

SHRIMPTONS CREEK PARKLANDS

Draft Plan of Management



 City of Ryde



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SHRIMPTONS CREEK PARKLANDS

Draft Plan of Management

The vision for Shrimptons Creek Parklands is to recognise the importance of this creekline as an environmental and recreational ‘spine’ located wholly within the City of Ryde. As such this corridor of parkland should be maintained and appreciated as a natural area with safe recreational access and act as a buffer to the creek from adjacent urban areas. The parklands shall provide clear connections to adjacent environments without compromising their natural character. Due consideration should be given to both environmental and recreational aims in the design, upgrade and maintenance of these parks.



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Executive Summary

Background

Shrimptons Creek Parklands (Parklands) is comprised of seven parks that lie adjacent to Shrimptons Creek. The Parklands are significant to the City of Ryde as they provide an almost continual link of open space from the centre to the extremities of the Ryde local government area. With an existing shared use pathway located within these reserves, the Parklands is a recreational and environmental 'spine' that serves the Ryde community.

The seven parks that are located along Shrimptons Creek are: Santa Rosa Park, Flinders Park, Tindarra Reserve, Greenwood Park, ELS Hall Park, Booth Reserve and Wilga Park. The name Shrimptons Creek Parklands has been utilised in this document to describe these parks in a holistic manner.

This Plan of Management has been written to respond to the increasing environmental and recreational demands placed on the parks along the Shrimptons Creek corridor. These pressures are due to the increasing urban development of the surrounding area, increased need for recreation and open space areas for the community and the need to protect the environmental values of the Corridor.

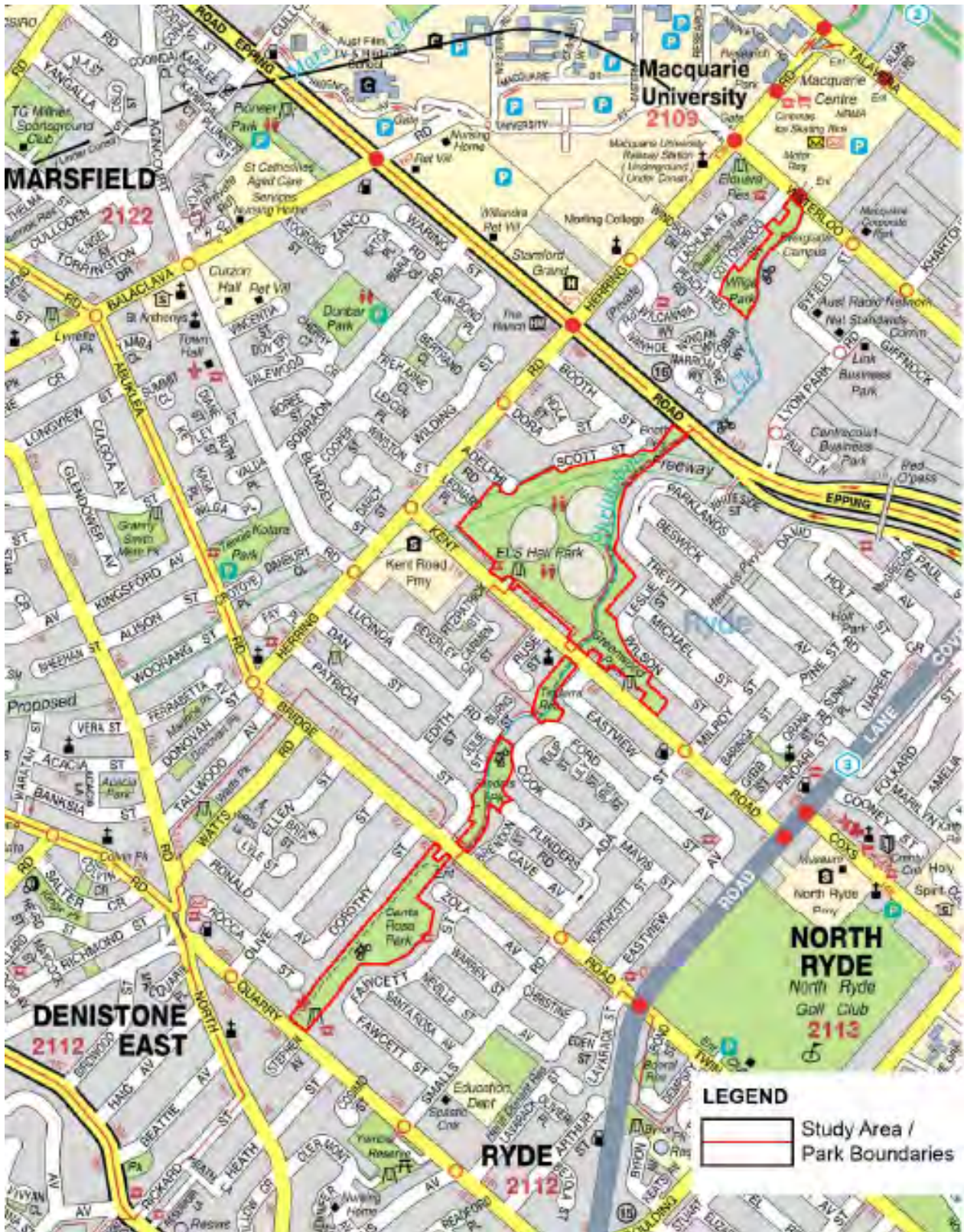
This Plan of Management has been prepared under the requirements of the Local Government Act 1993 and accordingly, this Plan of Management satisfies the requirements for content and process in preparing a Plan of Management under Section 38 of the Local Government Act 1993.

The Shrimptons Creek Parklands Plan of Management provides a strategic planning and sustainable management framework to conserve the Parks natural, cultural and indigenous resources and to promote public recreation and leisure. Management actions are recommended to meet current and future demands of Parklands users. Management actions outlined in Part 6 will improve the quality of the Parklands, respond to the needs of the community, satisfy management objectives and reinforce the values of the Parklands.

A Plan of Management was prepared for Shrimptons Creek Parklands and adopted by Council in 2009. Since this time, proposed changes of use in Santa Rosa Park and ELS Hall Park are proposed and amendments to the 2009 Plan of Management were required. This Plan of Management has been updated to authorise these changes in use.



Current Status of Shrimptons Creek Parklands	
Site Name	Shrimptons Creek Parklands
Location	North Ryde and Macquarie Park
Adjacent land uses	Low density residential, Business Park, Commercial Centre and Mixed Use
Land parcels	Refer to Table 2.1
Area (ha)	24.51 hectares
Ownership	City of Ryde
Management	City of Ryde
Land Classification (under Local Govt Act)	Community Land
Zoning (Ryde LEP 2010)	RE1 Public Recreation, E2 Environmental Conservation, SP2 Infrastructure
Catchment	Regional
Physical characteristics	<ul style="list-style-type: none"> The Parklands are approximately 3.3km in length Aspect: The Parklands run in a north south orientation. Topography: The creek embankment is steep with level ground beyond the embankments. Soils: Shrimptons Creek Parklands are located over two soil landscape groups. The first is Wianamatta Group Ashfield Shale and Bringelly Shale bedrock and the second is Mittagong Formation, located between Ashfield Shale and Hawkesbury Sandstone. Water quality: The water quality of Shrimptons Creek is of poor condition with evidence of discolouration, turbidity, aquatic weeds and strong odour within the waterway. Drainage: Shrimptons Creek flows from south to north through the Lane Cove National Park and onwards to the Lane Cove River at Macquarie Park. The catchment for the Creek is estimated at 5.5 square kilometres.
Flora and fauna	<ul style="list-style-type: none"> Flora: A portion of the Parklands is classified as natural area although the majority of the vegetation along Shrimptons Creek and the adjacent parks have been highly disturbed with weed species more prominent. However there are some good stands of remnant plant communities situated within Shrimptons Creek Parklands. This includes three endangered ecological communities along Shrimptons Creek, Blue Gum High Forest, Sydney Turpentine Ironbark Forest and Sydney Sandstone Gully Forest. Fauna: Small mammals such as possums and a variety of land and water birds.
Visual elements	<ul style="list-style-type: none"> The Parklands contain a variety of views into the Creek line. Views across the open parks towards natural areas and the creek are valued by the community.
Access	<ul style="list-style-type: none"> Access to the Parklands is achieved via walking, cycling (on bike route), private vehicle and or public transport (bus and train). There is a network of formal and informal pedestrian pathways, and car parks in the Parklands. There is limited access for people with mobility impairment.
Assets and condition	<ul style="list-style-type: none"> Pathways - Fair Park Building - Fair / Good Park Furniture - Fair Playground - Good
Recent improvements	<ul style="list-style-type: none"> Newly constructed Ryde Community and Sports Centre at ELS Hall Park



Current Status of Shrimptons Creek Parklands

Existing uses	<ul style="list-style-type: none"> Organised activities including soccer, cricket, baseball, rugby league, frisbee. Informal recreation including walking, fitness training, picnic and BBQ, and playgrounds. Private and community events, such as corporate picnics and Christmas parties.
Existing Lease / Licences	<ul style="list-style-type: none"> Santa Rosa Park - The Scout Association of Australia, New South Wales Branch of Haberfield. Santa Rosa Park - Australian Air League Incorporated (lessee) and Saints United Soccer Club Incorporated (transferees) ELS Hall Park - <i>Proposed</i> YMCA
Event / Booking Management	<ul style="list-style-type: none"> Bookings through City of Ryde Council as Owner and manager of the open space Bookings for the Ryde Community and Sports Centre through leasee
Maintenance	<ul style="list-style-type: none"> Park quality: grass mowing, garden bed maintenance, rubbish collection Built structures: Line marking in car parks, repairing lighting, bollards and barbecues, path condition, sea wall maintenance Toilets: maintenance, repairs and cleaning Playgrounds: safety inspections, repairs, water quality management

Basis for Management

The Shrimptons Creek Parklands is comprised of seven parks all classified as Community Land under the *Local Government Act 1993* and accordingly the provisions in Section 38 of the *Local Government Act 1993* apply to the planning and management for all parks within the Parklands. Other key relevant legislation includes the *Threatened Species Conservation Act*, *Companion Animals Act*, *Disability Discrimination Act* and others that apply to management of the Parklands.

The local planning framework is governed by the Ryde 2021 Community Strategic Plan, the current Four Year Delivery Plan, the Ryde Local Environmental Plan 2010 and the Ryde Development Control Plan. Council's strategic plans such as the draft Integrated Open Space Plan (2012), accessibility and social plans, and cultural initiatives also influence planning and management of the Parklands.

Vision for Shrimpton's Creek Parklands

The vision of the Shrimptons Creek Parklands is:

The vision for Shrimptons Creek Parklands would be to recognise the importance of this creekline as an environmental and recreational 'spine' located wholly within the City of Ryde. As such this corridor of parkland should be maintained and appreciated as a natural area with safe recreational access and act as a buffer to the creek from adjacent urban areas. The parklands shall provide clear connections to adjacent environments without compromising their natural character. Due consideration should be given to both environmental and recreational aims in the design, upgrade and maintenance of these parks.

Values and Roles

Shrimptons Creek Parklands, like most parks, are places for people. In particular, these parks cater to the local community. The configuration of and the inclusion of the pedestrian and cycle access way within the Parklands lends these parks to also be managed as a regional park. Whilst there should be active recreational opportunities, these parks should continue to provide a natural environment for passive recreational needs and enjoyment. The parks should also continue to be a wildlife corridor, providing and improving the stands of urban forest located there. Connecting with the creek, with the inclusion of interpretation and viewing opportunities, should occur to reinforce

the natural character of this environment.

Community values of the Park are related to the recreation, sports, open space and landscape, environmental, cultural and access and linkages. The key roles are summarised in the table below.

VALUE	ROLE
Management	<ul style="list-style-type: none"> Continued management of the Parks by City of Ryde. Ensure statutory objectives of reserve are met. Ensure community values are considered.
Recreation	<ul style="list-style-type: none"> Regional visitor catchments, while acting as local parks for adjoining residents. Provide recreational facilities maintained for active use. Provide informal recreational facilities for passive recreation.
Natural and Landscape	<ul style="list-style-type: none"> Maintain and enhance the tree canopy within the parks with continued native plant selection, particularly endemic species. Retain the natural alignment of the creek as much as possible. Remediate the creek line, where possible remove dense weed growth along the creek line in a staged manner and revegetate with endemic species. Maintain and enhance the sports fields of Santa Rosa Park and ELS Hall Park, but with a recognition of the natural environment that they exist within.
Cultural	<ul style="list-style-type: none"> Provide a venue for community events, activities and ceremonies in ELS Hall Park. The reason for this location being the inclusion of a facility that attracts additional activity beyond sporting use and a facility that can be utilised by the local community. Provide for community events, activities within Santa Rosa Park and Wilga Park. Provide natural heritage and environmental awareness through interpretation.
Access and Linkages	<ul style="list-style-type: none"> Continue to provide safe walking and cycling tracks for commuter and recreational use, particularly at night. Provide strongly identifiable entry points to the Parks and wayfinding within and between the parks. Provide connections to the adjacent commercial, business, educational and public transport centres. Provide links to recreational trails that lead to other significant nodes nearby ie: Yamble Reserve or reconnecting to Shrimptons Creek beyond Macquarie Centre.

Management Objectives

The key management objectives for Shrimptons Creek Parklands are as follows:

	PRINCIPLES	OBJECTIVES
Management	<ul style="list-style-type: none"> City of Ryde to maintain role as trustee 	<ul style="list-style-type: none"> Management of reserve according to statutory requirements Management of reserve according to community values.
Access and Linkages	<ul style="list-style-type: none"> Interaction of parks as part of everyday life by people of all ages and abilities. Clear connections to adjacent commercial, business, educational and transport areas. 	<ul style="list-style-type: none"> Ensure equitable and easy access to and within the Park for all members of the community. Encourage short distances to major facilities for utilisation by less abled community members. Establish links to other areas of the parks, and the public domain. Provide links between regional cycleways.

PRINCIPLES		OBJECTIVES
Recreation	<ul style="list-style-type: none"> Maintained active recreation. Diverse range of informal and passive recreation opportunities. Active and healthy people of all ages, abilities and cultural groups. Visitation from people in the local area as well as regionally. 	<ul style="list-style-type: none"> Maintain active, sporting facilities. Where necessary, provide for the separation of sporting uses due to possible safety issues. Encourage and facilitate recreational pursuits of the local community. Encourage and promote Shrimptons Creek Parklands for recreational opportunities to visitors, particularly cyclists and walkers as an accessway. Provide for and promote informal and passive recreation facilities and activities. Provide for groups, individuals and age groups. Provide opportunities to experience peace and quiet in the parks. Provide opportunities of communal meeting of different age groups. Provide interesting, creative and fun play opportunities. Provide opportunities for formal and informal eating.
Natural/ Landscape	<ul style="list-style-type: none"> Where possible, remediate the creekline and riparian corridor and revegetate with endemic species (if possible ecosourse). Conserve and enhance the remnant tree canopy within Shrimptons Creek Parklands. Enhance native vegetation, in particular expand existing plant communities where appropriate, to benefit indigenous fauna. Enhance vegetation in character with the plant communities identified for that area. Consider environmental sustainability with the design and maintenance of the Parks and its facilities, particularly Water Sensitive Urban Design 	<ul style="list-style-type: none"> Provide for the staged removal of weed species with revegetation of endemic species. Provide for the maintenance and management of the tree canopy. Enhance and expand upon existing ecological plant communities. Where possible, plant from appropriate plant community for the area for fauna habitat. Utilise water sensitive urban design principles in park design and upgrades. Investigate opportunities to utilise water harvesting. Provide appropriate erosion control measures to embankments of creekline where necessary. Ensure buildings within the Parks incorporate energy efficient measures.

PRINCIPLES		OBJECTIVES
Cultural	<ul style="list-style-type: none"> A community that is engaged with their local environment. Appreciation of the natural history. Understanding of the people, place and change over time. 	<ul style="list-style-type: none"> Provide opportunities to celebrate the natural environment, particularly the creekline. Provide opportunities to celebrate this history of the local community. Provide a range of opportunities for social and cultural activities for all age groups. Indigenous and non-indigenous (including multi-cultural) heritage to be identified, conserved and interpreted as appropriate. Animate Shrimptons Creek Parklands to enhance the artistic, cultural and natural environment. Animate Shrimptons Creek Parklands to provide a welcoming access way from the centre of the City of Ryde to Macquarie Park.

Master Plan

The master plan for Shrimptons Creek Parklands moves beyond the values established by the community and stakeholders and visualises the management and upgrades of these parks. Some of these management items and upgrades include:

- where possible, the inclusion of a 20 to 30 metre Riparian Corridor to either side of Shrimptons Creek;
- providing path connections from the main access way to other sections of the park, such as the upper levels of ELS Hall Park;
- revegetation along the parks to be eco-sourced from remnant stands of the ecologically endangered communities located there;
- viewing opportunities and interpretation of the creek line; and
- playground upgrades to have a natural character to them.

Action Plan

The Action Plan (Section 6) details the means by which the Master Plan and the community roles and values can be implemented in a staged manner. These actions relate directly to the Master Plan and the descriptions in Section 5.1. Some of these actions include:

- upgrading multi-use playing fields;
- stormwater management options;
- lighting of the pedestrian and cycle access way;
- clearing of vegetation close to the shared used pathway that obstruct sightlines;
- water recycling options;

- operation and management of the Ryde Sports and Community Centre (RSCS) in ELS Hall Park; and
- implementing a fenced dog leash free area in ELS Hall Park.

Conclusion

Shrimptons Creek Parklands are significant, particularly as a whole, as they provide an environmental and recreational link from the centre of the City of Ryde to its northern extents. The parks are well regarded by local residents for the natural landscape character and amenity they provide. The existing pedestrian and cycle access way is well used by residents for recreational and commuting to major transport and employment area nodes. These activities and the appreciation of the parkland's qualities should be encouraged, through the continued remediation of the Creek, where necessary; the continued revegetation of the parks using species from the ecologically endangered communities located here; and providing opportunities for interpretation of the creek.

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1 INTRODUCTION

This document is a Plan of Management for the parkland beside Shrimptons Creek. It shall provide a practical means of establishing and implementing the future uses and management of these parks. The Plan of Management objectives, policies and actions described in this document should be seen as a framework for future works dependant on budgeting allocations for their implementation.

1.1 What is a Plan of Management

A Plan of Management is a formal planning document that provides guidance for the future development and management of public open space. It achieves this by identifying values and affecting public open space and outlines how that open space can be improved, used, managed and maintained in the future. A Master plan often accompanies the Plan of Management. Includes in the Plan of Management is an Action Plan that illustrates the proposed on the ground changes and elements of the Plan of Management.

A Plan of Management was prepared for Shrimptons Creek Parklands and adopted by Council in 2009. Since this time, proposed changes of use in two of the parks which make up Shrimpton Creek Parklands were proposed and amendments to the 2009 Plan of Management were required. This Plan of Management has been updated to reflect these changes.

The Shrimptons Creek Plan of Management is prepared pursuant to the *Local Government Act 1993* and it states the intent of the City of Ryde, as Manager and owner of the park, towards the management of the Parklands. It sets management objectives and values, outlines current issues and proposes management strategies and actions to guide future management and development of the Parklands.

The community engagement approach that was adhered to in preparing this Plan of Management will continue throughout the life of the Plan and the City of Ryde will continue to work with the community, stakeholders and park users during the implementation of this Plan of Management.

This Plan of Management will be in operation for a maximum of ten years unless amended or revoked by the preparation of a new plan in accordance with the *Local Government Act 1993*. A review of the Plan and its provisions will be conducted once the Plan has been in operation for 5 years (mid term review). The City of Ryde in consultation with the local community and recreational users of the Park will review the management programs annually to assess the progress of implementation of the plan and the effectiveness of those programs.

1.2 Why prepare a Plan of Management for Shrimptons Creek Parklands?

Shrimptons Creek is a significant creek running through the centre of the City of Ryde. Environmentally, Shrimptons Creek is important as its entire catchment lies with the City of Ryde boundary and it runs to Lane Cove National Park and is considered a designated watercourse within a natural area.

The urban influences of this catchment have impacted upon the condition of this creek. The parkland located either side of Shrimptons Creek acts as a buffer for surrounding uses and could be utilised further in having a positive impact upon this creek line environment. The length of this creek and the subsequent adjacent parkland also acts as a corridor for wildlife and for pedestrian and cyclist access. It acts as an environmental and recreational 'spine' in the heart of the City of Ryde. As such, Shrimptons Creek Parkland is of significance to the health of the environment of the local area and to the people who wish to access its local facilities.

The parks that make up the Shrimptons Creek Parklands are located either side of Shrimptons Creek.

These parks include:

- Santa Rosa Park
- Flinders Park
- Tindarra Reserve
- Greenwood Park
- ELS Hall Park
- Booth Reserve
- Wilga Park.

This Plan of Management and Master Plan shall look at the parks that are adjacent to Shrimptons Creek as a whole. The main reason for this view is due to the majority of these parks abutting each other with the connective elements of the creek and cycle access path, so that they are experienced by park users holistically.

The above factors provide the reason for an assessment of the current use and management of these parks, and to allow for its appropriate future planning and management. As part of this assessment a vision shall be established. The vision provides the overriding management aim for the Shrimptons Creek Parkland that will enable it to function effectively as an environmental and recreational corridor.

1.3 Land to which this Plan of Management applies

This Plan of Management specifically applies to the parks adjacent to Shrimptons Creek, referred to as Shrimptons Creek Parklands (Refer to Figure 1.1 – Location Plan). Key features of Shrimptons Creek Parklands include:

- its central location within the City of Ryde.
- its accessibility by a major catchment of local residents to facilities located along this corridor.
- the creek line itself: the hydrology and morphology of the watercourse.
- how it acts as a wildlife corridor.
- its connection to public transport.
- the parklands' surrounding uses which influence how the park is used.
- the location of ELS Hall Park, a major sporting ground along the corridor, with Santa Rosa Park, another sporting ground within this corridor.
- informal recreational use.
- its relationship to surrounding smaller parks that are within the Shrimptons Creek catchment.
- a range of landscape settings from large open areas to more intimate spaces.
- parklands with distinct landscape characters.



1.4 Objectives of this Plan of Management

The Plan of Management aims to:

- provide a practical approach to the planning and management of the parkland adjacent to Shrimptons Creek.
- ensure that the public use and enjoyment of Shrimptons Creek Parklands be encouraged.
- respond to current needs and opportunities as well as providing future directions.
- reflect the values and expectations of the key stakeholders, the local and wider community and other users for the future use and enjoyment of Shrimptons Creek Parkland.
- meet all legislative requirements, including environmental considerations for creekline management.
- be consistent with Council's Management Plan and its other strategies, plans and policies.
- reflect proposed planning and implementation of improvements to Macquarie Park.
- respond to possible environmental conservation and environmental sustainability opportunities.
- enhance a natural flow regime of the watercourse so as to provide hydrological benefits (eg: mitigating high flow events and associated downstream impacts), ecological benefits, and to promote healthy soil structure, and to extend low watercourse flows during drought.
- support the conservation and interpretation of the natural heritage values of the area.
- present a Master Plan that realistically indicates proposed physical changes and improvements to the Shrimptons Creek Parklands.
- authorise the leasing of the Ryde Sports and Community Centre for the purpose of public recreation and community use.

1.5 Process of preparing this Plan of Management.

The process for the preparation of this Plan of Management followed the legislative requirements stated below. The process in relation to community consultation and the documents produced at each stage is detailed in Table 1.1.

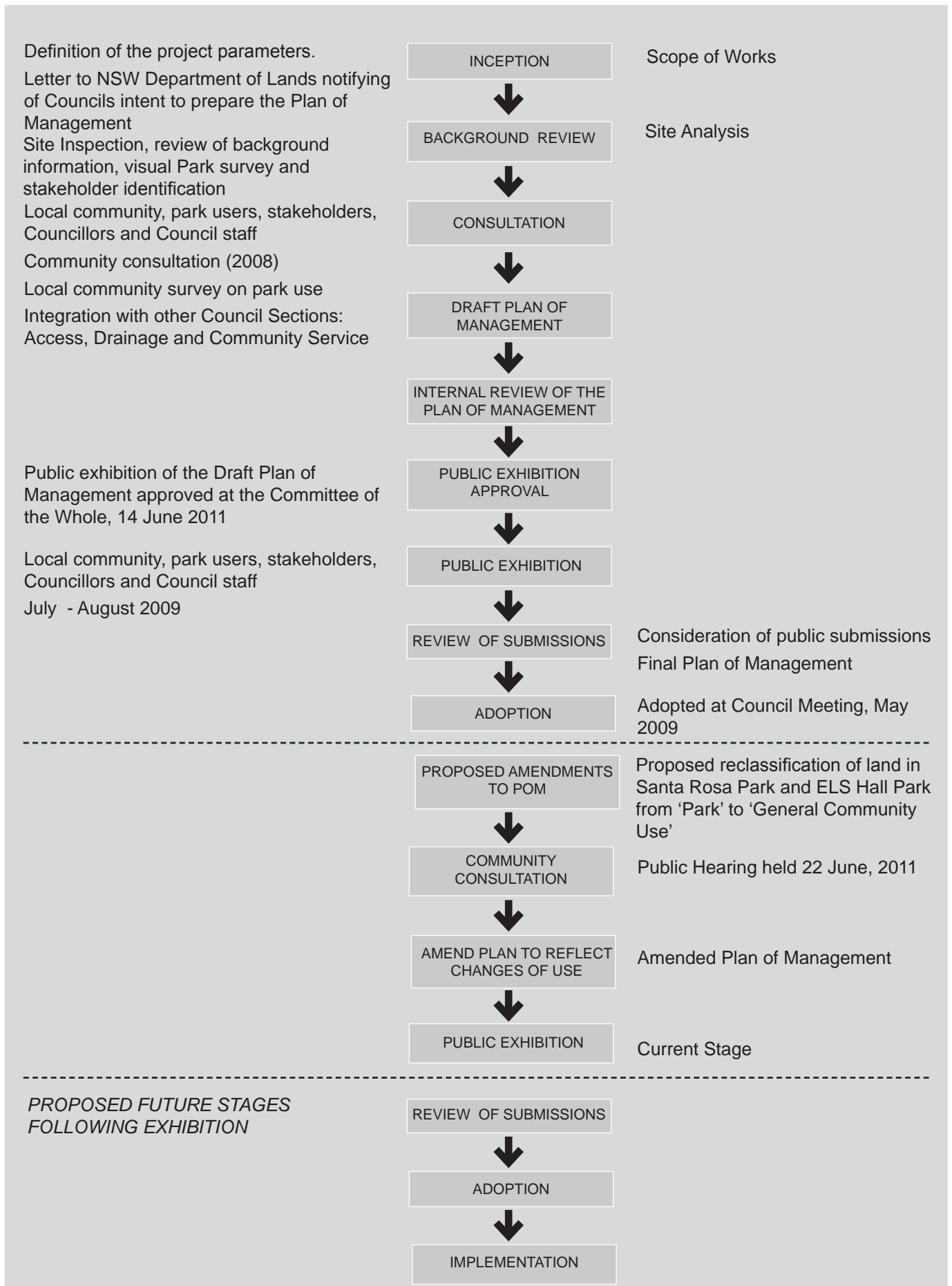
1.5.1 Legislative requirements

Shrimptons Creek Parklands are classified as community land under the *Local Government Act 1993*. Under this Act section 35 states that community land is required to be used and managed in accordance with the following Plan of Management applying to the land (NSW Govt 1993:s35).

The *Local Government Act 1993* provides the following information relating to the process of preparing a draft plan of management.

- a council must prepare a draft Plan of Management for community land.
- give public notice of a draft Plan of Management by placing a copy of the draft Plan of Management on public display for not less than 28 days.
- consider all submissions received by it concerning the draft Plan of Management.

Table 1.1 Process of preparing this Plan of Management



- amend the draft Plan of Management accordingly in response to public submissions.
- re-exhibit the draft Plan of Management if the amendments are substantial.
- Council must give public notice of the adoption of an amended Plan of Management if it is not re-exhibited.

1.5.2 Consultation

Consultation is an important part of the process of preparing a Plan of Management. Continuous review and incorporation of stakeholder, user and community attitudes, expectations and requirements into the ongoing management of Shrimpton Creek Parklands is paramount.

Community consultation for this project has been in the form of Park User Surveys and a Stakeholder Workshop. The Surveys conducted in July 2008 were utilised to gauge the reasons why the local community use the parkland adjacent to Shrimptons Creek. It was also a means of establishing the broad values of the park currently and how the local community would like to see the park. The Stakeholder workshop provided specific values by key user groups and was a means of transposing those values into ideas. This workshop took place on 9 July 2008.

The consultation for this Plan of Management has also included discussions with internal Council staff. This provided background knowledge and an awareness of issues related to other integrated elements such as access, drainage, and the Macquarie Park development control plan and public domain plan.

Public Hearings

On the 19th April 2012 Council proposed reclassification of two areas within the Shrimptons Creek Plan of Management from 'Park' to 'General Community Use' to allow for a new community nursery and indoor sports centre. A process of community consultation was implemented and a Public Hearing took place on 22 June 2012 in accordance with Section 40A of the *Local Government Act 1993*. An updated Action Plan has been prepared for Santa Rosa Park and ELS Hall Park in response to recommendations to Council following the Public Hearing process.

Further consultation will occur during the formal public exhibition of the Plan of Management.

1.6 What is included in this Plan of Management?

This Plan of Management is divided into the following sections, as outlined in Table 1.2.

Table 1.2 Structure of this Plan of Management

SECTION	WHAT DOES IT INCLUDE?	
1	Introduction	Background to the Plan of Management.
2	Description of Shrimptons Creek Parklands	Land Title, Building licence information, Natural, Physical, Cultural, Heritage, Maintenance
3	Planning and Management Context	State government planning legislation, local planning context.
4	Core Values, Roles and Objectives for Shrimpton Creek Parklands	Values of the community, stakeholders and users, vision, roles and policy objectives.
5	Shrimpton Creek Parklands Master Plan	Design masterplan and description.
6	Action Plan	Desired outcomes, actions required to implement management strategies.

2 DESCRIPTION OF SHRIMPTONS CREEK PARKLANDS

2.1 Location and Context

Shrimptons Creek is a tributary of the Lane Cove River. It is approximately 3.3 kilometres in length and is located wholly within the City of Ryde. The creek flows from south to north in a reasonably straight direction across the Ryde Local Government Area (LGA) and it joins the Lane Cover River in Lane Cove National Park at the northern boundary of the LGA. The parks that make up the content of this Plan of Management are located from the southern most point of the Creek (where the Creek first daylight) until Macquarie Centre. From the Macquarie Centre northwards until the Lane Cove National Park, Shrimptons Creek is on privately owned land.

There are seven small to large parks that lie beside Shrimptons Creek that are included in this Plan of Management. These are:

- Santa Rosa Park
- Flinders Park
- Tindarra Reserve
- Greenwood Park
- ELS Hall Park
- Booth Reserve
- Wilga Park

These parks extend from the centre of the City of Ryde LGA to the northern extremities of the Council boundary. The name Shrimptons Creek Parklands has been utilised in this document to describe these parks in a holistic manner. The parks are located within Ryde, North Ryde, Marsfield and Macquarie Park. (Refer to Figure 1.1: Shrimptons Creek Parklands Site Plan)

Shrimptons Creek Parklands are a recreational and environmental 'spine' within the central area of the City of Ryde. The majority of land either side of these parks is residential, however Wilga Park, the northern most park along this corridor, sits within medium density housing, and commercial buildings of Macquarie Park.

The size of Shrimptons Creek Parklands is 24.51 hectares, which is the equivalent to 245 average sized residential building blocks. Included in these parks are the well utilised sporting fields and facilities at ELS Hall Park that cater for soccer, cricket, baseball, Australian Rules Football and rugby league. Santa Rosa Park is the other park in this group that caters for organised sporting use for soccer and cricket.

The Parklands are well utilised by local residents for general exercise or to access the shops in Macquarie Park. Apart from being used by sporting groups, members of the local community spending time in ELS Hall Park watching the sporting matches played as well as using the RSCS located in the Parklands. Santa Rosa Park is of a similar nature to ELS Hall Park attracting spectators to watch sport played there. The parks are also used by commuters riding their bikes to Macquarie Park, walking from bus stops at Kent Road and Epping Road or by business park workers exercising during their lunch break.

The majority of the parks along Shrimptons Creek are bounded by single dwelling housing, with medium density and commercial buildings, as mentioned above beside Wilga Park.

Apart for the creek embankments, most of the parks along Shrimptons Creek have relatively flat terrain as they lie within the overland flow path of the creek. ELS Hall Park has some steep slopes leading from the creek to a flatter area where sporting fields are located. The steepest sections of the parks tend to be within the riparian zone of the creek and this has created issues in the ability to maintain the creek safely.

2.1.1 Santa Rosa Park

Santa Rosa Park is the southern most of the parks located along Shrimptons Creek. This park is where the creek daylights (becomes visible) for the first time from its source.

Santa Rosa Park is a longitudinal park, 4.59 hectares in size. The length of the park lies in a northeast-southwest alignment with the western boundary of Santa Rosa Park adjoining Sydney Water land. It is on the Sydney Water land that an existing shared use pathway is located. This pathway was built in 2006 as part of an agreement between City of Ryde and Sydney Water. There is no visual boundary between Santa Rosa Park and the Sydney Water land, so assumptions are made that this land is part of the park. The land that bounds the Sydney Water land is residential with no access points directly into the park.

The southern extent of Santa Rosa Park lies adjacent to Quarry Road. Less than 300m east along Quarry Road another park, Yamble Reserve is located.



