

ST MARYS | | | | | | | | | | CENTRAL PRECINCT OPEN SPACE AND LANDSCAPE MASTERPLAN (LOSM)



Final

July 2008

St Marys Development

CENTRAL PRECINCT OPEN SPACE AND LANDSCAPE MASTERPLAN

July 2008

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Table of contents

	Executive Summary
1.0	Introduction
1.1	Background
1.2	Structure of the Report
1.3	The Shared Vision
1.4	Site Appraisal
1.5	Open space / landscape strategies framework
2.0	Open Space Strategy
2.1	Principles for open space provision and distribution
2.2	Penrith City Council baseline requirements
2.3	Site opportunities
2.4	Proposed Open Space Plan
2.5	Principles for distribution of the Open Space Hierarchy
2.6	Access to Open Space
3.0	Open Space Performance Standards / Outcomes
3.1	Generally
3.2	Performance Criteria
a)	Regional Park usage
b)	District facilities
c)	Neighbourhood Parks
G	Playing fields to Regional Open Space
d)	Local Parks
4	Cultural Heritage Park
e)	Pocket Parks
	Village Centre Public Domain
	Sub Village Parks
10	Central Pocket Park
	Bushland Interface Parks
9	Edge Pocket Park
f)	Open space to corridors
E,F	Open space to corridors in Central Precinct
g)	Corridors
h)	Regional Park Interface
i)	Bushfire Management Zones
j)	Streetscapes / access
	• Collector Main Street
	• Collector Street
	• Access Streets
	• Road edge cycle ways
	• Off road cycle ways
	• Pedestrian paths

Table of contents

- 4.0 Public Domain Character
 - 4.1 Issues relating to all public domain
 - 4.2 Landscape and public domain character
 - 4.3 Landscape presentation and maintenance standards
 - 4.4 Public domain materials and treatments

- 5.0 Appendix
 - 5.1 Responses to planning strategies and controls

List of Figures

- 1 Open Space Masterplan
 - 1.1 Location Plan of St Marys Development
 - 1.2 St Marys development precincts
 - 1.3 Landscape & Open Space Planning Strategy
 - 1.4 Topography and visual features
 - 1.5 Landscape Character
 - 1.6 Development Constraints / Opportunities
- 2.1 Baseline Open Space Provision table
- 2.2 Relationship of PCC Open Space Action Plan hierarchy to EPS Classifications
- 2.3 Open Space Masterplan
- 2.4 Access Masterplan
- 4.1 Landscape presentation categories
- 4.2 Landscape presentation and maintenance categories

Executive Summary

Implementation Objectives

The open space masterplan must provide a framework for the ongoing planning and design of an interconnected network of functional and attractive open space. The network will cater for recreational use whilst also shaping and enhancing the character of the urban environment.

Objectives of the open space plan include:

recognition of natural values

- retention of appropriate natural canopy and understorey
- effectively manage relationship of urban development to the adjoining Regional Park
- optimisation of role and benefit of open space (eg. water, soils, salinity management)

recognition of cultural values

- conservation of significant heritage elements
- interpretation of cultural heritage values to enhance community experiences
- facilitation of sustainable and vibrant community
- development of identity

network connectivity

- serving a practical user catchment (ie within walking distance)
- linked to broader regional network of open space and access (ie Ropes and South Creeks and the Regional Park)

multi use facilities

- open space / recreation linked to other community facilities
- combination of open space types to provide opportunity for a variety of facilities
- be of practical dimensions to achieve the recreational / landscape role intended

responsiveness to needs

- cater for family use (playgrounds, kickabout , shaded seating, some parking)
- cater for personal fitness (walking, cycling, jogging, exercise)
- potential to cater for new active trends (skate uses, adventure playgrounds)
- community gathering space
- flexibility and adaptability in planning to cater for changing community needs
- provide safe and secure recreation environment

recognise specific opportunities provided by the St Marys site

- cater for family use (playgrounds, kickabout with support facilities – shaded seating, some parking)

Baseline open space requirements

The 1999 St Marys Open Space and Recreation Plan identified a “needs based approach” to open space provision rather than simply a focus on numeric requirements. Penrith Councils subsequent PLANS (People’s Lifestyle Aspirations and Needs Study) research also identified the need to improve the quality of the City’s open space and facilities through a focus on quality (rather than just on quantity), and incorporating the principles of social inclusion and universal (accessible and inclusive) design.

Penrith Councils 2007 Open Space Action Plan builds upon the PLANS principles but also defines baseline open space provision ratios based on the average open space provision across the LGA for active and passive open space. This establishes a guideline provision only and a baseline reference for developing an open space plan for the site. The application of the baseline ratios to the projected population (2500) for the Central Precinct are listed below:

Active Open Space	1.4 ha /1000	3.5 ha
Passive Open Space	1.64 ha /1000	4.1 ha
Total	3.04 ha / 1000	7.6 ha



Natural values



Network connectivity



Responsiveness to needs

Above: Objectives of the Open Space Plan

Open Space and Landscape Opportunities

The Central Precinct site presents a range of specific characteristics and opportunities that must be considered in establishing the most effective open space provision and distribution framework that can not only address community needs and aspirations but be sustainable in the long term for Council.

Regional Park

The Central Precinct is bounded by the 900 ha Regional Park for much of its perimeter. The park edge may be fenced but general access and recreation opportunities, consistent with the St Marys Development Agreement and the draft Regional Park plan of management (POM) will be available. The St Marys Development Agreement (cl. 11.13) requires the POM to provide for certain matters, including:

- make reasonable provision for public access to the Regional Park
- the provision of opportunities, in an outdoor setting, for recreation and enjoyment in natural and modified landscapes
- provision for sustainable visitor use and enjoyment that is compatible with the conservation of the Regional Park's natural and cultural values

In addition, cl. 11.14 of the Agreement requires the consideration of certain principles in the objectives of the POM:

- the principles of environmental and economic sustainability
- the principle of social/community sustainability, involving eg: maximising educational and community interaction and passive recreation opportunities

These suggest that it is fundamental that the park interact with the local and broader community. Use of the Regional Park such as access to bush trails and internal park facilities will greatly enhance the recreational amenity available to Central Precinct residents. In addition the relationship to the "bushland edge" of the park for over half of the precincts boundary will be a significant influence on the landscape amenity and character of the urban development.

Discussions with Department of Environment and Climate Change (DECC) have also identified that it is highly likely that the "boot shaped" area of Regional Park projecting into the Central Precinct could play a role in the local open space network as Bushland type parkland similar to the "Woodlands Park" in the Eastern Precinct.

Regional Open Space

In close proximity to the Central Precinct is 40 ha of land dedicated as Regional Open Space to be managed by Council for regional use and benefit. Penrith Councils 2007 Open Space Action Plan and District Open Space Contributions Plan identifies the provision of a range of district level sporting and recreation facilities on the Regional Open Space land.

The Developer of the Western and Central Precincts has a contractual obligation with the Commonwealth Government to deliver district level sporting and recreation facilities on the land which likewise will greatly enhance the accessibility of quality recreational facilities to the Central Precinct population

Drainage and vegetation corridors

The development of riparian and vegetation corridors through the precinct provide potential for recreational and open space provision. It is proposed to construct several open space corridors (serving dual riparian and recreation function) and stormwater basins (also dual detention and recreation function) within the Central Precinct. This will provide open space adjacent to creeklines and water bodies which will enhance landscape amenity and diversity of experiences and visual settings available to the community.

Proposed Open Space Masterplan

The open space masterplan developed for the Central Precinct (refer Figure 1 below) provides an open space distribution and quantum that meets the needs of the new community for quality, accessible, and sustainable open space and takes into account site specific open space opportunities.

The total local open space contribution area of 7.6 hectares equates to 3.04 ha / 1000 population based on the population estimate for the Central Precinct of 2500 . This comprises 3.5ha of active open space (located as an offset within the central Regional Open Space) and a total of 4.1ha passive open space.

The quantum recognises the following factors:

- distribution of open space adequately addresses the minimum target for accessibility to residences of 5 minutes walk generally
- the Regional Park and Regional Open Space accessible to the Central Precinct in addition to Regional Park areas suitable for use as passive open space supplement local open space in providing a “quantum” of space for recreational use
- the Regional Park context and the accessibility of corridor open space and linkages provides a high level of landscape amenity
- The Regional Open Space will also provide passive recreational amenity that will supplement the passive use local and pocket parks
- open space embellishment will provide a high level of landscape amenity that promotes “quality” of open space and recreational experiences
- the capacity of Council to effectively and sustainably maintain open space area must be considered - oversupply of poor quality open space is not a good or sustainable community outcome.
- in the context of the above factors the proposed open space masterplan reflects the needs based and qualitative approach as recommended in Council’s PLANS strategy.

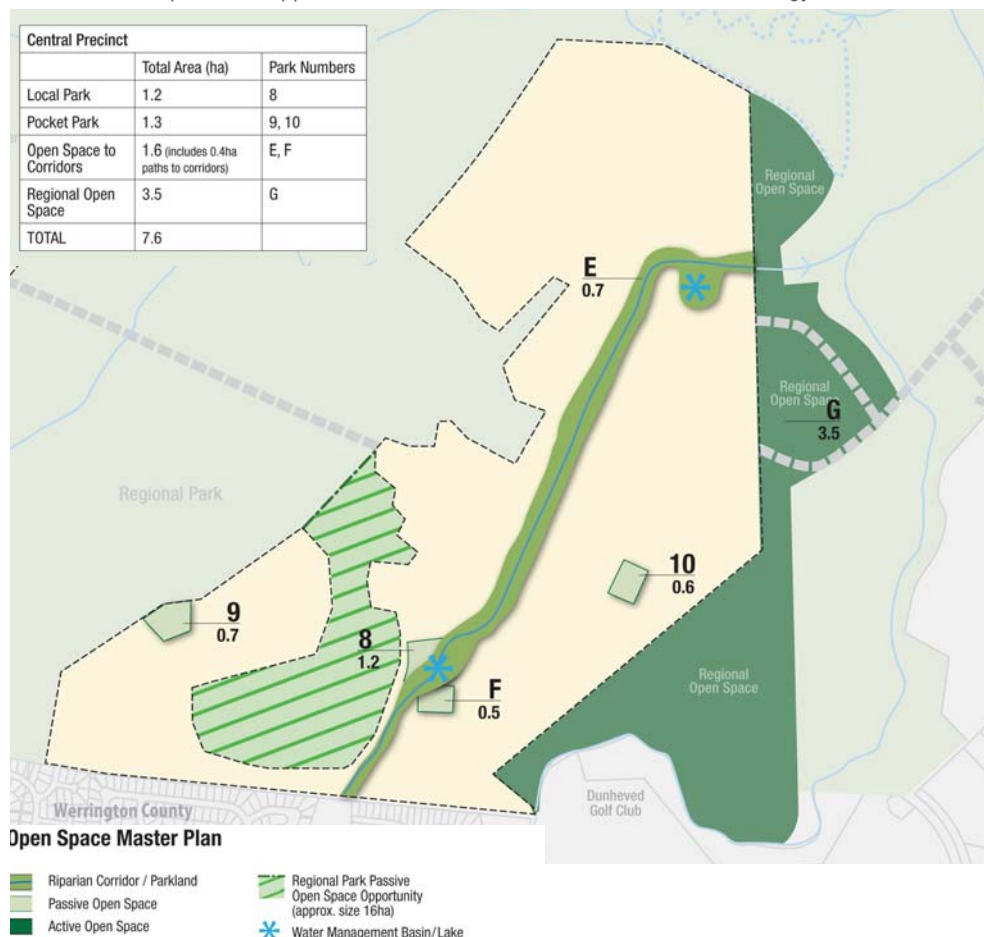


Figure 1: Open Space Masterplan

The process from here

Planning Agreement

The alternative open space masterplan as outlined is proposed to form the basis of ongoing negotiation of open space and embellishment contributions for the Central Precinct through the Planning Agreement process.

Open Space embellishment

The performance criteria identified in section 3.0 provide an indicative framework of items for consideration in embellishment of the open space system, and of the landscape settings to be developed and maintained.

Introduction

1.0

Background

The former Australian Defence Industries (ADI) site at St Marys was endorsed by the NSW Government for inclusion on the Urban Development Program (UDP) in 1993. The site was seen to present an opportunity to provide housing for Sydney's growing population within an environmentally sustainable framework.

The St Marys site is located approximately 45km west of the Sydney CBD, 5km north-east of the Penrith City Centre and 12km west of the Blacktown City Centre. The main western railway is located approximately 2.5km south of the site. The Great Western Highway is located another 1 km south and the M4 Motorway a further 1.5km south.

The overall site has an area of 1,545ha, and stretches roughly 7 kilometres from east to west and 2 kilometres from north to south, from Forrester Road, St Marys in the east to The Northern Road, Cranebrook in the west, and is bounded by Llandilo and Wilmot in the north and Cambridge Gardens/ Werrington County and the Dunheved Industrial Area in the south. Figure 1.1 illustrates the site.



Figure 1.1 Location Plan of St Marys Development

Given that the site straddles the boundary between two local government areas (Blacktown and Penrith), the Government decided that a regional environmental plan should be prepared for the site. Technical investigations into the environmental values and development capability of the land were commenced in 1994, and the Regional Environmental Plan for St Marys (Sydney Regional Environmental Plan No. 30 (SREP 30)) was gazetted in January, 2001. It zoned the land for a combination of “urban”, “employment”, “regional open space”, and “Regional Park” uses.

In view of the original scale of the residential and employment uses, a package of documents was prepared to guide and control development. It comprised SREP 30 (maps and written instrument), and an Environmental Planning Strategy (EPS) which sets out performance objectives and strategies to address key aspects associated with the site, including: conservation, cultural heritage, water and soils, transport, urban form, energy and waste, human services, employment, and land contamination.

A Deed of Agreement was entered into in December 2002, between the landowner and developers of the land (a Joint Venture comprising ComLand and Lend Lease Development) and the NSW Government setting out the developer's and State Government's responsibilities in providing services and infrastructure.

SREP 30 identified 6 development "precincts" (known as the Western Precinct, Central Precinct, North and South Dunheved Precincts, Ropes Creek Precinct and Eastern Precinct).

SREP 30 requires that a Precinct Plan be adopted by Council prior to any development taking place.

Planning for any precinct is to address all of the issues in SREP 30 and the EPS, including preparation of management plans for a range of key issues.

In March 2002 the Commonwealth Government advised that those areas of the site listed on the Register of the National Estate should be excluded from urban development. This had the effect of changing the boundaries of the areas to be set aside for conservation. The precincts available for development are shown in Figure 1.2.



Figure 1.2 – St Marys development precincts

On 29th December 2006 the Minister for Planning declared the Western and Central Precincts Release Areas, paving the way for the preparation of a Precinct Plan for these areas. The Landscape and Open Space Masterplan has been prepared in accordance with the requirements of SREP 30 and the St Marys EPS, the Penrith Open Space Action Plan (2007), and the Penrith Sustainability Blueprint for Urban Release Areas (2005) and addresses all relevant legislation.

The report supports the draft Precinct Plan for the Central Precinct.

1.2 Open Space Planning Process

The development of the strategy has been based upon the following process.

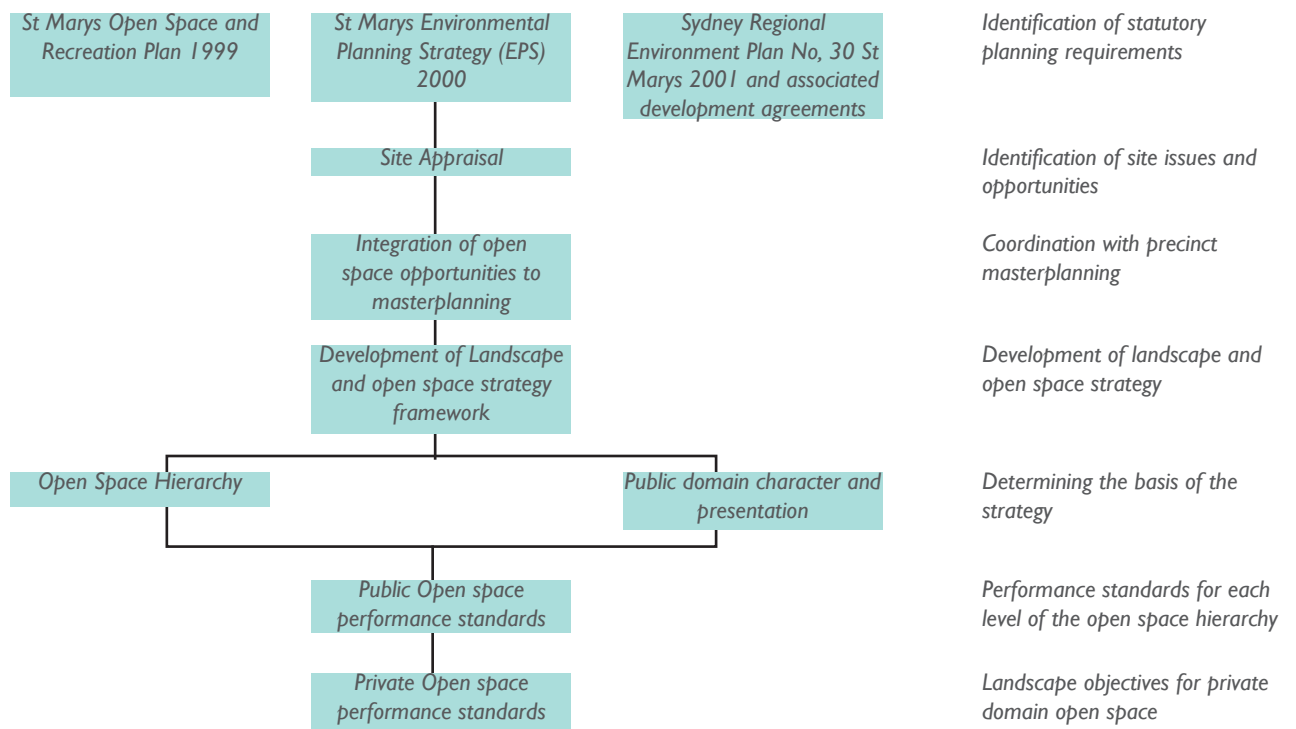


Figure 1.3: Landscape & Open Space Planning Strategy

1.3 Structure of the Report

Section One – Introduction

Background to the precinct planning process and review of the key site characteristics of significance to open space planning for the site. An open space / landscape strategies framework describes a strategic development process for the Central Precinct.