Photograph 2.1 Santa Rosa Park



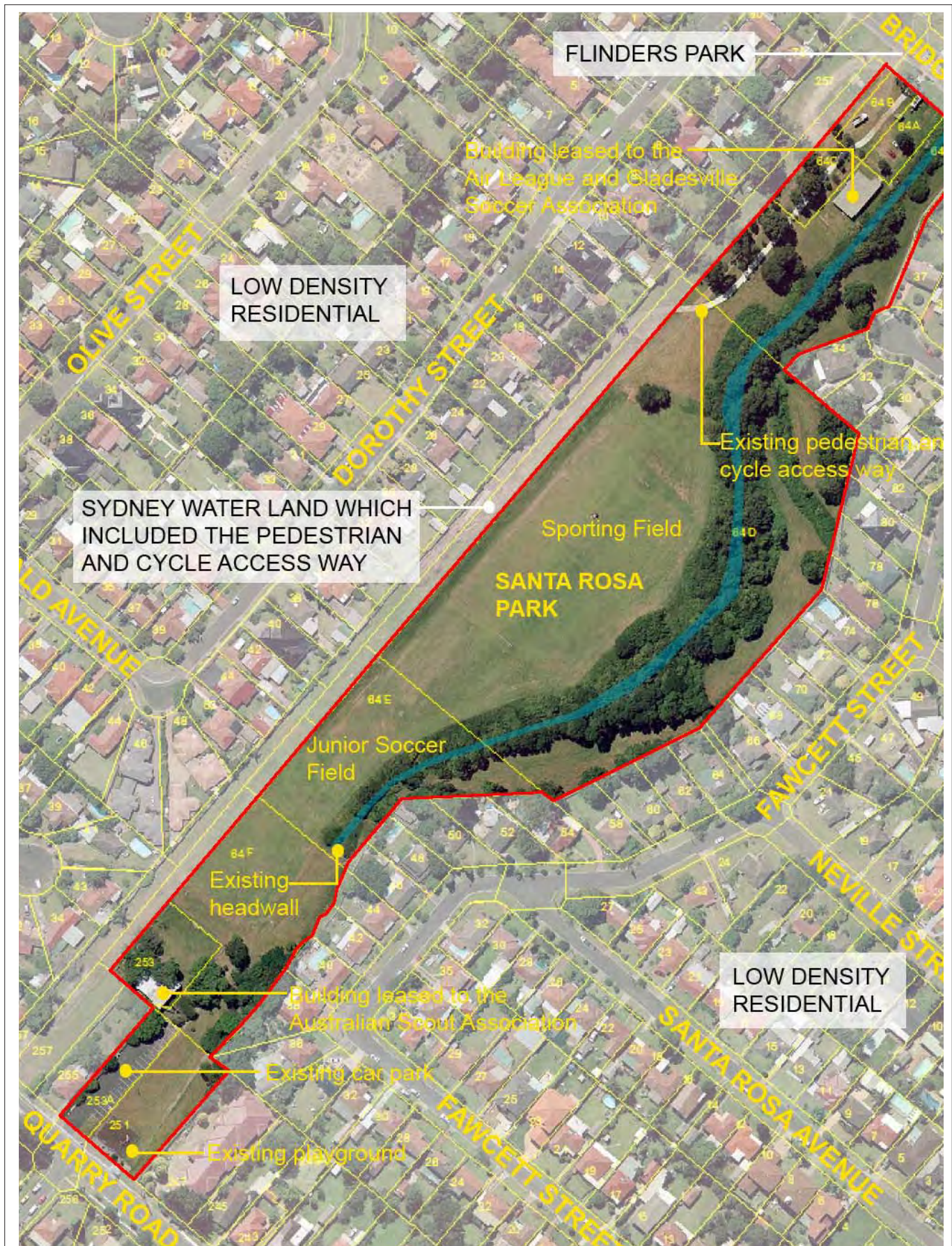
Photograph 2.2 Santa Rosa Park shared pathway

At the southern end of Santa Rosa Park is a playground, which is approximately 17 years old and is located adjacent to Quarry Road and a car park. There is a privately owned dwelling between the car park and the Sydney Water land. Behind the dwelling, to the north, is a building leased by City of Ryde to the Scouts Association of Australia enclosed by a 1.8m high chain wire fence around its perimeter.


The local community have consulted with Council about creating and operating a community nursery within Santa Rosa Park. As the existing land use classification did not support the use of the park for the purpose of a community nursery it was proposed that the land be re-categorised under the *Local Government Act 1993*. Refer to section 1.5 for further information on the actions undertaken to amend the changes in use for Santa Rosa Park.

The southern part of Santa Rosa Park has the least connectivity with the remainder of the park due to limited sight lines creating this sense of disconnection. The path within Sydney Water land is the most logical entry point to the park in this location due to visibility and the shared use pathway. There is no connection within the park between the pathway in Sydney Water land and the car park.

The eastern boundary of Santa Rosa Park is adjacent to residential land. The majority of housing here is single dwelling. There are two access points along this boundary into the park. The first is from a pathway link off Fawcett Street and the other from a cul-de-sac in Zola Avenue. The pathway link has recently been constructed to allow for maintenance vehicle access in the park on this side as Shrimptons



LEGEND

 Park Boundary

Creek provides a physical boundary within Santa Rosa Park for the eastern and western areas of the park. There is only one narrow linkage point connecting the eastern to the western area of the park. Access within the park on the eastern side is informal. The character of the park in this area has the closest connection with the creek's environs and is an enjoyable passive recreational experience.

The mid section of Santa Rosa Park is an open field, which is used by sporting groups for soccer and cricket. This is a gregarious space that balances with the smaller, creek environs landscape beside it. A grassed batter provides the boundary between Santa Rosa Park and the Sydney Water land from these fields. Apart from turf there are limited features in this section of the park, which adds to its expansive appearance. The northern extent of Santa Rosa Park is adjacent to Bridge Road. A bridge over a section of this road allows Shrimptons Creek to continue north. In this part of the park lies a brick building leased to the Australian Air League Incorporated with Saints United Soccer Club Incorporated a transferee. Whilst the opening of the park along Bridge Road is reasonable, a large portion of this open area is Sydney Water land. The Sydney Water land in this area is currently being used to stockpile materials for use in pipeline upgrades.

Shrimptons Creek within Santa Rosa park is orientated northeast-southwest, like the park itself. A drainage outlet from the cul-de-sac in the north-eastern section of the park provides a tributary that links in the main creek line. The creek has relatively steep embankments and was recently cleared of weed vegetation. Heavy weed infestation was evident prior to commencement of their removal in 2007. The water quality along the creek is of average to poor condition. The existing embankment width within this park is approximately 14m.

2.1.2 Flinders Park

Flinders Park is located to the northeast of Santa Rosa Park, across Bridge Road. It is a heavily canopied park of approximately 1.23 hectares in size and is lineal in shape, following the length of Shrimptons Creek.

A parcel of land, 57 Bridge Road, which was converted to parkland in 2005 provides a visual link to Flinders Park from Bridge Road, but no physical link. Shrimptons Creek is the western boundary of 57 Bridge Road and is located beside the entry point into Flinders Park. This entry point is the continuation of the shared use path. The pathway at this point is at its narrowest at approximately 1.2m wide. This width was established due to site constraints, with residential fencing on the western extent and the creek embankment falling sharply away to the east of the cycleway, being supported by gabion mattresses and vegetation.

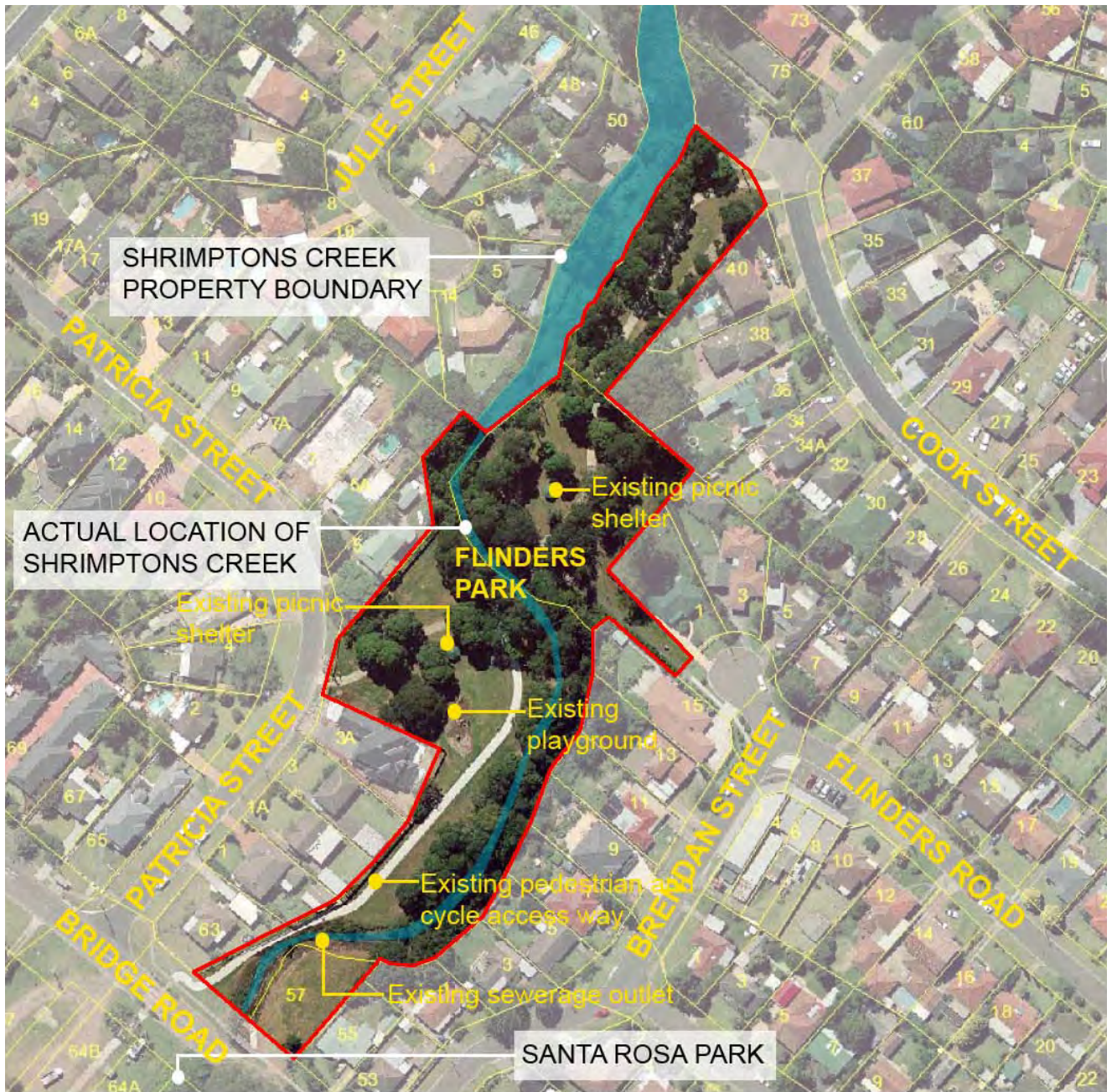
From the narrow entry point off Bridge Road, Flinders Park opens up to provide a heavily canopied park with playground and picnic facilities.



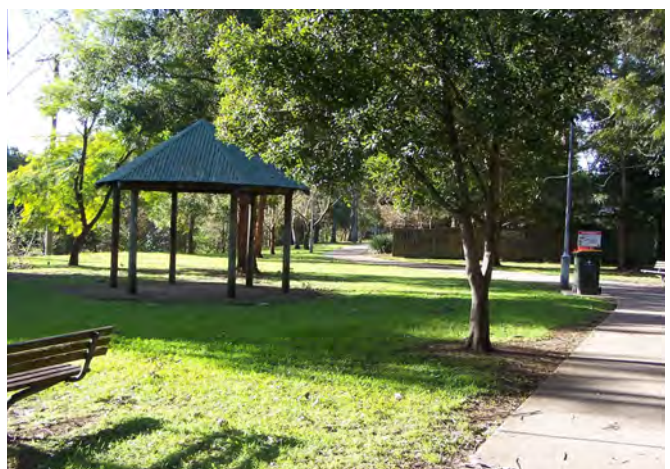
Photograph 2.3 Flinders Park entry from Bridge Rd



Photograph 2.4 Flinders Park playground



Photograph 2.5 Bridge Road looking towards Flinders Park



Photograph 2.6 Picnic shelters in Flinders Park

A playground is located to the west of the and park where it first opens up. Components of the playground were installed between 8 and 38 years ago. A picnic shelter is located close by; however there are no seats or table beneath it. Access is possible from Patricia Street via a connector path which joins the pathway prior to a bridge crossing. A large Sydney Water pipeline is visible from this bridge crossing.

Beyond the bridge crossing is a grassed area with a connector path from Flinders Road and Flinders Road shops. This area has picnic shelters, again with no seats and tables. The area is surrounded by a dense tree canopy of planted native species, which creates a positive ambiance to this space. Vegetation along the creek is largely weed species, which becomes thicker to the north of the park.

The pathway acts as a strong visual wayfinder within Flinders Park, leading to the northern extent of the park, where another entry point and connector path to Julie Street is located. The path ends at the northern extent of the park, which is a cul-de-sac. The wayfinding upon leaving the park is poor as the link between sections of the shared used pathway is along the nearby Ford Street. There are no signs immediately upon leaving the park to indicate the next section of pathway. The properties beyond the boundary of the park to the east, west and north are residential dwellings, the majority being single dwellings.

The creek within Flinders Park meanders through, allowing for landscape features such as bridges and the native vegetation to add to the character of this bushland park. The creek embankment is relatively steep with weed species prevalent and increasing in density toward the north of the park. The embankment width in this park is approximately 14m. The topography of the park itself is gentle with access points leading gradually down into the park.

2.1.3 Tindarra Reserve

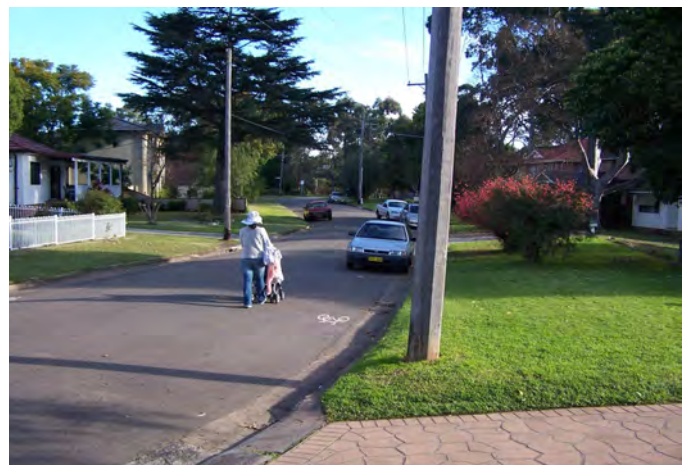
Tindarra Reserve is a small, heavily canopied reserve of 0.711 hectares. It is bounded by single dwelling residential to the west, Ford Street to the east with residential housing to the south and part of the northern boundary. The park narrows to follow the creek to Kent Road. There is an informal access point on the western side of Tindarra Reserve to Ruse Street.

The park has an open grassed area, with the shared use pathway providing interest. To the east of the pathway is a well kept native garden. The garden is on council owned land, however has been established and is maintained by the adjoining resident.

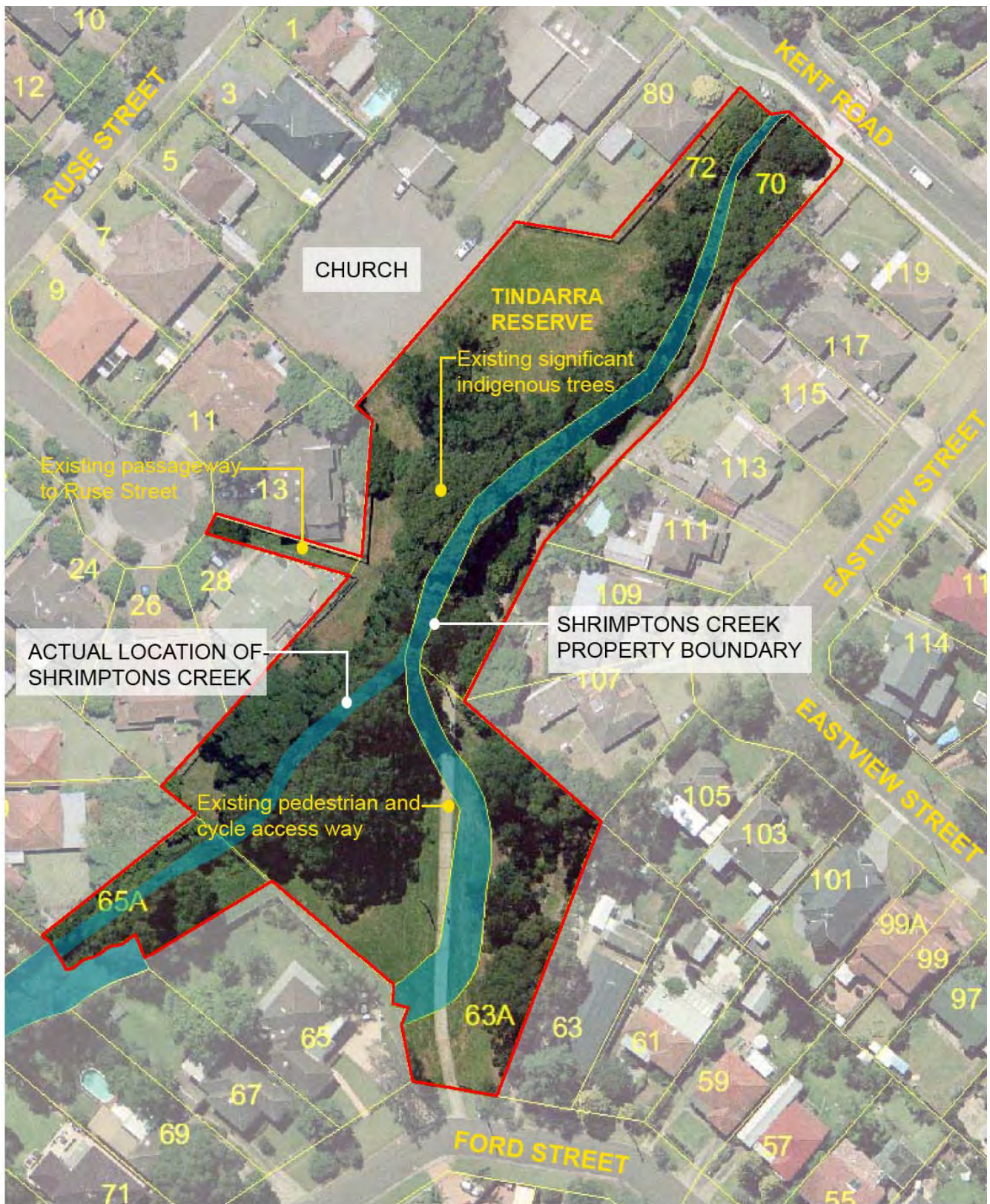
The pathway continues through the park to Kent Road. Shrimptons Creek is an obvious feature of this park. Like the path, the creek leads through the park to Kent Road. The embankment in this section of the park is not too steep as informal access is possible. There is a embankment width of approximately 12.5m. Vegetation along the creek line is dense with weed species. It is difficult to view the western part of Tindarra Reserve because of the dense vegetation along the creek corridor. Weed infestation has made it difficult to deduce the plant community growing here.



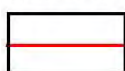
Photograph 2.7 Tindarra Reserve
OCTOBER 2012



**Photograph 2.8 Ford St connection between
Tindarra Reserve and Flinders Park**



LEGEND

 Park Boundary

2.1.4 Greenwood Park

Greenwood Park is located to the southeast of Shrimptons Creek. Approximately 2.46 hectares in size, it is forked in shape. The park is bounded by Kent Road to the south, with residential housing along the majority of its northern and some of its southern boundary. To the northwest of Greenwood Park is ELS Hall Park.

Greenwood Park is quintessentially a revegetated bushland park. The eastern arm of Greenwood Park is heavily treed with grassed areas that provide informal access along the length of the park, following a tributary of Shrimptons Creek. This tributary, once it reaches the boundary of the park and Kent Road, enters a concrete culvert. Greenwood Park is partially maintained by a volunteer bushcare group, organised by City of Ryde, which works in this park once a month.

The western arm of the park lies beside the main arm of Shrimptons Creek and beside ELS Hall Park. It has the continued shared use pathway passing through it, with a bridge crossing where the creek transects the creek. Access is available from Lesley Street with a concrete connector path joining on to the main pathway. This access pathway is reasonably steep. Apart from the Leslie Street, there is no pathway on this side of Greenwood Park, particularly along Wilson Street.

The park is utilised by members of the local community as a pleasant space to walk through and for commuters walking to a bus stop located on the park's boundary with Kent Road.

The condition of the main arm of Shrimptons Creek within Greenwood Park is again one that is highly disturbed, with dense weed growth along the embankments. The vegetation along the revegetated eastern arm has much less weed growth and is recognised as the Sydney Turpentine Ironbark Forest plant community. It is possible to see the creek along sections of the eastern arm. These embankments are relatively gentle in grade, with a embankment width of 14m evident. The park is mainly used for access due to the paths, both formal and informal. The treed canopy of Greenwood Park provides a pleasant bushland character.



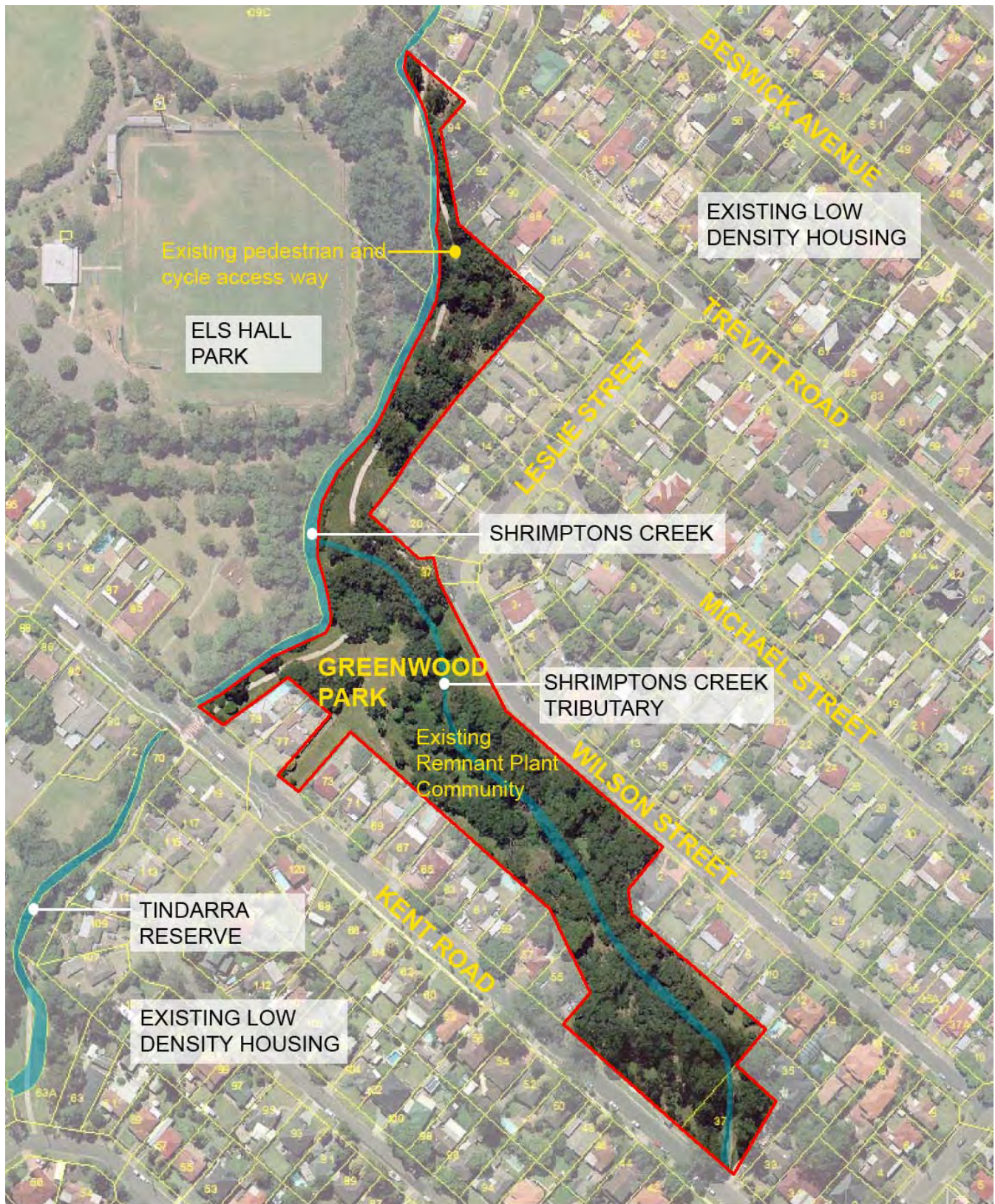
Photograph 2.9 Greenwood Park




Photograph 2.10 Greenwood Park looking towards Kent Road and the bus stop

2.1.5 ELS Hall Park

ELS Hall Park is the busiest of all the parks along Shrimptons Creek. It is also the largest, being 12.318 hectares in size. The park is bounded to the southwest by Kent Road and single dwelling residential houses. To the east the park is bounded by Shrimptons Creek and Greenwood Park. To the west the park is bounded by a future county road. Part of this land is owned by the Roads and Traffic Authority, however a large section of this future county road is owned by City of Ryde. Beyond this easement lies residential housing with single and medium density dwellings. The north and northeast of ELS Hall Park is bounded by residential properties and Booth Reserve.



LEGEND

 Park Boundary

ELS Hall Park caters to numerous sporting groups as well as the recreational needs of the local community. Within this park are playing fields utilised by Australian Rules, Oztag, Baseball, Soccer, Netball and Cricket. Recently installed fitness equipment is heavily used by the local community.

There are three playgrounds within ELS Hall Park. Two are close to the vehicular entry off Kent Road, one of which is basically a set of swings that is 38 years old. The third playground is located beyond the car park. The majority of equipment is up to 14 years old. Park user surveys indicate that two of the three playgrounds are used frequently and are highly regarded. The age of these playgrounds vary because of renewed equipment. The average age of these playgrounds is 14 years.



Photograph 2.11 ELS Hall Park looking to Kent Rd



Photograph 2.12 ELS Hall Park playground

There are picnic shelters located between a playing field and an oval, with a grove of trees providing ambiance and shade.

Three buildings are located within ELS Hall Park. An amenities block with canteen is located beside a playing field used regularly for soccer. Spectator seating to the front of this building has been included to meet Soccer NSW regulations for A Grade Women’s Soccer. The amenities block is located close to the car park.

The second building is a clubhouse that caters to the sporting groups who use the two ovals. This building is located in an elevated position between these fields to the north of the park.

The third building is a newly constructed indoor sports centre consisting of a two-court basketball (multi-purpose) facility, meeting rooms, amenities and canteen facilities.



Photograph 2.13 ELS Hall Park overlooking playing field from fitness area



Photograph 2.14 ELS Hall Park fitness area



Figure 2.5: Site Plan - ELS Hall Park
SHRIMPTONS CREEK PARKLANDS PLAN OF MANAGEMENT



Entry points are available from all nearby streets. The vehicular entry point is from Kent Road with parking available at this location and also along Scott Street. Informal parking occurs within ELS Hall Park from the Scott Street entry. Pedestrian entry points are informal.

The topography of ELS Hall Park has guided the use of the park. The park is basically split into three levels or 'terraces'. The upper terrace is where the future county road is located. Commanding views over the park are available from here. The mid terrace is where the sporting facilities and buildings are located. Formalised vehicular access is available from Kent Road to this terrace. A large car park is located on this level as well.

The lower terrace is where the central arm of Shrimptons Creek runs amongst a heavy canopy of trees. Steep slopes lead to this lower level. Linkages between the upper and lower level are informal desire lines. A tributary of Shrimptons Creek provides another connection between the mid to lower levels.

The triangular area to the north of ELS Hall Park has a good stand of endangered remnant Sydney Turpentine Ironbark Margin Forest trees with some remnant understorey shrubs, groundcovers and grasses. Linkages through this area are numerous as informal dirt access paths have been formed to connect the concrete shared use pathway within the park to Scott Street, the western boundary of the park.

Shrimptons Creek within ELS Hall Park, like Greenwood Park, is weed infested. The creek embankment is shallow near Kent Road, becoming increasingly steep when heading toward Booth Reserve. The embankment width within ELS Hall Park is approximately 14m. A tributary / drainage line leads from the section of the park where the playgrounds are situated to join the main creek. There is informal pedestrian access along this tributary, but no bridge connection / formal link to the concrete cycleway in the lower sector of this park. A bridge crossing exists to the north of ELS Hall Park to allow for the pathway to continue where there is sufficient public land, which is where the pathway enters this park. Flash flooding is an issue for the lower sector of the park.

2.1.6 Booth Reserve

Booth Reserve is a small parcel of land being 0.322 hectares in size. This reserve is a bushland reserve. Volunteers help to maintain the vegetation within it. Shrimptons Creek lies to the east of Booth Reserve. The shared use pathway lies to the west of the reserve and forks off to connect with Epping Road, which is the northern boundary. There is a bridge underpass that goes under Epping Road, leading into Department of Housing owned land and further to Wilga Park. Residential properties are located along the western boundary of the reserve. ELS Hall Park is the south-western boundary of the reserve. RTA owned land zoned as future county road is located to the east of the Booth Reserve boundary.


The creek within Booth Reserve has steep embankments and is weed infested with some remnant Sydney Turpentine Ironbark Margin Forest canopy trees. The approximate embankment width is 14m.



Photograph 2.15 Booth Reserve



LEGEND

 Park Boundary



2.1.7 Wilga Park

Wilga Park is the northern most park alongside Shrimptons Creek. Wilga is an indigenous word meaning 'willow' although most of the old willow trees have since been removed. Wilga Park is approximately 2.892 hectares in size (including 1 hectare of land owned by the Department of Housing).

The park is bounded by the Department of Housing land to the south, Waterloo Road to the north, high rise business park buildings to the east and medium to high rise residential to the west as well as Cottonwood Crescent. Cottonwood Crescent is the boundary to the large grassed open section of Wilga Park.

A shared use pathway connection beside Shrimptons Creek exists under Epping Road. The pathway continues through the Department of Housing land, then through Wilga Park close to the creek line until it reaches Waterloo Road.

The Department of Housing owns the parkland from Epping Road until just beyond Cobar Way. Heading north from the Department of Housing land, Wilga Park opens into a large circular space that is bounded by Cottonwood Crescent. Upon leaving this open area the park narrows down to creek line and pathway with planting in between. This configuration continues until Waterloo Road and the Macquarie Shopping Centre. Sightlines along this narrow section are average to poor, with no additional path options available. The rear side of high density housing backs onto this corridor providing minimal subconscious visual surveillance by neighbours. Across the creek line, to the east, lie high rise business park buildings. Whilst these buildings look over the park, the vegetation beside the creek line obscures visibility. This section of the park is where assaults have been reported in the past. A skatepark is located within the Department of Housing owned land. This skatepark was built in 1996 as part of a community connections project initiated by the City of Ryde and supported by the Department of Housing. A large picnic shelter with seating and barbeques is located near the skatepark. This was also installed as part of the 1996 upgrades.

The large circular space bounded by Cottonwood Crescent is grassed and has alcoves located beside the large space that provide seating opportunities. This open area provides some relief from the closeness of the park spaces either side of it. This is due in part to clear sightlines because of the open nature of this section of the park.

Shrimptons Creek within Wilga Park has a gently sloping embankment. Rock shelves are evident in sections of this part of the creek. Past bush regeneration works are also evident within this section of the park. However, there are weed species dominating the creek line vegetation within this park as well. The embankment width within Wilga Park is approximately 14m.



Photograph 2.16 Wilga Park



Photograph 2.17 Wilga Park



Photograph 2.18 Department of Housing land looking toward Epping Road underpass into Booth Reserve



Photograph 2.19 Skate bowl in Department of Housing land



Photograph 2.20 Picnic shelter known as 'the Hut' in Department of Housing land



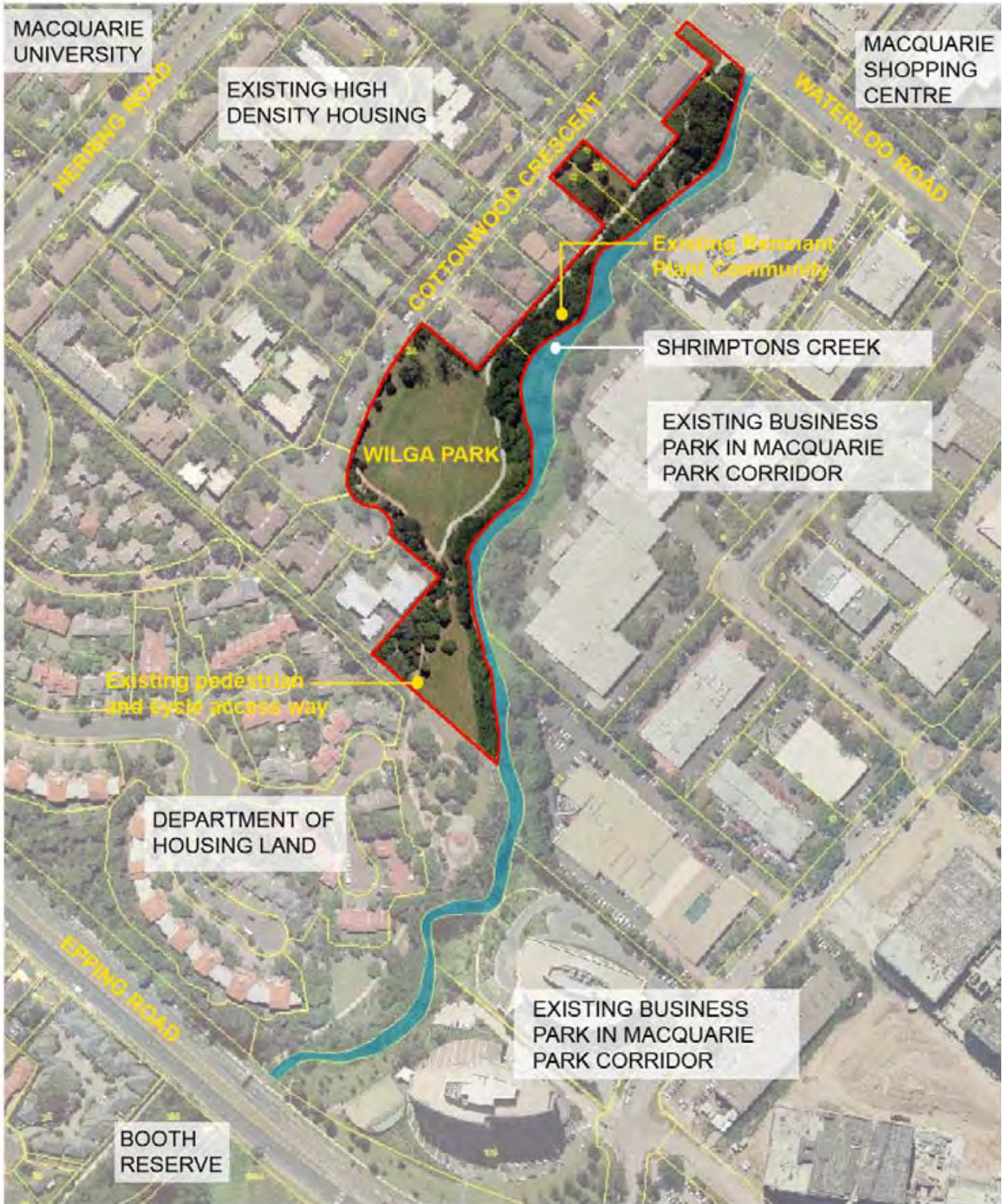
Photograph 2.21 Pedestrian and cycle path in Wilga Park




Photograph 2.22 Alcove in open area of Wilga Park



Photograph 2.23 View into sandstone outcrop and Shrimptons Creek at Wilga Park



LEGEND

 Park Boundary

It should be noted that a key feature of the Department of Housing land is an endangered stand of remnant Sydney Turpentine Ironbark Forest Margin (this plant community is recognised as part of the Sydney Turpentine Ironbark Forest ecologically endangered plant community). This plant community acts as a buffer between housing and Epping Road.