Section Two – Open Space Strategy

The development of an open space hierarchy is described that establishes an integrated network of open space, defining a setting and character for the development and which will encourage the new community to seek and enjoy recreation within their locality.

Section Three – Open Space Performance Standards

A series of performance standards are identified for open space and related landscape outcomes, which aim to ensure that a coordinated structure of natural and recreational open space is conserved, designed, and implemented achieving sustainable landscape setting and quality benchmarks. Maintenance requirements for the hierarchy are outlined in the separate Landscape Maintenance and Handover Report.

Section Four - Public Domain Character and Presentation

Standards for public domain character and presentation are outlined which identify character types appropriate to the elements of the open space hierarchy based on function, usage and general site opportunities. Design and materials treatments principles for landscape implementation are also identified.

Section Five – Private Domain Landscape Outcomes

To assist in complimenting the overall open space and landscape strategy with its strong linkages to the Regional Park context, broad objectives for private open space landscape are provided as a reference target.

Section Six – Appendix

Section Six provides an appraisal of responses to these key planning requirements of the St Marys EPS, SREP, and PCC's Sustainability Blueprint (2005) and Open Space Action Plan (2007) relevant to open space and landscape planning.

1.2 The Shared Vision

Project Vision

The St Marys Development will be a cohesive community that meets the needs and aspirations of all stakeholders. It will be an integrated, thriving and vibrant place centred on the core elements of learning, community interaction and engagement, housing diversity, enterprise and sustainability. It will capitalise on connections with nature and open space, respecting the natural and rural qualities of the region.

Key Elements Driving the Vision

Learning – access to whole of life learning

Diversity – mixture of uses and housing

People Focused – safe, accessible, community centric, lifestyle driven

Employment – employment for local residents providing 21st Century jobs, enterprise capability

Innovation – creative, distinctive, functional and responsive

Collaboration – partnership and integration

Sustainability – a holistic approach to social, economic and environmental outcomes, consistent with Council's 'Sustainability Blueprint for Urban Release Areas'

Delivery – timely delivery of facilities to meet the needs of the community

Design – provision of safe, well-designed and high quality urban environments that foster a cohesive community

Value & Place Attributes

A real place where you feel you belong and can contribute to the life of the community

A planned community that features places and spaces for today and tomorrow's needs

A walkable place where you can walk or cycle safely to school, work and other destinations – a place that caters for personal mobility choice, regardless of age or level of ability

1.3 Site Appraisal

The following summary provides a review of the key landscape issues identified in the appraisal of the existing site as part of this report. The outcomes are summarised on the diagrams on the following pages:

Figure 1.4 Topography: summarises the key topographic features of the site, and resulting major view corridors

Figure 1.5 Landscape Character: Identifies key character zones in terms of enclosure exposure, and topography along with major stands of existing vegetation

Figure 1.6 Development Constraints & Opportunities: Identifies key open space and landscape factors for consideration in urban planning for the precincts

Key observations from each of these maps are listed following.

Figure 1.4 Topography:

- Central Precinct typified by generally level topography related to the creek floodplain in its central to northern zones with undulating slopes on the south
- Strong visual enclosure of site on western edge by vegetation within the Regional Park and to Regional Open Space to east

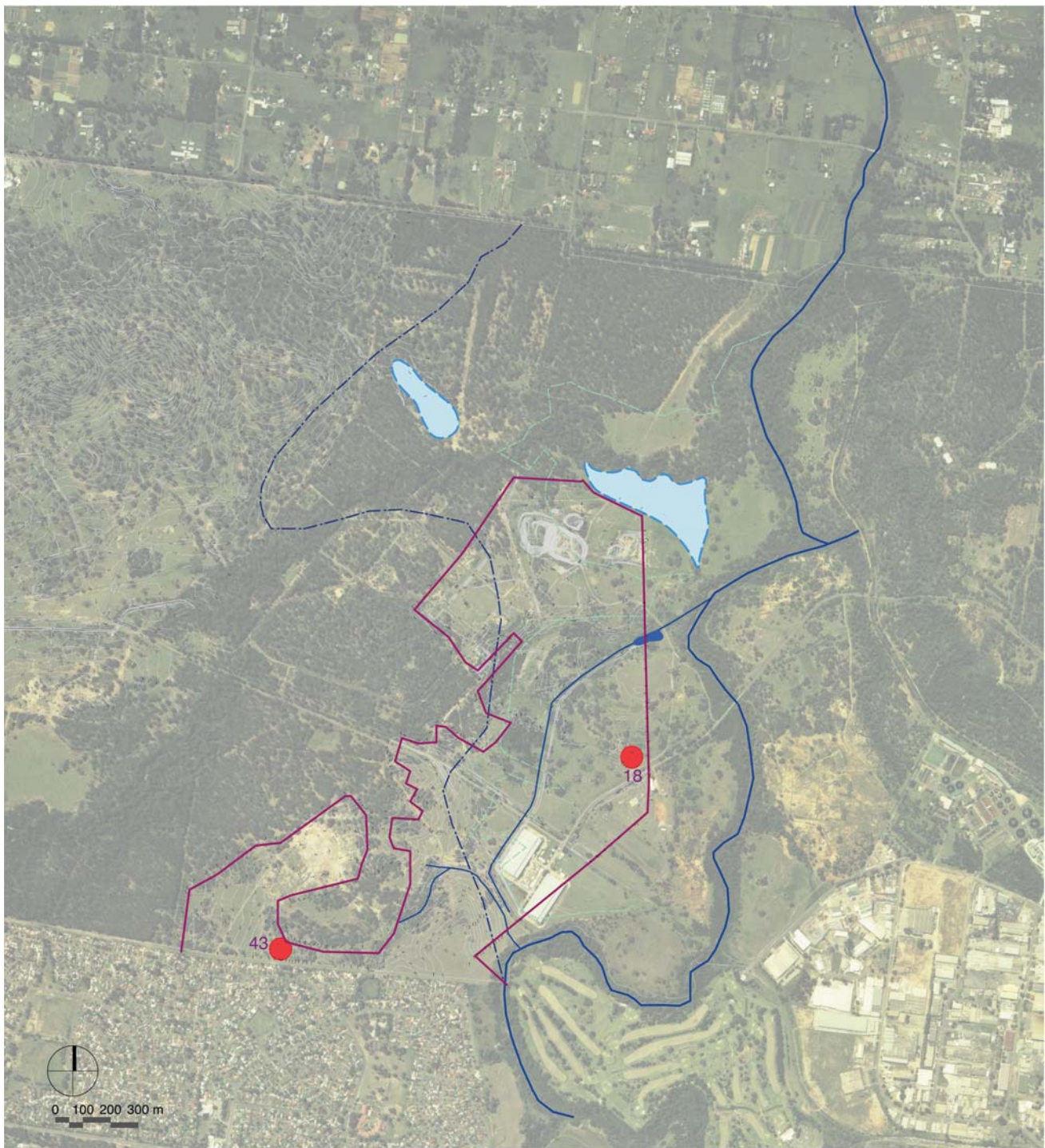
Figure 1.5 Landscape Character:

- Predominantly cleared undulating landscape
- Stands of tree canopy through central zone of precinct
- Scattered tree canopy through Regional Open Space
- Strong relationship to Regional Open Space
- Time lag for establishment of new tree plantings – potential for early works

Figure 1.6 Development Constraints and Opportunities

- Moderate to low falls for drainage through Central precinct
- Central Precinct is generally level without strongly defined aspect
- Open space opportunities around significant stands of trees
- Open space opportunities around indicative drainage basins and drainage lines within the precinct.
- DECC has advised the “boot” area of Regional Park that extends into the Central Precinct has potential for use as local passive open space and may not be fenced. The potential role of this area as open space should be explored further through planning agreement discussions.
- The proximity to the Regional Open Space provides the opportunity for active and passive recreational use by the community of the Central Precinct.

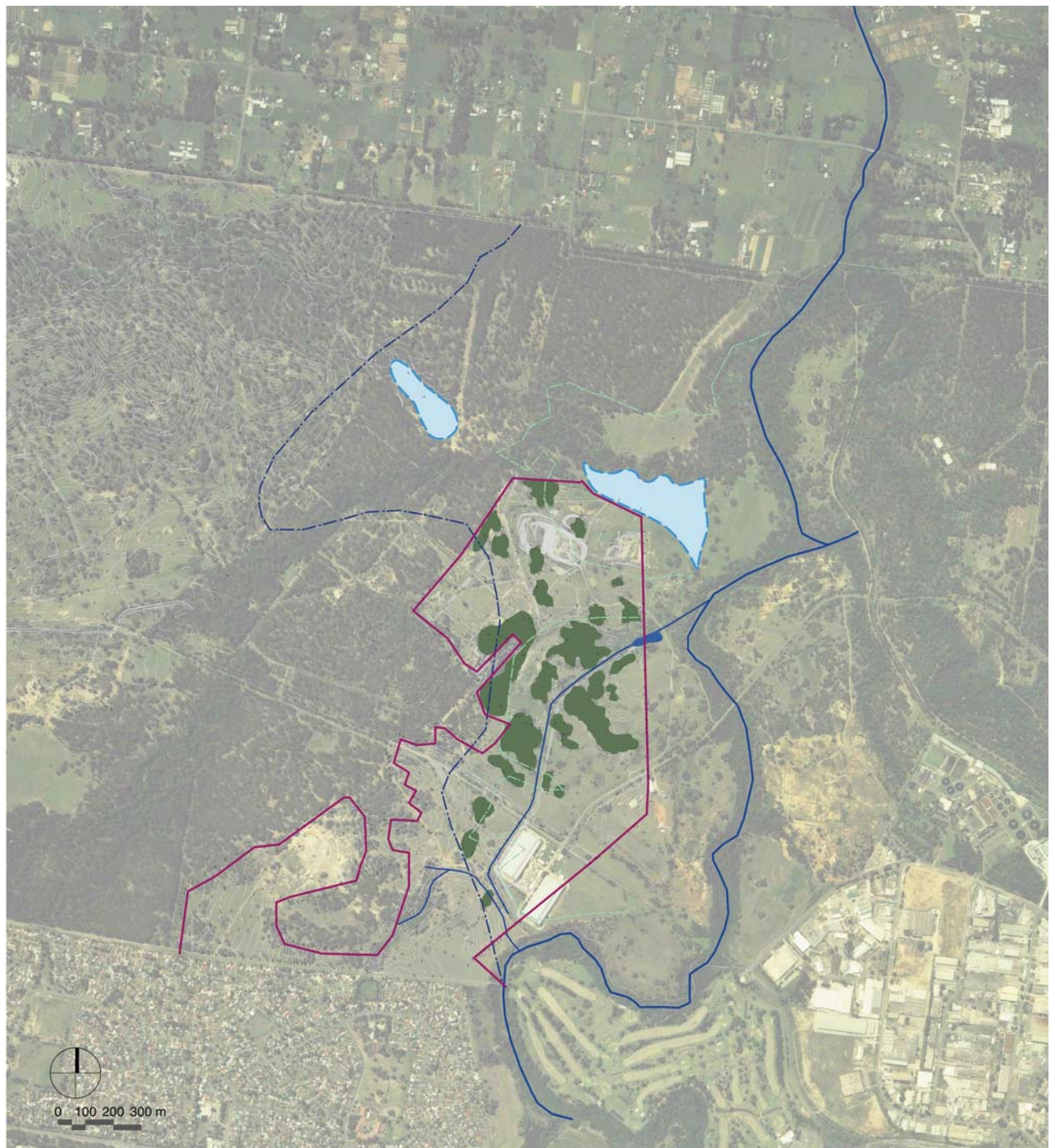




Key

- High Points
- Ridgeline
- 46 RL
- Major views
- Drainage lines
- Precinct boundary
- SREP30 drainage zones / waterbodies
- Existing dam waterbodies

Figure 1.4 Topography and visual features



Key





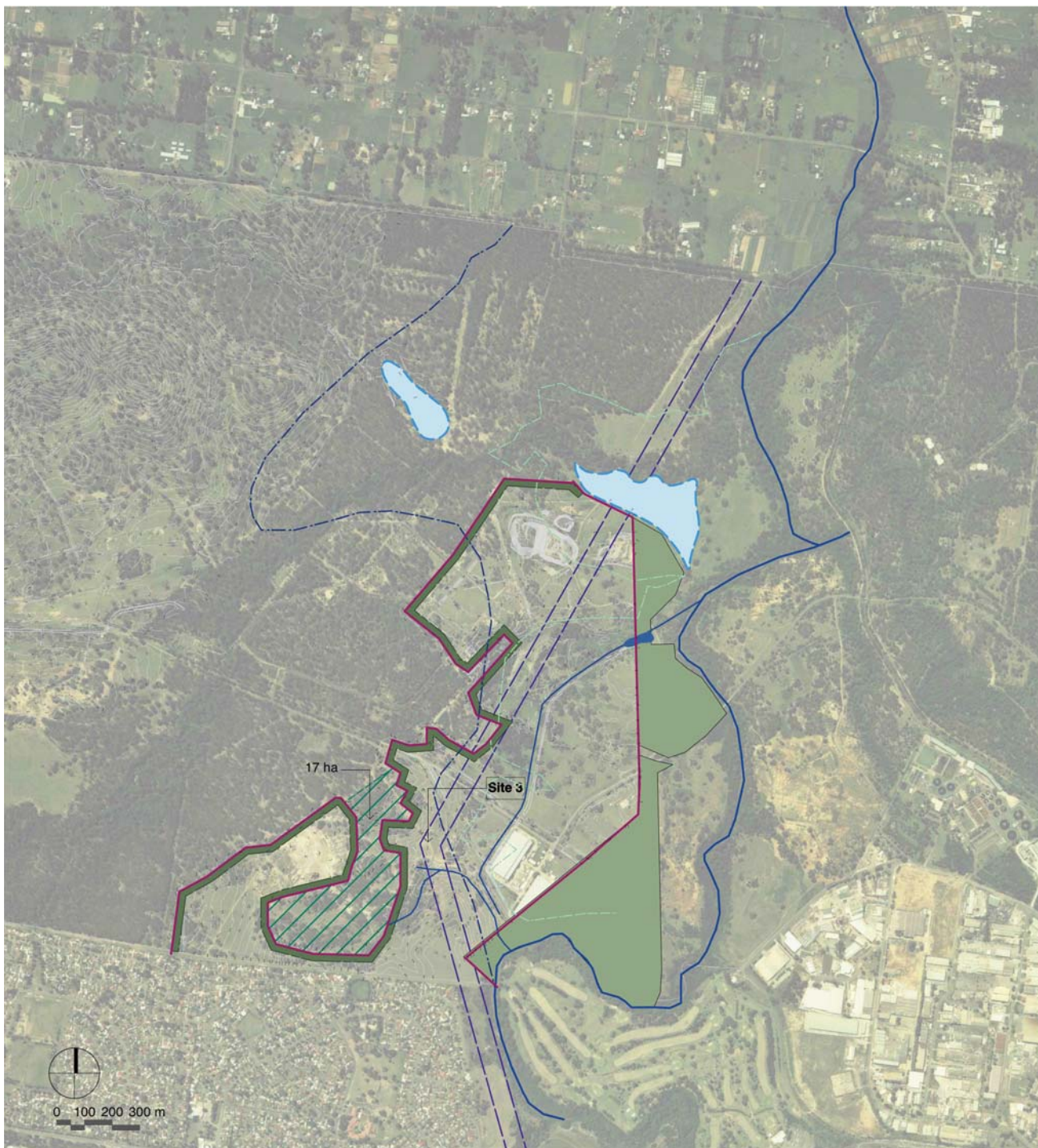
-  Major stands of existing vegetation
-  Existing artificial water bodies
-  SREP30 drainage zones
-  Proposed drainage basins

Figure 1.5 Landscape Character



Key

- Areas limited by spatial constraints from urban development
- Isolated zones from main development area
- Proximity to Northern Road - visual and noise exposure
- Steepest topography (over 1:10 slope)
- Asset Protection Zone (indicative)
- PMF
- High voltage power easement
- Regional Park areas not anticipated to be fenced by DECC - Potential open space role subject to discussion
- Regional Open Space

Site 3 Site 3 Cultural Heritage Site

Figure 1.6 Development Constraints / Opportunities

1.4 Open space / landscape strategies framework

A series of open space, landscape, and recreational values have been identified for the Central Precinct. The following framework relates these values to desired outcomes / objectives and opportunities and constraints that will influence realisation of the outcomes. Potential strategies for landscape and open space planning and management are listed to resolve open space hierarchy and performance standards.

Landscape and Open Space Values of the St Marys site

The Central Precinct site described in this report is one of strong individual identity and character. Foremost is the urban development area's relationship to the 900 ha Regional Park which conserves the highest quality biodiversity values and potential habitat zones.

The Central Precinct is bounded by the Regional Park for its western perimeter and draw on its values and qualities. To the east the precinct is bounded by the Regional Open Space which will likewise contribute to visual and recreational amenity of residents.

This requires that planning, design, and management strategies respond to both the physical and cultural values of the Regional Park and of the urban development area proper to facilitate a quality and sustainable community.

The summary values below for the Central Precinct should be addressed in open space planning. The strategies framework on the following explains how the constraints and opportunities presented by the site may address the site values.

Natural Values

- biodiversity conservation and enhancement
- appropriate conservation of natural vegetation
- water cycle management

Cultural values

- Aboriginal cultural heritage
- European cultural heritage
- views

Connectivity

- open space corridors
- off road cycle and pedestrian linkages
- access to Regional Park
- regional connections

Multi- use facilities

- linkages between facilities
- diversity of open space types
- practical / functional open space
- adaptability

Responsiveness to needs

- family recreation
- access and fitness trails
- adaptability
- sustainability

Landscape Strategies Framework				
Value	Objective	Opportunities	Constraints	Strategies
Natural environment	Appropriate and integrated conservation of natural canopy and understorey for flora and fauna protection and biodiversity enhancement	Regional vegetation corridors	Reduction in open space utility and flexibility	Locate open space around significant (good quality) stands of existing trees outside regional corridors
		Quality stands of trees along existing drainage corridors	Requirements for modifications to drainage corridors to cater for increased stormwater volumes. Cut and fill required.	Maximise conservation of existing drainage lines for drainage and vegetation retention purposes Effectively design any upgrading of drainage lines to conserve existing trees
		Individual trees and stands of existing trees through the site	Safety of residents	Appropriate and healthy trees retained where possible in road reserves
	Landscape planting to respond to Biodiversity Values of Regional Park	Potential to collect native seed stock for propagation of plant material for landscape plantings to ensure local provenance and genetic integrity is maintained	Implementation of some native tree species in urban environment: – limb and branch drop – general instability	Design of open space area embellishment to maximise use of existing site indigenous plant material
				Design of streetscape and urban public domain spaces to incorporate existing site indigenous plant material where practical, or native plant material generally (to continue visual character)
				Appropriate exotic / deciduous trees to be selectively used in urban public domain spaces to complement built character and provide micro climate benefits
Effectively manage relationship or urban development to adjoining Regional Park	Much of the site is enclosed by Regional Park – bushland setting	Potential impacts of residential gardens, etc. at edges to Regional Park	Where possible edge to regional park to be formed by functional zone such as road, pathway or open space integrated as bushfire protection reflecting bushfire management requirements for urban development	
Habitat values of open space corridors watercourses / bodies to be maximised	Aquatic habitat at waters edge and within swales of wetlands	Design suitability of hard water edges to some water bodies for habitat enhancement / salinity management	Conserve and enhance natural edges and riparian vegetation zones to existing creek line water bodies	
			Incorporate habitat voids and niches in hard water edges to artificial water bodies and integrate with natural / vegetated edge	
			Maximise overhanging native vegetation at edges of water bodies	
Optimise role and benefit of open space in water cycle management for the urban development	Existing drainage lines generally support existing tree and understorey vegetation	Generally flat upper half of site – minimal fall for drainage	Conserve and enhance drainage lines as natural corridors – also providing for off road access	
	Potential use of corridors for off road pedestrian / cycle access		Provide shared access paths to corridors and APZ zones where possible as part of an integrated access network	
	Potential recycling of water for irrigation	Impact of irrigation on water table and high salt content of soils needs to be managed	Design to consider minimal irrigation requirement to reduce impacts on water table and recurrent water use	
	Water Sensitive Urban Design Strategy will provide additional natural corridor values	Ensuring water quality objectives are met prior to stormwater discharge off site	Where irrigation is to be provided (eg. playing fields) use strategies to limit impact on water table (eg. drainage, programming)	
			Investigate storage and recycling of water to supplement irrigation needs	
			Maximise use of recycled (treated) water where suitable for irrigation purposes in partnership with Sydney Water	
Cultural role	Conservation and optimisation of interpretation of Aboriginal cultural heritage values in relation to site	Potential to research and develop interpretive / educational focus through oral history and Aboriginal site / area habitation and use	Limited physical sites in urban development area	Plan of Management for Regional Park shall consider development of Aboriginal cultural heritage themes and interpretation in appropriate bushland context

Landscape Strategies Framework				
Value	Objective	Opportunities	Constraints	Strategies
Cultural role (continued)	Optimise educational role of open space network	High quality natural and cultural heritage qualities of the site	For residents – static interpretation (eg. signage) can lose interest over time	Quality / evolving interpretive programme (natural and cultural heritage) linked to open space for educational, public art, and recreational benefit
	Open space system to assist in development of sustainable and vibrant community	Community pride and identity	Limited sphere of interest of typical residential communities in broader community values	Promote community and civic pride in the open space and landscape identity of the development through the provision of quality but practical environment
				Incorporate public art in design and embellishment of open space
		Potential community meeting / gathering places in a variety of contexts	Central meeting place should be located near to complementary community and retail facilities	Public gathering spaces related to Village Centre will offer potential for outdoor activities
			Lack of knowledge / interest in sustainable practices	Smaller meeting spaces incorporated through the open space network
			Design and treatments to promote visibility and legibility of sustainable strategies	
Open space	Well sited and integrated open space network to balance Regional Park	Open space to integrate and provide access to Regional Park	Management of Regional Park yet to be defined	Ensure Regional Park values are protected, enhanced and complimented by Central Precinct open space
	Community role of open space network to be maximised	Use existing site features and character where possible to optimise park setting	Park facilities need to be usable	Quality of parks to be maximised: - setting (use of remnant trees, pleasant views, and visual character) - provide good quality facilities
			Size of open space can limit long-term utility and ability to adapt to future needs	Ensure parks are of an adequate size to enable a quality landscape setting and adapt to changing use over time
		Panoramic views from south east of site to Blue Mountains and southwards	Areas having views are also exposed to westerly / south westerly winds	Intimate spaces be integrated within basic structure of open space along CPTED design principles
	High level of community accessibility to open space	Use of green corridors to link open space system	Distance of open space for residents	Locate open space and pedestrian / cycle access where possible to take advantage of views whilst providing protection from winds
			Quality and safety of open space and access system eg. paths and street interface	Open space located within walking distance (5 minute) of residential areas
			Variety of facilities integrated throughout Central Precinct that will ensure all age groups (in particular teens) will be catered for	
			Design of open space to have regard for safety and security issues	
			Links to open space to residential areas by quality footpath and through park pathway system	
		Potential to use streets, parks, and drainage / vegetation corridors to provide network	Safety and visual character of on street pedestrian / cycle links	Lighting to be provided to major links
				Provide an access network for pedestrians, cyclists, and joggers that links open space, residential areas and the village centre
			Pedestrian, cycle and jogging access through parks maximised – and where provided on streets – located in a wider landscaped setback	
		Access to Regional Park for residents and broader community	Potential input of Regional Park access on local open space and residential amenity	Pedestrian and cycle links to Regional Park maximised reinforcing appropriate local and regional access points
Sustainable quantum of open space	Regional Park, Regional Open Space, and green corridors supplement local open space in providing open space and recreational opportunities	Potential over supply of open space area compromising quality of open space and capacity for Council to maintain open space in the long term	Open space planning to provide a holistic approach that considers the range of site specific open space opportunities along with Council's baseline ratios in providing a sustainable and effective open space network for the community	

Open Space Strategy

2.0

2.1 Objectives for open space provision and distribution

Objectives to be addressed in the open space plan include:

recognition of natural values

- retention of appropriate natural canopy and understorey in green corridors or within open space
- effectively manage relationship of urban development to the adjoining Regional Park
- optimisation of role and benefit of open space (eg. water, soils, salinity)

recognition of cultural values

- conservation of significant heritage elements
- interpretation of cultural heritage values to enhance community experiences
- facilitation of sustainable and vibrant community
- development of identity

network connectivity

- serving a practical user catchment (ie within walking distance)
- linked to broader regional network of open space and access (ie Ropes and South Creeks and the Regional Park)

multi use facilities

- open space / recreation linked to other community facilities
- combination of open space types to provide opportunity for a variety of facilities
- be of practical dimensions to achieve the recreational / landscape role intended
- optimise role of Regional Open Space

responsiveness to needs

- cater for family use (playgrounds, kickabout with support facilities – shaded seating, some parking)
- cater for personal fitness (walking, cycling, jogging, exercise)
- potential to cater for new active trends (skate uses, mountain bikes, adventure playgrounds)
- community gathering spaces
- flexibility and adaptability in planning to cater for changing community needs
- provide safe and secure recreation environment

recognise specific opportunities provided by the St Marys site

- recognise in consideration of open space quantum, distribution and design the specific opportunities provided by the St Marys site.

2.2 Penrith City Council baseline requirements

The guiding open space and recreation document for the Environmental Planning Strategy of 2000 was the 1999 St Marys Open Space and Recreation Plan which identified a “needs based approach” to open space provision rather than simply a focus on numeric requirements. Penrith Councils subsequent PLANS (People’s Lifestyle Aspirations and Needs Study) research identified:

“the need to improve the quality of the City’s open space and facilities through a focus on –

- quality (rather than just on the quantity) through larger open space areas that provide a range of experiences for different age groups and interests, and
- incorporating the principles of social inclusion and universal (accessible and inclusive) design into the planning and design of open space areas.”

Penrith Councils 2007 Open Space Action Plan builds upon the PLANS principles but also defines baseline open space provision ratios based on the average open space provision across the LGA for active and passive open space. These targets must be equated against current population projections for the site.

This establishes a guideline provision only and a baseline reference for developing an open space plan for the site. It is also important to consider the specific characteristics of the site in terms of open space and landscape opportunities and in particular the PLANS principle of a focus on quality of experiences and facilities rather than quantum only.

Figure 2.1 below lists the application of the baseline ratio to the projected population for the Central Precinct.

**Baseline Open Space Provision
Penrith City Council 2007 Open Space Action Plan**

Component	Projected Development Population	Base requirement - 2007 Penrith Open Space Action Plan	Baseline Open Space Provision
Central Precinct	2500		
Active Open Space		1.4 ha /1000 pop	3.5 ha
Passive Open Space		1.64 ha /1000 pop	4.1 ha
Total Open Space		3.04ha /1000 pop	7.6 ha

Figure 2.1 Baseline open Space Provision table

2.3 Site Opportunities

The key site opportunities to be considered are outlined further below:

Regional Park

The Central Precinct is bounded by the 900 ha Regional Park for over 60% of its perimeter. The park edge may be fenced for protection of flora and fauna values but general access and recreation opportunities, consistent with the St Marys Development Agreement and the draft Regional Park Plan of Management (POM) will be available. The St Marys Development Agreement (cl. 11.13) requires the POM to provide for certain matters, including:

- make reasonable provision for public access to the Regional Park
- the provision of opportunities, in an outdoor setting, for recreation and enjoyment in natural and modified landscapes
- provision for sustainable visitor use and enjoyment that is compatible with the conservation of the Regional Park’s natural and cultural values

In addition, cl. 11.14 of the Agreement requires the consideration of certain principles in the objectives of the POM:

- the principle of environmental sustainability
- the principle of economic sustainability
- the principle of social/community sustainability, involving eg: maximising educational opportunities for school and community groups; maximising opportunities for community interaction and passive recreation within the Regional Park.

These suggest that it is fundamental that the park interact with the local and broader community. Access to bush trails and internal park facilities will greatly enhance the recreational amenity available to Central Precinct residents.

In addition the relationship to the “bushland edge” of the park for over half of the precincts boundary will be a significant influence on the landscape amenity and character of the urban development.

Discussions with Department of Environment and Climate Change (DECC) have also identified that it is highly likely that the “boot” shaped area of Regional Park projecting into the western edge of the south section of the Central Precinct could play a role in the passive open space network as bushland type parkland similar to the “Woodlands Park” in the Eastern Precinct.



The current Regional Park “boot” offers potential for passive open space use

Regional Open Space

In close proximity to the Central Precinct directly adjoining the Central Precinct is 40 ha of land dedicated as Regional Open Space for regional use and benefit. Penrith Council's 2007 Open Space Action Plan and District Open Space Contributions Plan identifies the provision of a range of district level sporting and recreation facilities on the Regional Open Space land. The developer of the Western and Central Precincts has a contractual obligation with the Commonwealth Government to deliver a range of district level sporting and recreation facilities on the land which likewise will greatly enhance the accessibility of quality recreational facilities to the Central Precinct population.

Drainage and vegetation corridors

The development of riparian and vegetation corridors through the precinct provide potential for recreational and open space provision. It is proposed to construct several open space corridors (serving dual riparian and recreation function) and stormwater basins (also dual detention and recreation function) within the Central Precinct. This will provide open space adjacent to creeklines and water bodies which will enhance landscape amenity and diversity of experiences and visual settings available to the community.

2.4 Principles for open space provision and distribution

The proposed open space plan puts forward an alternative scenario in terms of open space quantum to the base requirements outlined in 2.2. Broadly the plan arising develops the following principles whilst addressing Council's open space classifications (Open Space Action Plan -2007):

1. Local park at centre of neighbourhood as recreational, civic, and landscape focus
2. Residents within walking distance (5 minutes) of quality open space
3. Central active recreational parkland that builds upon and complements active and passive recreational facilities through the development and relates to the Village Centre community and educational facilities.
4. Locate parklands to take advantage of quality existing tree canopy where possible
5. Provide access to recreational and environmental amenity of Regional Park and Regional Open Space to complement local open space provision
6. Balance quantum of open space for residential population against quality of open space settings and experiences and diversity and range of recreational and lifestyle opportunities available.
7. Provide a sustainable quantum of open space that does not place demand on Council's maintenance resources without tangible benefit for the community.

2.5 Proposed Open Space Plan

Open Space Hierarchy

The proposed open space hierarchy responds to the categories of open space as defined in Penrith Council's 2007 Open Space Action Plan (OSRP). These are listed in the table below in relation to the categories outlined in the 1999 Open Space and Recreation Plan prepared by Clouston, and to which the Environmental Planning Strategy (EPS) and REP refer.

EPS / OSRP 1999 OPEN SPACE ELEMENT	SIZE RANGE	ACCESSIBILITY	PROPOSED HIERARCHY	SIZE RANGE	ACCESSIBILITY	CHARACTERISTICS
District facilities & Open Space			District facilities & Open Space			Range of sporting facilities in the Central Regional Open Space Specific facilities will be determined through consultation with key stakeholders
Level One Park	5.8 ha	District	District Park	>5 ha	District	
			Neighbourhood Park	up to 5 ha	Serves cluster of suburbs	
						<ul style="list-style-type: none"> • Focus of village • Major open space network access point • Active recreation focus • Passive park component • Dual use with educational facilities • Limited to pedestrian and cycle access systems
Level Two Park	1.5-2 ha		Local Park	0.5-3ha	2km	
						<ul style="list-style-type: none"> • The focus of neighbourhood • Individual theme based on physical and cultural characteristics • Linked to pedestrian and cycle access system • Variety of facilities including play/picnic needs
Level Three Park	0.5-1.2 ha		Pocket Park	0.25-1 ha	5 minute walk 500-600m	
						<ul style="list-style-type: none"> • Less Structured / formal • Serving local catchment • Incorporating playgrounds where required for equitable distribution

Figure 2.2 Relationship of PCC Open Space Action Plan hierarchy to EPS Classifications

Brief descriptions and roles of the components of the proposed hierarchy follow. These are based on the 2007 Penrith Open Space Action Plan (OSAP). include the addition of several further categories of open space to best realise the opportunities presented by the site:

District Facilities > 5ha

Recreational facilities used by and benefiting a district (eg. St Marys) catchment. The OSAP identified the potential contributions to existing Regional Facilities in the surrounding area that may be used by residents of the new community (eg. Potential Penrith Lakes district sporting complex). For the Western and Central Precincts these contributions may include facilities with the Regional Open Space adjoining the eastern edge of the Central Precinct

District Park

A District Park is greater than 5 hectares. It provides a wide range of recreational experiences for individuals, groups, families and communities. It will also provide experiences and facilities for the City's visitors. A District Park is accessible by public transport, and typically includes car parking, and toilet and change room facilities that may be associated with formal active sports facilities. District Parks will provide visitor facilities, such as BBQs and picnic furniture, lighting, attractive landscaped areas, shade structures where natural shade is not available, and universally designed playground systems (in areas of priority within the city). Recreation areas and facilities that cater for a range of age groups will also be available, such as pedestrian and cycle way systems, and informal areas for sports and recreation.