2.2 Significance of Shrimptons Creek Parklands

The parks along Shrimptons Creek are significant, particularly when viewed holistically, as combined, their overall size provides a meaningful amount of open space in an area of growing urban densification. Shrimptons Creek Parklands provides the largest continual link of green space within the central part of the City of Ryde. The longitudinal nature of the Parklands provides a green link that caters to recreational needs of a reasonably large catchment of the City of Ryde population.

The shared use pathway that traverses all of the parks beside Shrimptons Creek provides a well utilised connection from the centre of the City of Ryde to its northern reaches. The northern extent of these parks lies within Macquarie Park's public domain. Macquarie Park is a business park that accommodates over 50,000 workers. Due to this destination point, particularly Macquarie Shopping Centre, the shared use pathway within the parks along Shrimptons Creek is well used by both commuters and local residents. In addition, the pathway provides activity within all of these parks, which adds an element of safety. Without this connection some of the smaller parks would have minimal usage.

The natural areas surrounding Shrimptons Creek define the character of the majority of the Parklands, this being of a treed environment. In the results of the Park User Survey, local residents noted the importance of the ambiance of this open space as being a result of the bushland appearance. The parks provide a green link or corridor that is appreciated by local residents. As a green corridor, these parks provide a buffer for Shrimptons Creek and its riparian zone, which is an important factor in remediating the health of the creek. The green corridor also provides a habitat refuge for fauna.

2.3 Land ownership and management

2.3.1 Introduction

The ownership and management of the various parcels of land that comprise Shrimptons Creek Parklands is listed in Table 2.1 below. From Tindarra Reserve through each park north including Wilga Park, a narrow strip of land that contains Shrimptons Creek is subject to old waterway land title and possibly owned by the Department of Lands. In due course clarification is warranted to determine the creek line land status as to whether it is owned by Council or is Crown Land.

Table 2.1 Shrimptons Creek Parklands Land Register

SANTA ROSA PARK				
ADDRESS	LOT	DP	OWNER	SIZE (m ²)
64 Bridge Road, Ryde	10	219517	City of Ryde	5717
64A Bridge Road, Ryde	11	219517	City of Ryde	586.66
64B Bridge Road, Ryde	12	219517	City of Ryde	595.15
64C Bridge Road, Ryde	13	219517	City of Ryde	868.19
64D Bridge Road, Ryde	71	36579	City of Ryde	4891
64E Bridge Road, Ryde	13	219517	City of Ryde	4891
64F Bridge Road, Ryde	13	219517	City of Ryde	4462

SANTA ROSA PARK				
ADDRESS	LOT	DP	OWNER	SIZE (m²)
253 Quarry Road, Ryde	1	1047296	City of Ryde	1191.20
253A Quarry Road, Ryde	3	12918	City of Ryde	958.60
251 Quarry Road, Ryde	4	12918	City of Ryde	958.60
			<i>Total Area</i>	<i>25,119.40</i>

FLINDERS PARK				
ADDRESS	LOT	DP	OWNER	SIZE (m²)
57 Bridge Road, Ryde	1	39133	City of Ryde	556.40
59 Bridge Road, Ryde	F	36556	City of Ryde	1810
59 Bridge Road, Ryde	54	39133	City of Ryde	3267
59 Bridge Road, Ryde	100	552490	City of Ryde	6669
			<i>Total Area</i>	<i>12,302.40</i>

TINDARRA RESERVE				
ADDRESS	LOT	DP	OWNER /	SIZE (m²)
63A Ford Street, Ryde	41A	26924	City of Ryde	1148
65A Ford Street, North Ryde	3	778388	City of Ryde	544.5
70 Kent Road, North Ryde	5	208587	City of Ryde	1113
72 Kent Road, Ryde	16	652052	City of Ryde	4300
			<i>Total Area</i>	<i>7,105.50</i>

GREENWOOD PARK				
ADDRESS	LOT	DP	OWNER /	SIZE (m²)
37 Kent Road, North Ryde	1	30963	City of Ryde	
39 Kent Road, North Ryde	1	548943	City of Ryde	24025
			<i>Total Area</i>	<i>24,025</i>

ELS HALL PARK				
ADDRESS	LOT	DP	OWNER /	SIZE (m²)
109 Kent Road, Marsfield	14	208668	City of Ryde	72532
109B Kent Road, Marsfield	23	216999	City of Ryde	329.84
109C Kent Road, Marsfield	5	205419	City of Ryde	13992
109D Kent Road, Marsfield	4	205419	City of Ryde	7292
109E Kent Road, Marsfield	3	205419	City of Ryde	4506
109F Kent Road, Marsfield	2	205419	City of Ryde	172.37
109G Kent Road, Marsfield	2	228777	City of Ryde	13425
111A Kent Road, Marsfield	22	216999	City of Ryde	499.5
15 Adelphi Road, Marsfield	15	208273	City of Ryde	32.3

ELS HALL PARK				
ADDRESS	LOT	DP	OWNER /	SIZE (m ²)
2 Scott Street, Marsfield	3	228777	City of Ryde	10399
			<i>Total Area</i>	123,180

BOOTH RESERVE				
ADDRESS	LOT	DP	OWNER /	SIZE (m ²)
168 Epping Road, Marsfield	1	228777	City of Ryde	3219
			<i>Total Area</i>	3,219

WILGA PARK				
ADDRESS	LOT	DP	OWNER /	SIZE (m ²)
2A Cottonwood Cres, Macquarie Park	15	240110	City of Ryde	
12 Cottonwood Cres, Macquarie Park	16	240110	City of Ryde	
12B Cottonwood Cres, Macquarie Park	11	1046092	City of Ryde	
			<i>Total Area</i>	24,025

2.3.2 Leases and Licences

Under the *Local Government Act 1993* (as amended 1998), plans of management need to expressly authorise current and proposed leases and licences.

Granting a lease or licence on Community Land

A lease, licence or other estate may be granted, in accordance with an express authorisation by this plan of management, providing the lease, licence or other estate is for a purpose prescribed in s. 46 of the *Local Government Act 1993*. The purpose must be consistent with core objectives for the category of the community land. The *Local Government Act 1993* allows Council to grant leases or licences over all or part of community land. The use of land under a lease or licence must be compatible with the Local Environmental Plan or Council requirements and provide benefits and services or facilities for the users of the land. Terms and conditions of a lease should reflect the interests of Council and the public and ensure proper management and maintenance.

The following conditions must be met when granting a lease or licence over community land:

- The lease, licence or other estate must not be granted for a period (including any period for which the lease could be renewed by the exercise of an option) exceeding 21 years.
- A lease, licence or other estate may be granted only by tender in accordance with s.46A of the *Local Government Act 1993* (as amended) and cannot exceed a term of 5 years (including any period for which the lease could be renewed by the exercise of an option), unless it satisfies the requirements as scheduled in s.47, or is otherwise granted to a non – profit organisation.
- The Plan of Management must expressly authorise a lease or licence.

Council must:

- Give public notice of the proposal.
- Exhibit notice of the proposal on the land to which the proposal relates.
- Give notice of the proposal to such persons who appear to own or occupy land adjoining community land.
- Give notice of the proposal to any other person (owner or occupier of land in the vicinity of the community land), if in the opinion of the Council the subject to the proposal is likely to form the primary focus of the person's enjoyment of community land.

Expressed Authorisation for the Shrimpton's Creek Parklands

Subject to the provisions of the Local Government Act 1993, this Plan of Management authorises the leasing, licensing or granting of any other estate over the park or any buildings for

- Community and/or sporting purposes, and/or
- The provision of food and beverages consistent with the utilisation of the park, and/or
- Sponsorship partnerships where they directly benefit the City of Ryde, and /or
- The installation and/or maintenance of telecommunication facilities pursuant to the Telecommunications Act 1997 (Cth), and/or
- The operation of telecommunication facilities that were in existence prior to this Plan of Management coming into effect.

There are three buildings along Shrimptons Creek Parklands that are under a lease or licence. Both are leases and are located in Santa Rosa Park and ELS Hall Park. Their lease information is as follows:

Table 2.2 Current and Proposed Leases in Shrimptons Creek Parklands

CURRENT LEASE IN SANTA ROSA PARK	
Leesee / Licensee	The Scout Association of Australia, New South Wales Branch of 5 Rogers Avenue, Haberfield
Lease or Licence	Lease
Lessor / Licensor	City of Ryde
Permitted Uses	Lot 1 / 1047296
Term	21 Years expires 31 December 2020
Lessor / Licensor responsibilities	Keep the exterior of the premises in good repair Keep building in good repair
Lessee / Licensee responsibilities	Keep the inside of the premises tidy

CURRENT LEASE IN SANTA ROSA PARK	
Leesee / Licensee	Australian Air League Incorporated (lessee) Saints United Soccer Club Incorporated (transferees)
Lease or Licence	Lease
Lessor / Licensor	City of Ryde

CURRENT LEASE IN SANTA ROSA PARK

Permitted Uses	Care of amenities building
Term	20 Years expires 17 August 2013
Lessor / Licensor responsibilities	Agreement made for leasee to maintain structure of the building
Lessee / Licensee responsibilities	Keep the external building in good repair (as per memorandum attached to lease) Pay water and electricity Keep the internal areas of the premises and all fixtures in good repair (as per memorandum attached to lease).

PROPOSED LEASE IN ELS HALL PARK

Lease or Licence	Lease
Lessor / Licensor	City of Ryde
Permitted Uses	For community and/or sporting purposes, and/or provision of food and beverages consistent with the utilisation of the park,
Term	5 years plus 5 years
Lessor / Licensor responsibilities	Agreement made for leasee to maintain structure of the building
Lessee / Licensee responsibilities	Keep the external building in good repair (as per memorandum attached to lease) Pay water and electricity Keep the internal areas of the premises and all fixtures in good repair (as per memorandum attached to lease).

2.3.3 Key Stakeholders in Shrimptons Creek Parklands

The stakeholders responsible for the management of facilities in Shrimptons Creek's Parks are listed as follows:

Table 2.3 Key Stakeholders

ORGANISATION	RESPONSIBILITY / USES
City of Ryde	Land owner Maintenance, provision of community facilities (such as the library)
Australian Scouts	Leasee of Scout Hall, Santa Rosa Park
Air League and Saints United Soccer	Leasee and transferee of Air League Building, Santa Rosa Park
Sporting groups allocated to use ELS Hall Park	Use of park in accordance with the City of Ryde's fees and charges regulations
<ul style="list-style-type: none"> • Women's soccer • Baseball • AFL • Rugby 	
Sydney Buses	Bus services located just outside of parks
YMCA	Leasee of RSCS

2.3.4 Land Classification

For ease of management, the parks along Shrimptons Creek have been classified as community land in accordance with the *Local Government Act 1993*. Under this Act, the land that makes up community land can be classified as:

- Sportsgrounds
- Parks
- Natural areas (Bushland, Wetland, Escarpment, Watercourse, Foreshore)
- Cultural significance
- General community use

Shrimptons Creek parklands consist of sportsgrounds, parks and general community use classifications. Refer to the Section 3.

2.3.5 Maintenance

Shrimptons Creek parklands are maintained by the City of Ryde. The maintenance of these parks include the following:

- Sports field maintenance for ELS Hall Park and Santa Rosa Park – watering, top dressing, line marking, installation of soccer goalposts, maintenance of baseball diamond; mowing, herbicide application for weed removal, maintenance of turf wicket on upper oval.
- General turf maintenance for all parks – watering, mowing, top dressing, herbicide application for weed removal, trimming.
- Garden bed maintenance for all parks – watering, weeding, fertilising, pruning.
- Green maintenance for all parks – pruning, removal of dead trees.
- Inspection of play equipment for Santa Rosa Park, Flinders Park, Greenwood Park and ELS Hall Park.
- Repairs to and cleaning of built structures for Santa Rosa Park, Flinders Park, ELS Hall Park and Wilga Park.
- Inspection and repairs for all parks to pathways, stairs, handrails, fencing.
- Inspection of Gross Pollutant Trap units along Shrimptons Creek.
- Water quality monitoring of Shrimptons Creek.
- Installation of regulatory signs in all parks.
- Bush regeneration works by contract for Wilga Park, with volunteers in Greenwood Park.
- Preparation of community events for ELS Hall Park.
- Rubbish removal for all parks.

2.3.6 Financial Management

The main income source from the Shrimptons Creek Parklands is from leases with the Scout Association and the Air League (and Saints United Soccer as transferee) in Santa Rosa Park, and the hiring of the

sportsgrounds by AFL, baseball, soccer, oztag, rugby and cricket sporting groups in ELS Hall Park and Santa Rosa Park. The annual revenue raised through these sources is not significant when compared to the maintenance and management costs.

The main costs associated with the management of the Shrimptons Creek Parklands relate to the maintenance of its groups, particularly the sports fields in ELS Hall Park and Santa Rosa Park.

2.4 Use of the Park

2.4.1 Recreational

Shrimptons Creek Parklands is used in both an active and passive recreational capacity (Refer to Appendix A: Shrimptons Creek Parklands Usage).

Active Recreation

ELS Hall Park is an important resource for sporting fields within the central section of the City of Ryde. There are three fields which are used by five fee paying sporting groups (and five codes). The two ovals are utilised by Australian Rules Football and rugby during winter, with cricket using the ovals in summer. The field is used by Women's soccer during winter with a baseball diamond beside this field used during summer. Kent Road Public School uses three grassed netball courts located within the fitness track.

THE RCSC is located within ELS Hall Park and offers active organised sporting opportunities for the community under the management of a private operator.

Santa Rosa Park is used by soccer during winter and cricket during summer. Two fields are used by soccer; a full sized field and a junior sized field. There was an issue previously with organised sport playing at Santa Rosa with no bookings, however this has been alleviated by women's soccer utilising Santa Rosa Park on a Sunday.

Playing organised sport without a booking is an issue that impacts on the quality of the fields because of the amount of use, as it affects the quality of play for the sporting groups who have legitimately booked these grounds, and the general maintenance of the parks.

Passive Recreation

Shrimptons Creek Parkland is used and appreciated by the local residents. The majority of results from the Park User Surveys indicated that people enjoy the treed environment of these parks as it is an escape of sorts from the surrounding urban areas.

These parks are used regularly by local residents for informal exercise such as daily walking exercise, walking the dog, running and cycling. Local residents can access the Macquarie Centre Shopping Centre from as far away as Santa Rosa Park with almost no interaction with vehicular traffic because of the well located shared use pathway.

The pathway is also utilised by commuters to the Macquarie Park business park buildings from bus stops located at Kent Road and Epping Road and by workers who park their car in the residential areas outside of Macquarie Park and walk to work.

Events

ELS Hall Park is the main park along Shrimptons Creek Parklands that is used for events, which are mainly sporting events. In summer the park is used as a venue for 'Cinema in the Park', which is arranged by City of Ryde for the community.

Other potential sites along Shrimptons Creek Parklands that could be suitable for events include Santa Rosa Park and the circular space in Wilga Park.

2.4.2 Access and Circulation

The existing shared use pathway that traverses each of the parks along Shrimptons Creek is the main form of access within and throughout the Parklands. The majority of entry points into the Parklands are via the existing pathway network. (Refer to Appendix B: Shrimptons Creek Parklands Access and Constraints Plans.)

Access within the separate parks themselves is more informal. Worn dirt paths or desire lines, are evident in Santa Rosa Park between Shrimptons Creek and the eastern boundary with an informal crossing of the creek from the low side to the high side noticeable. Flinders Park has minimal informal access because of the size of the park. As Flinders Park is very much a lineal park, the existing cycleway caters for the majority of pedestrian movement.

Two formalised connector paths lead into this park from Patricia Street and Flinders Road. The Flinders Road connector path allows for access to neighbourhood shops located nearby. Tindarra Reserve is similar to Flinders Park in that its size means that the existing cycleway caters for much of the pedestrian movement. However; there is an informal creek crossing which leads to the western extents of Tindarra Reserve and a grassed passageway that links to Ruse Street.

Greenwood Park has informal access along a mown grassed area that extends along its length. Pedestrian movement appears to be minimal in this park as demonstrated by the lack of a worn dirt path within the grassed area acting as a pathway. On the Wilson Street side, there is no path; however one could be considered to provide definition to the park and an edge for bush regeneration works within the park. It would allow for an ease of pedestrian movement along this side of the park. In addition, the path would provide a link between Wilson Street and the existing formal connector path from Leslie Street. There is an informal creek crossing in Greenwood Park at the back of residential housing toward Kent Road.

ELS Hall Park has informal paths, or desire lines, providing linkages from the lower section of park to the mid section and to the shared use pathway. These paths could be rationalised and formalised, which would allow for revegetation works beside them to continue. A future cycleway connection between Kent Road and Scott Street in the future county road corridor has been identified in the City of Ryde Bike Strategy. Connections between the proposed path and the existing should be considered.

Booth Reserve has no informal access areas because of the size of the reserve and the existing shared use pathway traversing the park. Dense vegetation and a steep slope on the eastern side limits access opportunities to RTA owned land beside Epping Road. The existing pathway splits, leading up to and also heading under Epping Road, so no additional access is warranted.

Wilga Park and the Department of Housing land utilise the existing shared use pathway as the main access route. There is evidence of informal access in the larger open areas where they have been used as obvious shortcuts from the existing path. On the business park side of Shrimptons Creek, an informal path has been constructed out of decomposed granite, with native planting to provide access, however the path does not lead to a destination.

Most of the streets surrounding these parks have paths in place that link in with the shared use pathway. There are only a few exceptions, including Wilson Street next to Greenwood Park.

Signage

The existing shared use pathway acts as wayfinding throughout the majority of the reserves because it is usually the most obvious directional route. The only section of the pathway where there is wayfinding confusion is between Flinders Park and Tindarra Reserve as the path ends in a cul-de-sac, using Ford Street as pathway before heading into Tindarra Reserve with the path re-commencing. This confusion could be rectified with directional markings along Ford Street.

Informational signage is lacking, particularly informing where local shops, schools, bus stops and

community nodal points. As this cycleway is used by local residents and commuters alike, this information could be useful.

ELS Hall Park deserves its own information signage to point out facilities and path linkages as the size of this park and the visibility of facilities and features are not always obvious. In particular, the topography does at times provide a physical and visual barrier that isolate areas within the park.

Wilga Park could include signage providing information about access to nearby shops, trains station and educational institutions. The multicultural nature of the City of Ryde should be recognised with the inclusion of pictorial signage within these parks and the signs being designed to international signage standards.

Regulatory signage is located at entry points to each park. This signage incorporates Section 632 of the Local Government Act to allow for enforcement by the City of Ryde park rangers.

People with disabilities

The existing shared use pathway allows for disabled access through Shrimptons Creek Parklands from Santa Rosa Park to Wilga Park. Within the park, as discussed above, access is of a more informal nature. Elements of this informal access could address equal access better, particularly the well used parks, such as ELS Hall Park. Consideration of issues to be addressed regarding disabled access through ELS Hall Park includes:

- Path links to car parks
- Improved path links to major features of the park
- Accessible toilets
- Picnic tables and settings
- Bubblers

Amenity and Safety

Shrimptons Creek Parklands is used extensively by the public because of the shared use pathway, which allows for recreational as well as commuter access. The continued high pedestrian and cyclist activity should make these parks safe and encourage more activity, however; there are a couple of safety 'hot spots' that should be addressed.

Greenwood Park / ELS Hall Park

The vicinity of the bridge beyond the shared use pathway entry into Greenwood Park from Kent Road has been the site of assaults from a few years ago. The sight lines in this part of the park are adequate until the path reaches a corner. The addition of a second access point leading up to the upper level of ELS Hall Park may help to alleviate this safety concern by providing another path option to utilise.

Wilga Park

The Waterloo Road entry of this park leads onto the shared use pathway which in this section is long and straight with one elbow in it. On the western side of this path is a 1.8m high lapped and capped timber boundary fence with three storey apartments backing onto the park. On the eastern side of this path is bushland and Shrimptons Creek. This section of pathway is where numerous assaults have been reported. Thinning the bushland adjacent to the path, particularly the understorey (to approximately 3 metres from the path) to provide clearer sightlines, and providing clearly visible viewing areas over the creek could help to alleviate this safety issue. Lighting of the pathway to a safe pedestrian rating should also be considered. There would be a strong likelihood of pedestrians using this path at night because of the location of this section of path being near the Macquarie Shopping Centre, Macquarie University and

the future train station.

Topography

The steep topography of some of the embankments, within Shrimptons Creek Parklands should be considered, more so in the maintenance of the creek. Assessing the risk involved with works to any section of the creek should occur prior to works commencing.

Overall

Overall, the safety of the shared use pathway will allow for its continued success. The path's convenience to shops, public transport, employment, educational institutions and recreational areas will also allow for its continued success. The following should be considered in the upgrading or general maintenance of this access path:

- Clear sightlines / No hiding spots: Where there are corners or kinks in the path try to provide clear sightlines and lighting.
- Dense bushland vegetation: Vegetation directly adjacent to the paths should be low growing ground covers or grasses with underpruned trees providing clear sightlines.
- Weed control: Dense weed growth in close proximity to paths should be removed in a staged manner and replanted with low growing native species. As a minimum dense weed growth near paths should be pruned to allow for clear sightlines.
- Lighting: The highly trafficked sections of path along Shrimptons Creek Parklands should be lit to an acceptable pedestrian rating. Consideration should be given toward light spillage to allow for safety but to also consider adjoining residents and the wildlife corridor aspect of these parks.
- Surveillance of the path: Current and future development adjacent to the shared use pathway should consider looking over the path and subsequent open space to provide for surveillance and increased security of the path.
- Path design: The number of paths should be limited to avoid too many options for access and escape routes.
- Seating and bins: The location of seats and bins should be closely related to the path and not in isolated areas.
- Maintenance: A high level of maintenance is required to keep areas clean and so encourage continued use of the path.
- Prevention of unauthorised vehicle use: The paths should consider measures to deter motorbikes from being used with measures such as bollards on the path and mounding or ditches beside the path.

2.5 Built Facilities and Park Furniture

Two parks within Shrimptons Creek Parklands have buildings: Santa Rosa Park and ELS Hall Park. Santa Rosa Park has two buildings, both of which are leased. They cater for use by the Scout Association and the Air League with the Air League building also used by the Saints United Soccer Club.

ELS Hall Park has 4 buildings, all of which Council maintains or lease for private management and operation. One building caters for the use by sporting groups on the two ovals: AFL, rugby and cricket. The building closest to the car park is used by the Womens Soccer Association and the baseball association. The RCSC has recently been constructed at ELS Hall Park for active organised sports.

Flinders Park, ELS Hall Park and Wilga Park (the Department of Housing land) has picnic facilities, however; Flinders Park only has two picnic shelters and no picnic settings. The picnic facility in Wilga Park, which is known as 'the hut', is a large shelter with two picnic settings and a barbeque. This shelter is known as a place where anti-social behaviour occurs. ELS Hall Park has one picnic shelter with one setting.

There is park seating in Flinders Park, ELS Hall Park and Wilga, but not necessarily beside the shared use pathway. There is seating in Santa Rosa Park, but only where the existing playground is located. There is a grassed slope in Santa Rosa Park that could be utilised for spectator seating. In ELS Hall Park there are grassed terraces overlooking one of the ovals that is used for spectator seating. The baseball diamond in ELS Hall Park has grandstand style spectator seating. The soccer field has spectator seating to the west of the field. The number of seats is in compliance with the NSW Soccer Association's requirements for spectator number capacity.

Santa Rosa Park has a concrete cricket wicket with marked out soccer fields during the winter months. ELS Hall Park has two turf cricket wickets and baseball diamond, with marked out soccer field, rugby and Australian Rules fields. Playgrounds exist in Santa Rosa Park, on the Quarry Road boundary of this park; in Flinders Park, near Patricia Street; and in ELS Hall Park, where three playgrounds are located. One of these playgrounds is an old swing, however; the other two playgrounds are more extensive with combination units and climbing frames. The majority of the play equipment in all of these playgrounds (apart from one of the playgrounds in ELS Hall Park) are over 15 years old, with some components that are 38 years old, and should be considered for upgrading. Relocating the playground in Santa Rosa Park should be considered as its current position is disconnected to the majority of this park. The playground upgrades for all playgrounds could take into consideration a natural / environment theme to tie in with the character of their locations in the parks. The old swing in ELS Hall Park could be removed.

Other infrastructure within the Shrimptons Creek Parklands includes drainage, with a large number of Gross Pollutant Traps. Much of the land within these parks lies within the overland flow path. Sydney Water has an easement beside Santa Rosa Park, where the shared use pathway is located. In addition, Sydney Water has an easement in Flinders Park. Other infrastructure includes the shared use pathway. Utility connections are provided to the amenity buildings in ELS Hall Park and the Scout Hall and Air League building in Santa Rosa Park. Car parks are located beside the Scout Hall with a large car park near the soccer amenities building in ELS Hall Park.

There are toilets area situated in ELS Hall Park only. The parks that experience the longest attendance because of sporting events are ELS Hall Park and Santa Rosa Park. For this reason, and for the lack of this type of facility to the southern end of Shrimptons Creek Parklands, public toilets should be considered for Santa Rosa Park.

Sporting club canteens are available at ELS Hall Park. Apart from this there are no other refreshment facilities or kiosks within Shrimptons Creek Parklands [and the installation of watering stations along the length of the Parklands should be considered as a high priority.](#)

2.6 Natural Environment

2.6.1 Climate

The City of Ryde is located between two major meteorological stations at Sydney Observatory Hill and Parramatta. Sydney has a more temperate climate than Parramatta. The temperatures are higher in summer and colder in winter in Parramatta. Rainfall and average wind speeds are higher closer to the coast in Sydney compared to Parramatta.

Taking an approximate average of Sydney and Parramatta meteorological data, Shrimptons Creek Parklands would experience:

- Mean daily maximum summer temperature of 27 degrees Celsius.

- Mean daily minimum temperature in winter of 7 to 8 degrees Celsius.
- Mean annual rainfall of approximately 1,100mm.
- Ten to eleven wet days per month.
- Mean wind speed at 9am of 9 to 10 kilometres per hour.

Microclimate

Localised conditions within Shrimptons Creek Parklands occur because of local wind and temperature patterns formed by changes in landforms, orientation of landform and vegetation cover.

Shrimptons Creek influences the microclimate within the parks. The creek helps to reduce temperatures and increase humidity within its vicinity. This should be considered in the selection of vegetation within the close proximity of the creek.

There are open areas within Santa Rosa Park, ELS Hall Park and Wilga Park which could be exposed to strong winds and strong solar aspect. These elements should be considered in the location of items such as shelter, planting and seating, in order to provide a pleasant environment for park users.

2.6.2 Shrimptons Creek

Shrimptons Creek has an urban catchment, which means that the overall health and the concentration of water flow that runs through it is affected by the surrounding landuse in regard to its. Increasing urban densification has meant an increase in impermeable surfaces and therefore stormwater runoff. This has caused localised flooding issues within some of the parks that adjoin Shrimptons Creek such as Santa Rosa Park and ELS Hall Park. The increased stormwater runoff has caused scouring of the creek embankments in places.

Increasing urban growth has also impacted on the water quality of creek, instream obstructions and the amount of weeds found along this waterway.

The water quality of Shrimptons Creek is of poor condition. There is evidence of discolouration, turbidity, aquatic weeds and strong odours within the waterway. There is also evidence of stormwater derived rubbish along the banks and instream areas (2008 Ecological:18). It has also been noted that during heavy rain periods sewerage vents, particularly near Santa Rosa Park and Flinders Park have been known to overflow into the creek (Simms, J. 2008).

The Department of Water and Energy guidelines recommend a Riparian Corridor that is comprised of a Core Riparian Zone and Vegetated Buffer, for the management of creeks. This is based on the Water Management Act 2000 and the Sydney Metropolitan Catchment Management Waterways Health Strategy. For Shrimptons Creek the Core Riparian Zone is between 10 and 20 metres wide depending on the stream order and criteria stated in their guidelines. The upper watercourse of Shrimptons Creek is a First Order stream (determined under the Strahler System). It then becomes a second order stream downstream from the corner of Wilson and Leslie Streets, North Ryde. The Vegetated Buffer width is 10 metres. The Riparian Corridor is measured from the high bank of the watercourse, and denotes one side of the watercourse (2009: Department of Water and Energy). In a number of locations along Shrimptons Creek, adjoining residential development encroaches on the riparian zone of the creek line. These locations include part of Flinders Park, Tindarra Reserve, ELS Hall Park and Booth Reserve.

2.6.3 Topography, Stormwater, Drainage, Geology and Soils

Topography

The topography of the parkland beside Shrimptons Creek is similar to most land beside creek lines. The



Figure 2.8: Shrimptons Creek Catchment

creek embankment is relatively steep, with level ground beyond the embankments that hold any excess overland flow. In Santa Rosa Park, Flinders Park and Tindarra Reserve, the low lying ground near the creek embankments continues into adjoining residential properties. (Refer to Appendix C: Shrimptons Creek Parklands Access and Constraints Plan)

ELS Hall Park is different to the other parks along Shrimptons Creek in relation to its topography because of its size. This large park is split into three levels or 'terraces'. The lowest 'terrace' is where Shrimptons Creek is located. There are some drainage concerns with the playing fields located on the mid 'terrace'. The reason for this is the location of a tributary of Shrimptons Creek and a drainage line leading from the upper terrace through the mid terrace to the lower terrace. This means that stormwater overland flow is evident in all levels of the park, but this overland flow is usually directed down a vegetated zone between the sporting fields. Wilga Park exhibits the most accessible link to Shrimptons Creek, with shallow embankments and sandstone bedrock along the creekline. However; the eastern side of the Creek, located on the side where the business area of Macquarie Park is, has possibly the steepest and highest of the embankments. The circular area of land within Wilga Park near Cottonwood Crescent is gently sloping as it heads toward the creek, however the majority of this space is of an easy grade.

Stormwater and Drainage

The parks located along Shrimptons Creek are part of a sizeable catchment from which stormwater runoff drains. The creek is approximately 3.3 kilometres long and its catchment is approximately 5.5 square kilometres in size (Refer to Figure 2.8: Shrimptons Creek Catchment).

The following is a brief summary of stormwater and drainage components located along Shrimptons Creek:

- Six Gross Pollutant Traps (GPTs) are located along Shrimptons Creek. Four of the six GPTs are located along the stretch of Shrimptons Creek north of Epping Road until Waterloo Road

indicating high concentrations of overland flow.

- 36 stormwater outlets are located along Shrimptons Creek, four of which have netting to capture litter.
- Three pipelines cross Shrimptons Creek.
- There is evidence of stormwater runoff at Santa Rosa Park
- (Ecological 2008:18)

Water flow affects the water quality, human health, property, terrestrial and aquatic habitats. Water travelling overland can carry pollutants, sediments and weeds from roads, gardens and construction sites and ultimately degrade bushland and waterways. Increased velocity of water flows can erode



Photograph 2.25 Storm event in Santa Rosa Park 5.12.2007. Photo is taken looking from Bridge Road.
(source: R. Ganis)



Photograph 2.24 Storm event in Santa Rosa Park 5.12.2007. Photo is taken looking from Bridge Road.
(source: R. Ganis)

embankments, carry sediments and destroy habitats. Pollutants can bind to or remobilise from sediment and suspended solids (Egis Consulting 1999:16)

Until the 1960s, much of the land adjacent to Shrimptons Creek Parklands was market gardens. The impact of increasing residential growth within its catchment has created greater pressures on the health and condition of Shrimptons Creek. Localised flooding is a more common event. The parklands that are located either side of the creek have often remained undeveloped because of drainage reasons. The parks help act as a buffer for the majority of flooding events with some minor exceptions.

High velocity flows and localised flooding are still an issue within these parks with sections of the creek including gabion mattresses where erosion has been a concern. Whilst the use of gabion mattresses is prevalent, other methods of erosion control are preferred as the Department of Water and Energy does not support the use of gabion mattresses to mitigate erosion or bank instability.

Overland flow is extensive at the lower level of ELS Hall Park, where flash flooding is known. A concrete channel and energy dissipaters are evident where a tributary of Shrimptons Creek enters Greenwood Park from a culvert under Kent Road. This design indicates high velocity flows heading toward ELS Hall Park and the main arm of Shrimptons Creek. It is where two tributaries meet the central arm of Shrimptons Creek that concentrated overland flow and flash flooding appears to occur. Whilst the use of concrete channels is prevalent here, other methods of control are preferred by the Department of Water and Energy.

Whilst Wilga Park exhibits the most accessible link to Shrimptons Creek it also appears to have the broadest overland flow zone. The steepness of the slopes between the creek and the business park concentrates overland flow toward the parkland side of Shrimptons Creek. The majority of Department of Housing green space is within the one in one hundred year area of overland flow. Most of Wilga Park lies within the extent of the overland flow zone, apart from the large circular area.

Continued scouring of the creek embankment because of stormwater runoff is the main erosion concern with most of the parks along Shrimptons Creek.

An advantage to the amount of stormwater that flows through Shrimptons Creek Parklands is the possibility of detaining some of this water and reusing it in the irrigation of the park, particularly the playing fields within ELS Hall Park. Treatment of the stormwater will be required; however, the ability to harvest and reuse stormwater will provide the Council with the ability to function in a more environmentally sustainable manner. Overland flow can also be considered beneficial for the hydrological processes of the creek; for the replenishing and conditioning of soils; and for improving and maintaining ecological functions.