Neighbourhood Park Parks up to 5 ha

A Neighbourhood Park will be up to 5 hectares in area, and typically serves a 'cluster' of suburbs. Neighbourhood Parks will generally be accessible to bus routes, include (limited) parking, and have lighting, attractive landscaped areas, pedestrian and cycle ways, playground structures, standard toilet facilities, natural shade, and picnic and visitor facilities. A Neighbourhood Park could include a sports field suitable for children's training and competition activities, and other formal or informal (non-competitive) recreation areas. It is proposed that neighbourhoods parks may develop a design and facilities theme distinguishing it from that of the other neighbourhoods, and as such may draw on a larger user catchment than purely the local neighbourhood.

Local Parks 0.3 - 5 ha

A Local Park will be from 0.5 to 3 hectares in area, and primarily serves a suburb, or an area up to 2km in radius. The Local Park will typically have on street parking, landscaping, natural shade, park benches and seating, and a playground area (no toilet facilities).

Pocket Parks 0.25 to 1ha

A Pocket Park will be between 0.25 and 1 hectare in area, and caters for the local area. It will be within a 5 minute walk from most households (400m – 600m radius). The Pocket Park will typically include natural surface and shade areas, sometimes seating, informal play and passive recreation areas, and may have some play equipment. Pocket Parks will provide passive recreational use over a smaller sub-neighbourhood catchment, and as such will be distributed and sized to provide equitable access to open space for all residents. Parks will be developed under two general themes:

Sub-neighbourhood Parks: located within Neighbourhood Parks to supplement Local Parks for open space distribution

Bushland Interface Parks: adjoining Bush Fire Protection Zone and Regional Park

Additional open space categories

Other elements of the proposed open space hierarchy are listed following:

Drainage and vegetation corridors

Vegetation and drainage corridors in which existing and proposed drainage lines will be enhanced, existing vegetation will be retained, and through which shared cycle / pedestrian access (for off road access linkages between the neighbourhood areas of the development) will generally be provided. Some corridors may also include basic exercise equipment.

Within corridor zones any drainage channel area (including base and embankments) and required buffer zone (20m overall - nominal 10m each side minimum buffer) is not included in complying open space calculations in this masterplan. However it is proposed at several locations open space nodes are provided in addition to drainage and buffer requirements to supplement the local open space network. Access paths within the corridors may also be included as complying open space (based on Council's 2007 OSAP). These spaces will benefit from proximity to vegetation and access corridors and water edge situations to specific locations (adjoining drainage basins).

Corridors may require traversal by roads and services to ensure that infrastructure is developed in a manageable and interconnected arrangement. Such crossings will be minimised and the intrinsic qualities of the corridors (including habitat / biodiversity) maintained through appropriate design and detailing. Design will minimise tree removal, and maintain fauna movement function in the corridor.

Bush fire asset protection zones

A variable bushfire asset protection zone (APZ) has been defined for the Western Precinct by the 2008 Bushfire Management Plan for the Western and Central Precincts adjoining the Regional Park boundary to the development. These zones will incorporate roadways in some cases, effecting a management and environmental buffer between residential lots and the Regional Park. The zones also provide further opportunities for cycle / pedestrian access, and for consolidation with adjoining "interface parks" as identified earlier.

Quantum of Open Space

The proposed open space hierarchy as identified on the following page on Figure 2.2 and on the Open space Masterplan - Figure 2.3 has considered the provision of open space on the site addressing the objectives and principles for open space provision and distribution and the specific opportunities the site presents. The open space masterplan provides an open space distribution and quantum that meets the needs of the new community for quality, accessible, and sustainable open space.

The total local open space contribution area of 7.6 hectares equates to 3.04 ha / 1000 population based on the population estimate for the Central Precinct of 2500. This comprises 3.5ha of active open space (located as an offset within the central Regional Open Space) and a total of 4.1ha passive open space.

The quantum recognises the following factors:

- distribution of open space adequately addresses the minimum target for accessibility to residences of 5 minutes walk generally
- the Regional Park and Regional Open Space accessible to the Central Precinct in addition to Regional Park areas suitable for use as passive open space supplement local open space in providing a "quantum" of space for recreational use
- the Regional Park context and the accessibility of corridor open space and linkages provides a high level of landscape amenity
- The Regional Open Space will also provide passive recreational amenity that will supplement the passive use local and pocket parks
- open space embellishment will provide a high level of landscape amenity that promotes "quality" of open space and recreational experiences
- the capacity of Council to effectively and sustainably maintain open space area must be considered - oversupply of poor quality open space is not a good or sustainable community outcome.
- in the context of the above factors the proposed open space masterplan reflects the needs based and qualitative approach as recommended in Council's PLANS strategy.

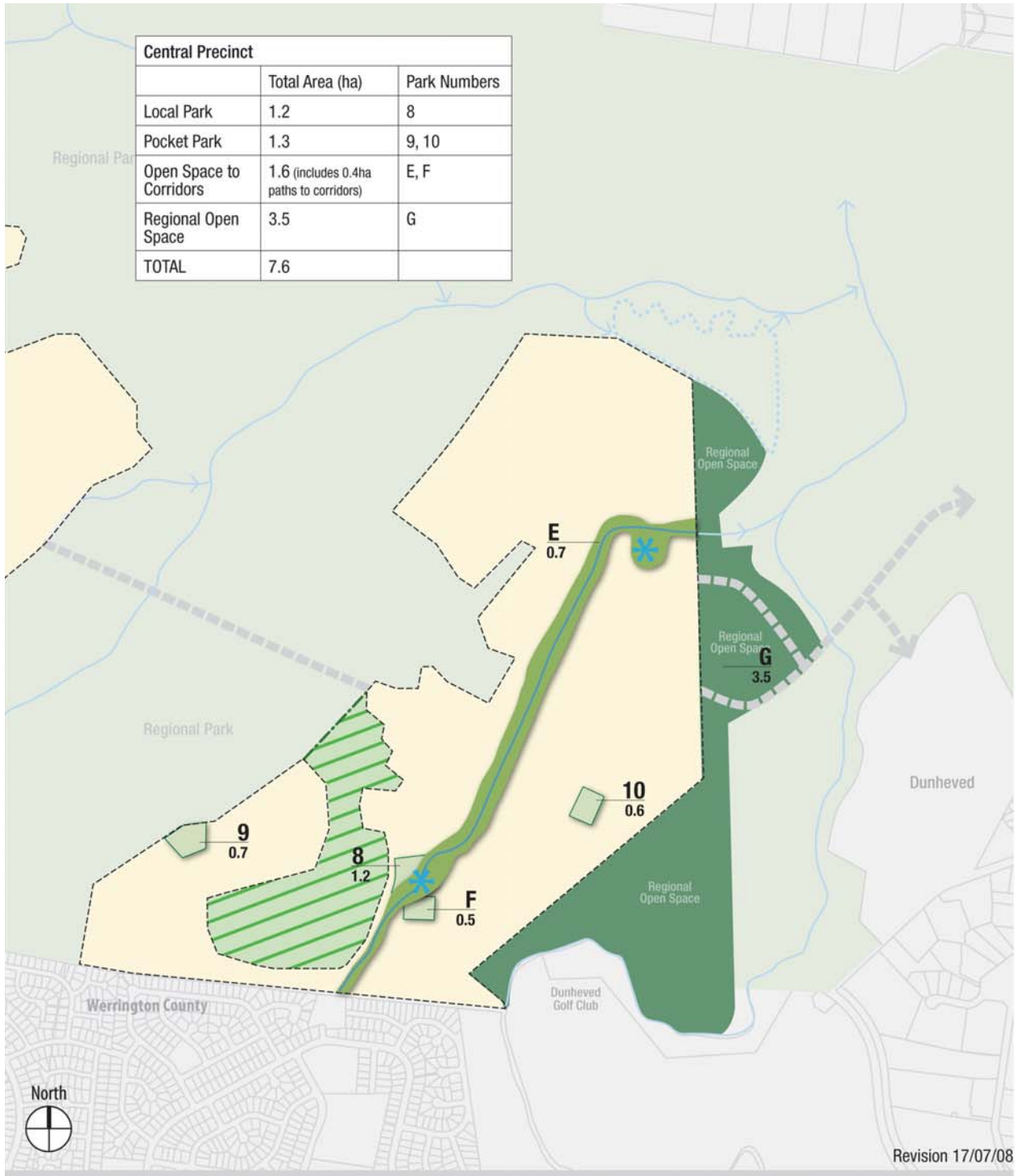
Open Space Masterplan

The table below identifies the hierarchy of open spaces comprising the proposed open space masterplan for the Central Precinct. The masterplan includes the following open space additional to neighbourhood, local and pocket parks:

- open space adjoining drainage and vegetation corridors which is additional to area required for drainage line and vegetation buffers (minimum 10m buffer each side of drainage line as identified in DWE creekline management requirements for St Marys site);
- pathways to drainage and vegetation corridors (nominal 2.5m width); and
- active facilities provided in Regional Open Space to Central Precinct as offset to active open space requirements;

which supplement local open space provision. Figure 2.3 opposite describes the proposed distribution of open space which is described further in section 2.6 Distribution of the Open Space Hierarchy.

Item	No.	Average Area	Total Area Cent prec
District Open Space			
District Park		in Western Precinct	
Neighbourhood Park (> 5 ha)		in Regional Open Space	
Facilities to ROS	G	3.5 ha	3.5 ha
Sub total			3.5 ha
Sub total active open space (PCC baseline active O/S - 3.5ha)			3.5 ha
Local Park (0.5-3ha)			
	8	1.2 ha	1.2 ha
Sub total			1.2 ha
Pocket Park (0.25-1ha)			
	9	0.7 ha	0.7 ha
	10	0.6 ha	0.6 ha
Sub total			1.3 ha
Open Space to corridors			
	E	0.7 ha	0.7 ha
	F	0.5 ha	0.5 ha
Paths to corridors (nominal 2.5m width x 1615 lin/m)	paths	0.4 ha	0.4 ha
Sub total			1.6 ha
Sub total passive open space (PCC baseline active O/S - 4.1ha)			4.1 ha
Total local open space- Central Precinct			7.6 ha
Other Open Space Resources			
Regional Park areas with potential for use as passive open space		17 ha	17 ha
PCC baseline open space requirement		7.6 ha	7.6 ha
Reference Total - Overall Open Space Resources		24.6 ha	24.6 ha



Open Space Master Plan

Scale 1:15,000m @ A4 (approximate)
 0 100m 200m 500m

- Riparian Corridor / Parkland
- Passive Open Space
- Active Open Space
- Regional Park Passive Open Space Opportunity (approx. size 16ha)
- Water Management Basin/Lake

Note: Location of all elements indicative only, subject to confirmation via detailed design.

Figure 2.3 Open Space Masterplan

2.6 Distribution of the Open Space Hierarchy

Distribution of open space has been considered in response to several key site planning criteria:

- i. physical factors making areas suitable / attractive for open space / recreational use.
- ii. effective distribution of levels of open space to address accessibility objectives
- iii. provision of a diversity of landscape settings and visual experiences
- iv. linking of open space to corridor zones incorporating shared access

Key locational principles for the open space areas as identified on the Open Space Masterplan (Figure 2.3 - previous page) are listed following. These are based on the numbered parks indicated on the plan.

Locational Principles

Central Precinct Oval (G)

It is proposed that as an offset to the 3.5ha of active open space which would nominally be required for the Central precinct to develop equivalent facilities within the Regional Open Space where their relationship to adjoining facilities can be optimised and a significant recreational facility provided. This will compliment development of other district facilities through the Regional Open Space. Residents in both the Western and Central Precincts will have access to the high quality facilities to be provided in the 40ha Regional Open Space. Playing field layout will optimise retention of existing trees that are scattered through the site and relationship to the Central Precinct Village Centre.

Cultural Heritage Local Park (8)

Located to incorporate a significant European Heritage Item (Site 3 - brickworks associated with Elizabeth Farm - refer Archaeological Assessment by Casey and Lowe - 2008) in order to conserve the heritage fabric and provide opportunities for interpretation. Heritage themes can provide an identity for landscape enhancement and an added focus for use and recreational experiences. The space also potentially integrates with the Regional Park boundary and the drainage / vegetation corridor running north south through the Central Precinct. Space will take advantage of existing tree canopy.

Edge Pocket Park (9)

The park adjoins the Regional Park optimising landscape character and amenity. The park is located to provide optimum accessibility and function to adjoining neighbourhood area. Space will take advantage of existing tree canopy.

Central Pocket Park (10)

The central pocket park is located centrally to the adjoining residential neighbourhood to provide optimum accessibility and function. Space will take advantage of existing tree canopy.

Central Precinct North Corridor Park (E)

The park will be provided as a node in the northern arm of the north south drainage / vegetation corridor to compliment local and pocket parks in serving the adjoining neighbourhoods. Integration with corridor will optimise the landscape and visual amenity of the space and provide good connectivity via the corridor shared access path.



The open space hierarchy will incorporate a variety of open space in varied landscape settings

Central Precinct South Corridor Park (F)

The park will be provided as a node in the southern arm of the north south drainage / vegetation corridor to compliment local and pocket parks in serving the adjoining neighbourhoods. The space will be located to the eastern side of the corridor and will function with the Cultural Heritage Park open space (park no. 8) adjoining the western side of the corridor in forming a consolidated recreational space and entry point from adjoining neighbourhoods

Integration with corridor will optimise the landscape and visual amenity of the space and provide good connectivity via the corridor shared access path.

Corridors

Corridors primarily relate to site drainage lines formalised during the sites previous use to which native tree canopy has either been retained or evolved. In addition to access and habitat conservation the corridors provide a key role in the proposed water cycle management strategy for the site.

The overall width of the corridors will generally be greater than 30 m. A minimum of 10 metres of vegetation buffer will be provided beyond the top of embankment to both sides of drainage channels. To several locations additional open space is provided adjoining the corridor which compliments open space provision of Local and Pocket Parks

All corridors provide potential for provision of off road cycle / pedestrian linkages, of which the path surface is included in complying open space.

The Central Precinct also includes a transmission line easement running generally north south. It is envisaged that the easement may also play a role in cycle / pedestrian access provision in the precinct, along with contributing to landscape amenity through appropriate landscape embellishment in compliance with authority requirements.

Bush Fire Asset Protection zone (APZ)

This zone adjoins the urban development area on all boundaries to the Regional Park varying in different edge conditions but ranging from 10-25 metres in width.

As mentioned previously the zone plays a potential open space role in a number of ways:

- for consolidation with open space within the urban development to supplement open space quality; and
- for provision of additional off road cycle and pedestrian linkages.

It is understood that where possible the APZ will incorporate roadways enhancing the environmental buffer between residential development and the Regional Park.

2.7 Access to Open Space

As mentioned earlier it is proposed that the open space system supports an integrated network of access linkages catering for pedestrian and cycle areas between neighbourhoods, parks and the village centre.

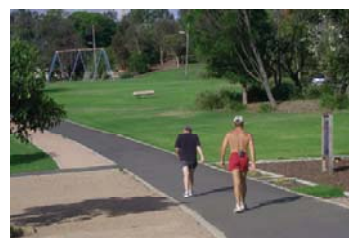
Figure 2.4 Access Masterplan describes the relationship of the access network to the open space system.

A series of access links is proposed to suit the open space categories, and road network:

- shared pedestrian / cycle path to corridors and corridor links through park areas
- dual or split pedestrian and cycle paths where corridors or parks convert to roadside access links
- dual or split pedestrian and cycle paths to roadside situations provided by means of a wider, landscaped setback.

The access network shall be planned and design to maximise safety and security observing all applicable width, signage, and sight line requirements. Planning shall also maximise connections to the street, and park system to optimise security and passive surveillance.

Section 3.0 - item j - Streetscapes and Access provides indicative sectional information on likely road corridors integrating shareway access.



The access network will pass through the drainage and vegetation corridor areas and key road corridors to link the open space system



Access Master Plan

Scale 1:15,000m @ A4 (approximate)
 0 100m 200m 500m

- Riparian Corridor / Parkland
- Passive Open Space
- Active Open Space
- Regional Park Passive Open Space Opportunity (approx. size 16ha)
- Water Management Basin/Lake
- 500m Walking Distance

Note: Location of all elements indicative only, subject to confirmation via detailed design.

Figure 2.4 Access Masterplan

Open Space Performance Criteria

3.0

3.1 Generally

The principles identified in section 2.0 outlined in broad terms the general location of the open space components that may comprise the Central Precinct's open space network. The Performance Criteria listed in this section detail the base objectives which will be applied in detailed siting and design of the open space components, as planning for the site develops.

Criteria are generally listed in the following categories:

Definition:

Context and role within natural systems and open space hierarchy.

Intent:

Recreational and community function of open space element.

Locational principles:

Location and parameters for masterplanning and detailed planning.

User catchment:

Anticipated distance to travel for regular park usage.

Access / Linkages:

Relationship to public access networks.

Carparking:

Nature of carparking provision to be constructed.

Recreation Range and Facilities:

Scope of recreational facilities to be provided in open space embellishment.

Natural Systems:

Relationship and treatment of natural systems (vegetation, water, soils, etc) within the open space category.

Landscape Character:

Landscape identity to be pursued through open space planning, design, implementation, and management.

Management and Maintenance:

Potential category of open space in relation to the Local Government Act (Community Land Management) Amendment 1998 under which Council will manage community lands. Also outlines maintenance level applicable to the open space type.



District Park



Neighbourhood Park



Local Park



Pocket Park



Corridors

a) Regional Park usage

A major feature of the urban development is its setting within, and relationship to, the Regional Park. The Regional Park provides amenity to the community both local and metropolitan both through the conservation of open space, and habitat values that it provides, along with its potential to provide a level of passive recreational and educational amenity sustainable within conservation objectives.

The St Marys Development Agreement (cl. 11.13) requires the RP POM to provide for certain matters, including:

- make reasonable provision for public access to the Regional Park
- the provision of opportunities, in an outdoor setting, for recreation and enjoyment in natural and modified landscapes
- provision for sustainable visitor use and enjoyment that is compatible with the conservation of the Regional Park's natural and cultural values

In addition, cl. 11.14 of the Agreement requires the consideration of certain principles in the objectives of the POM:

- the principle of environmental sustainability
- the principle of economic sustainability
- the principle of social/community sustainability, involving eg: maximising educational opportunities for school and community groups; maximising opportunities for community interaction and passive recreation within the Regional Park.

Key physical opportunities that may be incorporated in Regional Park establishment and ongoing management subject to the Regional Park Plan of Management include:

- park entries (incorporating parking and access entries);
- walking path access (integrated with access network through urban development);
- regional recreation links / multi-purpose trails;
- bushland setting picnic / barbecue facilities;
- interpretation facilities provided through the regional park;

It is noted that final usage planning is subject to DECC goals and objectives and ongoing discussions between DECC and Council.

As noted earlier in this report, discussions with Department of Environment and Climate Change (DECC) have also identified that the "boot" shaped area of Regional Park projecting into the Central Precinct (17 ha in area) may play a role in the local open space network as bushland type parkland similar to the "Woodlands Park" in the Eastern Precinct.

b) District facilities

The 2007 Penrith Open Space Action Plan identified some general directions for district open space enhancement relevant to the site. The proposed district facilities within the release area include :

- a senior AFL and cricket venue, local level playground, (St Marys Eastern Park Regional Open Space)
- a district level sports pavilion & field / outdoor entertainment venue
- a district level universally designed playground facility, amenities, shared path circuit

This Open Space Masterplan envisages the provision of a range of sporting and recreation facilities in the Central Regional Open Space (total approx. 40 ha), with good physical connection to the proposed Central Precinct Village Centre. The exact facilities to be provided will be determined following further consultation with key stakeholders, including PCC, Dept of Planning and potential user groups. This is consistent with both PCC's District OS Contributions Plan and the developers contractual obligation with the Commonwealth Government

c) Neighbourhood Parks -
G Playing fields to Regional Open Space

Definition

A Neighbourhood Park will be up to 5 hectares in area, and typically serves a 'cluster' of suburbs. The park primarily caters for the active recreation of the precinct but usually will be integrated with elements associated with other parks .

Size range

3.5 ha (up to 5.0 ha in Council's Open Space Action Plan)

Intent

The open space will provide for active recreational use by the community, in a landscape context that maximises native tree canopy to provide visual and shade amenity. The open space will provide for multiple activities and act as a community focus

Locational principles

- Located within Regional Open Space to Central Precinct to optimise integration of recreational facilities to suit modern community needs
- Located to compliment other district facilities in Regional Open Space
- Close to retail centre, learning facilities, community facilities
- On major trunk road
- Close to bus routes
- Optimise use of existing level, highly modified, and sparsely treed areas

User catchment

0-2 kilometres to district use

Access / linkages

- located integrated with off road cycle and pedestrian access network

Carparking

- carparking considered in integration with other Regional Open Space uses to maximise shared use

Recreation range and facilities which may be considered for provision

- playing fields
- tennis courts
- basketball / netball courts
- Amenities block
- play space and picnic facilities
- night lighting to fields and courts configured to meet all relevant standards and prevent impacts on adjoining residential areas
- Playing field irrigation

Natural systems

- Optimise opportunities for native shade tree planting to street frontages, boundaries, and all spaces not affecting playing field and court recreational use
- Provide drainage management to control impact of field irrigation on ground water

Landscape character

- Parkland landscape character
- Urban / suburban presentation (park adjoining Village Centre should be of higher presentation)
- Ameliorate open character of fields as far as possible with native tree planting to provide shade and define usage areas
- Protect natural features
- Optimise access to veils to west and south west through configuration and tree planting and planning of facilities

Management & maintenance

- Community land categorisation range
 - Sportsground
 - Park
- Suburban maintenance standard
- Playing field maintenance as outlined in Landscape Maintenance and Handover report



d) Local Parks - 8 Cultural Heritage Park

Definition

A Local Park will be from 0.5 to 3 hectares in area, and primarily serves a suburb, or an area up to 2km in radius. The Cultural Heritage park is located to incorporate the site of the former brickworks activities for the Elizabeth Farm Homestead. As such the park is aimed to provide a focus for heritage interpretation of the sites previous use (links to other heritage features and elements through the St Marys site. Around this focus, the park will provide a central open space for adjoining communities.

Size range

1.2ha (range of 0.3-5.0 ha in Council's Open Space Action Plan)

Intent

The cultural open space will provide a focal open space for the adjoining neighbourhoods, and reinforce the character of the Central Precinct - with mixed native and heritage relevant tree canopy for amenity planting. The park will provide a meeting place and place for passive and family recreation activities. The park will adjoin green corridors providing connections to the broader open space network, and will complement other parks and private open space in the provision of recreational opportunities to the community.

Locational principles

- Located on the site of former brickworks
- Linkages to corridor access system
- Optimise use of existing tree canopy

User catchment

0-2 kilometres

Access / linkages

- located integrated with off road cycle and pedestrian access network

Carparking

- parking spaces available on adjoining street frontages

Recreation range and facilities which may be considered for provision

- Interpretive design / signage
- Kick about area
- Shaded seating area
- Toddlers and children's playgrounds
- Path linkages
- Picnic / BBQ facilities
- Native canopy tree planting
- Limited garden bed planting
- Garden bed and grassed area incorporate public art in core design structure and as installations as appropriate
- night lighting of central park facilities to accommodate community use, within appropriate time frames

Natural systems

- Integrate existing tree canopy into park design / layout
- Tree and garden bed planting to focus on native plant species
- Potentially integrate water elements within park with stormwater management system, and water sensitive design generally

Landscape character

- Bushland, Woodland, Parkland, and open space water character
- Natural / suburban presentation
- Passive recreational nodes should develop a natural woodland canopy / character that provides a strong relationship to the Regional Park context and adjoining green corridors. Character transition from road edge to adjoining green corridor from parkland to woodland landscape.

Management & maintenance

- Community land categorisation range
 - Park
 - Natural Area Bushland
 - Natural Area Wetland
- Natural / suburban maintenance standard
- Landscaped Reserve maintenance as outlined in Landscape Maintenance and Handover report

e) Pocket Parks - Village Centre (eg. select areas of park E)

Definition

The Village Centre will incorporate public domain that provides centrally located, focal civic and community space. The spaces should have a strong relationship to the retail uses of mixed use development areas, and provide for a range of community uses including organised gatherings and events.

Size range

N/A

Intent

The Village Centre public spaces will provide both a visual and functional focus for the development that reflects it's identity of a "green urban" community. The design, materials, and activities catered in the village centre shall promote this identity.

Locational principles

- Located at the focus of the neighbourhood
- May be integrated into street network of village centre with strong retail focus
- Close to retail centre, learning facilities, community facilities
- On major collector road
- Close to bus route
- With close relationship to Regional park entry
- Optimise use of existing tree canopy
- Potential integration with water bodies

User catchment

0-2 kilometres serving the precinct - should offer variations in themes and facilities to Village Centre Park provided in Central Precinct.

Access / linkages

- located integrated with off road cycle and pedestrian access network

Carparking

- parking provided for on street frontages and through shared use of town centre commercial parking

Recreation range and facilities which may be considered for provision

- provide a range of spaces integrated with adjoining land uses
- reinforce the civic role of the town centre by creating areas suitable for both informal gatherings and public events, in addition to passive use by residents, visitors to the centre, and the local workforce
- passive use spaces (both hard and soft landscaped) buffered from vehicular traffic but related to pedestrian activity and flow
- incorporate a coordinated range of street furniture
- incorporate water elements as appropriate in core design structure
- incorporate public art in core design structure and as installations
- night lighting of town square within appropriate time frames

Natural systems

- Tree planting selected / designed for seasonal climate amelioration
- Tree and garden bed planting to potentially include both native and exotic species as applicable to meet design intent due to context within urban centre of development
- Potentially integrate water elements within Village Centre to stormwater management system

Landscape character

- Urban landscape character
- Plaza / square presentation
- Town centre character should embody the "green urban" theme of the development. This implies a hybrid landscape character that integrates both the natural vegetation image of the Regional Park setting but also the function of the space as a highly urban space of high usage and intensity of activity. As such it can be expected, that the town square would incorporate a proportion of paved areas catering for pedestrian movement and intensive usage

Management & maintenance

- Community land categorisation range – Park (if to be handed over to Council - subject to discussion)
- Manicured / Garden maintenance standard
- Landscaped Reserve maintenance as outlined in Landscape Maintenance and Handover report



St Marys Central Precinct |

e) Pocket Parks - 10 sub neighbourhood park

Definition

Pocket Parks are to provide smaller areas for passive recreation within close proximity (500 metres distance) within residential villages. The Open Space Hierarchy Plan provides indicative locations of Local Parks to be confirmed during ongoing development design to best suit masterplan requirements.

Size range

0.25-1 ha (range of 0.25-1.0 ha in Council's Open Space Action Plan)

Intent

Pocket Parks shall be provided either as stand alone spaces or integrated with other open spaces to provide greater accessibility to recreational opportunities in close proximity to residents.

Locational principles

- Located in ongoing development of the urban development plan to provide accessibility of residences to open space within walking distance
- Optimise use of existing tree canopy

User catchment

5 minutes walk

Access / linkages

- located integrated with off road cycle and pedestrian access network where possible

Carparking

- no parking required due to local residential use focus
- incidental street parking acceptable

Recreation range and facilities which may be considered for provision

- Open grassed area
- Shaded seating areas
- Internal / street path linkages, and connections to green corridor links
- Native canopy tree planting
- Limited garden bed planting
- Public art may be integrated with design of open space and facilities
- No parking spaces on site

Natural systems

- Integrate existing tree canopy into park design / layout
- Tree and garden bed planting to focus on native plant species
- Potentially integrate water elements within park with stormwater management system, and water sensitive design generally

Landscape character

- Bushland, Woodland, and Parkland landscape character
- Natural / suburban presentation
- Local Parks should develop a natural woodland canopy / character that provides a strong relationship to the open space network and Regional Park context

Management & maintenance

- Community land categorisation range
 - Park
 - Natural Area Bushland
 - Natural Area Watercourse
 - Natural Area Wetland
- Natural / suburban maintenance standard
- Passive Reserve maintenance as outlined in Landscape Maintenance and Handover report



e) Pocket Parks - bushland / corridor interface parks - 9

Definition

Bushland or corridor Interface parks are to provide smaller areas for passive recreation within close proximity (5 minutes walk) within residential neighbourhood (development sub-precincts), through consolidation adjoining corridor bushland areas. The Open Space Masterplan provides indicative locations of these parks to be confirmed during ongoing development design to best suit masterplan requirements.

Size range

0.7 ha (range of 0.25-1.0 ha in Council's Open Space Action Plan)

Intent

Bushland / Corridor Interface Parks shall be provided to supplement accessibility to recreational opportunities in close proximity to residential neighbourhoods, and to provide entry points to the pedestrian / cycle access network through the bushfire protection zone and corridors.

Locational principles

- Located in ongoing development of the urban development plan to provide accessibility of residences to open space within 5 minutes walking distance
- Optimise use of existing tree canopy
- Located adjoining bushfire protection zone or green corridors

User catchment

5 minutes walk

Access / linkages

- located integrated with off road cycle and pedestrian access network of the bushfire protection zone or green corridors

Carparking

- no parking provided due to local residential use focus

Recreation range and facilities which may be considered for provision

- Open grassed area
- Shaded seating areas
- Internal / street path linkages, and connections to cycle / pedestrian links in fire protection zone and green corridors
- Native canopy tree planting - non linked canopies within fire protection zone
- Limited garden bed planting
- Public art may be integrated with design of open space and facilities
- No parking spaces on site

Natural systems

- Integrate existing tree canopy into park design / layout
- Tree planting to focus on native plant species – canopy not to be linked through bushfire protection zone
- Potentially integrate water elements within park with stormwater management system, and water sensitive design generally

Landscape character

- Bushland, Woodland, and Parkland landscape character
- Natural / suburban presentation
- Bushland Interface Parks should develop a natural woodland canopy / character that provides a strong relationship to the Regional Park context

Management & maintenance

- Community land categorisation range
 - Park
 - Natural Area Bushland
- Natural / suburban maintenance standard
- Passive Reserve maintenance as outlined in Landscape Maintenance and Handover report



f) Open Space to Corridors -E, F

Definition

Open space nodes provided in addition to drainage and buffer requirements within corridors to supplement the local open space network. These spaces will benefit from proximity to vegetation and access corridors and water edge situations to specific locations (adjoining drainage basins). Access paths within the corridors may also be included as complying open space (based on Council's 2007 OSAP). The Open Space Masterplan provides indicative locations of open space to corridors to be confirmed during ongoing development design to best suit masterplan requirements.

Size range

0.5 - 0.7 ha

Intent

Open Space to Corridors shall be provided to supplement accessibility to recreational opportunities in close proximity with residential neighbourhoods, to provide open space adjoining feature water bodies, and to provide entry points to the pedestrian / cycle access network through the bushfire protection zone and green corridors.

Locational principles

- Located in ongoing development of the urban development plan to provide accessibility of residences to open space within 5 minutes walking distance)
- Located outside of functioning channel banks and required vegetation buffer zone (buffer zone totalling 20m both sides)
- Locate to optimise recreational opportunities adjoining permanent water bodies
- Optimise use of existing tree canopy

User catchment

5 minutes walk

Access / linkages

- located integrated with off road cycle and pedestrian access network of the bushfire protection zone or green corridors

Carparking

- no parking provided due to local residential use focus

Recreation range and facilities which may be considered for provision

- Open grassed area
- Shaded seating areas
- Internal / street path linkages, and connections to cycle / pedestrian links in fire protection zone and green corridors
- Native canopy tree planting - non linked canopies within fire protection zone
- Limited garden bed planting
- Public art may be integrated with design of open space and facilities
- No parking spaces on site

Natural systems

- Integrate existing tree canopy into park design / layout
- Tree planting to focus on native plant species – canopy not to be linked through bushfire protection zone
- Potentially integrate water elements within park with stormwater management system, and water sensitive design generally

Landscape character

- Urban presentation as appropriate to sections adjoining / interfacing with Village Centre - park E
- Bushland, Woodland, and Parkland landscape character
- Natural / suburban presentation
- Natural woodland canopy / character integrating with adjoining corridor

Management & maintenance

- Community land categorisation range
 - Park
 - Natural Area Bushland
- Natural / suburban maintenance standard
- Passive Reserve maintenance as outlined in Landscape Maintenance and Handover report



g) Corridors (including transmission easement)

Definition

Green corridors are established in areas of existing drainage and / or vegetation linkages.

Intent

Green corridors shall provide for the conservation of quality existing stands of vegetation in addition to providing the key elements of a natural drainage network. Significantly the corridors will provide linkages of the regional park bushland across the urban development.

Locational principles

- Located along existing drainage lines and vegetation corridors
- Optimise use of existing tree canopy

User catchment

The adjoining residential sub precincts and users of the access system from the Western Precinct and potentially beyond.

Access / linkages

- incorporating off road cycle and pedestrian access network

Carparking

- no parking provided for corridors

Recreation range and facilities which may be considered for provision

- shared pedestrian and cycle paths

Natural systems

- natural regeneration facilitated through the green corridor
- weed management and revegetation through degraded areas of corridor

Landscape character

- Bushland landscape character (note: for transmission easement - nature of bushland to consider height and maintenance requirements in easement)
- Natural presentation
- Corridors shall reflect the character of the natural vegetation systems of the Regional Park

Management & maintenance

- Community land categorisation range
 - Natural Area Bushland
 - Natural Area Watercourse
 - Natural Area Wetland
- Natural maintenance standard
- Green corridor maintenance regime as outlined in Landscape Maintenance and Handover report



h) Regional Park Interface

The Regional Park interface is a significant zone which must be effectively managed to conserve the environmental integrity of the Regional Park's natural systems.

Where possible ongoing urban planning will integrate an active road edge to the Regional Park interface as the most effective means of environmental buffer between residential housing and the park.

The provision of the required Bushfire Asset Protection zone (APZ) between the Regional Park and urban development is also relevant. In the APZ vegetation extent and density must be managed providing potential for multiple uses to be effected including fire protection, road alignment, and or pedestrian cycle access, and open space / recreational amenity (refer item J Asset Protection Zone on the following pages).

i) Bushfire Asset Protection Zones

Definition

Asset Protection Zones (APZ) are the setback zones provided between the bushland of the Regional Park and the urban development which must incorporate a reduced level of tree and understorey vegetation.

Intent

The management Zones are aimed to provide for multiple objectives including fire protection, pedestrian / cycle access, and open space / recreational usage to select locations. The cross sections for the Regional Park interface (refer i.) indicate the type of uses that will occur in the Management Zones which may include:

- Residential front gardens (fuel managed)
- Roads
- Pedestrian cycle paths
- Fuel reduced and managed open space

Locational principles

- Located at all junctions of the Regional Park to the urban development

User catchment

- The adjoining residential sub precincts and users of the access system from the eastern precinct and potentially beyond.