Geology and Soils

The City of Ryde is located on the transition from sandstone geology in the east to the low lying clay soils of the west. Shrimptons Creek Parklands are located over two soil landscape groups. Most of the parks along Shrimptons Creek are situated on Wianamatta Group Ashfield Shale and Bringelly Shale bedrock. This shale bedrock forms the dominant material of the upper ridge of Ryde. The main soil type for this soil landscape group is clay and clay loam because of the shale bedrock (Chapman and Murphy: 1989, pp.68-71). However there is a second soil landscape group along Shrimptons Creek starting approximately from ELS Hall Park leading through and beyond Wilga Park before returning to the previous soil group. This second soil landscape group is Mittagong Formation, located between Ashfield Shale and Hawkesbury Sandstone. The main soil type for this soil landscape group is a sandy loam or a sandy clay loam (Chapman and Murphy: 1989, pp.26-29).

2.6.4 Water, Hydrology and Fluvial Geomorphology

Water Quality

The quality of the water along Shrimptons Creek is of an average to poor condition. There is evidence of discolouration, turbidity, aquatic weeds, and strong odours. Rubbish from stormwater is noticeable along the creekline. Shrimptons Creek at Santa Rosa Park was shown to have elevated faecal coliform levels above the recommended guidelines. There was also evidence of elevated levels of nitrogen and phosphorus probably due to urban runoff from an eroded catchment, decomposing organic matter and low dissolved oxygen levels.

Shrimptons Creek's stream health was steadily improving with each sampling period since 2005; however, in Spring 2007 this health dropped and again in Autumn 2008. It is probable that this was caused by severe organic pollution. A slight increase occurred in Spring 2008 placing the overall health of the creek in the moderate category of organic pollution (Sydney Water 2009).

In addition to organic pollution the creek has recorded readings of 0% saturation of dissolved oxygen. These very low levels indicate problems with urban inputs and poor quality urban run-off transported along the whole of Shrimptons Creek. This problem is exasperated during times of low rainfall (Sydney Water 2009).

Hydrology

Flooding potential in the upper Lane Cove River catchment, which Shrimptons Creek leads in to is limited because of the short, steep nature of the catchment. This results in the quick rise and fall of stream height. The hydraulic capacity of the Lane Cove River generally diminishes upstream. Overbank flooding can occur in a 1 in 20 year flood with a 1 in 50 year flood required to produce widespread flooding. Turbidity is also evident when heavy rain occurs (Egis Consulting 1998).

Fluvial Geomorphology

Fluvial geomorphology looks at the geology and nature of water courses. Shrimptons Creek, as an upper reach of the Lane Cove River, has a generally narrow creekline and is fairly straight.

Embankment widths varied from 12.5 metres to 14 metres. Embankment depths varied from three metres to eight metres in height.

There is evidence of bank modification along Shrimptons Creek. Two areas of sandstone and concrete weirs are noted in Santa Rosa Park, Gabion mattresses have been used next to 57 Bridge Road in Flinders Park to reduce erosion. Concrete has been used to modify the bank in Flinders Park, near Lucinda Street, near Kent Road in Tindarra Reserve and in Greenwood Park near Kent Road. Energy dissipaters have been constructed in Greenwood Park near Kent Road where the creek flows out from a concrete culvert. Gabion mattresses have been placed near the Kent Road vehicular entrance to ELS Hall Park and concrete has been used near a stormwater outlet to modify the embankment in the same park (Ecological 2008).

2.6.5 Flora and Fauna

Cultural Planting and Urban Bushland

Urban bushland could be defined as being native vegetation remnants or indigenous plant communities growing in an urban environment. Whilst much of Shrimptons Creek Parklands is classified as natural area, in reality, the majority of the vegetation along Shrimptons Creek and the adjacent parks have been highly disturbed with weed species more prominent (refer to Table 2.4 below for species noted along the Shrimptons Creek corridor).

Table 2.4 Weed Species of Shrimptons Creek

Refer to Ecological 2008 for further weed listing.

BOTANICAL NAME	COMMON NAME
<i>Alternanthera philoxeroides</i>	Alligator Weed
<i>Anredera cordifolia</i>	Madeira Vine
<i>Arundo asparagoides</i>	Bridal Creeper
<i>Canna sp</i>	Canna
<i>Cardiospermum grandiflorum</i>	Balloon Vine
<i>Cestrum parqui</i>	Green Cestrum
<i>Cinnamomum camphora</i>	Camphor Laurel
<i>Egeria densa</i>	Leafy Elodea
<i>Erythrina crista-galli</i>	Cockspur Coral Tree
<i>Erythrina x sykesii</i>	Coal Tree
<i>Ipomoea indica</i>	Morning Glory (purple)
<i>Lantana camara</i>	Lantana
<i>Ligustrum lucidum</i>	Broad-leaf Privet
<i>Ligustru sinense</i>	Narrow-leafed Privet
<i>Myrlophyllum spicatum</i>	Eurasian Water Milfoil
<i>Parietaria judaica</i>	Asthma Weed
<i>Ricinus communis</i>	Castor Oil Plant
<i>Romulea sp.</i>	Onion Grass
<i>Rubrus fruticosus</i> agg. spp.	Blackberry
<i>Sagittaria montevidensis</i>	Arrowhead
<i>Salix babylonica</i>	Willow
<i>Senna pendula</i>	Senna
<i>Tradescantia fluminensis</i>	Tradescantia
<i>Zantedeschia aethiopica</i>	Arum Lily

Endangered Ecological Communities

Amongst the weed growth, there are some good stands of remnant plant communities situated within Shrimptons Creek Parklands. In fact recent vegetation surveys suggest that historically the City of Ryde area was heavily timbered with ‘*Turpentine-Ironbark Woodland*’ (now known as *Sydney Turpentine Ironbark Forest*) (Biosphere Consultants 2009:3)

Oculus Vegetation Survey (1999)

Previous classification from a 1999 vegetation survey identified three endangered ecological communities along Shrimptons Creek. These communities were *Blue Gum High Forest*, *Sydney Turpentine Ironbark Forest* and *Sydney Sandstone Gully Forest*.

The methodology utilised for this vegetation survey was through identification of plant communities from 1:10,000 aerial photographs.

Biosphere Consultants Survey (2008)

The vegetation communities within the City of Ryde area have recently been revised with a series of biodiversity surveys. The aim of these surveys was to provide quick baseline information regarding the existing status of flora and fauna within Council’s reserves.

The flora study component entailed a general survey of plant species within each reserve; and a quadrat based survey of particular bushland areas in each reserve (where there was sufficient vegetation cover) using the seven stage Braun-Blanquet techniques.

The vegetation communities along Shrimptons Creek have been revised from three to one plant community. This plant community is *Sydney Turpentine Ironbark Forest* and includes as part of its listing *Sydney Turpentine Ironbark Margin Forest*.

The following table details the vegetation communities listed in each reserve along Shrimptons Creek.

Table 2.5 Vegetation Classification of Shrimptons Creek Parklands

RESERVE	PREVIOUS CLASSIFICATION (Oculus, 1999)	VEGETATION CLASSIFICATION (Biosphere Environmental Consultants, 2008)	ADDITIONAL COMMENTS (Biosphere Environmental Consultants, 2008)
Booth Reserve	<i>Turpentine Ironbark Forest+</i>	Other vegetation	All understorey shrubs have been planted. Canopy contains open forest of shale species most likely STIFM community in the past. Overgrown with weeds.
ELS Hall Park	<i>Blue Gum High Forest+</i>	<i>Sydney Turpentine Ironbark Margin Forest+</i> (STIFM); Other Vegetation	Mostly landscaped around playing fields. Quadrat erected in northern section of park in forest dominated by Blackbutt (<i>Eucalyptus pilularis</i>) and Turpentine (<i>Syncarpia glomifera</i>). Vegetation and geology matched requirements for TIMF
Flinders Reserve	<i>Blue Gum High Forest+</i> ; Other Vegetation	Other vegetation	Reserve completely cleared of remnant trees and is landscaped. Most weeds associated with creek line.
Greenwood Park	<i>Blue Gum High Forest+</i> ; Other Vegetation	Other Vegetation; possibly <i>Sydney Turpentine Ironbark Forest+</i> (STIF) remnant.	Remnant Turpentines (<i>S. glomifera</i>) and Blue Gums (<i>E. saligna</i>) at extreme southern end with bushcare site restoring creek vegetation behind houses near Kent Road.
Santa Rosa Park	Other vegetation	Not surveyed	Not surveyed
Tindarra Reserve	Other vegetation	Other vegetation	Remnant Blue Gum (<i>E. saligna</i>) at entry, rest of park planted with shale loving plants. Weeds evident. Native garden from adjoining resident includes Western Australian species

RESERVE	PREVIOUS CLASSIFICATION (Oculus, 1999)	VEGETATION CLASSIFICATION (Biosphere Environmental Consultants, 2008)	ADDITIONAL COMMENTS (Biosphere Environmental Consultants, 2008)
Wilga Park	Sydney Sandstone Gully Forest; Other Vegetation	Sydney Turpentine Ironbark Margin Forest+ (STIMF)	Most of native vegetation has been planted and is weed infested but there is a decent area of natural bushland at the Waterloo Road end and an area near Peach Tree Road containing a remnant Sydney Blue Gum (<i>E. saligna</i>) and Rough-barked Apple (<i>Angophora floribunda</i>)

Refer to Appendix D for plant species list typical of Sydney Turpentine Ironbark Forest and for individual plant species lists for each park surveyed.

Biosphere Consultants have provided comment on the possibility of bushland intensification along the Shrimptons Creek corridor. ‘Unfortunately, the corridor is very narrow in places and badly disjointed due to open spaces along its length. Shrimptons Creek is also a badly disturbed watercourse and needs water remediation measures applied to it to improve the water quality of the creek. This may be best achieved by the construction of small off-line macrophyte basins at the point where each major drain discharges into the creek corridor. The tree canopy needs to be made much more continuous and this will require sympathetic street planting in places where there are gaps in the tree line (especially south of ELS Hall Park Reserve to Tindarra and Flinders Parks). Similarly, native shrub planting along the banks is also required to provide cover and to prevent reinfestation by exotic weeds.’ (Biosphere Consultants 2009:15)

Cultural Planting

Cultural planting could be defined as planted material that has not grown via revegetation. There are some parks along Shrimptons Creek where cultural planting has occurred, these being mainly:

- Flinders Park (native plantings, probably from the late 1980s on).
- Tindarra Reserve (native planting by adjacent private landholder – mid 2000s).
- Greenwood Park (native planting evident).
- ELS Hall Park (exotic tree species for shade with some native trees planted, probably from the mid 1980s on).
- Wilga Park (native plantings, with Brush Box (*Lophostemon conferta*) street tree planting along Cottonwood Crescent, probably from early 1990s on).

It should be noted that there appears to be no remnant vegetation from the period of market gardens in the North Ryde and Marsfield area. For example historic photos show an area of Santa Rosa Park being used as a market garden.

The majority of vegetation along Shrimptons Creek Parklands is viewed by the public as native. Pursuing this native character in the attempt to revegetate along the creek lines remnant plant community types is and should remain the dominant vegetation theme within all of Shrimptons Creeks’ parks.

Fauna

The recent Flora and Fauna Study conducted by Biosphere Consultants has provided a comprehensive list of fauna observed in each park along Shrimptons Creek with the exception of Santa Rosa Park where no flora or fauna surveys occurred.

Appendix D contains detailed lists of fauna observed in Shrimptons Creek Parklands. The main native and exotic fauna observed within Shrimptons Creek Parklands are birds. There are very few native terrestrial mammals in any of these parks. ELS Hall Park, which noted the most number of terrestrial mammals listed four species: Brush-tail possum; Ring-tail possum; domestic house mouse; and the Grey-headed Flying Fox.

There is aquatic life in the creek itself, but consists mainly of Plague Minnow (*Gambusia holbrooki*) and Short-finned Eel (*Anguilla australis*).

Booth Reserve, ELS Hall Park, Greenwood Park, Flinders Park and Tindarra Reserve have been identified as a possible tertiary conservation area in Biosphere Consultant's 2008 Flora and Fauna Study. Tertiary Conservation Areas are bushland which has been degraded yet still retain elements of the original flora and fauna. This provides an opportunity for a conservation role of some sort (Biosphere Consultants 2009:4).

2.6.6 Visual Assessment

Sight lines are an important element to the safety of a park. With the parks along Shrimptons Creek, clear sight lines vary.

Apart from the entrance from Quarry Road, Santa Rosa Park has a large open space that has clear visibility of almost the entire park. In some ways this is slightly stark and could be softened with vegetation and or some seating or picnic facilities placed in a manner that keeps the appearance of this park as a cohesive whole. Flinders Park from Bridge Road starts as a relatively open area, then narrows down to a more intimate space because of the enclosing nature of the increasing tree canopy. This canopy opens up again when leaving Flinders Park to walk along Ford Street.

The gently sloping nature of Tindarra Reserve from Ford Street means clear sight lines are evident, especially with the minimal tree canopy. This open space narrows to an enclosed one when moving north along the shared use pathway toward Kent Road. Views of the creekline are compromised by dense vegetation. There is no clear view of the opposite side of Shrimptons Creek in this reserve.

Greenwood Park as a pleasantly canopied space has clear sight lines due to the width of grass area, which acts as an informal pathway. Minimal undergrowth and the gentle fall of the land toward the north and the bridge crossing, adds to the open visibility initially. Once the shared use pathway turns a sharp corner visibility is restricted.

There are some great views over ELS Hall Park from the land proposed for county road, due to the topography, which has meant steep slopes formed when the two ovals were established. ELS Hall Park has three tiers; the proposed county road land, the playing fields and Shrimptons Creek. The connection between the playing fields and the creek is not as strong as between the former RTA land and the fields due mainly to the dense vegetation that has grown alongside the creek.

Booth Reserve has no visual connection to the creek as dense vegetation has obscured this view.

Wilga Park and the Department of Housing land as previously been discussed in this document, has some safety issues related to poor sightlines. This is particularly due to dense vegetation growing adjacent to the mixed used cycleway. Ensuring low growing native plants are grown beside the path and that trees are underpruned to over three metres from ground level would help to alleviate this concern with sight lines in this park.



Photograph 2.26 1912 Photo of Buckingham Falls, Shrimptons Creek. Buckingham Falls is located within Lane Cove National Park.

(Photo by Rex Hazlewood)



Photograph 2.27 1928 Photo of Buckingham Falls, Shrimptons Creek, in flood

2.7 History of Shrimptons Creek Parklands

Please note, the following is not a definitive account of the history of Shrimpton Creek Parklands. For further information please refer to Council's website or local history library.

2.7.1 Indigenous History

Aboriginal people lived for thousands of years in what is now known as the City of Ryde. The Wallumedegal were the traditional custodians who resided in this area. The name is derived from the snapper fish or wallumal and combined with the word for place, or matta. The name was used to describe a place with the people of the Wallumedegal clan coming from the 'snapper clan' with the fish used as their totem.

The extent of Wallumedegal land went along the north bank of the Parramatta River from the Lane Cove River (or Turrumburra) in the east to Parramatta (or Burrumatta) at the head of the river in the west.

In 1788 when European settlement began, the Wallumedegal quickly encountered foreigners, particularly foreigners in boats. This was because the Parramatta River became the main transport route between Sydney and Parramatta.

Significant Aboriginal people associated with Ryde

The most significant and enduring symbol of the Aboriginal presence in the City of Ryde is the grave of Woollarawarre Bennelong and Nanbarry, two key figures in the history of early Sydney. Bennelong, who came from the Wangal clan located on the southern side of the Parramatta River, was captured in late 1789 on the orders of Governor Arthur Phillip. Bennelong escaped after six months, but returned peacefully to the settlement of Sydney. Phillip built him a brick hut at Tubowgulye, now Bennelong Point (where the Sydney Opera House is sited) and took him to England two years later.

Bennelong died in 1813 and was buried in Kissing Point, near the Parramatta River, in an orchard on the grounds of James Squire, the first brewer in Sydney.

Nanbarry, was the nephew of Colebee, a Cadigal clan elder. The Cadigal clan were on the southern side of the Parramatta River in the Balmain area. He died in 1821 and was buried at his request with Bennelong and his last wife, overlooking the Parramatta River.

Bidgee Bidgee was the most prominent leader in the district and was made 'Chief of Kissing Point' in 1816 by Governor Lachlan Macquarie, who also gave Bidgee Bidgee a brass breastplate and a fishing boat. The name Bidgee Bidgee means river flat.

Bundle was another key figure of the area who was well known for tracking robbers for James Squire when Squire was district constable (1804).

Bennelong, Nanbarry, Bidgee Bidgee and Bundle went on long sea voyages in English sailing ships, but they spent their last years at Kissing Point.

2.7.2 Non-Indigenous History

North Ryde and Marsfield

North Ryde was established as part of an area known as 'Field of Mars' until the late nineteenth century. Field of Mars was a series of land grants given by Governor Philip to soldiers, hence the name 'Mars' after the Roman God of war. The name Ryde was derived from the Isle of Wight and named after the birthplace of the wife of the vicar of St. Anne's and also Kissing Point's first postmaster.

Until the mid 1950 much of North Ryde and Marsfield was still market gardens and poultry farms with migrant families working the land. By the 1970s most of these market gardens had been abandoned,

waiting for development. The reminders of this period can be seen with the naming of local streets after families that lived and worked on land in this area (Cotter, K. 2008).

A section of North Ryde was renamed Macquarie Park (after Governor Lachlan Macquarie 1762-1824) and developed as an employment area in the mid 1960s as a high-tech industrial area, with the rezoning of the 'Green Belt' of the 1958 Cumberland Planning Scheme. Macquarie University began developing at the same time on adjacent land. It was proposed that the industrial land would have an interaction with the University in the type of industries located here, based on a model for Stanford University in California. (City of Ryde 2008)

Companies such as AWA Limited, Beiersdorf, Racal and Universal Press located their corporate headquarters to North Ryde during the 1970s. The Macquarie Park Corridor, as it has been named, is currently that of the leading high-tech industrial area of Australia, attracting scientific, electronic, computing, medical communication and pharmaceutical companies (City of Ryde 2008).

Macquarie Centre was built in the 1981 as a regional shopping centre. It is located over a section of Shrimptons Creek, which is the only part of the central arm of the Creek that isn't daylighted (visible).

Shrimptons Creek

Shrimptons Creek was named after Robert Shrimpton, an early settler to the North Ryde area. The lands surrounding Shrimptons Creek were cleared in the early 1800s to provide farmland and market gardens, which helped to the area to gain a reputation as a centre of produce for Sydney. The Creek supplied water to places such as Smalls Homestead, one of the most prominent farms in Ryde in the 1820s.

Elements of Shrimptons Creek worth noting even up until recent times, were the clarity of the waters. Oral history from a resident living on Zola Avenue tells of his sons swimming and yabbing in Shrimptons Creek at Santa Rosa Park (Simms, J. 2008).

Buckingham Falls in Lane Cove National Park are considered to be a landmark along Shrimptons Creek, which local residents refer to and used to visit frequently as a picnic spot and occasionally to swim in (prior to the construction of the M2 Motorway) (Conversation with resident 2008; Redding1986:13). When there was heavy rainfall, Buckingham Falls were at their best. The falls have formed due to a drop in the sandstone bedrock. This bedrock appears to be quite extensive as it is evident along the northern reaches of Shrimptons Creek as it nears the Lane Cove River. Bedrock can be seen at Wilga Park and at 88 Talavera Road.

Shrimptons Creek Parklands

The history of the reserves either side of Shrimptons Creek is not obvious. Records indicate that the majority of these reserves were in existence prior to the Geographical Naming Board being established. No definite reasoning behind the naming of the reserves has been found, apart from ELS Hall Park, which was named after Alderman ELS Hall and Booth Reserve, which was named after Alderman Booth.

2.8 Landscape Character

The dominant style within Shrimptons Creek Parklands is a bushland character directly related to the proximity of Shrimptons Creek. The Creek in these locations has helped to define these parks and also the ambiance of these places.

The linked nature of these parks provides a corridor, which as noted by residents when surveyed, provides a green 'escape' from the surrounding urban environment.

There are no heritage elements within these parks.

Elements within these parks that have been identified as part of its landscape character include:

- Shrimptons Creek and its tributaries, which provide links to upper park areas

- Native tree canopy and bushland
- Natural environment, undeveloped and peaceful open space
- Wildlife such as ducks and birds
- Sports facilities in ELS Hall Park including exercise equipment
- Child friendly with facilities for familie
- An overall enhancement to the surrounding area.

The major elements within Shrimptons Creek Parklands that would continue to provide its natural character are: improving the bushland, attracting wildlife, and encouraging continued appreciation and awareness of the natural elements along this green corridor. The other major focus within Shrimptons Creek Parklands is ensuring that the parklands remain child friendly with community sports facilities focused at ELS Hall Park and Santa Rosa Park and other play opportunities along this corridor, where appropriate. These elements and ideals should interact with each other.

3 PLANNING AND MANAGEMENT CONTEXT

The following section details the various Acts and legislation that need to be taken into account for the management of Shrimptons Creek Parklands and the development of this Plan of Management.

There are two types of land ownership that come under council care, control and management. These are land owned by Council (operational land and community land) and land owned by the State/Federal Governments (Crown land, public roads, commons and land subject to the *Trustees of Schools of Arts Enabling Act 1902*).

All public land owned or under the care, control and management of council is defined as public land. All public land has to be registered and classified as either operational or community land.

Operational land tends to have no special restrictions on how council manages, develops or disposes of that land. Community land cannot be sold or otherwise disposed of by council, with restrictions placed on community land use and on grants of leases and licences (Farrier et al 1999:157). Shrimptons Creek Parklands is classified as community land.

3.1 State and Federal Legislation applying to Shrimptons Creek Parklands

3.1.1 Environment Protection Biodiversity and Conservation Act 1999 (Commonwealth Legislation)

The *Environment Protection Biodiversity and Conservation Act 1999* is federal legislation that provides the national framework for protection of the environment, particularly nationally significant environments and promotes ecologically sustainable development. This Act also promotes the conservation of biodiversity, provides for the protection and conservation of heritage and encourages a co-operative approach toward the management of environments.

The section of this Act that is of relevance for this Plan of Management as it relates to the protection of native species, particularly threatened species and the protection of ecological communities. Section 18(5) and Section 18(6) under Subdivision C of Chapter 2, Part 3, Division 1 of this Act states that a person must not take action that will have a negative impact on a listed threatened ecological community included in the critically endangered or endangered community categories. The Act provides for:

- identification of key threatening processes.
- protection of critical habitat.
- preparation of management plans.
- issuing of conservation orders and regulation of wildlife import / export.

Shrimptons Creek Parklands has two areas of *Sydney Turpentine Ironbark Forest*, an ecologically endangered plant community. Under this Act the size of ecologically endangered communities should be greater than one hectare to comply. In this case, both are less than one hectare in size, therefore this Act does not apply.

3.1.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979 (EPA Act)* establishes the statutory planning framework for environmental and land use planning in NSW through State Environmental Planning Policies (SEPPs), Regional Environmental Plans (REPs) and Local Environmental Plans (LEPs). The

EPA Act also sets out processes for approving development applications for structures and works on public and private land as set out in the Ryde Local Environmental Plan.

3.1.3 State Environmental Planning Policy 19 - Bushland in Urban Areas (SEPP19)

The *State Environmental Planning Policy 19* aims to protect and preserve bushland within urban areas because of its value:

- to the community
- as natural heritage
- aesthetically
- recreationally
- educationally
- as a scientific resource

Under this SEPP a Plan of Management can be prepared if council considers more detailed provisions for protecting and preserving bushland is required. Proposed development on land adjoining bushland zoned or reserved for public open space purposes should take into consideration possible impacts to this adjoining land.

Shrimptons Creek Parklands contains bushland that is remnant and also revegetated. ELS Hall Park has a stand of remnant *Sydney Turpentine Ironbark Margin Forest*. The Department of Housing land that adjoins Wilga Park also has a good stand of *Sydney Turpentine Ironbark Margin Forest*, which extends along its Epping Road boundary.

3.1.4 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* repealed State Environmental Planning Policy No. 56 – Sydney Harbour Foreshores and Tributaries (SEPP 56) and Sydney Regional Environmental Plan No. 23 – Sydney and Middle Harbours (SREP 23) in September 2005. The SREP (Sydney Harbour Catchment) consolidates the provisions of SEPP 56 and SREP 23. The Development Control Plan for Sydney Harbour Foreshores and Waterways accompanies the SREP (Sydney Harbour Catchment).

This Environmental Plan includes part of the Lane Cove River catchment, however; this does not extend as far upstream as where Shrimptons Creek is located. So this Environmental Plan does not apply.

3.1.5 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* aims to protect, restore and enhance the quality of the environment having regard for the need to maintain ecologically sustainable development. This Act is environmental legislation that is the most significant of those administered by the Department of Environment and Climate Change. This Act enables specific protection of the environment policies to be formed with measures to reduce pollution and other impacts on the environment. The Act includes a single licensing arrangement relating to water pollution, noise pollution and waste management.

The Environmental Protection Authority is the regulatory authority to be consulted for activities listed in Schedule 1 of this Act. Local councils are the authority to be consulted for most non-scheduled activities. There is a duty to notify the regulating authority such as the EPA or local council of any pollution incidents where there is potential harm to the environment is caused or threatened.

3.1.6 Water Management Act 2000

The *Water Management Act 2000* is legislation that aims to protect and enhance the quality of water in water courses and sources within New South Wales. This Act provides guidelines for inclusions in management plans for water management areas or water sources. These guidelines include provisions for the protection and enhancement of the quality of water; water monitoring and reporting requirements; the conditions to which access licences and approvals are to be subject.

The *River and Foreshores Improvements Act 1948*, which was repealed in 2008, has been replaced with *Water Management Amendment (Controlled Activities) Regulation 2008*, which are the controlled activity provisions under the *Water Management Act 2000*. This consolidates these two Acts into one, strengthening the environmental protection and controls over waterfront works. Controlled Activity approval is required under the *Water Management Act 2000* for works carried out on waterfront land. Waterfront land is measured as 40 metres from the high bank of the watercourse, and also includes the watercourse. A river is:

- “any watercourse, whether perennial or intermittent and whether comprising a natural channel or a natural channel artificially improved and
- “anything declared by the regulations to be a river”

(Water Management Act 2000)

Under the Act, controlled activity includes the construction of any building or infrastructure work within the definition of the EPA Act; removal of material or vegetation from land; deposition of material; and carrying out of any other activity that affects the quantity or flow of water in a water source. The Department of Water and Energy are required to assess the impacts of any proposed works to the waterfront. There are some exemptions to controlled activities for some public authorities, including council for works along waterfronts, however; the Department of Water and Energy, who enforces this Act, should be consulted prior to any works commencing.

Riparian Corridors are to be considered when carrying out controlled activity works along a watercourse. Riparian areas are a transition from terrestrial to aquatic land and are important for the protection of a watercourse as they perform important environmental functions. Guidelines produced by the Department of Water and Energy indicate what the Riparian Corridor width should be. The Riparian Corridor width is comprised of the Core Riparian Zone and a Vegetated Buffer. The Riparian Corridor width is measured from the high bank of the watercourse and denotes one side of the watercourse. With Shrimptons Creek the Riparian Corridor width is 20 to 30 metres (10 metres Core Riparian Zone for the upper watercourse; 20 metres Core Riparian Zone downstream from corner of Wilson and Leslie Streets, North Ryde; and 10 metres Vegetation Buffer). A Vegetation Management Plan may be required to be completed as part of an application for controlled activity approval works within 40m of a river, lake or estuary.

Shrimptons Creek has been identified as a watercourse as per the *Water Management Act 2000*. Consequently, the principles and objectives of the Act apply.

3.1.7 National Parks and Wildlife Act 1974

The National Parks and Wildlife Act defines an Aboriginal object as “*any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*” Aboriginal objects include physical objects (stone tools, scarred trees), material deposited on the land such as middens, and the ancestral remains of Aboriginal people. An Aboriginal Place is one declared by the Minister in the belief that the place is or was of special significance to Aboriginal culture.

Section 86 of the National Parks and Wildlife Act makes it an offence to damage, deface, destroy, disturb,

or collect any Aboriginal object or evidence site without the approval of the Director of the Office of Environment and Heritage. However, this offence only applies if the action was “knowingly” undertaken by the offender [no longer true - see below] . Section 90 enables a person to seek an authorisation to impact, destroy or remove an Aboriginal object by applying for a Heritage Impact permit from the Director of the Office of Environment and Heritage. The Director may issue such permits with conditions and restrictions, and sets up appeal and deemed refusal provisions for this permit process .

The Office of Environment and Heritage’s amendments to the National Parks and Wildlife Act adopted in October 2010 require people to consider Aboriginal heritage in the course of activities such as development. These laws articulate that an onus of responsibility is being placed on developers and those doing activities that could ‘harm’ Aboriginal objects to carry out suitable assessment and this includes Council activities, whether it be major works or regular maintenance.

3.1.8 Threatened Species Conservation Act 1995

The objectives of the *Threatened Species Conservation Act 1995* are to conserve threatened species, populations and ecological communities of animals and plants. The Act includes measures to conserve biological diversity and promote ecologically sustainable development. These measures include Recovery Plans, Threat Abatement Plans, Threatened Species Priorities Action Statements and Species Impact Statements. These measures aim to prevent the extinction of and encourage the recovery of threatened species, populations and ecological communities by protecting their critical habitats. It also aims to eliminate or manage threats to the survival or evolutionary development of these species, populations and ecological communities.

A Scientific Committee is formed under this Act to identify threatened species, populations, ecological communities and vulnerable species. They also identify key threats to the survival of these species, populations and communities, and ways to manage these threats.

The Act includes amendments to other Acts such as in the Environmental Planning and Assessment Act 1979 with the requirement of a Species Impact Statement for any action proposed where a threatened species, population or ecological community is located. The Act includes amendments to the National Parks and Wildlife Act 1974 with additional offences and coverage of interim protection orders for the conservation of threatened species, populations and ecological communities.

Threat Abatement Plans are prepared under this Act to identify key threatening processes in order to manage them. These plans include procedures for public authorities to follow for implementation. Consent and determining authorities are to take the terms of threat abatement plans into account when considering development applications in accordance with the *Environmental Planning and Assessment Act 1979*.

Part 2A of the Act includes Biodiversity Banking and Offset Scheme measures.

Shrimptons Creek has one ecological endangered community of *Sydney Turpentine Ironbark Forest*. A slightly different plant community: *Sydney Turpentine Ironbark Margin Forest* is considered to be the same listing as *Sydney Turpentine Ironbark Forest*. There are no threatened species identified to date, along Shrimptons Creek.

3.1.9 Noxious Weeds Act 1993

The *Noxious Weeds Act 1993* is the legislative mechanism to reduce the impact of weeds on the environment, the economy and the community. The Act establishes measures to prevent and restrict the spread of significant weeds. The control classes set up under this Act are part of these measures. Five classes have been established with legal requirements by control authorities for each species of weed declared as noxious within each local government area.

Local councils as the local control authority are required to administer this Act. The manner of

administering this Act includes:

- Responsibility for the control of weeds on private and publicly owned land including roads and watercourses.
- Develop, implement, co-ordinate and review noxious weed control policies and programs.
- Inspect land in connection with its noxious weed control functions.
- Co-operate with other councils adjoining to control noxious weeds.

A recent assessment of Shrimptons Creek by the consultants Ecological identified four out of the five classes of weeds along Shrimptons Creek. The four classes found were as follows:

- Class 1 – The plant must be eradicated from the land and the land must be kept free of the plant.
- Class 3 – The plant must be fully and continuously suppressed and destroyed.
- Class 4 – The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed.
- Class 5 – The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with.

3.1.10 Rural Fires Act 1997

The *Rural Fires Act 1997* is carried out by the Rural Fire Service and supersedes the *Bush Fires Act 1949*. The aim of the Act is to provide for the prevention, mitigation and suppression of bush and other fires in local government areas and rural fire districts. The Act also includes an aim of co-ordinating bush fire fighting and prevention, protection of persons from injury and death and property from damage due to fires. Under this Act there is a continuous chain of command from the Commission to the firefighter within the NSW Rural Fire Service. There is also an emphasis on having regard to the principles of ecologically sustainable development when carrying out fire fighting and prevention activities included in this Act.

Shrimptons Creek Parklands has no fire protection zones, so this Act does not apply.

3.1.11 Companion Animals Act 1998

The *Companion Animals Act 1998* aims to promote responsible animal ownership in NSW. Under the Act, dogs in public places must be on a lead under the effective control of a competent person, except in a declared off-leash area. Dogs are prohibited within 10 metres of children's play areas, food preparation / consumption areas, and recreation areas where dogs are prohibited by the local authority. If a dog defecates in a public place, the dog owner must remove and dispose of it in a rubbish receptacle.

The parks within the Shrimptons Creek Parklands are very popular locations for recreation with dogs and following a trail of off lease areas in 2010/11, ELS Hall Park has been resolved as a permendant off leash area.

All provision for dog exercise areas should be planned and managed in accordance with the City of Ryde's Companion Animals Management Plan and to meet the needs of the Ryde Community.

3.1.12 Heritage Act 1977

The *NSW Heritage Act 1977* aims to conserve the environmental heritage of NSW. Proposed changes affecting sites on the State Heritage Register, and the management of archaeological and maritime archaeological sites, are covered by this Act. The Heritage Act also applies in managing excavation that

may affect archaeological relics.

Shrimptons Creek Parklands is not listed on the State Heritage Register and does not have any heritage listed items.

3.1.13 Disability Discrimination Act 1992

The *Disability Discrimination Act 1992* is a Commonwealth Act that aims to eliminate, as far as possible, discrimination against people with disabilities in many areas, including access to premises. The Act also aims to promote recognition and acceptance in the community that people with disabilities have the same fundamental rights as the rest of the community.

The Act covers a range of areas including sport and recreation, and access to premises. The Act requires that people be able to access any building which the public is entitled to enter or use through the primary entrance used by the general public. It further requires that people should have access to any services and facilities provided in those buildings.

The *NSW Anti-Discrimination Act 1997* also makes it unlawful to discriminate on the ground of disability.

Shrimptons Creek Parklands has a well utilised shared use pathway that also caters for disabled access from Santa Rosa Park to Macquarie Shopping Centre. With access within parks, such as ELS Hall Park, disabled access should be provided wherever possible as it is required by law, however this park and its buildings were established prior to this Act.

3.2 State Government Policies and Initiatives

Park management sits within the context of the State Government of New South Wales strategic direction, some of which are outlined in the following documents.

3.2.1 Sydney Metropolitan Catchment Management Waterways Health Strategy

The Waterways Health Strategy has been developed into a program to assess the current condition of all rivers and small streams in the Sydney basin with the aim of restoration or protection. Priority is given in restoring or protecting reaches that:

- Have a high or very high recovery potential to an ancestral geomorphic type.
- Require physical protection to ensure maintenance of the existing type in good geomorphic condition.
- Require physical action now to stabilise or reserve a degrading condition.