Access / linkages

- incorporating off road cycle and pedestrian access network

Carparking

- no parking provided for users of access network

Recreation range and facilities

- shared pedestrian and cycle paths
- other facilities integrated with adjoining open space

Natural systems

- tree canopy managed to provide interrupted canopies
- slashing maintenance of native grass understorey
- weed management and appropriate revegetation through degraded areas of setback

Landscape character

- Woodland landscape character
- Natural / suburban presentation
- The protection zones shall reflect the woodland character incorporating principally trees in grassed groundcover.

Management & maintenance

- Community land categorisation range
- Park
- Natural / suburban maintenance standard
- Green corridor maintenance regime as outlined in Landscape Maintenance and Handover report



Above: APZ zones will occur to junction with Regional park

j) Streetscapes / access -Collector Main Street

Definition

Village Centre Streets are the main street corridors through the village centre.

Intent

Landscape treatment must reflect the civic and village centre role (based on pedestrian access and on street trading use) of these roads.

Landscape character

- Urban landscape character
- Urban presentation
- The Village Centre streets should incorporate an avenue planting of an appropriate deciduous tree species to provide for year round street amenity
- Ground surfaces shall be predominantly paved

Pedestrian / cycle service level

- Paved pedestrian access to both sides of the road corridor
- Cycle access to the village centre precinct and related cycle rack facilities to be provided

Management & maintenance

- Urban maintenance standard



Above: Village Centre Street

j) Streetscapes / access - Collector Street / Employment Street

Definition

Collector roads are the major vehicular access routes into and through the development.

Intent

Landscape treatment must reflect the civic and visual importance (based on frequency of use) of these roads. Road corridor may include pedestrian / cycle access way and pedestrian only path links

Landscape character

- Urban landscape character
- Urban presentation
- The Collector Roads should incorporate a strong / formal avenue planting of an appropriate evergreen tree species to provide visual continuity and legibility of the road route
- Ground surfaces to verges and medians may vary from maintained native grasses (adjoining Regional Park) to maintained garden bed / pavement through the village centre
- Soft landscape treatments where provided should be kept simple to reduce recurrent maintenance needs and variation

Pedestrian / cycle service level

- Paved pedestrian access to minimum one side of the road corridor
- Cycle ways to nominated roads

Management & maintenance

- Urban maintenance standard
- The Collector Roads require a regular and coordinated approach to landscape maintenance



Above: Collector Street

j) Streetscapes / access - Local Streets

Definition

Local Streets link neighbourhoods.

Intent

Landscape treatment must recognise the nature of these streets fronting residential properties and the implications of varied landscape treatments to private domain areas fronting the streets. As such landscape should provide a simple continuous native street tree canopy located within the grassed nature strip of the roadway, or swale water sensitive urban design treatment

Landscape character

- Urban / Parkland landscape character
- Suburban presentation
- Maximise retention of existing tree canopy
- Local Streets should incorporate avenue planting of an appropriate evergreen native tree species to provide visual continuity and legibility of the road route
- Ground surfaces will generally be grassed nature strips.

Pedestrian / cycle service level

- Paved pedestrian access to minimum one side of the road corridor
- Cycle ways to nominated roads

Management & maintenance

- Suburban maintenance standard
- Local Streets require a regular and coordinated approach to landscape maintenance

j) Streetscapes / access - Access Streets

Definition

Local Streets provide local access within the development sub precincts.

Intent

Whilst the streetscape treatments of the other road elements develop continuity in layout and species to promote legibility and identity, the local streets offer potential for more varied layout and application of species to suit street layout and other issues such as conservation of existing trees etc.

Landscape character

- Parkland landscape character
- Suburban presentation
- Maximise retention of existing tree canopy
- The Local Streets should incorporate intermittent planting of an appropriate evergreen native tree species to reinforce stands of existing trees and enhance street corridors
- Ground surfaces will be grassed nature strips to street.

Pedestrian / cycle service level

- Paved pedestrian access to minimum one side of the road corridor

Management & maintenance

- Suburban maintenance standard
- Local Streets require a regular and coordinated approach to landscape maintenance

j) Streetscapes / access -Road edge cycle ways

Definition

Road edge cycle ways will be provided to enhance linkages through the development on wider road setbacks as required.

Intent

The road edge cycle ways should provide legible and safe connections between off road sections of the network.

Landscape character

- Of the relevant street corridor on which it lies

Management & maintenance

- Suburban maintenance standard as applicable to the road corridor



Above: Road edge cycleways

j) Streetscapes / access - Off road cycle ways / pedestrian links

Definition

Off road pedestrian / cycle links shall be the major access elements located through the green corridors, open space areas, and Bushfire Asset Protection Zones.

Intent

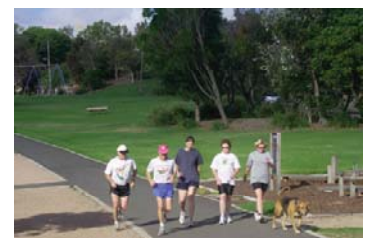
Shared off road pedestrian / cycle links are located through green corridors to minimise impacts on the biodiversity values of the corridor, and to form an edge between bushland and Woodland landscape character types. Through parkland areas the links may provide an edge between parkland and woodland landscape types.

Landscape character

- Of the relevant green corridor or park open space in which it is located
- It is desirable that all pedestrian / cycle paths have a consistent material and width to promote legibility and identity of the access network (colour changes may reflect individual village identity)

Management & maintenance

- Suburban maintenance standard



Above: Shared Paths

j) Streetscapes / access -Pedestrian pathways

Definition

Pedestrian pathways shall occur along street corridors and through open space areas as defined in streetscape types.

Intent

Pedestrian pathways should provide direct clear access between usage areas and catering for through site access by users

Landscape character

- Path alignment principles will vary between open spaces to optimise the recreational or functional requirements of the particular link. However in general it is desirable that all pedestrian paths other than those in the Civic Square have a consistent material and width to promote legibility and identity of the access network (colour changes may reflect individual village identity)

Management & maintenance

- Suburban maintenance standard



Above: Pedestrian Path

Public Domain Character

4.0

4.1 Issues relating to all public domain

Public domain can be defined as the publicly accessible network of open space, streets, paths, and squares that frames our urban environments.

The quality of public domain as perceived by its users is influenced by a number of factors including:

- landscape including trees and lower level natural and planted vegetation
- built form
- pavements
- street and park furniture
- signage and information
- public art



Streetscapes



Open Space

The public domain for the St Marys Central Precinct must function at a number of levels:

- within the Penrith LGA;
- within the district including the adjoining residential suburbs;
- within the overall St Marys Development (ie including the Western and Central precincts);
- adjoining the Regional Park;
- for the community of the Central Precinct; and
- within Regional Open Space Corridor Linkages

This requires that whilst developing an identifiable and appropriate landscape character for the Central Precinct that treatments must also have reference to and context with the St Marys Development, and the Regional Park.

Landscape design and materials themes should be developed in such a way that the area's natural features and site characteristics will be conserved and recognised. The open space system which the landscape themes support should have diversity, interest and accommodate the needs of a wide range of users.

The application of landscape themes to individual public domain elements should be done based on a number of criteria:

context within the development	from denser urban centre to less dense suburban outer areas	Public domain within the denser village centre should develop a more urban character in context with built form, density of development. This will be reflected in elements such as footpaths and a mix of deciduous and native evergreen plantings
the function and usage of the public domain	type and intensity of usage	Open spaces that cater for a higher intensity of usage (eg. a Civic Square) should incorporate design and materials treatments that cater for high pedestrian traffic and recurrence of use during the week. Passive recreational open spaces in less dense suburban areas will have periods of peak usage (but of a more low key nature) ie. weekends, with recovery periods ie. during the week. As such native planting and tree canopy and an emphasis on soft landscape surfaces is appropriate
relationship of the public domain to the Regional Park	Whether the open space or streetscape has a visual or functional relationship to the Regional park	Open spaces and streetscapes that have a more direct relationship with the Regional Park must be compatible both in visual character and in usage of plant material that reflects the local indigenous plant communities and assists in conserving / enhancing biodiversity values

The following section of the report describes the intended landscape themes to be developed through ongoing masterplanning and design and in implementation of the public domain system of the development.

Section 5 outlines objectives for the implementation and management of private domain landscape outcomes which are also important in the overall character and environmental integrity of the development

4.2 Detailed public domain character

The landscape character of the Central Precinct urban development will need to reflect a range of scenarios of development context, use and relationship to the Regional Park. The characters for landscape presentation which reflect these situations include:

- bushland
- woodland
- parkland
- open space water
- plazas / squares

The nature and application of these characters is identified on Figure 4.1 below and in the descriptions following:

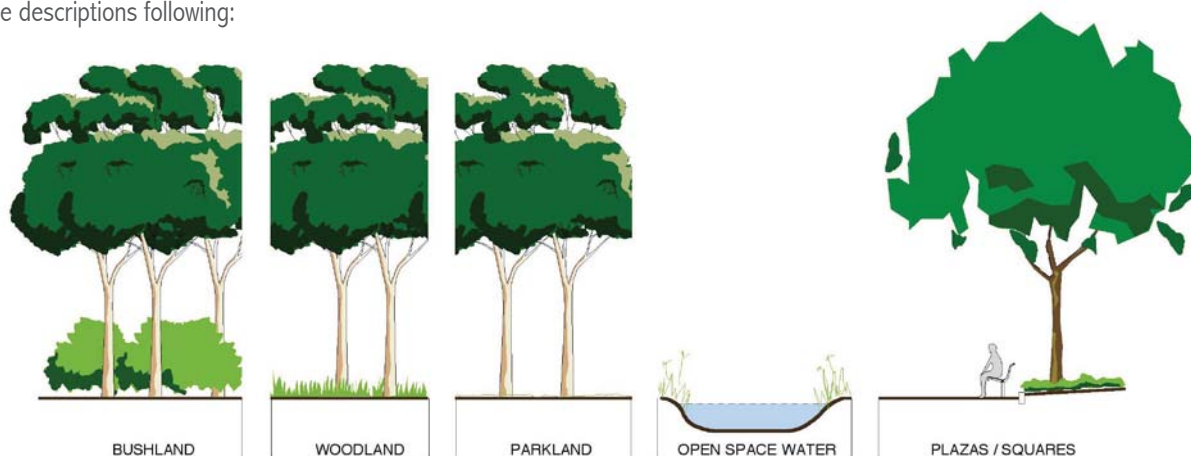


Figure 4.1 Landscape presentation categories

Bushland Character

Bushland character is the key landscape theme for the site in its context within the Regional Park. Bushland character will provide a direct visual and ecological link to the plant communities of the Regional Park, and it's deployment through the development open space will provide green corridor linkages of flora and fauna habitat, and fauna movement.

Bushland character will be conserved and enhanced through the green corridors, and will be developed to varying extents through the level three and level two reserves based on their context and nature of usage. Through open spaces, streetscapes, and residential lots, existing character of native trees, understory shrubs (to open spaces), and grasses (to open spaces and streetscapes) will be retained as far as practical within fire security and safety requirements. The resultant emphasis through corridors and open spaces is of the bushland character as the dominant / identity / landscape character through the public realm of the Central Precinct.

The bushland character will integrate with and complement the more formal landscape themes of the village centre and denser urban areas of the development.

Bushland character will generally be associated with low levels of recreational use, pedestrian cycle access paths being the key use other than interpretive / educational access. The bushland environments will generally be self sustaining in terms of maintenance (other than establishment maintenance of revegetation planting), requiring minimal recurrent maintenance other than weed monitoring, and for management as determined by the separate Bushfire Management Plan.



Existing bushland character



Existing woodland character

Woodland Character

Woodland character provides a transition from Bushland areas to parkland character. Woodland generally retains a strong visual context to the native bushland of the regional park through it's retention and enhancement of native tree canopy. The woodland areas however will focus on understorey regimes incorporating trees in native grass and groundcover understorey. This is aimed at maintaining sight lines for safety and security and reducing understorey level fuels for bushfire risk. Woodland areas will assist in providing a buffer between bushland areas and parkland areas and can be expected to be incorporated at the interfaces to the Regional Park, through the Asset Protection Zone and adjoining access linkages through green corridors.

As for bushland areas the recurrent maintenance requirements of woodland areas are proposed to be low, focussing on removal of non endangered or vulnerable shrub understorey and on fire management. Built form may be incorporated through structures and awnings to provide shade and shelter, along with high quality paving, street furniture, lighting, signage, and water elements. Public art will be incorporated as a formative design direction.

Parkland Character

Parkland character will vary between open spaces based on existing features, their context within the urban development, and usage. The essential elements of the parkland character will be trees in maintained grass, predominantly native canopy to further reflect the indigenous bushland context of the Regional Park. Non native trees may be used in select locations such as parks within denser urban areas to provide winter solar access. Neighbourhood Parks (sports fields) are included in this character. Parkland character will involve recurrent maintenance of recreational grassed areas. Sportsfields may also be irrigated.

Built form may be incorporated through change rooms, public amenities, structures and awnings to provide shade and shelter, along with high quality paving street furniture, lighting, signage, and water elements. Public art will be incorporated as a formative design direction.

Open space water character

Within the open space network a variety of water bodies / elements are proposed as part of the developments water sensitive design approach, stormwater management, and as landscape features. Wetland character will be a combination of ephemeral and permanent water bodies incorporating various edge treatments. Open space water character will be located adjacent to other landscape character abutting open space water bodies through the development. Typically key water bodies will incorporate wetland macrophytes to their perimeter

Water edge treatments may vary in relation to adjoining / related design use, and can be expected to include both hard and soft edge situations. Selection of edge use will take into account habitat corridors, maintenance requirements and salinity constraints.

Urban plaza / square character

Within the village centre the opportunity must be pursued to provide urban spaces that complement the density of built form and uses, and provide a focus for community gathering and events.

These spaces can be expected to include a larger proportion of hard pedestrian surfaces and "structural" landscape. Plazas / squares may be developed as an integrated public access within a commercial site. Maintenance of these structured landscapes will be inherently higher commensurate with their higher intensity of usage.

Deciduous trees may be used in select locations (such as Civic spaces) to provide winter solar access.



Parkland character



Open space / water character



Urban plaza / square character

4.3 Landscape presentation and maintenance standards

Landscape presentation within this report is the term used to indicate the level of landscape detail that is proposed to be applied to embellishment of open space areas.

Presentation is typically linked to landscape character. As such open spaces of plaza / square type character may be generally associated with an urban (or higher) presentation / maintenance standard, whilst bushland character is sustainable with a natural (or lower) presentation / maintenance standard.

This concept is illustrated in Figure 4.2 below which identifies through the shaded boxes the maintenance standard applicable to the landscape character type. The concept is used in this report to relate presentation and maintenance standards to performance standards for open space and streetscape elements of the public domain as identified in section 3.0

The presentation / maintenance standards are referenced and further detailed in the identification of maintenance levels in the separate Landscape Approvals, Maintenance, and Handover Plan Report.

		LANDSCAPE CHARACTER				OPEN SPACE WATER
		BUSHLAND	WOODLAND	PARKLAND	PLAZAS / SQUARES	
MAINTENANCE / PRESENTATION STANDARD	NATURAL					
	SUBURBAN					
	URBAN					

Figure 4.2 Landscape presentation and maintenance standards

Urban presentation

Urban landscape presentation will apply to those open spaces which lie within the denser development zones of the Central Precinct, and which serve a higher intensity and recurrence of community use.

Levels of presentation are higher than other spaces to meet these usage demands and to compliment the urban character of their locations.

Parks of the Open Space Hierarchy that would typically fall within the urban presentation category include:

- selected area of Park (Park E) at village centre interface



Examples of open space of urban presentation and maintenance standard

Suburban presentation

Suburban landscape presentation will apply to active and passive recreational use spaces catering for moderate levels of usage including family use, social gatherings, fitness and exercise activities, and playgrounds.

This presentation type will typically encompass a combination of landscape character types which will dictate variations in the level of presentation across the open space dependent on the character and type / level of usage it receives.

Suburban presentation will generally be located in a landscape setting that is of woodland, parkland, or open space water character or a combination of each.

Suburban presentation will also apply to Bushfire Protection Zones where recurrent maintenance is required to address fuel management requirements.

Open Space that would typically include the suburban presentation category include:

- Neighbourhood Parks generally
- Local and Pocket Parks not adjoining vegetation corridors or Regional Park (eg park 10)



Examples of open space of suburban presentation and maintenance standard

Natural presentation

Natural landscape presentation will apply to low level and intensity of use spaces areas that incorporate and adjoin natural systems.

Typically green corridors and the interface areas of adjoining parks will fall into this category. Retention of existing vegetation and revegetation (where applicable) with indigenous species will provide a generally self sustaining landscape with low recurrent maintenance demands.

Open Space that would typically include (but generally not solely comprise) the natural presentation category include:

- Selected areas of Local and Pocket Parks adjoining vegetation corridors or Regional Park (eg parks 8,9,E,F)



Examples of open space of natural presentation and maintenance standard

4.4 Public domain materials and treatments

The use of design and materials treatments should aim to recognise both the district and local context of the Central Precinct as part of the Penrith area within the context of adjoining suburbs, as a community within the Regional Park.

At the same time the development needs to provide an identifiable and marketable image to prospective residents that promotes the St Marys development as a desirable and attractive place to live (or to locate a business).

The ongoing masterplanning and design development process will identify and confirm design and materials treatments for the St Marys public domain. Listed below are materials objectives for each of the key public domain elements, that should be observed in this process.

Pavements

Footpath paving for the St Marys development must provide a hard wearing, cost effective and practically maintainable surface that enhances the character and identity of the public domain and provides an aesthetically pleasing visual experience.

A hierarchy of pavement treatments is desirable which will reflect the varied pedestrian and vehicular access roles of streetscapes and open space areas, from urban to natural landscape character contexts. Park and open space areas provide an opportunity to apply a less structured approach to application of pavement materials, as parks tend to be destinations for users, and as such do not need to provide strong visual continuity between different sites.

This is with the exception of:

- pedestrian linkages connecting to systems beyond the individual parks; and
- cycle linkages connecting to systems beyond the park.

There is also a strong justification to limit the range of paving materials incorporated to the public domain (including parks and open space) to make maintenance, renewal and extension works more cost effective and practical for Council.

Potential materials for parkland and open space may provide for a limited range of materials from quality stone (for use as an accent and 'special places' pavement) to asphalt or exposed aggregate in situ concrete as a pathway surface through green corridors, and fire protection zones.

Cycle Routes

The development of the pedestrian and cycle network through the St Marys development is an important component of the ongoing planning for the site.

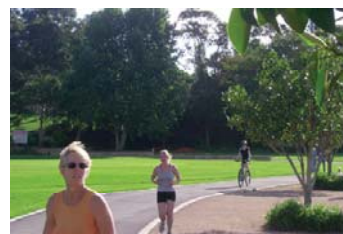
The success of the cycle routes will depend upon the suitability of the routes in providing effective and safe access, quality of surface, a pleasing visual environment, and clarity in route identification.

Where possible a unified colour surfacing and line marking system is followed as a long term objective for ongoing implementation that identifies cycle routes in their various forms. Major road crossing points will be treated differently to highlight their location.

Liaison with adjoining councils and the RTA is desirable to ensure that the continuity of such treatments is developed where possible.



Above: pavements



Above: cycle routes

Street Furniture

Street furniture provides a secondary series of streetscape elements after kerbs and footpath materials and street tree planting, whilst also providing fundamental visual and functional elements within open space areas. Furniture items provide both functional and aesthetic contributions to the quality of public domain and are most successful when part of a recognisable thematic approach.

The location of furniture items must be both functionally and aesthetically based. Facilities are required at locations where users are most likely to require them (eg. seats, bins etc. within village centre), however they should also relate to an overall location theme that integrates with paving, open space character themes and other furniture elements.

The ongoing planning and design for the St Marys development may consider two categories of furniture for application to public domain. An “urban” palette may be appropriate through the village centre and denser urban areas, with a “parkland” palette applied through suburban open space areas, and green corridor areas (potentially through to the Regional Park). It is desirable that there be some thematic design / materials reference between the palettes to reinforce continuity and identity, but that the parkland palette may slightly more affordable to install / replace and be of a highly robust nature. It is also suggested that to civic and street squares and open spaces that opportunities may arise to incorporate site specific furniture items as artwork elements adding to the individual character and identity of these areas within the public domain. Opportunities may arise to develop site specific furniture installations where they have public art or cultural references to a specific site.

The application of furniture elements to open space areas determines a varied set of functional criteria to that of street footpaths and urban plaza areas. Adaptable and multifunctional elements are more appropriate for parkland settings where usage is significantly less ordered than that to street environments. The less structured visual setting of open space areas also determines that park furniture should be very simple in design to adapt to a variety of settings and design themes including picnic tables and table/seating units which can be used in a variety of ways.

For both maintenance, cost, and replacement purposes it is preferable that a simple palette of furniture be incorporated into park designs. Again opportunities may arise for specific “one off” designed elements such as artwork sitting walls or other elements to have design themes or interpretation in open spaces.

Street tree planting

Street tree planting is a fundamental component of streetscape quality. The proposed street hierarchy for the St Marys development incorporates a range of street corridor widths with varying requirements and opportunities for street tree planting. The selection and implementation of street planting must be directed to achieve the benefits of street tree canopy whilst minimising long term maintenance and structural problems to road and kerb structures. This requires an integrated design process whereby street tree requirements are considered in road cross sectional widths.

It is a reality that street tree planting requires ongoing maintenance to optimise the visual and functional impact (and maintain health). In a stressful and constrained environment such as the urban street there will also be potential for mature trees to cause damage to rigid street treatments as they are moving, living organisms. The objective should be to minimise potential for such problems through preparation and construction of tree planting pits.



Above: street furniture elements



Above: cafe furniture is managed by traders



Above: street tree planting

It is proposed that establishment irrigation potentially using recycled water be provided to major street trees in the urban Civic Centre. Irrigation control would be tailored to limit water cycle / salinity impacts.

In terms of streetscape design approach it is proposed that tree species be used to reflect the road hierarchy developed in the precinct plan including collector roads and neighbourhood roads in which a coordinated species and avenue alignment is desirable within the hierarchy types.

In Suburban zones trees to appropriate Australian native trees. To Urban character areas tree planing will generally be more structural and may include a mix of native and exotic species.

To local streets it is proposed that street tree species define neighbourhood zones to promote the subtle differences between residential areas.

Street understorey planting

Landscape treatments at ground level should be limited to simple turfed or paved treatments with street tree planting to provide a clear definition of the extended public domain in these areas. Generally lower level planting such as street beds and floral displays should be minimised due to recurrent problems with public safety and with provision of adequate maintenance. The use of lower level garden planting may be appropriate however to the village centre to provide definition and to enhance these environments.

Open space planting

Park and open space areas provide the opportunity to apply a more diverse range of site specific approaches to tree and garden planting. In general it is recommended in the design principles for open space areas that tree planting themes to adjoining corridors maintain the appropriate species for that corridor. Spacing may be varied to highlight entries or provide views into the open space from footpath and road areas.

Within park and open space areas it is proposed that edge and structured planting (ie. the majority of tree canopy) should be site indigenous native species. For feature planting, native species should also be used where possible. To seating areas within parkland - natural character parks where native evergreen canopy only is provided, it is proposed that design schemes incorporate a proportion of seating in locations accessible to winter sun. To parks in urban settings, deciduous shade tree planting may be appropriate.

Major tree and garden bed plantings within open spaces may be irrigated with recycled water sources subject to a strict management regime.

Local area traffic management

Local area traffic management comprises the measures undertaken to control and direct traffic through neighbourhood areas to reduce impacts to the quality of the residential environment. In terms of design and materials finishes it is important that LATM measures relate to the street environment on which they are located, and maintain the visual and functional access of footpath zones.

The balance of paving to soft landscape treatments should again reflect the specific street environment, noting that planted areas require ongoing maintenance for aesthetic quality.



Above: street tree planting



Above: Open space planting



Above: Open space planting



Above: streetscape lighting

Streetscape lighting

Two forms of street lighting are required to street corridors:

- Vehicular Street Lighting
Mast top street lighting to meet relevant RTA and Austroads standards.
- Pedestrian Lighting
Pole mounted or under awning pedestrian lighting to meet relevant Australian Standards.

Vehicular street lighting is generally treated as a purely functional requirement, without regard for the aesthetic role of the light pole as a Street Furniture Element. Various 'Smart Pole' types (eg. City of Sydney, Homebush Bay) are an exception to this rule which the street lighting pole becomes a positive furniture element meet a number of functional requirements including lighting, signage, and traffic signals. Such a treatment may be applicable within the Village Centre.

Pedestrian lighting requires a much closer relationship to footpath level (usually 3.5 - 4.5 metres at 20 metre intervals) to provide optimum illumination.

To the village centre where a high level of night pedestrian access is to be encouraged street treatments must provide a minimum level of illumination in accordance with Australian Standards. The pedestrian light pole should be treated as part of the streetscape furniture approach and should aesthetically integrate with other furniture elements.

The use of feature lighting such as tree uplighting, and facade lighting to attractive building facades are also ways in which the street environment can be enhanced for night time use and appreciation.

Open Space lighting

There are a range of issues that must be considered in determining the level of lighting to be provided to open space areas. The situations to which lighting will apply are:

1. Sports facility lighting for training/event purposes
2. Lighting of major cycle routes and pedestrian access paths for night time usage
3. Feature lighting of elements as visual displays (eg. sculpture/artwork elements, uplighting trees)

Sports field lighting is generally provided by mast top fittings adjoining the playing field or courts, and is undertaken on a site specific basis. Pedestrian lighting of path access ways through parks should be evaluated for each specific site based on linkage value, impacts on pedestrian amenity, and safety/security considerations. The use of pole top fittings to match those to pedestrian streets is the recommended approach to provide visual continuity where lighting is agreed to be required.

Other forms of lighting that may be considered for individual open space sites include feature flood lighting or uplighting of park elements (artworks, significant trees), and bud lighting of major street tree avenues for special events or festivals.



Above: Open space lighting

Art in Landscape

Opportunities to incorporate public art into the public domain will occur in a range of situations. Art should be incorporated as formative design input not just as overlay elements to a design.

Opportunities may include:

- At focal intersections and locations to street corridors
- To squares
- To parks and open space areas
- To playgrounds / play spaces
- To the village centres
- To street corridors with a vehicular access emphasis to be interpreted from the motor vehicle
- On walking / cycle trails where applicable

The potential for integration of public art into these elements should be identified at the initial stages of a project. This will enable complete integration into the design process, and incorporation of the artwork as a functional and integral component of the scheme rather than an overlaid installation.

Public art expression may take place in various forms:

- Formal display commissioned art (eg. sculpture displays)
- In paving patterns and paving inlays
- On flag and banner displays to neighbourhood main streets and commercial centres
- On wall murals and facade treatments
- Plaques - providing local history references - mounted to walls and other elements
- Incidental art installation to reinforce detailed character and history of neighbourhoods
- Playgrounds
- As statuary or artwork installations
- As street furniture to specific sites
- Fences
- “Arty” design

In all cases the public art component can provide a reference and educational tool related to physical or cultural characteristics of a location or it’s natural / cultural heritage. Public Art can also provide cultural expression reflecting social or cultural values, or alternatively may provide a purely visual element, enhancing the appreciation and diversity of the public domain.

In all cases public art should contribute to the identity and character of open space and landscape and engage users of open space in an ongoing way.



Above: Examples of public art in landscape

Appendix

5.0

5.1 Responses to planning policies and controls

The following chart outlines the responses of this open space and landscape strategy to the planning policies and controls defined for the site:

These include:

- St Marys Open Space and Recreation Plan, 1999 (included as a base reference as open space guidelines in the EPS - 2000 were based its on this document)
- Environmental Planning Strategy, 2000
- Regional Environmental Plan No. 30, 2001, and any associated Development Agreements
- Penrith City Council Sustainability Blueprint for Urban Development 2005
- Penrith City Council, June 2007, Open Space Action Plan

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE
St Marys Open Space and Rec'n Plan 1999 (Clouston)	Western & Central Precinct
Section 3.1 New approaches to open space and recreation planning	
Open space and recreation planning linked to human services planning	open space planning has been carried out in coordination with human services planning within the project team and through liaison with Council. Key strategies include the relationship of the Level One park and town square within the village centre and the fully integrated access system linking all open space to the urban development and related facilities
Open space and recreation planning linked to infrastructure planning particularly considering natural systems	open spaces to be located adjoining corridors in the majority of cases to increase connectivity potential and take advantage of the natural amenity and character of the corridors
Greater emphasis on the quality of open space provision	performance criteria to clearly identify the nature of embellishment in terms of character, facilities and ongoing maintenance
Mechanisms for monitoring and responding to emerging communities needs	open space design to provide flexibility in layout and fixed elements to enable adaptation to meet varied and changes needs
refer Human Services planning for ongoing monitoring	
Flexibility in development and management principles	
	see above
Multipurpose facilities to cater for a range of uses	provision of facilities to "build in" adaptability to future change, capacity for shared use, and suitability to varied levels of intensity of use
Grouping of facilities for shared use	District park to incorporate ovals and multi- purpose courts located in close relationship to village centre
Opportunity for shared use related to community and educational facilities	
Baseline provision at early stages of development with specialised facilities once characteristics and needs of population are ascertained	park design to allow for future "overlay" of more specialised facilities or facilities related to shared use between development "precincts"
Section 4.1 Planning principles – key stakeholder objective: for comprehensive OS system that:	
Is needs based	in addition to meeting community open space requirements for urban development the strategies to address the metropolitan recreational focus (as identified by DOP Metropolitan Open Space Team) for regional access trail linkages
Adopts best practise and current benchmarks	planning and design of open space will integrate water sensitive urban design strategies along with sustainable maintenance and management techniques
Is fully integrated into the proposed and existing social and planning fabric	the open space network is to be planned to strongly reinforce its context to the Regional Park (which essentially encloses it) whilst being highly accessible to surrounding communities.
Accessibility promoted through hike and bike network	
Ensures equity of access and opportunity	the open space network will provide equitable distribution of open space to all areas of the urban development based on accessibility and size
Provides a wide recreation spectrum	the open space network will provide for a wide range of active and passive recreational types with built in adaptability for future change
Is provided in a timely manner	to be provided in relation to staged urban development to meet development of community
Is flexible to changes in demand and opportunity	refer responses above related to flexibility
Works in concert with an agreed masterplan	the open space strategy has been prepared in coordination with the precinct framework plan
Conserves areas of significant ecological, landscape or heritage value	the 900ha regional park conserves areas of core habitat significance whilst the open space plan incorporates a range of existing tree canopy and habitat into park areas
Is matched by an agreed funding programme	developer to build and maintain open space until handover

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE
Is based on principles of sustainability	<ul style="list-style-type: none"> open space plan reflects water sensitive urban design integrated with the urban development
design of open space to have regard for sustainability of ongoing maintenance requirements	
Section 4.2 Social outcomes to be met	
Integration	<ul style="list-style-type: none"> the open space plan will reinforce access links to adjoining access corridors and communities
Community diversity	<ul style="list-style-type: none"> the range of proposed density within the development promotes community diversity adaptability and flexibility of open space will facilitate diversity of perspectives and uses of open space by different demographic groups provide a range of open space and recreational choices
Timely provision of facilities	<ul style="list-style-type: none"> to be provided in relation to staged urban development to meet development of community
Enhancement of regional amenity	<ul style="list-style-type: none"> the establishment and facilitation of community access to the Regional park is the urban development's key contribution to regional amenity the linking of corridor open space to Regional Corridors (eg. South Creek) and related areas Provision of high quality of open space embellishment
Access and equity	<ul style="list-style-type: none"> refer responses to 4.1
Community identity and regional integration	<ul style="list-style-type: none"> the identity of the development and the open space system which supports it will be focussed upon its relationship to the Regional park and the habitat and environmental values it provides.
Community facilitation	<ul style="list-style-type: none"> refer Human Services planning
Flexibility and innovation	<ul style="list-style-type: none"> refer responses to 4.1
Cultural development	<ul style="list-style-type: none"> Subject to the Regional Park POM, the Regional Park and the open space network can incorporate coordinated interpretation programmes which will increase accessibility to and understanding of the natural and cultural heritage of the site and of responsible and sustainable environmental management. Develop identity and character of community through setting, sustainability, quality and function of open space
Section 6. methodology and provisional outcomes	
Open space planning is to be derived from the unique qualities of the site	
Its importance in the regional open space system	<ul style="list-style-type: none"> 900ha Regional Park conserved as part of regional open space system is a focus for character and identity of urban development Strong links to Regional Open Space System
Biodiversity values	<ul style="list-style-type: none"> Conservation role of Regional Park recognised in urban planning at park junctions and design of internal open space and coordinated with Regional Park Plan of Management Vegetation retention optimised through planning of open space system and tree retention optimised in urban development
Topography	<ul style="list-style-type: none"> Opportunities for views from open space in the Western Precincts optimised to ridgetop locations
Drainage systems	<ul style="list-style-type: none"> Open space planning retains key natural / evolved drainage lines in particular where supported by existing vegetation
Heritage values	<ul style="list-style-type: none"> Cultural values for Aboriginal heritage to be considered in POM for Regional Park and Regional Open Space Open space which incorporates site 3 - brickworks for Elizabeth Farm homestead can interpret former site use and function in open space design and facilities Interpretation of site natural and cultural heritage throughout open spaces
Potential for linkages both regional and within site	<ul style="list-style-type: none"> Open space linked by network of access ways through corridor open space and along landscaped setbacks to roads Access networks links to local / regional access system linking to Central Precinct
6.1 Settings – open space to provide diversity but with an emphasis on the existing site characteristics and natural settings as these are difficult to recreate	<p>A variety of settings are to be provided across the proposed open space hierarchy – these have been cross referenced in the Performance Criteria (section 4.0) as they relate to the categories of community land management (local Govt Amendment Act (1998) and include:</p> <ul style="list-style-type: none"> - natural area bushland - natural area watercourse - park - sportsground - general community use (Civic Square)
<p>Hierarchy to be applied (PCC Open Space Action Plan 2007)</p> <ul style="list-style-type: none"> District park: <ul style="list-style-type: none"> - greater than 5 ha - active and passive needs of the LGA Neighbourhood parks: <ul style="list-style-type: none"> - up to 5 ha - active and passive recreation of a neighbourhood Local parks: <ul style="list-style-type: none"> - 0.5 to 3 ha - passive recreation of a neighbourhood Pocket parks: <ul style="list-style-type: none"> - 0.25 to 1 ha - passive recreation of a precinct 	<p>The proposed open space masterplan shall reflect the PCC Open Space Action Plan 2007 hierarchy with the addition of the following additional category that responds to site opportunities:</p> <ul style="list-style-type: none"> -Open space within corridors -Shared access paths within corridors -Active recreational facilities proposed to be provided with Regional Open Space as offset to open space provision