Shrimptons Creek lies within the Sydney basin, so is one of the creeks assessed under this strategy.

3.2.2 Sydney Metropolitan Regional Recreational Trails Framework

This document investigates the existing and proposed trail networks that exist within the Sydney Metropolitan Region. It provides:

- 'key strategic links, missing connections'
- 'opportunities for a network of regional recreation trails across the Sydney Region;'
- 'opportunities and priorities for future State Government funding'
- opportunities to 'reinforce local government and State agency partnerships'
- 'a variety of trail experiences including journeys connecting through greenspaces and urban areas and to regional public transport interchanges,'

- ‘opportunities to connect regional trails with major urban centres and connections to regional transport interchanges’. (Hassell 2005:1,12)

There are no trails indicated along Shrimptons Creek and the adjoining parkland in the Sydney Metropolitan Regional Recreational Trails Framework document. The Great North Walk is located within Lane Cove National Park with a proposed Parramatta to the Great North Walk trail link following Terrys Creek and the boundary between City of Ryde and Hornsby Shire Council. The Great North Walk is a north – south trail that extends from the Parramatta River north to Newcastle.

3.3 Local Government Act 1993

All land that is owned by Council is governed under the *Local Government Act 1993*, that specifies that all lands under Council ownership must be classified as either Operational or Community Lands. The *Local Government Act 1993* as amended 1998 requires the following to be completed in the preparation of a Plan of Management for Community Land:

- Determination of the categorisation of ‘community land’ based on its use and/or other ecological and heritage significance criteria.
- Provide a description of the ‘condition of the land’ and any buildings or improvements proposed for the land.
- Provide a description of the use of the land and any such buildings or improvements, at the date of the adoption of the plan of management.
- Specify the purposes for which the land, and any buildings and improvements will be, permitted to be used together with a description of the scale and intensity of such permitted use or development.
- Address and meet the ‘core’ objectives for each appropriate land category.
- Provide expresses conditions to ensure that the terms of all leases or licences issued will be consistent with the core objectives for the particular land category in which they occur.
- Include performance targets.
- Include actions to achieve objectives and satisfy performance targets.
- Include a means of assessing the success or otherwise of plan implementation.

Land Categorisation

The purpose of the categorisation of Community Land is to provide the parameters for the planning and management of the land including the permissible uses for the land. Under Section 36 of the *Local Government Act 1993*, Community Land is to be categorised as one or more of the following:

- Natural Area
- Sportsground
- Park
- An area of Cultural Significance
- General Community Use.

For all Land that is categorised as a Natural Area, further categorisation as one or more of the following is required:

- Bushland
- Wetland
- Escarpment
- Watercourse
- Foreshore
- A category prescribed by the regulations.

The process for the preparation of a Plan of Management for Community Land is also prescribed in this Act. Section 38 defines the requirements for the public exhibition of a draft Plan of Management, Section 40 and 41 outlines the process for adoption and making amendments respectively.

Table 3.1 Land Categorisation Core Objectives

LAND CLASSIFICATION	CORE OBJECTIVES FOR MANAGEMENT OF LAND CLASSIFICATION
A) natural areas Land that is categorised as a natural area is to be further categorised as one or more of the following:	36E (refer to section 5.2.2.iii – Action Plan) (a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and (b) to maintain the land, or that feature or habitat, in its (c) natural state and setting, and (d) to provide for the restoration and regeneration of the land, and (e) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and (f) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the <i>Threatened Species Conservation Act 1995</i> or the <i>Fisheries Management Act 1994</i> .
Bushland	36J (refer to section 5.2.2.iii – Action Plan) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the land, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion, and to restore degraded bushland, and to protect existing landforms such as natural drainage lines, watercourses and foreshores, and to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term, and to protect bushland as a natural stabiliser of the soil surface.

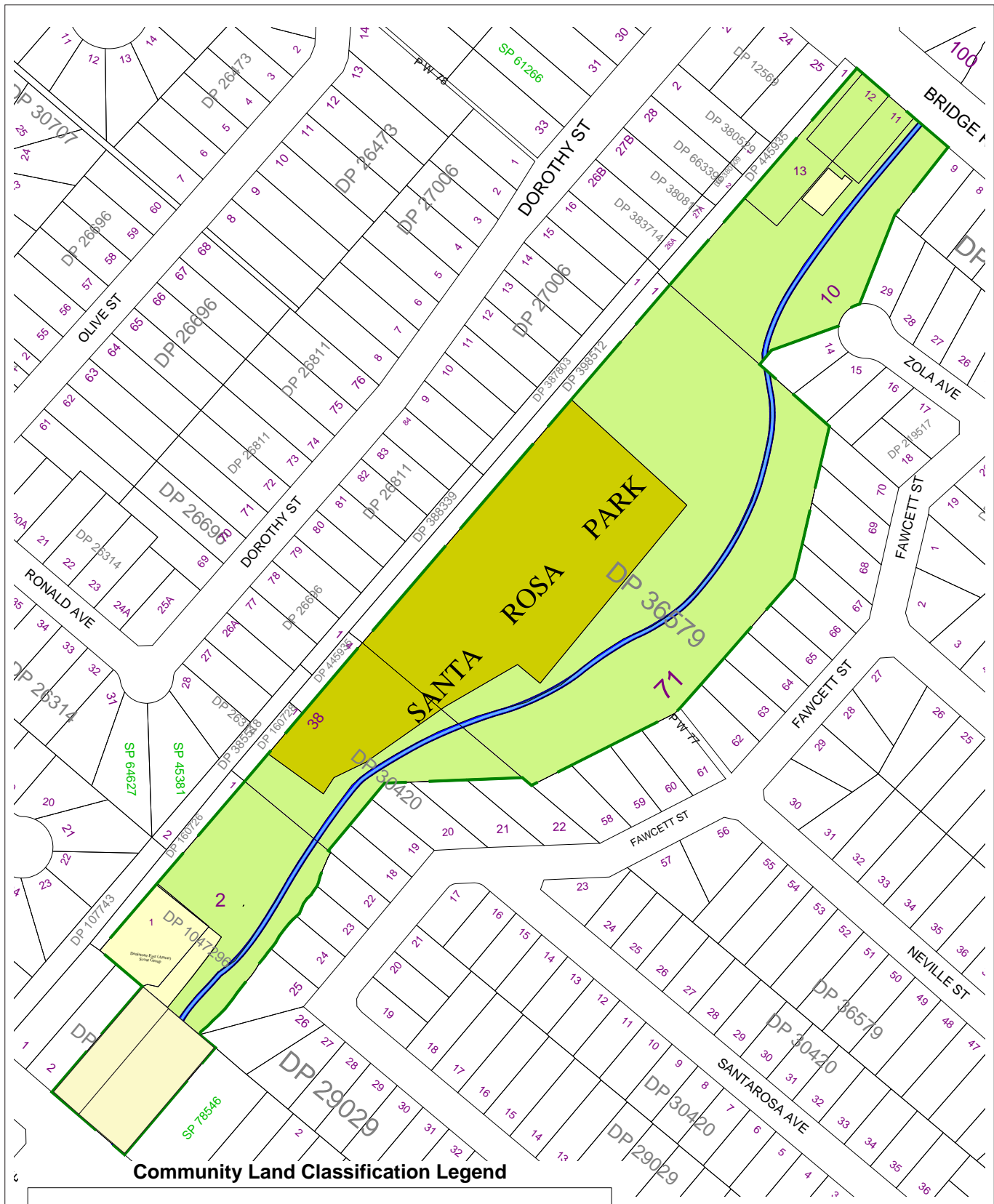
LAND CLASSIFICATION	CORE OBJECTIVES FOR MANAGEMENT OF LAND CLASSIFICATION
Wetland	<p>36K (not relevant to this Plan of Management)</p> <p>to protect the biodiversity and ecological values of wetlands, with particular reference to their hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of the wetlands, and</p> <p>to restore and regenerate degraded wetlands, and</p> <p>to facilitate community education in relation to wetlands, and the community use of wetlands, without compromising the ecological values of wetlands.</p>
Escarpment	<p>36L (not relevant to this Plan of Management)</p> <p>to protect any important geological, geomorphological or scenic features of the escarpment, and</p> <p>to facilitate safe community use and enjoyment of the escarpment.</p>
Watercourse	<p>36M (refer to section 5.2.2.iii – Action Plan)</p> <p>to manage watercourses so as to protect the biodiversity and ecological values of the in stream environment, particularly in relation to water quality and water flows, and</p> <p>to manage watercourses so as to protect the riparian environment, particularly in relation to riparian vegetation and habitats and bank stability, and</p> <p>to restore degraded watercourses, and</p> <p>to promote community education, and community access to and use of the watercourse, without compromising the other core objectives of the category.</p>
Foreshore	<p>36N (not relevant to this Plan of Management)</p> <p>to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore’s role as a transition area, and</p> <p>to facilitate the ecologically sustainable use of the foreshore, and to mitigate impact on the foreshore by community use.</p>
B) Sportsground	<p>36F (refer to section 5.2.2.ii – Action Plan)</p> <p>to encourage, promote and facilitate recreational pursuits in the community involving organised and informal sporting activities and games, and</p> <p>to ensure that such activities are managed having regard to any adverse impact on nearby residences.</p>
C) Natural area	<p>36G (refer to section 5.2.2.i – Action Plan)</p> <p>to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and</p> <p>to provide for passive recreational activities or pastimes and for the casual playing of games, and</p> <p>to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.</p>

LAND CLASSIFICATION	CORE OBJECTIVES FOR MANAGEMENT OF LAND CLASSIFICATION
D) An area of cultural significance	<p>36H (refer to section 5.2.2.iv – Action Plan)</p> <p>(1) The core objectives for management of community land categorised as an area of cultural significance are to retain and enhance the cultural significance of the area (namely its Aboriginal, aesthetic, archaeological, historical, technical or research or social significance) for past, present or future generations by the active use of conservation methods.</p> <p>(2) Those conservation methods may include any or all of the following methods: the continuous protective care and maintenance of the physical material of the land or of the context and setting of the area of cultural significance, the restoration of the land, that is, the returning of the existing physical material of the land to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material, the reconstruction of the land, that is, the returning of the land as nearly as possible to a known earlier state, the adaptive reuse of the land, that is, the enhancement or reinforcement of the cultural significance of the land by the introduction of sympathetic alterations or additions to allow compatible uses (that is, uses that involve no changes to the cultural significance of the physical material of the area, or uses that involve changes that are substantially reversible or changes that require a minimum impact), the preservation of the land, that is, the maintenance of the physical material of the land in its existing state and the retardation of deterioration of the land.</p> <p>(3) A reference in subsection (2) to land includes a reference to any buildings erected on the land.</p>
E) General community use	<p>36I (refer to section 5.2.2.v – Action Plan)</p> <p>Promote, encourage and provide for the use of the land, and to provide facilities on the land, to meet the current and future needs of the local community and of the wider public:</p> <p>in relation to public recreation and the physical, cultural, social and intellectual welfare or development of individual members of the public, and in relation to purposes for which a lease, licence or other estate may be granted in respect of the land (other than the provision of public utilities and works associated with or ancillary to public utilities).</p>










3.4 Local Planning Context

City of Ryde’s planning framework guides this Plan of Management as follows:

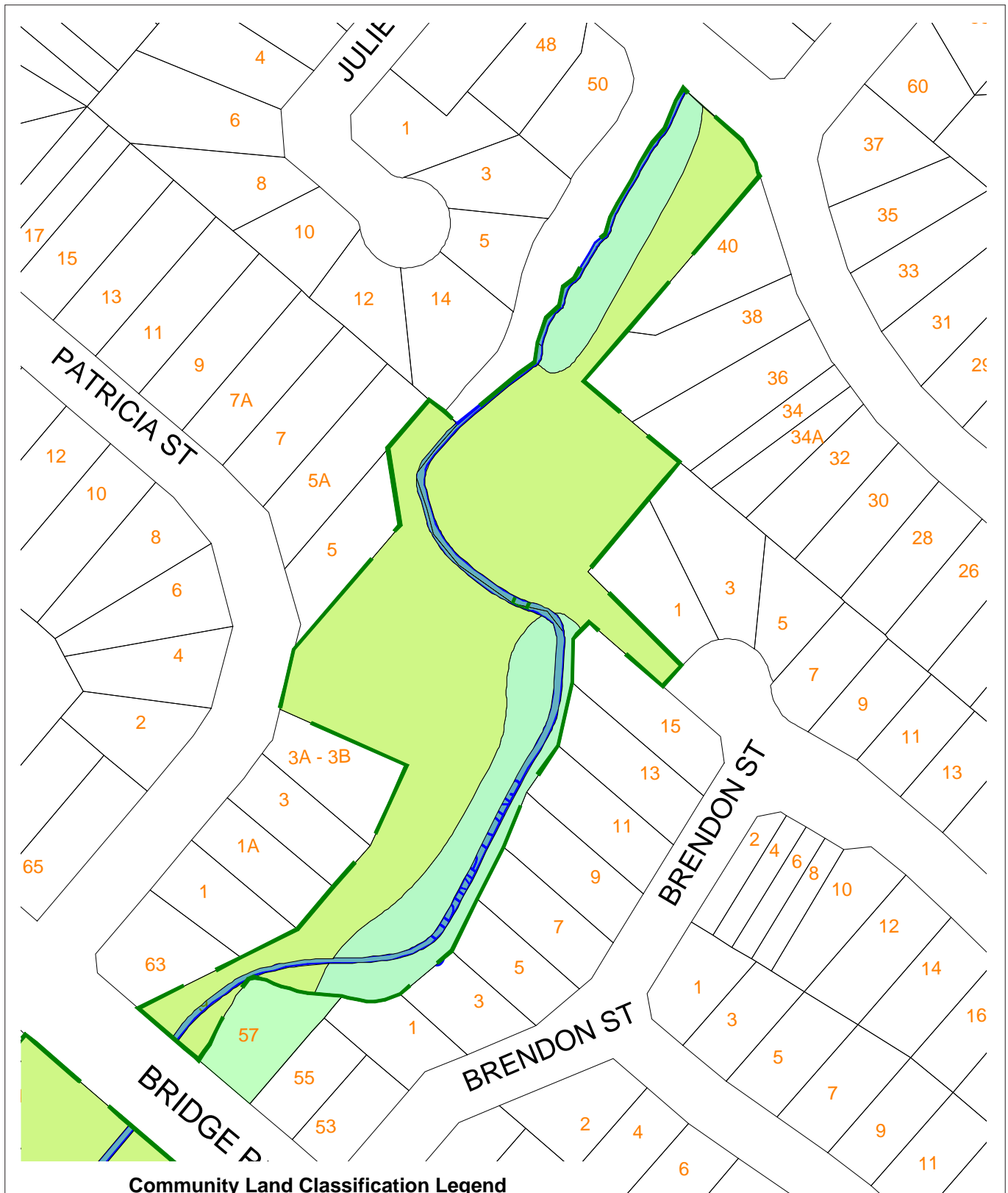
- Council’s Community Strategic Plan and 4 year Delivery Plan, which sets overall objectives and performance targets for activities, budgets and other issues relating to open space and recreation management.
- Planning instruments, particularly the Ryde LEP 2010 and Development Control Plan which govern uses of and development of facilities within the reserves.
- Policy documents, such as the draft Integrated Open Space Plan, Bikeways Plan (1994), Social Plan 2005; Access and Equity Policy; draft Urban Forest Policy and DCP for Tree Preservation, Tennis Courts Policy, and cultural initiatives.
- Certain aspects of the Local Government Act 1993 guide the management of Crown land by the City of Ryde.












Community Land Classification Legend

	General Community Use		Natural Areas - Wetlands
	Natural Areas - Bushland		Park Boundary
	Natural Areas - Escarpment		Parks
	Natural Areas - Foreshore		Sportsgrounds
	Natural Areas - Watercourse		

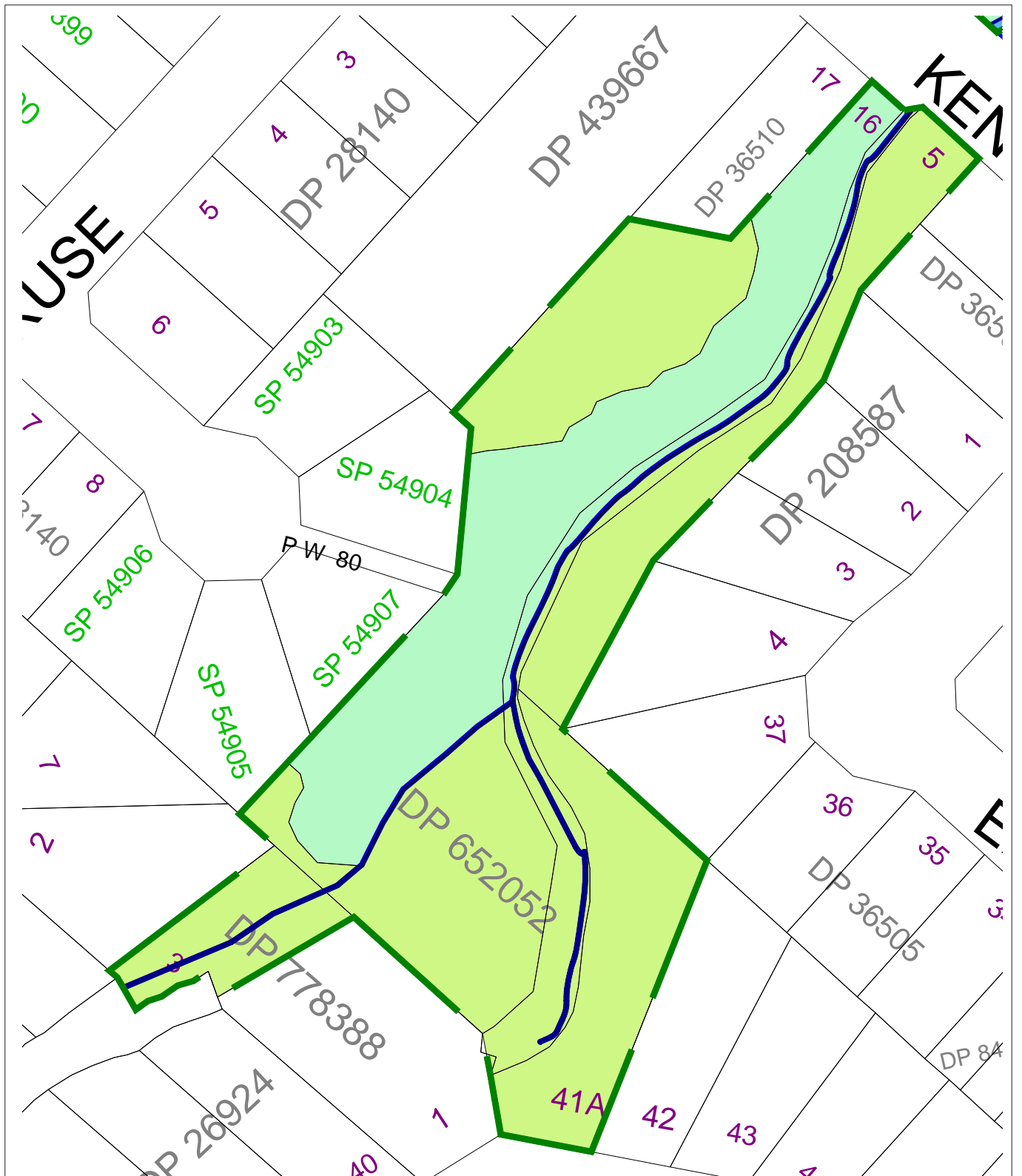













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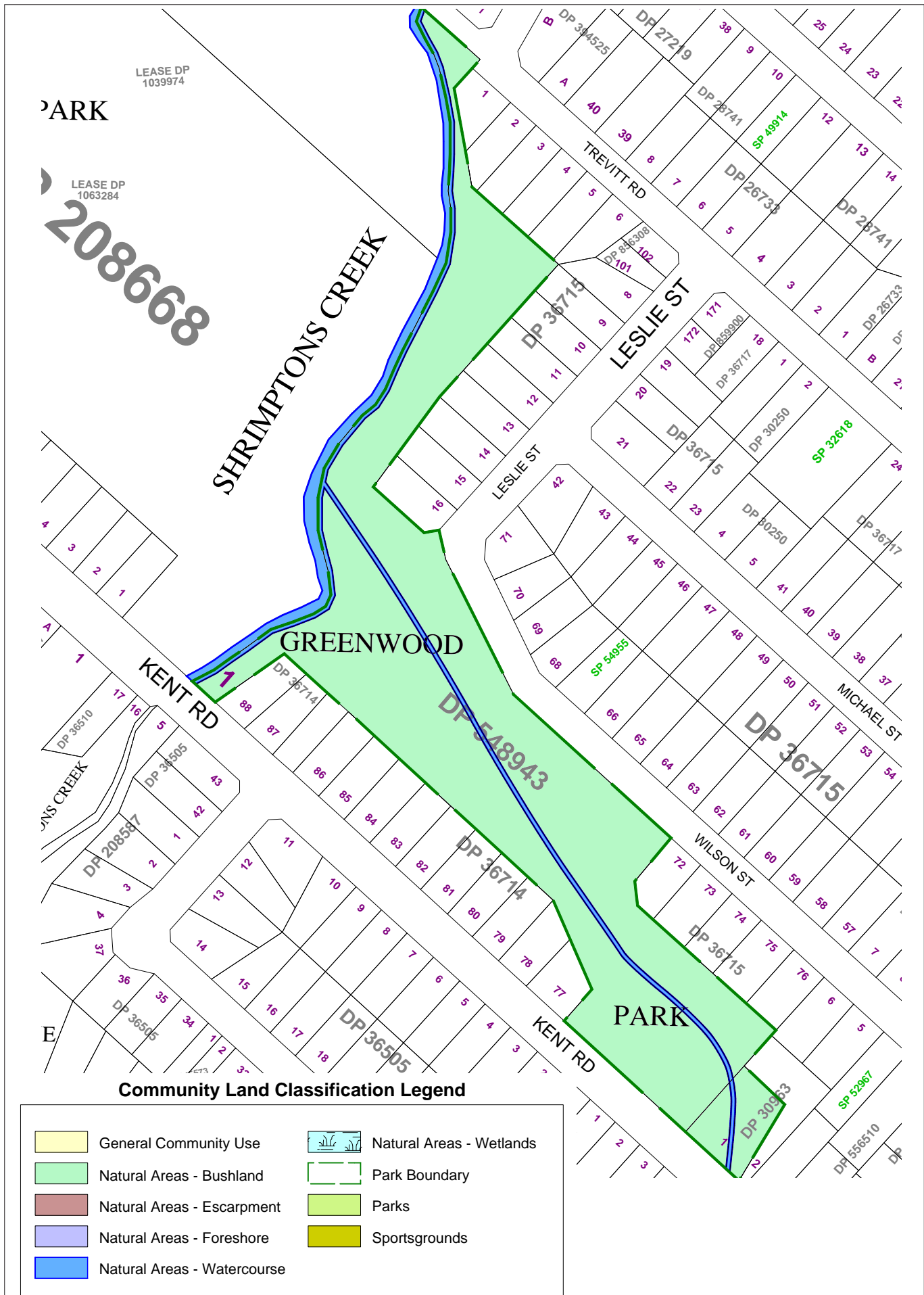













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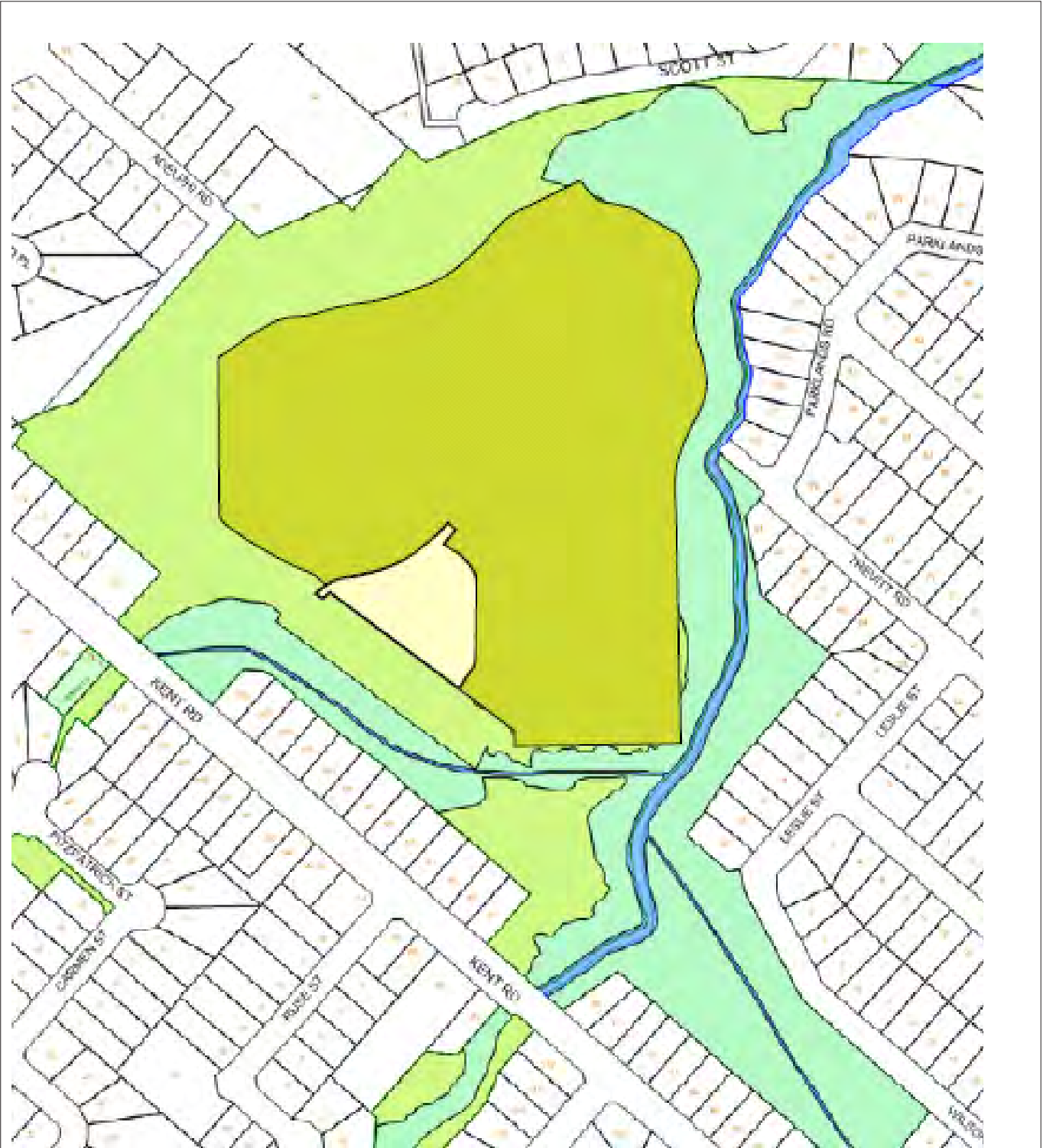













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










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








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3.4.1 City of Ryde Community Strategic Plan

Council’s Community Strategic Plan contains a strategic overview of Council’s proposed activities, budgets and other issues relating to community and the environment. This Plan of Management is consistent with the vision formulated by City of Ryde in its current Management Plan for the whole of the City. Council’s vision in the current Management Plan is:

City of Ryde: The place to be for lifestyle and opportunity @ your doorstep.

Following on from the vision, Council’s mission is:

To work with our community and partners to provide strategic leadership, effective projects and quality customer services.

Council’s key outcome areas for the City are as listed in Table 3.6 below.

Table 3.2 City of Ryde’s key Outcome Areas

KEY OUTCOME AREAS		OUTCOMES
A City Of Liveable Neighbourhoods	A range of well-planned clean and safe neighbourhoods, and public spaces, designed with a strong sense of identity and place.	<ul style="list-style-type: none"> All residents enjoy living in clean, safe, friendly and vibrant neighbourhoods. Our community has a strong sense of identity in their neighbourhoods and are actively engaged in shaping them. Our neighbourhoods thrive and grow through sustainable design and planning that reflects community needs.
A City Of Wellbeing	A healthy community, with all supported throughout their life by services, facilities and people.	<ul style="list-style-type: none"> Our residents are encouraged to live healthy and active lives. All residents feel supported and cared for in their community through the provision of ample services and facilities. Residents feel secure and included in an environment where they can connect socially and are supported by their neighbours.
City of Prosperity	Creating urban centres which champion business, innovation and technology to stimulate economic growth and local jobs.	<ul style="list-style-type: none"> Our community and businesses flourish and prosper in an environment of innovation, progression and economic growth. Our city is well-designed and planned to encourage new investment, local jobs and business opportunities. Macquarie Park is recognised globally and locally as an innovative education and technology hub.
City of Environmental Sensitivity	Working together as a community to protect and enhance our natural and built environments for the future.	<ul style="list-style-type: none"> Our residents, businesses and visitors collaborate in the protection and enhancement of the natural environment. To encourage and enable all our residents to live a more environmentally sensitive life. As we grow, we protect and enhance the natural and built environments for future enjoyment.

KEY OUTCOME AREAS		OUTCOMES
City of Connections	Access and connection to, from and within the City of Ryde. Providing safe, reliable and aordable public and private travel, transport and communication infrastructure.	<ul style="list-style-type: none"> • Our residents, visitors and workers are able to easily and safely travel on public transport to, from and within the City of Ryde. • Our community has the option to safely and conveniently drive, park, cycle or walk around their city. • Our residents, visitors, workers and businesses are able to communicate locally and globally.
City of Harmony and Culture	A welcoming and diverse community, celebrating our similarities and differences, in a vibrant city of culture and learning.	<ul style="list-style-type: none"> • Our residents are proud of their diverse community, celebrating their similarities and differences. • People living in and visiting our city have access to an inclusive and diverse range of vibrant community and cultural places and spaces. • Our community is able to learn and grow through a wealth of art, culture and lifelong learning opportunities.
City of Progressive Leadership	A well led and managed city, supported by ethical organisations which deliver services to the community by listening, advocating and responding to their needs.	<ul style="list-style-type: none"> • Our city is well led and managed. • The City of Ryde will deliver value for money services for our community and our customers. • Our residents trust their Council, feel well informed, heard, valued and involved in the future of their city.

3.4.2 Ryde Local Environment Plan 2010

The Ryde Local Environmental Plan (LEP) 2010 guides development control within and along the Reserve, with zoning maps and defined categories for development as either permissible or prohibited. This Plan of Management does not override provisions in the LEP however recommendations within the Plan of Management should inform the development of future LEP's. Under LEP 2010, the Parklands are is zoned RE 1 - Public Recreation, E2 - Environmental Conservation and SP2 - Infrastructure and the objectives of these zones are listed in Table 3.6 below.

Table 3.3 Zoning Objectives - RE1 and E2

ZONING	OBJECTIVES
RE1 - Public Recreation	<ul style="list-style-type: none"> • To enable land to be used for public open space or recreational purposes. • To provide a range of recreational settings and activities and compatible land uses. • To protect and enhance the natural environment for recreational purposes. • To provide adequate open space areas to meet the existing and future needs of the residents of Ryde. • To protect and enhance the natural bushland in a way that enhances the quality of the bushland and facilitates public enjoyment of the bushland in a way that is compatible with its conservation.
E2 - Environmental Conservation	<ul style="list-style-type: none"> • To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values. • To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

ZONING	OBJECTIVES
SP2	<ul style="list-style-type: none"> To provide for infrastructure and related uses. To prevent development that is not compatible with or that may detract from the provision of infrastructure. To ensure the orderly development of the land. To ensure that development does not have an adverse effect on adjoining land.

Table 3.4 Zoning table for Zone RE1, E2 and SP2

ZONING	WITHOUT DEVELOPMENT CONSENT	WITH DEVELOPMENT CONSENT ONLY	PROHIBITED
RE1	Environmental protection works	<ul style="list-style-type: none"> Business identification signs; Community facilities; Environmental facilities; Kiosks; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Restaurants; Roads 	Anything not listed in this table with respect to RE1 only.
E2	Environmental protection works	<ul style="list-style-type: none"> Drainage; Environmental facilities 	Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres;
SP2	Nil	<ul style="list-style-type: none"> The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Recreation areas; Roads 	Any development not specified in the columns to the left.

The zoning of the land under the Ryde LEP and other planning instruments provides a mechanism to ensure the appropriate development of the land usually through the Development Application process. The zoning table usually indicates what is permissible or not permissible on the site. The zoning of RE1 Public Recreation is consistent with the Public Purpose of Public Recreation applying to the Parklands. Council will refer to this Plan of Management as well as the LEP 2010 and other relevant legislation in

assessing development applications relating to the Parklands.

As a process in the preparation of this revised Plan of Management, a study was undertaken to review the designation of E2 zones within the parklands. The purpose of this review was to:

1. Review the existing E2 zones identified under the Ryde LEP 2010 to determine if they satisfy the intent and objectives of Department of Planning's LEP Practice Note PN09-002 Environmental Protection Zones
2. Identify other areas within the Parklands that should be considered appropriate for an E2 zone.
3. Consider the use of other the environmental protection zones within the Parklands.
4. To accurately map all environmental protection zones.

The findings of this study were as follows:

The assessment completed for this project has identified that the Parklands contain a mix of environmental values including both natural and non-natural items.

Our recommendations include the introduction of the E3 zoning, targeting specific intentions based around the zones objective of providing:

- *Rehabilitation and restoration of special environmental qualities. Specifically, our recommendation to use the E3 zoning to ensure the Critically Endangered Ecological Community STIF, having special environmental quality, is managed from a current state of assessed low environmental value to improvement higher environmental value and resilience.*
- *Support for the transition from high ecological value land to other land. Specifically, our recommendation to use the E3 zoning to ensure the Critically Endangered Ecological Community STIF is buffered from residential or special purpose zones, particularly where the majority of adjoining vegetation is zoned E2.*

It is noted that there is currently no provision in Ryde LEP 2010 for an E3 zone. As such, an additional recommendation is that for future LEPs, Council develops specifications for E3 zones and land use tables in line with DoP Practice Note 09-002 and the LEP Standard Instrument (LEP Template).

Santa Rosa Park:

- *Restoration areas that are subject to current and future restoration works have been zoned as E3 to better reflect status as a rehabilitated natural area.*
- *Park retains RE1 zoning.*

Flinders Park:

- *Conversion of E2 areas to an E3 zone to better reflect on-ground characteristics and management intent – that being restoration. The park contains vegetation that is likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act. Fauna habitat values were considered to be moderate due to the presence of Lily Pilly and Blueberry Ash that may serve as a foraging resource for birds, as well as presence of bedrock in creek and relatively higher levels of leaf litter. Therefore this area is a prime candidate for restoration works. Restoration works have previously been undertaken in the reserve, and the proposed conversion of RE1 area between existing E2 to E3 will form a consolidated patch of vegetation that is managed for restoration.*
- *The above has the effect of increasing the overall 'E' zoning and providing for a more suitable framework for the management of the larger patch as a single entity, supporting the higher*

quality vegetation whilst restoring areas of lower quality that provide a linkage between the former E2 zones, that may have otherwise remained as RE1.

Tindarra Reserve:

- *Rationalisation of the E2 zone to better reflect on-ground characteristics and management intent.*

Greenwood Park:

- *Rationalisation of the E2 zone to better reflect on-ground characteristics, including areas previously zoned as E2 over hardstand (roads) and landscaped areas, and areas subject to structural simplification due to underscrubbing, or containing lawn at top of bank. E2 zones over hardstand areas are not an appropriate use of this zoning and devalue other areas that are zoned as E2.*
- *Conversion of RE1 to E3 to support the adjacent E2 zone and better reflect management intent.*

ELS Hall Park:

- *Rationalisation of the E2 zone along the creekline to better reflect on-ground characteristics and management intent, including removing E2 zoning over an area of road. E2 zones over hardstand areas are not an appropriate use of this zoning and devalue other areas that are zoned as E2.*
- *Conversion of E2 parallel to Kent Road to RE1 to better reflect on-ground characteristics of the vegetation that include little to no mid-storey and groundcovers ranging from landscaped areas to hardstand, lawn and gravel.*
- *Convert zoning of infrastructure areas on the opposite side of Kent Road and cul-de-sac at the end of Fitzpatrick Street to appropriate SP zoning.*

Booth Reserve:

- *Current SP2 zoning will need to remain as is due to restrictions on changing this zoning type.*
- *However, as Council has care, control and management of this reserve, it is recommended that it is managed for all intents and purposes as an E2 zone, as it's ecological values meet the criteria suitable for E2 zoning. Restoration works for this reserve are also recommended.*

Wilga Park:

- *Rationalisation of the E2 zone along the creekline to better reflect on-ground characteristics and management intent.*
- *Conversion of RE1 to E2 in the south of the park to better reflect on-ground characteristics*
- *Conversion of E2 to RE1 adjacent to open space to better reflect on-ground characteristics, namely the significant stretch of vegetation that is mainly weeds and exotics.*
- *Convert zoning of infrastructure areas on Waterloo Road and Cottonwood Crescent to appropriate SP zoning.*

The assessment completed for this project has identified that the Reserve contains a mix of environmental values including both natural and non-natural items.

Recommended future environmental zoning includes E3 (Environmental Management) to conform to the areas of remnant native vegetation. The remaining areas are recommended to maintain their zoning of RE1 (Public Recreation). The recommended future environmental zoning is shown on

Recommended Future Zoning - Santa Rosa Park



Legend

- Current Zoning
- E2
 - RE1
 - SP2

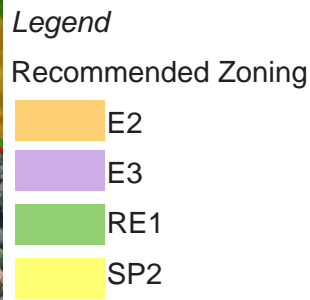
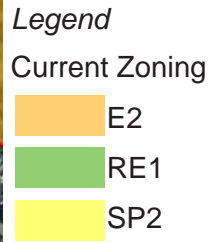


Legend

- Recommended Zoning
- E2
 - E3
 - RE1
 - SP2

Overall changes in park area under each zoning category

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Santa Rosa Park	RE1	4.79	To	RE1	3.42
				E3	1.37
Total		4.79			4.79



Overall changes in park area under each zoning category

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Flinders Park	E2	0.28	To		
	RE1	1.11		RE1	0.89
				E3	0.70
Total		1.39			1.39

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Tindarra Reserve	E2	0.26	To	E2	0.57
	RE1	0.61		RE1	0.30
Total		0.87			0.87



Current Zoning

- E2
- RE1
- SP2



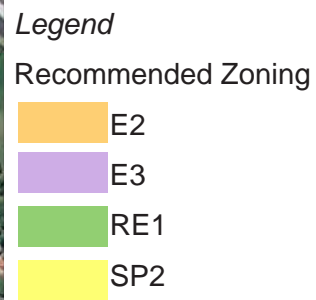
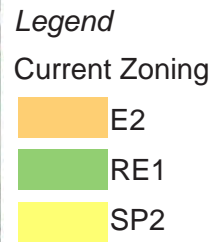
Legend

Recommended Zoning

- E2
- E3
- RE1
- SP2

Overall changes in park area under each zoning category

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Greenwood Park	E2	2.90	To	E2	1.88
	RE1	0.08		RE1	0.88
				E3	0.22
Total		2.98			2.98



Overall changes in park area under each zoning category

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
ELS Hall Park	E2	2.71	To	E2	2.08
	RE1	8.61		RE1	9.01
	SP2	0.80		SP2	0.90
				E3	0.25
Total		12.12			12.12

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Booth Reserve	SP2	0.32	To	SP2	0.32
Total		0.32			



Legend

Current Zoning

- E2
- RE1
- SP2



Legend

Recommended Zoning

- E2
- E3
- RE1
- SP2

Overall changes in park area under each zoning category

Park/Reserve Name	Current Zoning	Area (ha)	Future Zoning	Area (ha)
Wilga Park	E2	0.79	E2	1.43
Wilga Park	RE1	2.85	RE1	2.21
Total		3.64		3.64

Figure 3 along with a comparison with the current zoning under Ryde LEP 2010.

The future environmental zoning recommended is an expansion of environmental zoning for the Reserve but a shift from the use of E2 to an E3 zone to better reflect the assessed value of environmental assets present within the Reserve under the DoP guidelines. This approach would allow an increase in the area protected and managed under an environmental zone (from 1.06ha to 2.14ha).

It is noted that there is currently no provision in Ryde LEP 2010 for an E3 zone. As such, an additional recommendation is that for future LEPs, Council develops specifications for E3 zones and land use tables in line with DoP Practice Note 09-002 and the LEP Standard Instrument (LEP Template).

Recommended future environmental zoning is shown along with a comparison of the current zoning under Ryde LEP 2010 and full copy of the Report is contained in Appendix E

Development controls are further defined in Development Control Plans that apply to the Parklands include:

- City of Ryde Development Control Plan 2010,

3.5 City of Ryde Policies and Plans

3.5.1 Draft Integrated Open Space Plan

Council's commitment for the parks and open spaces of Ryde is that:

"We have ample, accessible open space to meet our needs, shared and enjoyed by us all, founded on a healthy natural environment, conserving our rich heritage, culture and local character and managed sustainability now and for future generations".

As outlined in the draft Integrated Open Space Plan, the objectives for open space within the City of Ryde are as follows:

Ample, Accessible Open Space

- providing open space within at least 400 metres safe and direct walking distance from every residence
- maintaining existing provision at minimum (ie no net loss of open space)
- ensuring safe and convenient access to open space for all abilities
- optimising access by walking and cycling
- maintaining a network of recreational corridors, linkages and connections.

Shared And Enjoyed By All

- providing opportunities for all ages and backgrounds
- balancing structured and unstructured recreation
- incorporating flexibility for multiple uses
- fostering healthy physical activity and mental wellbeing
- offering safe environments that encourage social interaction, health and wellbeing

- enabling simple wayfinding and providing accessible information and interpretation.

Founded On A Healthy Natural Environment (C04)

- responding to Ryde's natural topography and geology
- maximising creek, river and bushland connections and corridors
- conserving and enhancing native flora and fauna communities and habitats
- providing natural connections across the City linking with adjoining LGAs
- promoting awareness of Ryde's natural values
- maximizing permeable area by minimising built structures and hard surfaces
- adapting to the impacts of climate change by park planning and design

Conserving Our Rich History, Culture And Character (C06)

- integrating natural, Aboriginal and non-Aboriginal heritage into the city's open spaces
- interpreting and promoting the unique history of Ryde for residents and visitors
- drawing on local landscape character in park design and planting strategies
- maximising views and vista opportunities across the City
- implementing public art to express the identity and culture of the City

Managed Sustainably For Ours And Future Generations (C03, C07)

- conserving energy and resources and optimising life cycles
- managing assets to a financially and operationally sustainable model
- designing to high standards and quality with innovative practices
- actively involving the community in planning and design
- fostering partnerships with other parties to extend recreation opportunity
- operating under a structured management and maintenance plan and

At the time of this Plan of Management being prepared, the Integrated Open Space plan was on public exhibition.

3.5.2 Social Plan

Council's Social Plan 2005 includes specific Needs Papers for target groups of children, young people, older people, people of a culturally and linguistically diverse background, men, women and Aboriginal people. A framework for social planning for Ryde 2005-2010 is also presented.

3.5.3 Access and Equity Policy and Disability Action Plan

Both the Access and Equity Policy (2003) and the Disability Action Plan 2006-2008 advocate provision of inclusive, equitable and accessible facilities and services in Ryde for all people with various disabilities. The Disability Action Plan states that open spaces and facilities throughout the City are intended to be accessible wherever possible and achievable within the landform. A key aim of the Plan is that people

with disabilities need to be able to have full access to key parks and linkage routes. Park furniture and signage in key parks needs to be accessible.

3.5.4 Companion Animals Management Plan

The City of Ryde's Companion Animals Management Plan outlines how the City of Ryde will fulfil its responsibilities under the NSW Companion Animals Act 1998. This document has been produced in line with the City of Ryde's Management Plan 2007-2010. It outlines the relevant objectives, establishes priorities and sets out a clear program for implementation. The Plan is confined to an examination of domestic dogs and cats.

The aim for the Companion Animal Management Plan is to promote and facilitate responsible pet ownership of dogs and cats, animal welfare and the benefits of owning a companion animal.

The objectives of the Plan are:

- To ensure Council meets its obligations under the Companion Animals Act 1998.
- To investigate the best mix of regulatory and non-regulatory approaches to achieving responsible pet ownership through education in the City of Ryde.
- To consider ways Council could harness the benefits of owning pets.
- To establish priorities for companion animals management for the next three years.

3.5.5 No Smoking Policy - Parks and Reserves

The City of Ryde has developed a policy that aims towards a healthier and safer smoke free environment through the discouragement of smoking on Council's reserves and Parks. The policy has defined the following smoke free zones:

- Within 10 metre of all public children's play areas and facilities for the use of children.
- All public playing fields, sporting grounds, recreations reserves, bushlands reserves and parks.

3.5.6 Bushcare Policies and Procedures Manual - July 2007

This Manual is the tool kit for all bushcare works and bushcare volunteers across the City of Ryde with the aim to regenerate, protect and preserve urban bushland areas within the City of Ryde through the support and management of volunteers for the enjoyment of future generations.

3.5.7 Community Facilities Plan: Future Directions

The Community Facilities Plan: Future Directions does not provide a detailed evaluation of all facility assets, but sets principles and directions which will inform future asset strategies. Neither does it address management or operational issues of community facilities, as Council has recently reviewed these issues in the separate Operational Review of Community Facilities. While it recognises the very extensive provision of community facilities within the City by private sector and non-government providers, its focus is on the facilities owned and managed by Council.

The development of community facilities directly supports Council's Vision and Mission. The City of Ryde's purpose in ensuring the provision of community facilities is as follows:

To support the provision of well designed and publicly accessible, places that build and sustain the wellbeing of the community.

The City of Ryde vision for community facilities is:

Our community has access to well designed sustainable facilities which promote a vibrant community with strong connections.

The City of Ryde aims to provide community facilities and spaces that are responsive to the community's needs. There is a commitment to providing places that allow for social, cultural, recreational and civic activities to take place in a way that is accessible and equitable.

Within the City of Ryde, community facilities create opportunities for residents and workers to access services and come together in social, educational, artistic, sporting, religious and recreational activity. They enhance quality of life, create social capital and enable services to reach those most in need.

Community facilities foster an environment that encourages community engagement, service take-up and voluntary activity. Council has the responsibility of managing the development of these community assets on the community's behalf to ensure that:

- Existing facilities meet current and future requirements
- Community resources are effectively and efficiently used with usage maximised
- Ongoing development

3.5.8 Macquarie Park Corridor Master Plan

The Macquarie Park Corridor Master Plan analyses surrounding building uses and types, spatial definition, floor space control, building heights, view corridors, open space and significant geographical elements such as topography and stormwater overland flow. The Master Plan provides development control guidelines relating to environmental, social and economic principles. The Master Plan also includes landscape character information to help illustrate the development controls.

Existing parkland beside Shrimptons Creek is proposed to remain as parkland under the Macquarie Park Corridor Master Plan. The Master Plan also looks at increasing the amount of parkland on the business park side of Shrimptons Creek, which is across from Wilga Park. The aim stated in the Master Plan is for Shrimptons Creek to provide a prestigious 'park like' setting for offices. Development adjoining Shrimptons Creek shall have a strong landscape character, providing a safe and attractive edge to the Creek. The use of native plant species is encouraged. Wilga Park is the only park of Shrimptons Creek Parklands that is located within the Macquarie Park Corridor.

3.5.9 Macquarie Park Development Control Plan (DCP)

The *Macquarie Park Development Control Plan, July 2008* provides the framework to guide the future development of the Macquarie Park Corridor. The aim of this DCP is to provide background, objectives and building controls and urban design criteria to achieve desirable development outcomes for implementing the strategic vision of Macquarie Park.

The vision for the Macquarie Park Corridor is that:

'Macquarie Park will mature into a premium location for globally competitive businesses with strong links to the university and research institutions and an enhanced sense of identity.

The Corridor will be characterised by a high-quality, well designed, safe and livable environment that reflects the natural setting, with three accessible and vibrant railway station areas providing focal points.

Residential and business areas will be better integrated and an improved lifestyle will be forged for all those who live, work and study in the area.'

(City of Ryde 2008:9)

The Structure Plan discusses the objectives for the open space network, which is to:

- Provide additional open space within a network of well connected parks, plazas and green spaces.
- Rationalise the existing open space network to provide consolidated open spaces and open space corridors.
- Accommodate a range of active and passive recreational uses.
- Contribute to the stormwater and ecological management.
- Maximise the accessibility of public open space, and to contribute to the pedestrian and cycle network; and to create bio-links and canopy connections to existing vegetation communities surrounding the Corridor. (City of Ryde 2008:15)

Whilst not all of Shrimptons Creek Parklands lies within the Macquarie Park Corridor, Wilga Park is the one park that does. The objectives stated in the DCP for Shrimptons Creek: South (Wilga Park) include the following:

- Rehabilitate and consolidate existing pockets of remnant vegetation.
- Improve creek health including water quality.
- Upgrade existing passive recreational facilities including seating, lighting and circulation paths.
- Ensure all new developments adjacent to Shrimptons Creek address the creek corridor. (City of Ryde 2008:63)

The DCP goes on to include controls for Shrimptons Creek: South (Wilga Park) such as providing active frontages, referring to the Macquarie Park Public Domain Technical Manual for detailed design controls, improving stormwater runoff, establishing seed collection for propagation, expanding pedestrian pathways and cycleway connections, providing clear, transparent boundary treatments, install permeable paving and the like.

3.5.10 Macquarie Park Public Domain Technical Manual

The Macquarie Park Public Domain Technical Manual was produced in conjunction with the DCP to provide guidelines for urban design and information to assist developers and council in constructing public domain works. The Technical Manual is broken down into three sections providing an overview, the typical arrangement of streets and technical details. The objectives for the open space network in this document reflect those of the DCP. The Technical Manual includes street tree species, paving details, lighting details and street layouts.

4 CORE VALUES, ROLES AND OBJECTIVES FOR SHRIMPTONS CREEK PARKLANDS

This section of the Plan of Management identifies and defines the specific roles and objectives for Shrimptons Creek Parklands based on community values. Establishing the needs and requirements of owners, trustees and users of the reserve are essential for good management of reserves. These needs and requirements are in addition to the legislative requirements and context outlined in Section 3.

4.1 Community Values of Shrimptons Creek Parklands

The local community and users of Shrimptons Creek Parklands place value on the Parklands for various reasons. It is vital for council to understand the reasons why the community and users value the Parklands as this informs how the Parklands will be managed into the future.

4.1.1 The Local Community

The City of Ryde has a population of over 100,000 people. Shrimptons Creek Parklands is located within four suburbs in the City of Ryde: North Ryde, Ryde, Marsfield and Macquarie Park. Shrimptons Creek is the divider between North Ryde and Marsfield. The population of each suburb is as follows:

- North Ryde has a population of just over 10,000 people
- Ryde has a population of just over 20,000 people
- Marsfield has a population of almost 12,000 people
- Macquarie Park has almost 5,600 people

(www.abs.gov.au: 2006 Census data).

Points of interest about the statistical data for these four suburbs include:

- North Ryde has a high number of 25 to 54 year olds, living in family groups mainly in private detached housing, with a very high proportion of Australian born residents.
- Ryde has a high number of 25 to 54 year olds, but is closely followed at 16.6% by the 65 and over age bracket. There are a high number of Australian born residents. Most live in family groups in detached housing.
- Marsfield has a high number of 25 to 54 year olds but is closely followed at 19.1% by 15 to 24 year olds. There are more overseas born people living in Marsfield than North Ryde and Ryde with a reasonably high Asian population in this area (22.6%), although the number of Australian born residents is still highest at 45.5%. An almost even amount of people live in detached housing and semi-detached housing, with the majority living in family groups.
- Macquarie Park again has a high number of 25 to 54 year olds but is closely followed at 23.8% by 15 to 24 year olds. There are a large percentage of residents born overseas at 49.2%, mainly from Asia. 73.8% live in an apartment with an almost even number living in family groups and living alone. (www.abs.gov.au: 2006 Census data).

Key features of the local community along Shrimptons Creek are:

- The suburban nature of the majority of where the parks adjacent Shrimptons Creek are situated

- The urbanisation of Macquarie Park – where increasing densification is occurring
- The high number of Australian born residents, except for possibly the Macquarie Park area
- Apart from Ryde, the high number of young people living in the area.

4.1.2 Community Consultation

Community consultation occurred in the initial stages of the development of the Shrimptons Creek Parklands Master Plan and Plan of Management. This consultation was in the form of surveys to over 1,800 households located near Shrimptons Creek, with the survey also available on City of Ryde's webpage (Refer to Appendix G for Park Survey and survey results).

In addition to the initial community surveys, a stakeholder meeting took place with City of Ryde councillors and prominent park user groups invited (Refer to Appendix H for Stakeholder Workshop meeting minutes).

Park User Survey

The community in the vicinity of Shrimptons Creek Parklands were consulted regarding their use of the Parks, their current views on how the Parks function, suggestions on how they would like to see the Parks utilised and priorities on what was seen as the most important element to retain or improve. The results indicated that:

- The majority of local residents utilised the parks along Shrimptons Creek for passive recreation, walking, walking their dog or cycling along the shared use pathway. Some walked to Macquarie Park or to a bus stop through these parks. Some walked to the larger ELS Hall Park to watch sporting events or to exercise on the equipment located there.
- The trees and natural character of these parks were highly valued by the majority of residents surveyed.
- Many survey responses appreciated the creek as part of the natural character of the area and wanted the creek line restored with weeds removed and the like.
- The survey indicated that residents appreciated the facilities in ELS Hall Park and would like the sporting facilities there to continue as a feature of this park.
- Residents utilised the parks to entertain their children or grandchildren, using the playgrounds.
- Cleanliness was appreciated within these parks.
- Increasing the number of toilets and playgrounds as well as including a dog leash free area were suggested.

Stakeholder Consultation Workshops

A Stakeholder Consultation Workshop, to which Councillors were invited was held on 9 July 2008. The values suggested here were of a similar kind to those expressed in the initial local community survey. These values included:

- An appreciation of the natural environment and character within these parks,.
- An appreciation of the open space amenity within an urban environment.
- The active recreational use of the park.
- The importance of recognising and facilitating passive recreational use within ELS Hall Park,

particularly the exercising of dogs within this park.

- Opportunities for water recycling.

For an outline of the information recorded at this workshop please refer to the appendices.

Dog Leash Free Area Community Consultation

The Park User Survey identified the need for a dog leash free area to be established within Shrimptons Creek Parklands. Responses suggested that ELS Hall Park was currently used as an informal dog leash free area.

Additional community consultation on two dog leash free area options occurred in December 2008. 200 survey questionnaires were letterbox dropped to residents local to ELS Hall Park (refer to appendices for copy of survey and survey responses). An additional question regarding the fencing of the dog leash free area was asked. The majority of responses indicated support for a fenced dog leash free area in ELS Hall Park at the end of Adelphi Road.

Public Hearings

In February 2011 Council proposed reclassification of two areas within the Shrimptons Creek Plan of Management from 'Park' to 'General Community Use' to allow for a new community nursery and indoor sports centre. A process of community consultation was implemented and a Public Hearing took place on June 22 2011 in accordance with Section 40A of the *Local Government Act 1993*. An updated Masterplan has been prepared for Santa Rosa Park and ELS Hall Park in response to recommendations to Council following the Public Hearing process. Refer to Appendix F for the Public Hearing Report.

4.1.3 Values of Shrimptons Creek Parklands

Community consultation as well as the City Vision document has established the following core values of Shrimptons Creek Parklands:

- Natural environment character.
- Continued good access through these Parks. Providing clear connections and clearly located linkages and access ways to public transport and commercial areas such as Macquarie Park. Continuing to provide recreation trails for walkers, dog walkers and bicycle riders.
- Recreation catering for sporting use in ELS Hall Park and Santa Rosa Park. Passive recreational use (such as walking or cycling) and children's facilities.
- Events or cultural expression that highlights the creek line, trees and natural environment.
- Natural and Landscape elements with a recognition of the importance of green open space in an urban environment, the recognition and appreciation of the park's trees and the fauna such as native birds that inhabit these areas. Restoration of the creek line generally and providing opportunities for water harvesting in ELS Hall Park.

4.2 Vision for Shrimptons Creek Parklands

The overall vision for the parks alongside Shrimptons Creek, had taken into consideration the values of the community and the statutory context. It reads as follows:

The vision for Shrimptons Creek Parklands would be to recognise the importance of this creek line as an environmental and recreational 'spine' located wholly within the City of Ryde. As such this corridor of parkland should be maintained and appreciated as a natural area with safe recreational

access and act as a buffer to the creek from adjacent residential areas. The parklands shall provide clear connections to adjacent environments without compromising their natural character. Due consideration should be given to both environmental and passive recreational aims in the design, upgrade and maintenance of these parks.

4.3 Roles of Shrimptons Creek Parklands

Following on from the vision statement, major policy objectives have been established.

Management opportunities

- Cater to the local community mainly, but also to the regional community (particularly due to the location of Wilga Park within Macquarie Park Corridor and the shared use pathway).
- Provide an area of open space in the midst of residential environments, and in the case of Wilga Park, high density residential and business areas.

Provide recreation opportunities

- Maintain and continue active recreational use within Santa Rosa Park and ELS Hall Park.
- Investigate the possibility of active recreational use of Wilga Park.
- Enhance and create passive recreation within Shrimptons Creek Parklands to cater for different ages and groups and the environmental focus of these parks.
- Provide for organised field sports within Santa Rosa Park and ELS Hall Park.
- Provide for informal recreation for passive recreation.

Improve natural and landscape opportunities

- Enhance the natural character of the parks.
- Provide communal meeting opportunities.
- Increase awareness and provide opportunities for appreciation of the natural landscapes within these parks.
- Provide opportunities for families, friends and workers (in the Macquarie Park area) to enjoy lunch and picnics.

Provide cultural interpretation opportunities

- Encourage cultural expression within the parks.
- Encourage natural heritage interpretation within the parks.
- Provide a place for local residents to appreciate the natural environment of these parks.

Improve access and linkages

- Reinforce the entry points and access through the park.
- Provide for safe access along the pedestrian / cycle path, particularly at night.
- Provide places for local children to play informally.
- Provide safe places for people to meet informally.

- Provide opportunities for the older members of the local community to meet safely, with easy to utilise access points.
- Provide opportunities for open space linkages to public transport, major town centres, and other places of interest.

The role of Shrimptons Creek Parklands is to provide for recreational, natural, landscape, cultural, access and linkage requirements.

Table 4.1 Roles of Shrimptons Creek Parklands

VALUE	ROLE
Management	<ul style="list-style-type: none"> • Continued management of the Parks by City of Ryde. • Ensure statutory objectives of reserve are met. • Ensure community values are considered.
Recreation	<ul style="list-style-type: none"> • Regional visitor catchments, while acting as local parks for adjoining residents. • Provide recreational facilities maintained for active use. • Provide informal recreational facilities for passive recreation.
Natural and Landscape	<ul style="list-style-type: none"> • Maintain and enhance the tree canopy within the parks with continued native plant selection, particularly endemic species. • Retain the natural alignment of the creek as much as possible. • Remediate the creek line, where possible remove dense weed growth along the creek line in a staged manner and revegetate with endemic species. • Maintain and enhance the sports fields of Santa Rosa Park and ELS Hall Park, but with a recognition of the natural environment that they exist within.
Cultural	<ul style="list-style-type: none"> • Provide a venue for community events, activities and ceremonies in ELS Hall Park. The reason for this location being the inclusion of a facility that attracts additional activity beyond sporting use and a facility that can be utilised by the local community. • Provide for community events, activities within Santa Rosa Park and Wilga Park. • Provide natural heritage and environmental awareness through interpretation.
Access and Linkages	<ul style="list-style-type: none"> • Continue to provide safe walking and cycling tracks for commuter and recreational use, particularly at night. • Provide strongly identifiable entry points to the Parks and wayfinding within and between the parks. • Provide connections to the adjacent commercial, business, educational and public transport centres. • Provide links to recreational trails that lead to other significant nodes nearby ie: Yamble Reserve or reconnecting to Shrimptons Creek beyond Macquarie Centre.

4.4 Management Principles and Objectives

The overall management objectives for Shrimptons Creek Parklands are to provide safe open space and access within an urban environment and preserve it’s natural landscape values for the local and regional community. These objectives can be achieved by maintaining and providing facilities that maximise

recreational and cultural use.

City of Ryde intends to manage Shrimptons Creek Parklands to:

- Preserve the current aspects of the Park that are particularly valued ie: tree canopy, natural character, accessibility and recreational elements.
- Ensure that future uses are not only compatible with existing uses but with identified values.
- Allow for limited approval of small community events within Santa Rosa Park, ELS Hall Park and Wilga Park, which are ancillary to and supportive of the public recreational use and the natural character of the Parks. These activities should have acceptable impacts on the natural environment, public recreational and open space amenity.
- Minimise the intensification of use that has impacts on the local community and park users.

Table 4.2 Management Principles and Objectives

	PRINCIPLES	OBJECTIVES
Management	<ul style="list-style-type: none"> • City of Ryde to maintain role as trustee 	<ul style="list-style-type: none"> • Management of reserve according to statutory requirements • Management of reserve according to community values
Recreation	<ul style="list-style-type: none"> • Maintained active recreation. • Diverse range of informal and passive recreation opportunities. • Active and healthy people of all ages, abilities and cultural groups. • Visitation from people in the local area as well as regionally. 	<ul style="list-style-type: none"> • Maintain active, sporting facilities. • Where necessary, provide for the separation of sporting uses due to possible safety issues. • Encourage and facilitate recreational pursuits of the local community. • Encourage and promote Shrimptons Creek Parklands for recreational opportunities to visitors, particularly cyclists and walkers as an accessway. • Provide for and promote informal and passive recreation facilities and activities. • Provide for groups, individuals and age groups. • Provide opportunities to experience peace and quiet in the parks. • Provide opportunities of communal meeting of different age groups. • Provide interesting, creative and fun play opportunities. • Provide opportunities for formal and informal eating.

PRINCIPLES	OBJECTIVES
Natural/ Landscape	<ul style="list-style-type: none"> • Where possible, remediate the creekline and riparian corridor and revegetate with endemic species (if possible ecosourse). • Conserve and enhance the remnant tree canopy within Shrimptons Creek Parklands. • Enhance native vegetation, in particular expand existing plant communities where appropriate, to benefit indigenous fauna. • Enhance vegetation in character with the plant communities identified for that area. • Consider environmental sustainability with the design and maintenance of the Parks and its facilities, particularly Water Sensitive Urban Design
Cultural	<ul style="list-style-type: none"> • A community that is engaged with their local environment. • Appreciation of the natural history. • Understanding of the people, place and change over time.
Access and Linkages	<ul style="list-style-type: none"> • Interaction of parks as part of everyday life by people of all ages and abilities. • Clear connections to adjacent commercial, business, educational and transport areas.

<ul style="list-style-type: none"> • Provide for the staged removal of weed species with revegetation of endemic species. • Provide for the maintenance and management of the tree canopy. • Enhance and expand upon existing ecological plant communities. • Where possible, plant from appropriate plant community for the area for fauna habitat. • Utilise water sensitive urban design principles in park design and upgrades. • Investigate opportunities to utilise water harvesting. • Provide appropriate erosion control measures to embankments of creekline where necessary. • Ensure buildings within the Parks incorporate energy efficient measures.
<ul style="list-style-type: none"> • Provide opportunities to celebrate the natural environment, particularly the creekline. • Provide opportunities to celebrate this history of the local community. • Provide a range of opportunities for social and cultural activities for all age groups. • Indigenous and non-indigenous (including multi-cultural) heritage to be identified, conserved and interpreted as appropriate. • Animate Shrimptons Creek Parklands to enhance the artistic, cultural and natural environment. • Animate Shrimptons Creek Parklands to provide a welcoming access way from the centre of the City of Ryde to Macquarie Park.
<ul style="list-style-type: none"> • Ensure equitable and easy access to and within the Park for all members of the community. • Encourage short distances to major facilities for utilisation by less abled community members. • Establish links to other areas of the parks, and the public domain. • Provide links between regional cycleways.

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5. ACTION PLAN

5.1 Introduction

The following tables present the actions identified from Section 4, which were identified as resolving management issues and relate to values identified by the community. The tables also provide the guidelines for the implementation of the Landscape Master Plan. It is expected that these actions would be fulfilled within the next ten years. The table headings are described as follows:

- Issue – subject of the strategy and action
- Strategy – reflects the value and provides direction for the actions
- Action – a specific task required to resolve issues, consistent with the value and strategy.
- Priority – importance or urgency of the action. The importance of the action is rated as follows:

Table 5.1 Priority Rankings

TERM	ACTIONS
Short Term (0-2 Years)	<ul style="list-style-type: none"> • Safety Issues • Park functional improvements • Severe environmental rectifications • Management of unauthorised use
Medium Term (3-5 Years)	<ul style="list-style-type: none"> • Preventative and remedial maintenance • Resolution of park users conflicts • Moderate environmental rectifications • Improve park user use and enjoyment
Long Term (5-10 Years)	<ul style="list-style-type: none"> • Long term quality improvements • Reduction of maintenance costs
Ongoing	<ul style="list-style-type: none"> • Regular actions for the life of the Plan of Management

- Responsibility – the section of Council, or another organisation responsible for implementing the action.
- Performance Indicator – the desired outcome in implementing and achieving the strategy or action.

Please note that the item numbers in the following action plans relate directly to the Master Plan descriptions listed in section 5.2 of this Plan of Management.

5.2 Action Plans

5.2.1 Management

BACKGROUND	DESIRED OUTCOMES
<p>The majority of Shrimptons Creek’s parks are owned by Council. Where they are owned by another body, Council has care, control and management of that land. An exception to this is the Department of Housing land which is maintained by Council. The management principles stated Local Government Act 1993 for community land should apply to all of the parkland.</p> <p>Management of the open space of Shrimptons Creek Parklands includes:</p> <ul style="list-style-type: none"> - parks - sportsgrounds - community use <p>Initiatives</p> <ul style="list-style-type: none"> - Review access way in accordance to ‘Safer by Design’ guidelines - Provide lighting plan along access way and entries to parks 	<ul style="list-style-type: none"> • Continued management of Shrimptons Creek Parklands by City of Ryde as owner or by having care, control and management, with continued maintenance of Department of Housing land. • Regular maintenance of built facilities and structures to ensure safety and usability • High quality sporting surfaces • High quality natural and passive recreation areas within Shrimptons Creek Parklands • High quality amenities to Shrimptons Creek Parklands, particularly Santa Rosa Park and ELS Hall Park • Safer access ways, particularly in high use areas • Continued stormwater management measures along creek line

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Ai, Bi, Ci, Di, Ei Fi, Gi, Hi	Footpaths	Ensure all paths are safe in location and construction. Ensure paths within parklands are consistent overall.	Assess access way in accordance with 'Safer by Design' guidelines.	Short	City of Ryde	Safer accessways, particularly at night in high use areas. Consistent path network.
			Identify any pathway inconsistencies: trip hazards, pinch points and the like and provide guidelines for rectifying.	Ongoing	City of Ryde	Removal of trip hazards
			Widen the existing shared use pathway at pinch point with cantilevered decking or similar	Short	City of Ryde	Installation of wider pathways
			Assess stability of existing bridge structures at regular intervals.	Short	City of Ryde	Study completed
			Provide a lighting plan for access way especially high use areas.	Short	City of Ryde	Study completed
			Identify areas along access way where under pruning is required and where low growing shrubs should be planted	Ongoing	City of Ryde	Vegetation pruned
			Provide consistencies in materials to allow parkland to be read as a whole.	Short	City of Ryde	Consistent path network.
			Ensure regulatory signage at entry and exit points along path indicate in particular that motorbikes and minibikes are not allowed.	Short	City of Ryde	Installation of appropriate signage
			Request police provide random checks of park to increase safety of area and reduce incidence of motorbike / minibike use.	Ongoing	City of Ryde	Ongoing liaison with NSW Police
			Ensure regulatory signage at entry to parks to emphasise that horses are not allowed within parks	Ongoing	City of Ryde	Installation of appropriate signage

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Provide drinking fountains along shared use pathway.	Short	City of Ryde	Installation of drinking fountains
			Improve kerb ramps where possible for better cyclist access.	Short	City of Ryde	Installation of kerb ramps
			Refer to Ryde Bike Strategy and NSW Bicycle Guidelines for minimal path widths.	Short	City of Ryde	Application of the Bike Strategy
Bi	Toilets	Ensure that sufficient number of public toilets are located in close proximity to shared use pathway.	Provide toilet amenity building in Santa Rosa Park to cater for park and sporting group users.	Short	City of Ryde	Public toilets located at convenient locations.
			Consider location of toilet in vicinity of playground to cater for kids and parents utilising playground.	Medium	City of Ryde	Public toilets located at convenient locations.
Bi, Ci, Fi	Quality playgrounds	Provide and maintain high quality playgrounds with a natural character in the design.	Provide upgraded playgrounds in locations specified in master plan and that relate to playground strategy.	Medium	City of Ryde	Playgrounds that are safe, well maintained and aesthetically relate to the surroundings they are located.
			Ensure playgrounds comply with Australian Standards	Ongoing	City of Ryde	Playgrounds that are safe, well maintained and aesthetically relate to the surroundings they are located.
			Ensure playground upgrades utilise renewable resources and have a natural theme to them	Medium	City of Ryde	Playgrounds that are safe, well maintained and aesthetically relate to the surroundings they are located.
Ai, Bi, Fi	Quality sports fields	Provide high quality sports fields	Provide affordable sporting field upgrades where required, including drainage to fields	Short	City of Ryde	High quality sporting fields

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Ai, Bi, Ci, Di, Ei Fi, Gi, Hi	Quality passive recreation	Encourage informal outdoor recreation and appreciation of creek line environment.	Provide high quality affordable upgrades to passive recreation spaces, where appropriate throughout.	Medium to Short	City of Ryde	High quality passive recreation opportunities
			Ensure passive recreation upgrades are of a holistic manner throughout parklands	Medium to Short	City of Ryde	High quality passive recreation opportunities
			Ensure upgrades accommodate environmental requirements.	Medium to Short	City of Ryde	High quality passive recreation opportunities
Ai	Quality remediation and revegetation works to Shrimptons Creek	High quality creek line environment.	Provide remediation and revegetation plans which follow DECC and DWE guidelines for remediation and revegetation.	Short	City of Ryde	High quality creek line environment.
			Ensure continued remediation of creek line area and revegetation works are in a staged manner and are carried out to high standards.	Short	City of Ryde	High quality creek line environment.
Ai, Bi, Ci, Fi	Quality picnic facilities	Encourage outdoor eating.	Provide high quality picnic facilities in convenient locations.	Medium	City of Ryde	High quality picnic facilities
			Provide picnic settings and BBQs made from renewable resources.	Medium	City of Ryde	High quality picnic facilities
			Install picnic facilities beside playgrounds	Medium	City of Ryde	High quality picnic facilities
Ai, Bi, Ci, Di, Ei Fi, Gi, Hi	Park entries	Ensure clear and recognisable park entries	Provide high quality park entries utilising a materials palette that is consistent across all of Shrimptons Creek's parks.	Medium	City of Ryde	High quality picnic facilities
Fi	Dog leash free area	Encourage dog owners to focus on one area to exercise their dogs. Reduce conflict of sporting group users with dog owners	Provide fenced dog leash free area in ELS Hall Park near Adelphi Road	Short	City of Ryde	Well used dog leash free area that reduces conflict with sporting groups.