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE
<p>6.5 Distribution Key locational criteria: - provision and distribution related to population catchments for each stage</p>	<ul style="list-style-type: none"> • distribution of open space has related to the neighbourhood structure developed in the precinct masterplan to provide equitable access to and distribution of the quantum of open space
<p>proximity of level one and two parks to urban cores, major public transport routes and schools</p>	<ul style="list-style-type: none"> • Level One park located adjoining village centre • Level Two parks distributed through the urban development with access to major roads and linked to the pedestrian / cycle access network
<p>ease of pedestrian access particularly to level three parks</p>	<p>Level Three parks predominantly located adjoining corridors or with a nominated wide setback street to allow for comfortable linkages and related landscape</p>
<p>location in areas of appropriate topography</p>	<p>All open space located on generally level usable land, some with a variety of slopes to add to design opportunities</p>
<p>location of all parks close to natural drainage corridors / basins wherever possible</p>	<ul style="list-style-type: none"> • The majority of parks linked to green / drainage corridors – note that this will require that a proportion (no more than 15%) of the open space system will be subject to some flood inundation / storage role. However this will not compromise their recreation role and function.
<p>maximised retention of existing vegetation / minimised ground disturbance</p>	<p>Open space incorporates tree retention where possible</p> <ul style="list-style-type: none"> • design of open space will focus on using existing levels where practical to minimise impacts on soils and salinity

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE
St Marys Environmental Planning Strategy (EPS) 2000	
A summary of performance objectives of the EPS of relevance to open space and landscape planning are listed below. Specific strategies recognised in this Landscape and Open Space plan and / or to be developed in ongoing project planning and designated listed opposite. This generally reflect the strategies provided in the EPS	
Conservation	
a representative and significant proportion of the natural values of the land are to be conserved within a regional park.....	<ul style="list-style-type: none"> • 900ha Regional Park to be established over lands of high habitat and conservation significance • Management of the park boundary proposed to control access to Regional park • Regional park – to incorporate no development other than “appropriate park related uses” • POM for Regional Park will identify access to the park that provides for community use and benefit compatible with natural conservation values
urban design and site planning in the employment and urban areas are to have regard for significant tree stands and where practical retain those trees	<ul style="list-style-type: none"> • Retention of significant stands of trees in open space areas and road corridors is incorporated where possible into urban planning. Road planning will be developed during ongoing design to maximise tree retention where practical • seed collection and propagation programme proposed to provide plant material for revegetation works • Tree removal for urban development will be balanced through new plantings to open space and road corridors. • vegetation links to be further developed through open space • subtle visual separation between active and passive recreation will be provided through tree planting to create open space “rooms” • local indigenous species to be used to majority of open space areas and where practical (sustainable) to road corridors
adverse impacts on the vegetation and fauna habitats within the Regional Park and Regional open space zones resulting from the urban development are to be minimised	<ul style="list-style-type: none"> • Compatible land uses are provided adjacent to park – park edges will be defined where possible by a roadway edge that will provide for environmental management and surveillance of the boundary and reduction of edge impacts • active frontage to bushland (for passive surveillance / buffer) is desirable
Infrastructure is to be designed and located to minimise potential adverse impacts on the conservation values of the land	<ul style="list-style-type: none"> • planting along roads will extend vegetation canopy • Information kit to be developed for residents – education and incentives for good environmental practise and appreciation of conservation values
Infrastructure and recreational facilities within the Regional park are to be sited and constructed to minimise impact on the parks natural values	<ul style="list-style-type: none"> • Pedestrian and cycle access through regional park will be considered as part of the Regional Park Plan of Management and can preferably be planned and linked to the urban development areas of the Central Precinct • weed management plan has been prepared • fire management plan has been prepared
Cultural heritage	
regard for and education and understanding of the identified items of environmental heritage on the land.....	<ul style="list-style-type: none"> • Interpretation of the environmental and cultural heritage of the site is to integrated into the design of open space and embellishment of park and other public domain • Open space which incorporates site 3 - brickworks for Elizabeth Farm homestead can interpret former site use and function in open space design and facilities • Refurbishment to be balanced with proposed use, maintenance, and safety • Community plan identifies public art as having a key role in heritage interpretation
Water and soils	
Water cycle	
no net adverse impact on water quality in South Creek and Hawkesbury Nepean Catchment	<ul style="list-style-type: none"> • Water sensitive urban design strategies including wetland water bodies integrated with open space will assist in water quality management
water usage on and the importation of potable water onto the site is to be minimised	<ul style="list-style-type: none"> • Design of open space embellishment is to generally focus on sustainable / low maintenance landscape with the exception of focal areas • Use of recycled water for landscape irrigation purposes is to be pursued
no significant increase to water table and salinity impacts	<ul style="list-style-type: none"> • Tree retention is to be maximised through open space and where possible to road corridors, and allotments • In the long term native tree cover to be increased • Irrigated areas are to be effectively managed through subsoils treatments and regime management
drainage lines are to be constructed and vegetated so that they approximate as natural a state as possible.....maximise the conservation of indigenous flora...	<ul style="list-style-type: none"> • Key existing drainage lines and related vegetation are to be conserved and enhanced • Drainage corridors within the Central Precinct to be subject to additional planting / regeneration to reinforce riparian cover
Transport	
6. urban form is to maximise the potential for public transport walking and cycling to replace car travel	
Urban form	
Environmentally sustainable development	
1. development is to be planned and carried out so that it supports the goal of ecologically sustainable development	

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE
Urban form	
Environmentally sustainable development	
1. development is to be planned and carried out so that it supports the goal of ecologically sustainable development	
Urban form	
2. development is to result in an attractive and safe built environment satisfying a diverse range of community needs	
4. development is to include:	
c) clearly distinguishable public and private spaces	
5. urban design measures to discourage crime and facilitate safety and disabled access	
Energy and Waste	
5. development should contribute to improved regional air quality by achieving higher than normal public transport use, encouraging walking and cycling	
Human services	
Community services	
1. Integrate community services with land use planning	
Open space and recreation	
6. a range of open space and recreation areas and facilities for passive and active recreation is to be provided including playgrounds and neighbourhood parks	
7. the accessibility and utility of open spaces are to be maximised for use by the community	<ul style="list-style-type: none"> Open space is to be accessible via integrated access network and shall be fronted either by other open space types or roadways All urban development areas shall be within walking distance of an open space area. Active use open space located at the centre of the precinct related to the village centre and community / educational facilities Passive recreational open space distributed equitably through the development sited to take advantage of existing tree canopy and relationship to drainage corridors (natural landscape character)
8. Recreation activities and facilities are to be located and designed to maximise conservation of cultural and natural values	<ul style="list-style-type: none"> Open space planning optimises tree conservation design of open space shall integrate conservation of required vegetation / other items see above
Sydney Regional Environmental Plan No. 30 - St Marys and associated Deed of Agreement	
10 Content of draft Precinct Plan	
2. A draft precinct plan is to include proposals for and information about the following for the land to which it applies	
(g) location of open space, its function and landscaping intent	<ul style="list-style-type: none"> The location of open space is defined on the open space masterplan Figure 2.3 the function of open space and landscaping intent is identified in section 4.0 Open Space Performance Standards for each of the components of the open space hierarchy
(m) the impact of the proposed development on any adjoining land that is zoned Regional Park or Regional Open Space	<ul style="list-style-type: none"> Performance standards for the interface of the development with the Regional Park These include the provision of "active" edges incorporating roads where possible to the boundaries of the Regional Park to control the edge impacts of residential housing including potential garden escape etc. and providing enhanced potential for passive surveillance of vandalism and dumping.
24 Performance Objectives - Conservation	
2. Urban design and site planning in the Employment and Urban zones are to have regard to significant stands of trees and where practicable retain those trees	<ul style="list-style-type: none"> Retention of significant stands of trees in open space areas and road corridors is incorporated into urban planning. Road planning will be developed during ongoing design to maximise tree retention where practical seed collection and propagation programme proposed to provide plant material for revegetation works Tree removal for urban development will be balanced through new plantings to open space and road corridors. vegetation links to be further developed through open space subtle visual separation between active and passive recreation will be provided through tree planting to create open space "rooms" local indigenous species to be used to majority of open space areas and where practical (sustainable) to road corridors
27 Open space and recreation	
(1) A range of open space and recreation areas and facilities for passive and active recreation is to be provided including local playgrounds and neighbourhood parks	<ul style="list-style-type: none"> Open space masterplan provides a hierarchy of functional open space distributed within an accessible framework of corridor open space Play spaces incorporating stimulating design and artwork themes will be incorporated within open spaces in the hierarchy to meet Penrith Council requirements Flexibility in open space provision shall be achieved through design: <ul style="list-style-type: none"> to provide multi purpose spaces within parks that can adapt to changing needs minimise construction of inflexible / permanent structures that could compromise future flexibility maximise potential for temporary / moveable facilities provision (such as toilets, shelters, stages etc) build into park establishment provision of services outlets to provide for temporary use / future adaptation

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE
(2) the accessibility and utility of open spaces are to be maximised for use by the community	<ul style="list-style-type: none"> • Open space is to be accessible via integrated access network and shall be fronted either by other open space types or roadways • All urban development areas shall be within 5 minutes walk of an open space area. • Active use open space located at the centre of the precinct related to the village centre and community / educational facilities • Passive recreational open space distributed equitably through the development sited to take advantage of existing tree canopy and relationship to drainage corridors (natural landscape character)
(3) Recreation activities and facilities are to be located and designed to maximise conservation of cultural and natural values . . .	<ul style="list-style-type: none"> • Open space planning optimises tree conservation • design of open space shall integrate conservation of required vegetation / other items • see above
Penrith Sustainability Blueprint for Urban Release Areas - 2005	
Principle 1: Value the Site Attributes - preserve ecosystems, protect biodiversity, air, water, and conserve heritage	<ul style="list-style-type: none"> • establish corridor open space to key drainage lines and or vegetation corridors • improve and manage corridors adhering to riparian management objectives • retain good quality existing vegetation where possible in open spaces, road corridors and allotments
Principle 2: Create Localised Landscapes and Quality Public Domains - based on the indigenous landscape attributes	<ul style="list-style-type: none"> • landscape enhancement of corridors, open space, and streetscapes to respond to relevant indigenous plant communities to the site
Principle 3: Create Communities - not just housing estates	<ul style="list-style-type: none"> • open space and access network planned to provide an accessible and integrated system of open space • provide varied landscape settings through open spaces • landscape to parklands and streetscapes promotes sense of identity
Principle 5: Save Water - Water Sensitive Urban Design (WSUD)	<ul style="list-style-type: none"> • predominant use of locally indigenous plant species which are low water demand • recycled and / or harvested water reuse to landscape irrigation
Principle 6: Save Energy and Greenhouse Gases	<ul style="list-style-type: none"> • access network promotes cycle use and walking within the precinct
Principle 7: Maximise Liveability & Longevity	<ul style="list-style-type: none"> • landscape enhancement to provide simple robust quality landscape setting • open space planning and enhancement to maximise ongoing flexibility of use
Principle 8: Reduce Resource Consumption - energy, land, water and materials	<ul style="list-style-type: none"> • as for principle 5 and 6
Principle 9: Minimise Waste - return, reuse, recycle	<ul style="list-style-type: none"> • recycling facilities provided in public domain areas and key open spaces
Principle 10: Build-in Community Safety & Crime Prevention Measures - thoughtful design of the public domain	<ul style="list-style-type: none"> • open space design to integrate CPTED principles
Penrith Open Space Action Plan, June 2007	
Objective 1 – Maximise use of existing cultural and recreation facilities	<ul style="list-style-type: none"> • New facilities to focus on gaps in existing provision
Objective 2 – Rationalise recreation and cultural resources in the Penrith Local Government Area	<ul style="list-style-type: none"> • Consider the quantum of open space required in the context of the adjoining Regional Park and Regional Open Space to avoid “over supply” of space that it not effectively used by the community given the range of options available • Provide quality open space areas focussing resources on key areas rather than “spreading too thin”
Objective 3 – Provide new recreation and cultural facilities that are under supplied in the Penrith Local Government Area	<ul style="list-style-type: none"> • New facilities to focus on gaps in existing provision
Objective 4 – Encourage Community Involvement in Facility and Service Provision	<ul style="list-style-type: none"> • Potential community involvement in planning and design of facilities • Close liaison with sporting clubs for ongoing management of facilities
Objective 5 – Facilitate Diverse Recreational & Cultural Program Development	<ul style="list-style-type: none"> • Provide resources to co-ordinate and facilitate recreation and cultural activities to meet community needs • Ensure that Council managed community, sport and recreation facilities offer a variety of relevant recreational cultural activities and services • Provide appropriate recreation and cultural facilities for a wide range of cultures in Penrith • Facilitate participation in arts and cultural activities by community artists • Encourage the programming of recreation and cultural activities that support and assist the tourism objectives of Council • Encourage sports development activities
Objective 6 – Provide Effective and Sustainable Management, Support and Resources	<ul style="list-style-type: none"> • park planning and design to consider ongoing maintenance with the aim of minimising where possible recurrent maintenance requirements • focus higher maintenance demands in areas of high usage volume and impact, and key landscape zones of importance to civic identity

RELEVANT POLICY / CONTROL	LANDSCAPE AND OPEN SPACE PLANNING RESPONSE								
<p>District Facilities</p> <p>The 2007 Open Space Action Plan identified general objectives for the St Marys site</p> <ul style="list-style-type: none"> • Establishing a new Regional Park to ensure appropriate flora and fauna habitat areas are preserved • Establishing a large park that provides for a range of passive and active recreational and sporting facilities, and to accommodate the needs of future residents • Investigating the feasibility of establishing a sports facility to service a catchment beyond the immediate residential base, and • Investigating the feasibility of establishing an 'environmentally sustainable' centre for research and educational purposes (pending the outcome of any proposals planned for the Castlereagh site). <p>The proposed district facilities within the release area may include -</p> <ul style="list-style-type: none"> • a senior AFL and cricket venue, local level playground, (St Marys Eastern Park Regional Open Space) • a district level sports pavilion & field / outdoor entertainment venue • provision of 6 full size playing fields, 4 mini fields, basketball / netball courts to serve local needs, lighting, car parking, spectator seating / shelter • a district level universally designed playground facility, amenities, shared path circuit 	<ul style="list-style-type: none"> • Ongoing planning will investigate provision of a range of sporting and recreation facilities in the Central Regional Open (total approx. 40 ha), with good physical connection to the proposed Central Precinct Village Centre. • Exact facilities to be provided will be determined following further consultation with key stakeholders, including PCC, Dept of Planning and potential user groups. 								
<p>7.1 Quantum of Open Space</p> <p>The Local Open Space Action Plan 2007 identifies a target quantum of 3.04ha per 1000 population.</p> <p>Central Precinct</p> <table border="0"> <tr> <td>970 dwellings</td> <td>2500 population</td> </tr> <tr> <td>Active Open Space</td> <td>3.5 ha</td> </tr> <tr> <td>Passive Open Space</td> <td>4.1 ha</td> </tr> <tr> <td>Total Open Space</td> <td>7.6 ha (3.04 ha / 1000)</td> </tr> </table>	970 dwellings	2500 population	Active Open Space	3.5 ha	Passive Open Space	4.1 ha	Total Open Space	7.6 ha (3.04 ha / 1000)	<p>The open space masterplan provides 7.6ha open space at a rate of 3.04 ha / 1000 population</p> <p>This includes open space additional to local open space as identified in Council's 2007 Open Space Action Plan definitions:</p> <ul style="list-style-type: none"> - open spaces within drainage and vegetation corridors that are additional to lands required for drainage lines and vegetation buffers (20m total buffer to drainage line as per DWE requirements for St Marys site) - Shared access paths within corridors - active facilities provided in Regional Open Space to Central Precinct as offset to 3.5ha requirement in Central Precinct <p>The quantum recognises the following factors:</p> <ul style="list-style-type: none"> - distribution of open space adequately addresses the minimum target for accessibility to residences of 5 minutes walk generally - the Regional Park and Regional Open Space accessible to the Central Precinct in addition to Regional Park areas suitable for use as passive open space supplement local open space in providing a "quantum" of space for recreational use - the Regional Park context and the accessibility of corridor open space and linkages provides a high level of landscape amenity - The Regional Open Space will also provide passive recreational facilities that will supplement the passive use local and pocket parks - open space embellishment will provide a high level of landscape amenity that promotes "quality" of open space and recreational experiences - the capacity of Council to effectively and sustainably maintain open space area must be considered - oversupply of poor quality open space is not a good or sustainable community outcome. - in the context of the above factors the proposed open space masterplan reflects the needs based and qualitative approach as recommended in Council's PLANS strategy.
970 dwellings	2500 population								
Active Open Space	3.5 ha								
Passive Open Space	4.1 ha								
Total Open Space	7.6 ha (3.04 ha / 1000)								