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Ensure that size of fenced dog leash free area is comparable to Blenheim Park's dog leash free area.	Short	City of Ryde	Installation of the off leash area
			Ensure regulatory signage at entry to parks to emphasise that dogs must be on a leash when not in leash free area	Short	City of Ryde	Installation of the off leash area
			Resolve hours of operation, and lighting of dog leash free area.	Ongoing	City of Ryde	Well used dog leash free area that reduces conflict with sporting groups.
			Provide water, planting, dog poo disposal bins, seating and shelter in dog leash free area.	Short	City of Ryde	Well used dog leash free area that reduces conflict with sporting groups.
Ai, Bi, Ci, Di, Ei, Fi, Gi, Hi	Seating	Providing seating as rest stops throughout parkland	Provide rest stop seating near shared use pathway, in appropriate locations	Short	City of Ryde	Convenient seating locations that allow for appreciation of the parks.
			Include seating where views over the parks are possible	Short	City of Ryde	Installation of seating
			Provide seating made from renewable materials	Short	City of Ryde	Selection of seating materials
			Provide seating beside playgrounds with enough room for prams and the like.	Short	City of Ryde	Installation of seating
			Provide terraced spectator seating in Santa Rosa Park.	Short	City of Ryde	Installation of seating
			Upgrade spectator seating terracing in ELS Hall Park.	Short	City of Ryde	Installation of seating
			Provide terraced seating in Wilga Park's circular area	Short	City of Ryde	Installation of seating
Ai	Lighting	Ensure safe access ways, particularly at night in high usage areas	Provide lighting plan for shared use pathway	Short	City of Ryde	Safe access ways through park at night, particularly in high usage areas.

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Ensure care is taken in location of lighting to not impede or obstruct views of adjoining properties.	Short	City of Ryde	Safe access ways through park at night, particularly in high usage areas.
			Where possible include solar lighting option for lighting of parks and shared use pathway	Short	City of Ryde	Safe access ways through park at night, particularly in high usage areas.
Bi, Fi	Park bookings	Ensure all bookings meet the objectives of the Reserve	Provide guidelines for booking Santa Rosa Park and ELS Hall Park to appropriate trustee staff	Short	City of Ryde	Bookings consistent with the objectives of the Reserve
Ai, Fi	Bins	Encourage recycling of rubbish and minimise rubbish within Parks	Provide recycling bins.	Long	City of Ryde	Level of service defined and met.
			Provide bins along shared use pathway, where possible in conjunction with rest stop seating.	Long	City of Ryde	Bins installed
			Provide dog poo disposal bins (and bags) along shared use pathway at locations where easy for maintenance vehicles to access	Short	City of Ryde	Bins installed
			Provide additional bins near sporting fields	Short	City of Ryde	Bins installed
			Empty bins daily and after sporting games on weekends.	Ongoing	City of Ryde	Level of service defined and met.
			Ensure sports groups pay the full cost of the garbage service.	Ongoing	City of Ryde	Level of service defined and met.
			Review correct functionality of bins on a regular basis	Ongoing	City of Ryde	Level of service defined and met.
			Remove dumped rubbish from ELS Hall Park	Ongoing	City of Ryde	Level of service defined and met.

ACTION PLAN REFERENCE		ISSUE	STRATEGY	ACTION		PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Ai, Bi, Ci, Di, Ei, Fi, Gi, Hi	Garden Beds	Ensure healthy plants and attractive garden beds	Provide minimum monthly maintenance for established gardens.	Ongoing	City of Ryde	Ongoing	City of Ryde	Level of service defined and met. Bushcare volunteering policies defined and met.
			For newly established gardens provide weekly maintenance as a minimum for at least three months. Maintenance should include watering regime.	Ongoing	City of Ryde	Ongoing	City of Ryde	Level of service defined and met.
			Include horticultural maintenance.	Ongoing	City of Ryde	Ongoing	City of Ryde	Level of service defined and met.
			Top up mulching and clean mulch from adjacent areas	Ongoing	City of Ryde	Ongoing	City of Ryde	Level of service defined and met.
			Encourage continued bush regeneration volunteer works in Greenwood Park and encourage possible volunteer work in other parks along Shrimptons Creek	Ongoing	City of Ryde	Ongoing	City of Ryde	Level of service defined and met. Bushcare volunteering policies defined and met.
			Allow opportunities for planted areas to be maintained by local community such as at Tindarra Reserve. Possibly connect with interpretation trail and included as a native community garden.	Ongoing	City of Ryde	Ongoing	City of Ryde	Level of service defined and met. Bushcare volunteering policies defined and met.
Ai	Turf	Carry out turf maintenance	Continue regular mowing schedule and horticultural maintenance as required.	Long	City of Ryde	Long	City of Ryde	Level of service defined and met.
Ai, Bi	Fencing	Ensure fencing serves its purpose and is sympathetic to the landscape character of the park	Install fencing to park boundaries where facing streets.	Medium	City of Ryde	Medium	City of Ryde	A consistent appearance along park boundaries of fencing materials.
			Ensure fencing material is consistent throughout parklands.	Medium	City of Ryde	Medium	City of Ryde	A consistent appearance along park boundaries of fencing materials.

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Install bollards in Santa Rosa Park, near Bridge Road end, to differentiate Sydney Water land worksite from the park.	Medium	City of Ryde	A consistent appearance along park boundaries of fencing materials.
Ai, Bi, Fi	Carparking	Provide formalised car parking to reduce ad hoc parking, which is detrimental to park's appearance	Provide small formalised car parking of approximately 10 spaces near Air League building in Santa Rosa Park	Short	City of Ryde	Sufficient car parking and reduction of impact to parks with ad hoc parking.
			Provide formalised car parking for approximately 20 spaces off Scott Street in ELS Hall Park	Medium	City of Ryde	Sufficient car parking and reduction of impact to parks with ad hoc parking.
			Provide small formalised car parking for approximately 10 spaces off Adelphi Street in ELS Hall Park	Medium	City of Ryde	Carparking areas formalised
			Ensure disabled car parking spaces are in close proximity to park features and are clearly marked	Medium	City of Ryde	Sufficient disabled car parking
Ai	Recognising meeting spaces	Reinforce and expand on existing meeting spaces	Allow for clearer sight lines into parks.	Medium	City of Ryde	Meeting space and clear visual access into the Park.
Ai, Bi	Visual connectivity	Stronger visual connections within parks for safety and appearance	Provide clearer visual connection within parks by regular maintenance to prune vegetation near sightlines	Medium	City of Ryde	Good visual connection within parks
			Provide clearer visual connection within Santa Rosa Park from existing car park to sporting fields by providing a path and pruning vegetation.	Medium	City of Ryde	Good visual connection within parks
Di	Clarification of land ownership of old waterway land	Provide clarification of creek line status and correct location of waterway land.	Contact Dept of Lands regarding status of creek line ownership as to whether council or crown owned.	Long	City of Ryde and Dept of Lands	Correct land title information

5.2.2 Recreation

BACKGROUND	DESIRED OUTCOMES
<p>Shrimptons Creek Parklands is used for active and passive recreation. Santa Rosa Park is used for organised sporting activities such as cricket and soccer. ELS Hall Park is used for organised sporting activities such as cricket, soccer, Australian Rules Football, oztag, baseball and rugby.</p> <p>The access way in Shrimptons Creek Parklands is used by cyclists and walkers.</p> <p>There are few rest stops / seats or opportunities for refreshments</p> <p>The Park is also used extensively for passive recreation activities such as walking, however the park currently does not cater for these uses formally.</p> <p>Initiatives</p> <p>Upgrade active sporting areas within ELS Hall Park and Santa Rosa Park to retain these two parks as focal points along Shrimptons Creek Parklands.</p> <p>Integrate formalised passive use with active uses in ELS Hall Park and Santa Rosa Park.</p> <p>Provide seating or rest stops along access way throughout Shrimptons Creek Parklands</p> <p>Provide formalised passive recreation spaces</p> <p>Provide a café or kiosk within the ELS Hall Park.</p> <p>Provide community sporting facilities within ELS Park.</p> <p>Provide a community gardening facility within Santa Rosa Park.</p>	<p>Continued use of Santa Rosa Park and ELS Hall Park by sporting groups.</p> <p>Integrated use of Santa Rosa Park and ELS Hall Park by various users.</p> <p>Integrated park usage along Shrimptons Creek Parklands as a whole.</p> <p>Provision of a range of passive recreation opportunities that relate to the section of the parks they are located in and also relate to the creek line and natural environment.</p> <p>Recreational activities that cater for the local community as well as visitors to the area.</p> <p>Provision of rest stops and places for refreshment</p>

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Bii, Fii	Upgrade sporting facilities	Improve condition of fields	Allow for sporting field upgrades, including drainage of sporting fields	Ongoing	City of Ryde	Improved sporting facilities and increased usage of sporting facilities
			Allow for junior sporting fields in former county road in ELS Hall Park.	Ongoing	City of Ryde	Increased usage of sporting facilities
Bii, Fii	Integrated recreation opportunities along whole of parklands	Provide recreational opportunities for a variety of age groups.	Provide a variety of open spaces along Parklands	Medium	City of Ryde	Integrated and variety of recreation along Shrimptons Creek Parklands
			Encourage multiple usage of sporting facilities to continue in Santa Rosa Park and ELS Hall Park	Ongoing	City of Ryde	Integrated and variety of recreation along Shrimptons Creek Parklands
			Provide at least two multi-purpose sports fields – a junior sized field and a senior sized field that allows soccer to be played in winter and cricket to be played in summer.	Medium	City of Ryde	Integrated and variety of recreation along Shrimptons Creek Parklands
Bii, Cii, Dii, Eii, Fii, Gii, Hii	Improving passive recreation in parks	Provide opportunities for informal passive recreation activities.	Provide passive recreation activities that relate to the natural environment and creek line.	Long	City of Ryde	High quality recreation opportunities.
Bii, Cii, Dii, Eii, Fii, Gii, Hii	Recognising spaces for contemplation	Reinforce and expand on spaces for contemplation	Construct viewing points overlooking creek line. Ensure clear sightlines to viewing points	Medium to Long	City of Ryde	Places for contemplation.
Fii, Hii	Recognising meeting spaces	Reinforce and expand on existing meeting spaces	Create clearly visible meeting space in circular part of Wilga Park	Ongoing	City of Ryde	Meeting space and clear visual access into the Park.
			Create meeting and / or café space near car park of ELS Hall Park.	Medium	City of Ryde	
Bii, Cii, Fii, Hii	Rest stops	Provide points of rest and contemplation.	Provide seating, water stations, rest stops and viewing areas throughout Shrimptons Creek Parklands, particularly beside access way	Short	City of Ryde	Rest stops utilised by people using access way.

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Bii, Cii, Fii	Upgrade children's playgrounds	Improve play opportunities.	Allow for playground upgrades to reflect natural environment character of parks. Explore innovative play opportunities, particularly involving environmental education principles Allow for playgrounds to cater for different age groups	Medium Ongoing Medium	City of Ryde City of Ryde City of Ryde	Exciting and educational children's playgrounds and play experiences Exciting and educational children's playgrounds and play experiences Exciting and educational children's playgrounds and play experiences
			Provide new playground in Santa Rosa Park in location that interacts with sporting fields and shared use pathway	Medium	City of Ryde	Playground installed
			Renew playground in ELS Hall Park, near Kent Road and Greenwood Park, with the design and materials to reflect upon the natural character / environment.	Medium	City of Ryde	Playground installed
			Renew existing playground in Flinders Park to reflect an environmental education or natural character. Allow for interpretation trail to link in with playground	Medium	City of Ryde	Playground installed
Bii, Fii	Toilets and change rooms	Ensure toilets and change rooms for use by sporting groups and the public are of a high quality	Assess condition of existing toilets and change rooms.	Short	City of Ryde	High quality toilets and amenities appropriately located that meet stakeholder and public requirements
Bii, Dii, Eii, Fii, Gii	Walking loops	Provide walking loop to connect with access way and other park facilities	Design and construct pathways to link in with existing and provide a connection to highly utilised areas within parks	Short	CoR	Exercise paths within parks.

5.2.3 Natural and Landscape

BACKGROUND	DESIRED OUTCOMES
<p>One ecologically endangered plant community is located along Shrimptons Creek Parklands: Sydney Turpentine Ironbark Forest; (which includes the similar Sydney Turpentine Ironbark Forest Margin);</p> <p>Shrimptons Creek is a designated creek line. Works carried out along this creek should be in accordance with Dept of Water and Energy guidelines.</p> <p>A 20m to 30m Riparian Corridor width, each side of the creek is recommended by Dept of Water and Energy</p> <p>Dense weed growth is an issue throughout the creek line.</p> <p>Remediation and revegetation works have been suggested along some segments of Shrimptons Creek.</p> <p>Shrimptons Creek Parklands is appreciated for its trees and natural environment</p> <p>Initiatives</p> <p>Vegetation Management Plan for the remnant ecologically endangered plant communities</p> <p>Vegetation Management Plan for the riparian corridor</p> <p>Water recycling study for ELS Hall Park</p> <p>Landscape upgrades</p>	<p>Continued implementation of Stormwater Management Plan (July 1999)</p> <p>Continued staged weed removal</p> <p>Managed remediation and revegetation works along creek line.</p> <p>Continued maintenance of the tree canopy along Shrimptons Creek Parklands.</p> <p>Revegetation of parks with ecologically endangered plant communities species.</p> <p>Continued maintenance of ornamental native gardens that relate to the character of Tindarra Reserve, ELS Hall Park and Wilga Park</p> <p>Provision of water recycling.</p>

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Biii, Ciii, Diii, Eiii, Fiii, Giii, Hiii	Catchment Management	Improve catchment water quality going through Shrimptons Creek	Include Water Sensitive Urban Design options for park upgrades.	Ongoing	City of Ryde and adjacent Local Government Authorities	Improved water quality
			Ensure Riparian Corridor acts as a buffer zone to creek line	Ongoing	City of Ryde	Improved water quality
			Ensure GPT units and sediment traps have litter liners and are regularly maintained	Ongoing	City of Ryde	Maintenance service levels are met
			Replace or fix netting over existing stormwater outlet near Trivett Street (ELS Hall Park) with a litter net.	Ongoing	City of Ryde	Maintenance service levels are met
			Provide drainage swales and biofiltration options where Creek is close by roads, particularly in ELS Hall Park and beside future roads near Wilga Park.	Short	City of Ryde	Improved water quality
Biii, Ciii, Diii, Eiii, Fiii, Hiii	Creek remediation	Improve the performance, water quality and appearance of the creek	Reduce impact of high velocity flows through the use of rock armouring and the like, particularly along areas of high erosion and soft engineering methods such as coir logs, where appropriate	Short	City of Ryde	Improved condition of the creek.
			Rebuild banks in pinch point at Flinders Park and at vehicular entry to ELS Hall Park from Kent Road, with hard engineering methods such as sandstone boulders.	Short	City of Ryde	Improved condition of the creek.
			Rebuild banks with soft engineering methods such as coir logs in mid section of Greenwood Park	Short	City of Ryde	Improved condition of the creek.
			Investigate option of constructing rock armouring over existing concrete channel at Greenwood Park.	Short	City of Ryde	Investigation completed

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Provide for the revegetation of creek as part of remediation works and to follow on from any weed removal	Short	City of Ryde	Improved condition of the creek.
			Investigate option for wetlands or macrophyte areas near drainage outlets to creek	Short	City of Ryde	Improved condition of the creek.
			Assess and provide for fauna habitat at planning stage of remediation works.	Ongoing	City of Ryde	Assessments undertaken
Ciii	Weed Removal	Staged removal of dense weed growth along creek line	Provide for the staged removal of weeds to coincide with remediation and revegetation works	Short	City of Ryde	Weed free sections of creek
			Assess and provide for fauna habitat at planning stage of remediation works.	Ongoing	City of Ryde	Assessments undertaken
Biii, Ciii, Diii, Eiii, Fiii, Giii	Vegetation within Parkland	Ensure the continued protection and enhancement of existing tree canopy and natural landscape.	Provide for the staged revegetation of areas with recent weed removal	Ongoing	City of Ryde	Embellishment of revegetation programs
			Provide for the continued protection and enhancement of remnant ecologically endangered plant communities.	Short	City of Ryde	Implementation of revegetation programs
Hiii			Provide vegetation connections to existing stands of remnant vegetation communities within and beyond the Parklands	Short	City of Ryde	Establishment of connections
			Provide for the appropriate revegetation of Riparian Corridor.	Short	City of Ryde	Establishment of connections
			Ensure planting works utilise indigenous native species wherever possible.	Ongoing	City of Ryde	Use of appropriate plant species
			Maintain and enhance existing ornamental native vegetation where located.	Ongoing	City of Ryde	Maintenance service levels are met
			Allow for the continued ambiance of the parklands, with their natural landscape and treed canopy, to be maintained.	Ongoing	City of Ryde	Additional trees planted and maintenance service levels met

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Provide for the continuation of the existing tree canopy throughout parklands and along near by streets	Ongoing	City of Ryde	Additional trees planted
			Provide vegetation links to parks beyond Shrimptons Creek Parklands.	Ongoing	City of Ryde	Additional vegetation planted
			Ensure Council's tree protection measures are enforced to protect existing trees to be retained with works that take place within parks.	Ongoing	City of Ryde	
Biii, Ciii, Diii, Eiii, Fiii, Giii, Hiii	Stormwater and flooding	Minimise impacts of localised flooding.	Allow for the continued implementation of the Stormwater Management Plan (July 1999)	Short	City of Ryde	Reduced incidence of localised flooding
			Allow for small, landscaped detention areas, where possible, within parklands for use when storm events occur	Short	City of Ryde	Installation of detention basins
			Upgrade stormwater outlet to incorporate litter net at 57 Bridge Road in Flinders Park	Short	City of Ryde	Outlet upgraded
			Install GPT and other stormwater outlet device at crossing leading onto Lucinda Road in Flinders Park; northern end of Tindarra Reserve; near the eastern end of Greenwood Park; at the vehicular entry to ELS Hall Park.	Short	City of Ryde	Installation of GPT
Biii, Ciii, Diii, Eiii, Fiii, Giii, Hiii	Erosion and sedimentation control	Eradicate erosion problems and sedimentation build-up	Where possible provide vegetated and terraced slopes beyond Riparian Corridor.	Short	City of Ryde	Areas are vegetated
			Ensure densely planted Riparian Corridor	Ongoing	City of Ryde	Areas are vegetated
			Include water sensitive urban design methods for drainage collection to reduce sedimentation.	Ongoing	City of Ryde	Use of WSUD

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Allow for regular maintenance of sediment traps.	Ongoing	City of Ryde	Maintenance service levels met
			Formalise paths in bushland areas, including drainage measures	Short	City of Ryde	Construction of paths completed
			Provide silt fencing to prevent sedimentation of Santa Rosa Park from Fawcett Street	Short	City of Ryde	Installation of silt fencing
Biii, Fiii, Hiii	Water usage	Reduce amount of water usage in Parklands	Investigate water recycling options for sporting field irrigation at ELS Hall Park and Santa Rosa Park.	Medium	City of Ryde	Reduced use of potable water.
			Investigate water reuse options for toilets in amenities buildings	Medium	City of Ryde	Investigations completed
			Allow for the installation of rainwater tanks on buildings along parklands	Medium	City of Ryde	Installation of tanks
			Include Water Sensitive Urban Design measures in park upgrades	Medium	City of Ryde	Use of WSUD
			Include permeable pavements, where possible	Medium	City of Ryde	Use of permeable pavements
			Ensure regular top up of mulch to garden beds to reduce water evaporation	Ongoing	City of Ryde	Maintenance service levels met
Hiii	Public Domain Upgrades	Incorporate public domain details from Macquarie Park Corridor DCP and Technical Manual	Provide consistent streetscape amenity to parks located within Macquarie Park Corridor	Long	City of Ryde	Recognisable visual connection of public domain adjacent to parkland.
			Incorporate the public domain details at entry points to all parkland for consistency.	Long	City of Ryde	Recognisable visual connection of public domain adjacent to parkland.

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Biii, Ciii, Diii, Eiii, Fiii, Giii, Hii	Street tree planting	Street tree planting to reflect the landscape character of the parks, particularly at entry points	Provide native street tree planting at entries to parks and along streets facing boundaries.	Long	City of Ryde	Recognisable visual connection of public domain adjacent to parkland.
Biii, Ciii, Diii, Eiii, Fiii, Giii, Hii	Landscaping within parkland	Reinforce natural character of Shrimptons Creek Parklands	Ensure planting works utilise native species wherever possible Include bird attracting native species where possible Ensure planting works utilise indigenous native species wherever possible Playgrounds should reflect natural character in design and materials and include planting	Ongoing Ongoing Ongoing	City of Ryde City of Ryde City of Ryde	Use of appropriate species Use of appropriate species Use of appropriate species
			Playgrounds should reflect natural character in design and materials and include planting	Medium	City of Ryde	Materials in playgrounds are natural in character
			Provide park boundary planting to soften appearance and to provide screening of boundary fencing.	Medium	City of Ryde	Use of appropriate species
			Provide planting to help screen pipework and the like within parks	Short	City of Ryde	Use of appropriate species
			Ensure Council's tree protection measures are enforced to protect existing trees to be retained with works that take place within parks.	Ongoing	City of Ryde	Maintenance service levels are met
	Community Nursery and Garden	Development of a community nursery and garden in Santa Rosa Park	In partnership with the local community, establish, operate and manage a community nursery to grow plans for use in public space and to promote habitat creation on private land	Short	City of Ryde	Establishment of nursery and garden
	Zoning of environmental protection zone	Ensure the correct zoning of land within the Parklands	Modify the LEP to reflect zoning recommendations	Medium	City of Ryde	LEP modified

5.2.4 Cultural

BACKGROUND	DESIRED OUTCOMES
<p>Shrimptons Creek Parklands has a strong environmental focus. Environmental education should be encouraged.</p> <p>The history of the area the parklands is located includes market gardens, and technical industries.</p> <p>The Ryde area has a strong connection with significant historical indigenous people.</p>	<p>Identifiable and innovative recognition of the environmental importance of Shrimptons Creek</p> <p>Cultural and environmental events occurring along Shrimptons Creek Parklands</p> <p>Clearer wayfinding along access way</p> <p>Encouraged community use of facilities</p>
<p>Initiatives</p> <p>Public Art Strategy</p> <p>Environmental Education Strategy</p> <p>Cross Cultural Communication Strategy</p> <p>Community Building Strategy</p>	

ACTION PLAN REFERENCE		ISSUE	STRATEGY	ACTION		PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Biv, Civ, Div, Eiv, Fiv, Hiv	Environmental Education	Establish an innovative program and means of exploring the creek line.	Establish an environmental education type interpretation trail or exploration route which can be followed by individuals or school groups.	Medium	City of Ryde	Medium	City of Ryde	Awareness of the creek line environment.
Civ, Giv, Hiv	Public Art	Incorporate innovative public art to educate and provide awareness of the creek environment	Provide public art strategy and implement	Long	City of Ryde	Long	City of Ryde	Strategy completed and art installed
			Include public art installations along creek line that educate and inform on the creek environment	Long	City of Ryde	Long	City of Ryde	Art installed
			Include public art to reduce impact of 1.8m high timber boundary fencing near Waterloo Road in Wilga Park	Long	City of Ryde	Long	City of Ryde	Fence installed
			Include public art at entry point into parks.	Long	City of Ryde	Long	City of Ryde	Art installed
			Investigate public art option such as mosaics for Epping Road underpass between Booth Reserve and Department of Housing land.	Long	City of Ryde	Long	City of Ryde	Investigations completed
Fiv Hiv	Events and festivals	Establish a program of events and festivals that celebrate the natural environment and provide awareness of the creek line environment.	Develop potential new events and festivals that focus on environmental concerns	Long	City of Ryde	Long	City of Ryde	Varied program of environmentally themed events and festivals
			Publicise events to local and greater community	Ongoing	City of Ryde	Ongoing	City of Ryde	Events advertised
			Provide facilities that could be utilised for events or festivals within the parks.	Long	City of Ryde	Long	City of Ryde	Facilities provided

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Biv, Civ, Div, Fiv, Hiv	Social and cultural groups	Provide a range of opportunities for social and cultural activities	Parkland amenities and services to include a range of group sizes including picnic settings and food preparation areas Allow for unstructured cultural activities. Allow for unstructured activities for varied age ranges Allow for possibility of native community garden in Tindarra Reserve.	Medium Ongoing Ongoing Medium	City of Ryde City of Ryde City of Ryde City of Ryde	Social and cultural groups enjoying Shrimptons Creek Parklands Uses catered for Uses catered for Installation of garden

5.2.5 Access and Linkages

BACKGROUND	DESIRED OUTCOMES
<p>Shrimptons Creek Parklands has a well utilised shared use pathway that runs the length of these parks.</p> <p>Connections between features outside the park and other levels within the parks should be encouraged.</p> <p>Regional bike paths should accommodate pedestrian activity.</p> <p>'Safer by Design' should be utilised in upgrades and maintenance of access ways.</p> <p>Lighting of access ways should be considered, particularly in high use areas.</p> <p>Initiatives</p> <p>Wayfinding Strategy</p> <p>Lighting Plan</p>	<p>Clear connections to adjacent land uses and public transport</p> <p>Continued provision of recreational trails for walkers, dog walkers and bike riders</p> <p>Safe negotiation paths at all times</p>

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
Bv, Cv, Ev, Fv, Gv, Hv	Links to transport nodes and nearby community facilities	Provide clear connections to transport nodes and community facilities.	Construct connection paths, where required, to transport nodes and community facilities	Medium	City of Ryde	Clear connections to nearby transport nodes and community facilities
			Provide clear sightlines along paths and between connections.	Medium	City of Ryde	Clear sight lines created
			Provide easily negotiated connection (possibly vegetated) between Santa Rosa Park and Yamble Reserve.	Medium	City of Ryde	Improved access
			Provide path link to Kent Road from Wilson Street bounded section of Greenwood park.	Medium	City of Ryde	Path installed
Fv	Pedestrian entries into parks	Provide obvious pedestrian focused entry points into parklands from adjacent roads.	Provide pedestrian access points in ELS Hall Park at Adelphi Road, Scott Street and Kent Road (beside vehicular access).	Medium	City of Ryde	Obvious entry points that cater for pedestrian use.
Bv, Cv, Dv, Ev, Fv, Hv	Connections within parks	Provide formalised connections within parks to other park facilities, such as in ELS Hall Park	Construct formalised path connections to other facilities within parks such as ELS Hall Park and Santa Rosa Park	Short	City of Ryde	Clear access to other facilities within parks
			Provide formalised path along section of Greenwood Park bounded by Wilson Street and linking with Leslie Street path.	Short	City of Ryde	Path installed
			Provide creek crossings in Santa Rosa Park, Tindarra Reserve, ELS Hall Park and Wilga Park to allow for loop walks, but also connection to other features both internally and externally to the parks.	Short	City of Ryde	Crossings installed
Bv, Cv, Dv, Ev, Fv, Gv, Hv	Safer by Design	Incorporate 'Safer by Design' measures in park upgrades, particularly along access way	Prune dense vegetation within 3 metres of pathways to improve sightlines	Short	City of Ryde	Safer access ways.

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Plant low growing groundcovers or grasses (below 1m in mature height) within 3 metres of pathway and trees with tall mature canopy	Short	City of Ryde	Use of appropriate species
			Provide lighting plan and upgrades to access way, especially high use areas	Short	City of Ryde	Completion of lighting plan
			Install convex mirrors at two blind corners south of Kent Road.	Short	City of Ryde	Installation of mirrors
Bv Fv	Bicycle parking facilities	Increase facilities catering for non-motorised modes of transport	Install bike parking facilities adjacent to rest stops and in larger parks near other park facilities	Medium	City of Ryde	Increased bicycle patronage
			Install bike parking facilities near bus stops, such as Greenwood Park and near public transport nodes.	Medium	City of Ryde	Bike parking installed
Bv, Cv, Dv, Ev, Fv, Gv, Hv	Wayfinding and signage	Increase legibility of access through Shrimptons Creek Parklands and adjacent connections	Provide signage strategy that relates to the Macquarie Park Corridor DCP and Technical Manual	Medium	City of Ryde	Clear directional signage and entry markers
			Ensure regulatory park signage is in visible location at all park entries	Ongoing	City of Ryde	Signage installed
			Reinforce regulatory signage indicating that motorbike and minibike usage in parks is not allowed.	Ongoing	City of Ryde	Signage installed
			Ensure regulatory signage at entry to parks to emphasise that dogs must be on a leash when not in leash free area.	Short	City of Ryde	Signage installed
			Ensure regulatory signage at entry to parks to emphasise that horses are not allowed within parks.	Short	City of Ryde	Signage installed
			Ensure shared use signage from NSW Bicycle Guidelines is installed for awareness of different users of path.	Short	City of Ryde	Signage installed

ACTION PLAN REFERENCE	ISSUE	STRATEGY	ACTION	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR
			Design and install iconic 'logo' for access way at entries. Logo should be visual and require minimal language.	Short	City of Ryde	Logo designed and implemented
			Install clear directional wayfinding signage between missing links such as Ford Street	Short	City of Ryde	Signage installed
			Investigate additional option for missing link of inclusion of 1.2m wide pedestrian footpath between Flinders Park and Tindarra Reserve along Ford Street.	Short	City of Ryde	Path constructed
			Allow for inclusion of shared use pathway linkage beside Scott Street to allow for pedestrian and cycle access. Provide wayfinding signage to indicate this.	Short	City of Ryde	Path constructed and signage installed
			Provide wayfinding signage at entries to parks.	Short	City of Ryde	Signage installed
			Include signage that provides awareness of safety issues along shared use pathway when rain event occurs	Short	City of Ryde	Signage installed
Bv, Cv, Dv, Ev, Fv, Gv, Hv	Access for all	Improve access for all people using Shrimptons Creek Parklands	Incorporate even surfaced paths, pedestrian ramps and accessible grades that comply with Australian Standards	Medium	City of Ryde	Access ramps and provision of surfaced constructed to Australian Standards.

5.3 Landscape Master Plan

Proposed Landscape Master Plans are illustrated in **Figures 5.1 to 5.11**. These Master Plans indicate works and actions that the Action Plan proposes for implementation in order to achieve the objectives and desired outcomes for Shrimptons Creek Parklands.

5.3.1 Key proposals

Key proposals for Shrimptons Creek Parklands include:

A. Shrimptons Creek Parklands

Ai. Management

- Manage the parklands as a whole in relation to impacts or improvements to the creek line, the creek line buffer and the open space corridor.
- Provide consistencies along parklands in regard to materials to allow parkland to be read as a whole.
- Provide lighting of the shared use pathway, particularly where pedestrian movement is most frequent, such as at Macquarie Park.
- Ensure 'Safer by Design' measures are implemented along the whole access way.
- Provide picnic areas within Santa Rosa Park near the playground and overlooking the sports fields. Upgrade BBQ and picnic facilities within ELS Hall Park.

Aii. Recreation

- Retain playing fields in Santa Rosa Park and ELS Hall Park as focal points along parklands. Enhance facilities in these two parks to encourage multi-use recreation opportunities.
- Investigate active playing opportunities for Wilga Park.
- Upgrade playgrounds within Santa Rosa Park, Flinders Park and ELS Hall Park with their design and materials to reflect upon the natural character / environment.

Aiii. Natural and landscape

- Continue to implement the Stormwater Management Plan for the Lane Cove River Catchment (July 1999);
- Follow a staged approach in the remediation of Shrimptons Creek.
- Consider the inclusion of small macrophyte or wetland areas, where major drains discharge into the creek corridor, to improve the water quality of Shrimptons Creek.
- Weed removal along creek line and in parks shall be in staged manner and include revegetation works. Where works are considered to have a major impact on creek line and parkland, a vegetation management plan shall be provided and Department of Water and Energy shall be notified of the proposed works.
- Retain environmental 'spine' character along whole of parklands.
- Provide a continuous tree canopy within the parks and along near by streets.
- Provide vegetation connections, where possible, to existing stands of remnant vegetation

communities that exist within and beyond Shrimptons Creek Parklands.

- Provide vegetation links to parks that lie beyond Shrimptons Creek Parklands.

Aiv. Cultural

- Allow for interpretation of the creek line and educational exploration points along the creek line.
- Provide for cultural events in locations such as Santa Rosa Park, ELS Hall Park and Wilga Park.
- Allow for interpretation of the creek line including viewing points.
- Provide multi-lingual information signage for wayfinding purposes or utilise graphics to international standards;
- Provide public art opportunities that interpret the creek line and natural environment;

Av. Access and linkages

- Provide for linkages or connections along the shared use pathway.
- Allow for viewing points along the creek line to increase a visual connection with Shrimptons Creek.
- Retain shared use pathway along whole of parklands.
- Provide wayfinding signage or graphics along access way.
- Provide linkages to local community centres, schools, public transport and nodes within Macquarie Park Corridor.
- Provide clear entry points into the parks, which are consistent in appearance to allow for parkland to be read as a whole.

B. Santa Rosa Park

Bi. Management

- Address the street frontages to both Quarry Road and Bridge Road with landscaping to provide clearer and more inviting entries.
- Provide a stronger visual connection within Santa Rosa Park, particularly from the car park and existing playground to the sports fields.
- Provide public toilets near proposed playground area.
- Provide picnic area and BBQ in vicinity of Air League building, overlooking the sports fields and augment tree planting in this area.
- Provide small car park area off Bridge Road to reduce informal car parking within Santa Rosa Park.
- Provide a community nursery and productive garden in Santa Rosa Park.

Bii. Recreation

- Provide at least two definite multi-purpose sports fields – a junior sized field and a senior sized field, to allow for soccer to be played in winter and cricket to be played in summer.

- Provide for a passive recreation area and pathway that interacts with Shrimptons Creek and the proposed remediation works.
- Provide a new small playground area in location that can have interaction with the shared use pathway and interaction with sporting fields so that visibility of playground is possible whilst sport is being played.

Biii. Natural and landscape

- Allow for proposed remediation works to Shrimptons Creek to be carried out as planned;
- Allow for regrading of the site to accommodate local flooding concerns, particularly local flooding near residential properties.
- Where possible, provide a 10m Core Riparian Zone and 10m Vegetated Buffer along this section of Shrimptons Creek.
- Install GPTs or other stormwater outlet devices near where Shrimptons Creek daylight in the southern section of the park and from Fawcett Street.
- Upgrade the stormwater outlets to incorporate litter nets.
- Provide silt fencing to prevent runoff and sedimentation where indicated.
- Rebuild the bank near one of the outlets using soft engineering methods such as coir logs.

Biv. Cultural:

- Provide opportunities to 'explore' the creek with viewing points and interpretation of the creek and proposed remediation works;

Bv. Access and linkages

- Strengthen appearance of entry points from Fawcett Street and Zola Avenue;
- Provide for two creek crossings from the sporting fields to the creekline passive recreation area to allow for a loop walk from within Santa Rosa Park.
- Provide pathway connections within Santa Rosa Park to the main pedestrian and cycle accessway.
- Provide for a clear connection between Santa Rosa Park and Yamble Reserve along Quarry Road.

C. Flinders Park

Ci. Management

- Remove picnic shelters and provide picnic facilities such as seating and BBQs in the vicinity of the upgraded playground.
- Allow for seating beside playground with enough room for prams and the like.
- Provide rest stop seating near pedestrian and cycle access way.

Cii. Recreation

- Renew existing playground to reflect an environmental education or natural character. Allow for interpretation trail to link in with playground.

Ciii. Natural and landscape

- Stage the removal of noxious weeds along section of Shrimptons Creek within Flinders Park with remediation works to the creek line.
- Augment existing planting with species from the Sydney Turpentine Ironbark Forest plant community.
- Retain trees in grass in the larger spaces and augment with additional tree planting.
- Upgrade stormwater outlet to incorporate litter net in the 57 Bridge Road section of Flinders Park.
- Remove sediment build up from the bedrock stream bed in the 57 Bridge Road section of Flinders Park.
- Investigate bank stability of creek in 57 Bridge Road section.
- Rebuild banks in the pinch point where the widening of the shared use pathway is proposed. Utilise hard engineering methods such as sandstone boulders.
- Rebuild banks in section of Flinders Park indicated with hard engineering methods such as sandstone boulders.
- Upgrade stormwater outlet to incorporate litter net where indicated.
- Install GPT and other stormwater outlet device at crossing leading on to Lucinda Road.

Civ. Cultural

- Provide opportunities to 'explore' the creek with viewing points and interpretation of the creek and proposed remediation works.
- Include an interpretation type trail that allows for environmentally focussed public art / interpretation or environmental education opportunities.

Cv. Access and linkages

- Provide an informal crossing between 57 Bridge Road and the main section of Flinders Park.
- Widen the existing shared use pathway at pinch point with cantilevered decking or similar.
- Formalise entry points into Flinders Park and provide clear wayfinding information at these entry points for connections to adjacent parks, community facilities, local schools and the like.

D. Tindarra Reserve:

Di. Management

- Consider requesting the land allocated as Shrimptons Creek be resurveyed to align with the existing location of the creek line.
- Allow opportunities for planted areas maintained by the local community, connecting garden with interpretation trail and possibly forming a native community garden;
- Provide consistencies along parklands in regard to materials to allow parkland to be read as a whole.

Dii. Recreation

- Retain passive recreation components within Tindarra Reserve.

Diii. Natural and landscape

- Maintain where possible, a 10 metre core riparian zone and 10 metre Vegetated Buffer either side of this section of Shrimptons Creek.
- Upgrade stormwater outlet to incorporate litter net where indicated.
- Install GPT and other stormwater outlet device near the northern extent of Tindarra Reserve.

Div. Cultural

- Provide creek crossing to opposite side of Tindarra Reserve with a link to Ruse Street. Allow with the incorporation of crossing, a viewing opportunity of creek line.

Dv. Access and linkages

- Retain existing pedestrian and cycle access way.
- Provide wayfinding information to strengthen connection between Flinders Park and Tindarra Reserve along Ford Street, possibly marking Ford Street a solid colour indicating a pathway.
- Provide a secondary path on the western part of Tindarra Reserve with native ornamental planting reflective of the eastern section of the park.
- Formalise entry points into Tindarra Reserve and provide clear wayfinding information at these entry points for connections to adjacent parks, community facilities, local schools and the like.

E. Greenwood Park

Ei. Management

- Continue bush regeneration works within Greenwood Park.
- Provide consistencies along parklands in regard to materials to allow parkland to be read as a whole.
- Provide lighting of the pedestrian and cycle access way, particularly where pedestrian movement is most frequent.
- Ensure 'Safer by Design' measures are implemented along the whole access way.

Eii. Recreation

- Retain passive recreation components within Greenwood Park.

Eiii. Natural and landscape

- Install GPT and other stormwater outlet device near the eastern extent of Greenwood Park.
- Upgrade stormwater outlet to incorporate litter net.
- Remove sediment build up from the bedrock stream bed near existing pedestrian and cycle bridge crossing.
- Provide silt fencing to prevent runoff and sedimentation upstream of the existing pedestrian and cycle bridge. Rebuild banks utilising soft engineering methods such as coir logs in the mid section of the arm of Shrimptons Creek in Greenwood Park;
- Investigate option of naturalising concrete channel from Kent Road culvert with rock armouring and planting.

Eiv. Cultural

- Provide opportunities to 'explore' the creek with interpretation, especially of the bush regeneration work within this park, and viewing points.
- Provide creek crossing at eastern end of Greenwood Park to access Kent Road and the bus stop;

Ev. Access and linkages

- Provide pathway link to Kent Road in section of land between housing;
- Formalise desire line path along length of Greenwood Park with material that is sympathetic with the natural character of this park.

F. ELS Hall Park

Fi. Management

- Provide new community facility near existing car park. Community facility could include a kiosk, meeting rooms and accommodate indoor multi-use courts. Include area for spectator seating to soccer field.
- Provide fenced dog leash free area in the former country road area at the end Adelphi Road. Include seating area within dog leash free area.
- Include seating and viewing areas beside the proposed shared use path from the former county road area / upper section to take in the views over the playing fields.
- Provide a small car park at the end of Adelphi Road for dog leash free users to utilise (accommodate for up to 10 parking spaces). Include landscaping to car park. Provide pedestrian path connections to mixed use path from car parks.
- Provide a small car park at the end of Scott Street and formalise entry to ELS Hall Park from this street to reduce the incidence of informal parking in the park. Provide up to 20 parking spaces. Include landscaping to car park.
- Upgrade and provide additional picnic facilities.
- Provide new picnic facilities near upgraded playground.
- Upgrade existing spectator terracing to area beside playing field.

Fii. Recreation

- Provide drainage improvements to sporting fields.
- Provide possible junior playing field opportunities on former county road land.
- Renew playground near Kent Road and Greenwood Park with the design and materials to reflect upon the natural character / environment.
- Remove old swing set near Kent Road entry.
- Provide an indoor community sports facility within ELS Hall Park.

Fiii. Natural and landscape

- Expand the vegetation communities from the northern end of the Park and from Greenwood Park along the creek line, with vegetation augmented in the upper area of the park selected from the Sydney Turpentine Ironbark Margin Forest plant community.
- Investigate opportunities for wetland or bioretention elements along Shrimptons Creek, where

room allows.

- Provide boundary planting along former county road to soften this edge.
- Retain small natural drainage swale near Scott Street within ELS Hall Park and upgrade as a feature in this area. Where possible provide a 30m Riparian Corridor width (Core Riparian Zone of 20m and Vegetated Buffer of 10m) either side of Shrimptons Creek.
- Install GPTs or other stormwater outlet device near Kent Road vehicular entry.
- Upgrade stormwater outlet to incorporate litter net.
- Provide potential constructed wetland or other nutrient trapping device and bridge crossing below playing fields.
- Provide silt fencing to prevent runoff and sedimentation.
- Rebuild banks, utilising soft engineering methods such as coir logs, along tributary to Shrimptons Creek in ELS Hall Park, where indicated.
- Rebuild banks, utilising hard engineering methods such as sandstone, along tributary to Shrimptons Creek near Kent Road vehicular entry.
- Fence off and revegetate with vegetation eco-sourced from remnant ecological plant communities where indicated along tributary and creekline.
- Replace or fix netting over existing stormwater outlet near Trivett Street with litter net.
- Remove dumped material located along Shrimptons Creek near remnant bushland area.

Fiv. Cultural

- Provide opportunities to 'explore' the creek line by including an interpretation trail leading from the existing car park to the upgraded playground. Provide viewing opportunities and one creek crossing to enable access to upgraded playground from car park.
- Explore opportunities to provide for cultural events within ELS Hall Park.

Fv. Access and linkages

- Provide links between upper areas and lower area of ELS Hall Park.
- Provide a creek crossing in the southern section of the park where a tributary of the creek heads into the park.
- Formalise one of the desire lines between the upper field area and lower creek area near Beswick Avenue.
- Formalise one of the desire line paths in the remnant Sydney Turpentine Ironbark Forest area to minimise disturbance to bushland area. Path material to be sympathetic to bushland area.
- Provide a mixed used pathway in the former county road area that allows for a local cycle link between regional cycle paths. Include a link to the existing fitness area and between the two playing fields.
- Possible inclusion of shared use pathway linkage beside Scott Street to allow for pedestrian and cycle access.
- Provide separate formalised pedestrian access entry path from Adelphi Road.

- Provide formalised entry point from Scott Street where current desire line exists beside bushland area and continue path to link in with existing shared use pathway.
- Formalise dirt track that edges the bushland area from the upper level to the playing field level.
- Provide linkage paths to existing fitness trail.
- Provide loop path around ELS Hall Park.

G. Booth Reserve

Gi. Management

- Establish a maintenance program for existing GPT in Booth Reserve near Epping Road and establish regular inspections of GPT.

Gii. Recreation

- Retain passive recreation components within Booth Reserve.

Giii. Natural and landscape

- Where possible provide a 30 metre Riparian Corridor width (20 metre Core Riparian Zone and 10 metre Vegetated Buffer) to either side of Shrimptons Creek.
- Continue to revegetate Booth Reserve with Sydney Turpentine Ironbark Forest plant species to provide a continuous bushland link from ELS Hall Park and to provide some form of connectivity to the Department of Housing land, which has a good stand of Sydney Turpentine Ironbark Margin Forest.

Giv. Cultural

- Investigate public art options, such as tiled mosaics, to make access under Epping Road more appealing.

Gv. Access and linkages

- Formalise path connection from Booth Street to existing pedestrian and cycle access way.

H. Wilga Park

Hi. Management

- Incorporate 'Safety by Design' measures within Wilga Park.
- Provide lighting, possibly up to P3 standard along pedestrian and cycle access way.
- Provide viewing opportunities of Shrimptons Creek in clearly sited locations to deter loitering.
- Prune back and underprune existing vegetation along path entry from Waterloo Road to improve sight lines.
- Provide seating terracing to circular area of Wilga Park.
- Upgrade common area to allow for clearly visible meeting spaces, outdoor 'study' areas, possible fitness path or other form of informal fitness and possible playground.
- Establish maintenance program for existing GPTs within Wilga Park and establish regular inspections of GPTs.

Hii. Recreation

- Retain passive recreation components within Booth Reserve.
- Explore possibilities of including a multi-use junior playing field in Wilga Park.

Hiii. Natural and landscape

- Where possible provide a 30 metre Riparian Corridor width (20 metre Core Riparian Zone and 10 metre Vegetated Buffer) either side of Shrimptons Creek.
- Revegetate, where possible, with Sydney Turpentine Ironbark Margin Forest plant species eco-sourced from nearby remnant stands of this plant community.
- Upgrade stormwater outlet to incorporate litter net.
- Replace or fix netting over existing stormwater outlets with litter nets.

Hiv. Cultural

- Provide public art opportunities at Waterloo Road end of Wilga Park to highlight path entry from Waterloo Road.
- Provide public art expression of the creek line under Waterloo Road, Talavera Road and Macquarie Centre.

Hv. Access and linkages

- Provide possible pedestrian creek crossings to commercial area.
- Provide a loop path to circular area of Wilga Park.
- Formalise entry points into Wilga Park and provide clear wayfinding information at these entry points for connections to adjacent parks, community facilities, local schools and the like.

5.3.2 Design Guidelines

The main theme that dominates Shrimptons Creek Parklands is the natural environment. The tree canopy, the creek line and the bushland are elements that have been recognised by members of the local community as features that make these parks enjoyable.

The design guidelines should therefore reinforce the natural character evident. Emphasis should be placed on seating, playgrounds and the like displaying this natural character. Materials for paths should take into account the natural character in their colouring or the use of permeable pavements where possible.

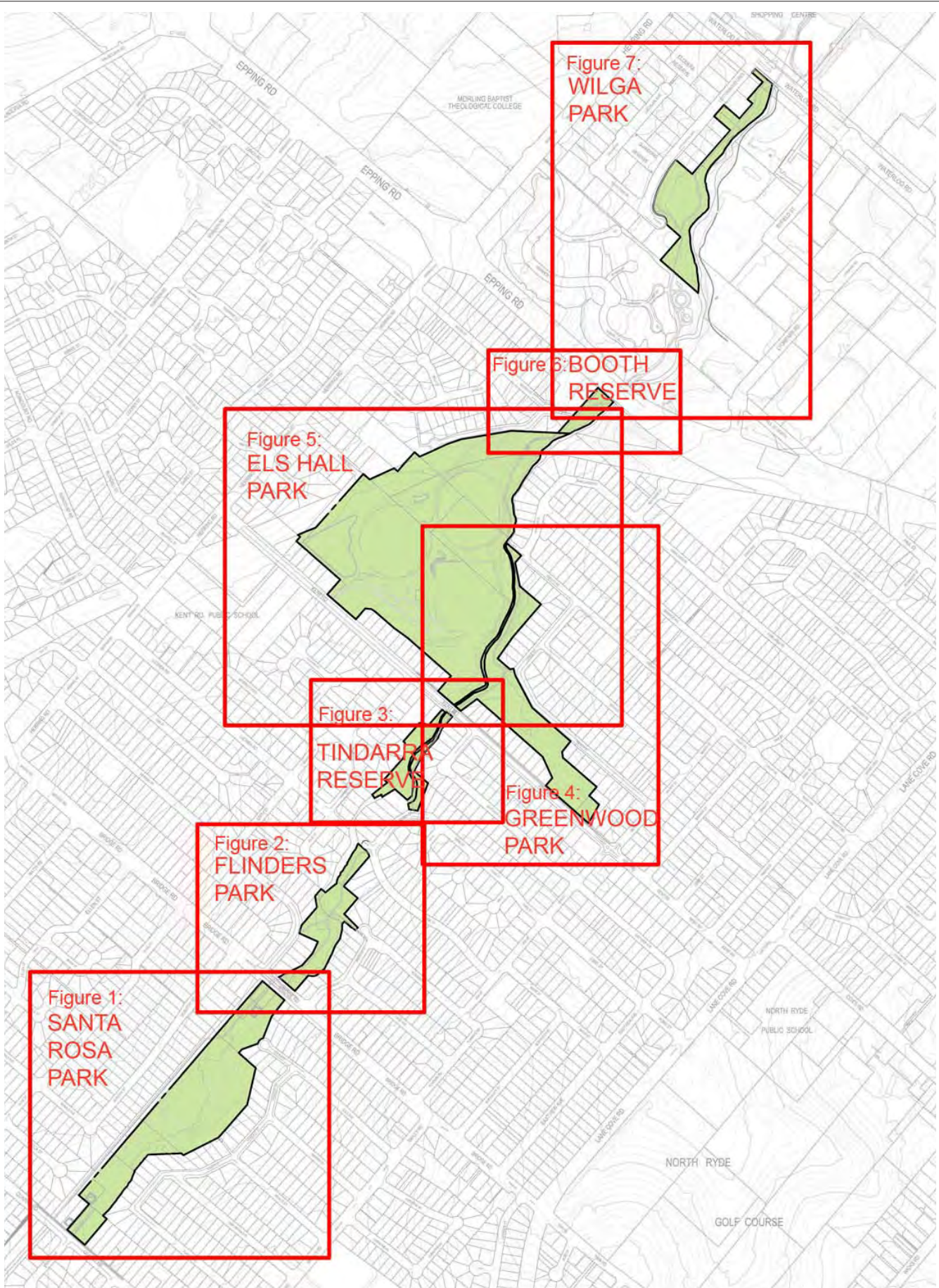
Bollards should be considered for park boundaries that front roads or adjoining open space.

5.3.3 Ecological Sustainability and the use of recycled materials

The proposed toilet block in Santa Rosa Park and proposed buildings in ELS Hall Park should take into consideration sustainable design, utilising solar access, cross flow ventilation and renewable resources throughout these structures. Solar lighting and water recycling measures should also be incorporated into these proposed buildings.

Any existing buildings to be retained within these parks should take into consideration upgrades that would allow for improved sustainability through the use of renewable resources in structural upgrades, solar lighting and water recycling measures.

Picnic shelters should be built from recycled hardwood timbers and recycled roofing material. Bollards







Water Sensitive Landscapes



Childrens Trike Track



Barbecue /Picnic Spaces



Childrens Adventure Play



Public Toilets, Open Visibility

Legend

- 1 Entry Threshold Structure
- 2 Water Sensitive ESD
- 3 Linear Visual Connection
- 4 Vertical Habitat Structure
- 5 Waterway /Habitat Trail
- 6 Welcome to Park Space
- 7 Childrens Play 2-5 y.o.
- 8 Picnic Areas + 1 BBQ
- 9 Public Toilet
- 10 Existing Pedestrian Path
- 11 Waterway Education
- 12 Childrens Trike Loop
- 13 Waterway Overlook



Plan (southern end)

Scale = 1:300

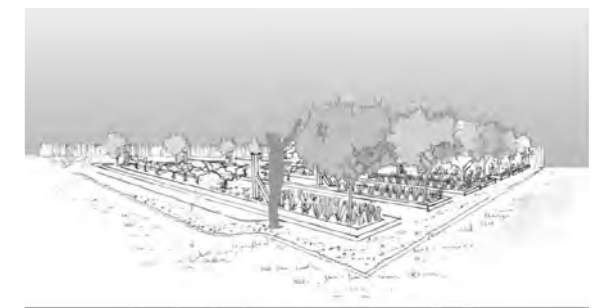


Plan (northern end)

Scale = 1:300



Quarry Road Pedestrian Entry



Productive Garden



"The hub" Common Building



Orchard Legacy



Street Trees



Space for People



Habitat Restoration Project (during)



Open Sided Potting Structure



Public Orchard



Cut Flowers



Raised Productive Gardens



Productive Landscape



Legend

- 1 Vehicular Access
- 2 Materials Drop-off
- 3 Potting Shed
- 4 Green House
- 5 Hardening Off Benches
- 6 Office /Seed Store
- 7 Store Room /Toilet
- 8 Productive Garden
- 9 Existing Bus Stop
- 10 Existing Carpark
- 11 Citrus Orchard

Plan

Scale = 1:200



Lightweight Greenhouse Structure



Growing Benches



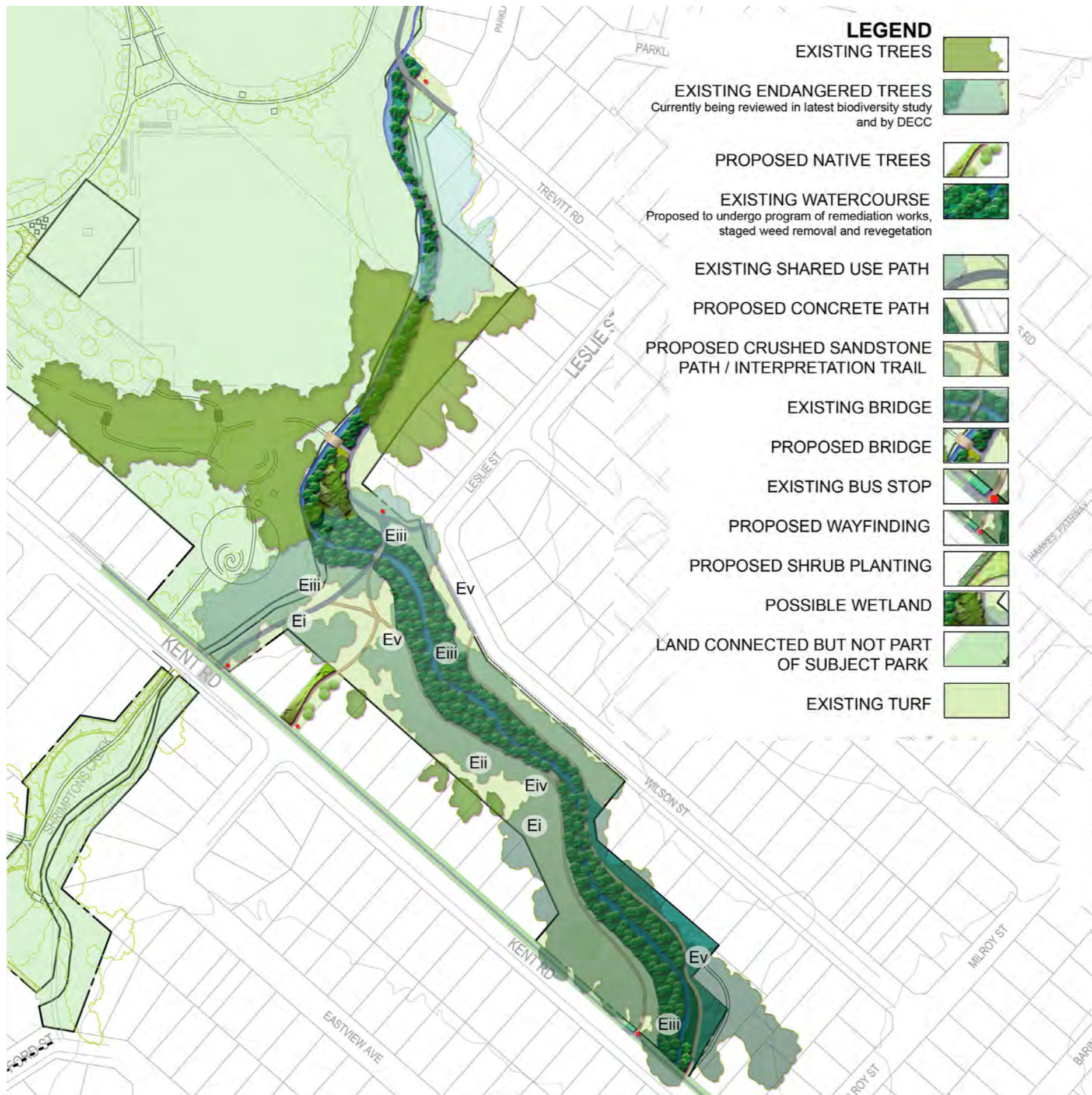
Hardening Off Areas



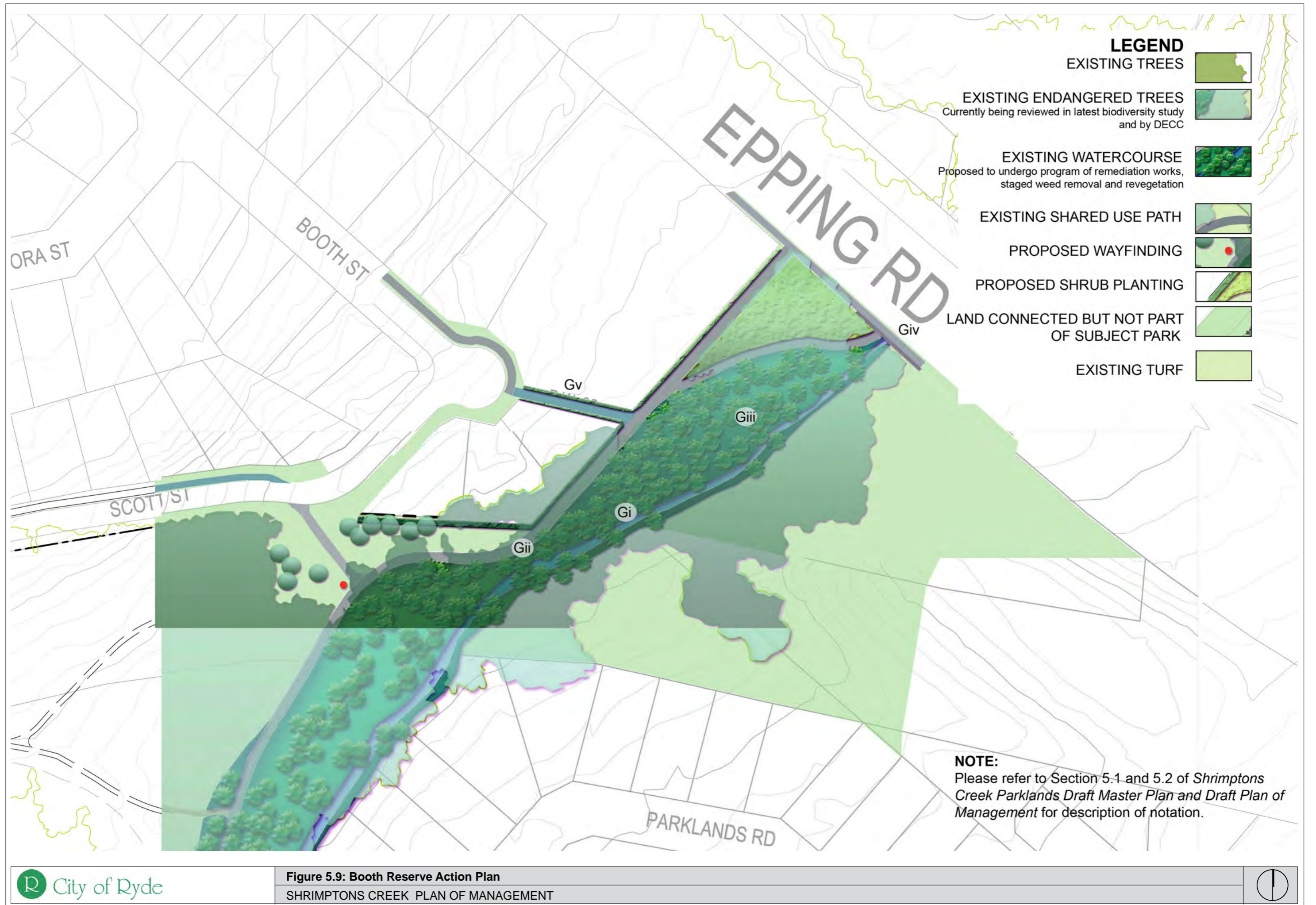
Community Nursery Equipment













should be recycled plastic, where possible. Bridges or viewing areas should incorporate recycled hardwood timbers or recycled plastic material.

The terracing within ELS Hall Park and Wilga Park should utilise recycled hardwood timber for seating walls. Informal seating along the access way should utilise recycled hardwood timber.

Due to the heavy canopy of the Shrimptons Creek Parklands, solar lighting of the access way is probably not an option, but should be considered where there is appropriate solar access or where the lighting is located near a building which could accommodate photovoltaic cells.

Water sensitive urban design should be encouraged throughout Shrimptons Creek Parklands, from small scale works beside access ways, to larger drainage requirements in parks such as ELS Hall Park.

5.3.4 Interpretation Trail, playgrounds and public art

Public art within Shrimptons Creek Parklands should incorporate an environmental education theme and utilise, where possible, recycled or renewable materials. Wayfinding or directional signage that is associated with the shared use pathway should be considered. The wayfinding signage could be part of a public art component, adding a consistent visual theme throughout Shrimptons Creek Parklands. Refer to **Figure 5.13** for examples of public art and wayfinding images to help to illustrate these concepts.

Playgrounds should incorporate recycled or renewable elements and have an environmental education theme to them. Incorporation of natural explorer opportunities along the access way should be encouraged to add to the interpretation and education values.

The opportunity should be pursued for the natural explorer or interpretation trail to become something of a 'learnscape' which allows for meaningful learning of the natural environment of Shrimptons Creek Parklands as a basis for developing 'Earth stewardship'. This learnscape could look at colour and texture, line and shape, forest and habitat, science and environment, and native foods as means for critical reflection and social critique of the natural environment in which they are situated (Davis 1999). Refer to **Figure 5.12** for examples of playgrounds and images of nature interpretation opportunities.

A community garden could be incorporated into the Department of Housing land beside Wilga Park. It should be a communal style garden, not individual allotments. The garden should incorporate and be viewed clearly from the shared use pathway. The garden could be an eco styled garden to tie in with the natural character of Shrimptons Creek Parklands and could be part of the natural explorer interpretation trail. Refer to **Figure 5.14** for examples of community gardens.

Overall, Shrimptons Creek Parklands should reinforce the natural character that is valued by local residents.

The images on this page provide some visual examples of how the interpretation trail within Shrimptons Creek Parklands could appear.



Image 1: Playground with natural theme at Hunter Wetlands Centre Australia, Newcastle, NSW

(source: www.wetlands.org.au)



Image 5: Informal trail at Hunter Wetlands Centre Australia, Newcastle, NSW

(source: www.wetlands.org.au)



Image 2: Viewing area over wetland at Hunter Wetlands Centre Australia, Newcastle NSW

(source: www.wetlands.org.au)



Image 6: Environmental Education Artwork - Sandstone Crab Sculpture. Winnererremy Bay Foreshore Park, NSW

(source: E. Read)

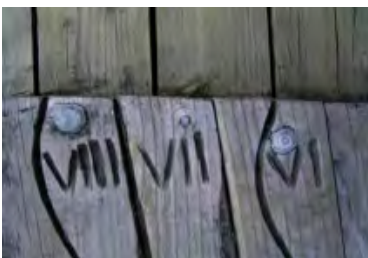


Image 3: Environmental Education Artwork - Wooden bridge detail, Wellington, NZ

(source: E. Read)



Image 4: Environmental Education Artwork - Vegetated Inchwork. New York Botanical Gardens

(source: E. Read)

The images on this page provide some visual examples of wayfinding which could be considered along the shared us pathway with Shrimpton Creek Parklands.



Image 1: Wayfinding signage - Working in conjunction with footpath wayfinding logo (see Image 3). Freedom Trail Heritage Walk. Boston

(source: E. Read)



Image 2: Orientation Mosaic Artwork, Rockefeller Centre. New York

(source: E. Read)



Image 3: Footpath Wayfinding Artwork, Freedom Trail Heritage Walk. Boston.

(source: E. Read)



Image 4: Footpath Artwork - Entry marker into adjacent community garden. New York

(source: E. Read)

The images on this page provide some visual examples of community gardens, particularly communal spaces, which could be considered within the Department of Housing land alongside Shrimptons Creek.



Image 1: Permaculture class in Ecogarden, Kariiong, NSW (source: E. Read)



Image 3: Example of communal space community garden. New York

(source: E. Read)



Image 4: Pathway with clear sightlines leading through community garden. New York

(source: E. Read)



Image 2: Example of communal space community garden. New York

(source: E. Read)

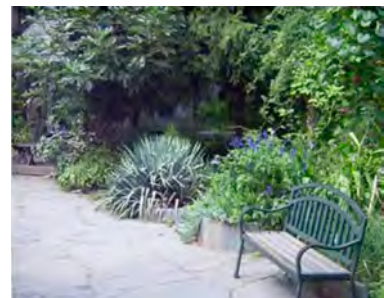


Image 5: Open area within community garden. New York

(source: E. Read)

5.3.5 Vegetation Guidelines

Shrimptons Creek Parklands has remnant stands of Sydney Turpentine Ironbark Forest and Sydney Turpentine Ironbark Margin Forest. These vegetation communities should be reinforced throughout these parklands with the use of eco sourced indigenous plant species. A list of the plant species within these ecological communities is provided in **Appendix F**.

Where possible, provide a 20 to 30 metre Riparian Corridor width along either side of Shrimptons Creek. The Riparian Corridor should be comprised of a 10 to 20 metre Core Riparian Zone (provide a 10 metre width Core Riparian Zone in the upper watercourse with a 20 metre Core Riparian Zone downstream of Wilson and Leslie Streets, North Ryde) and 10 metre Vegetated Buffer. This Corridor should aim to provide a vegetation buffer for the creek line. Riparian plant species should be locally native species and have local provenance. The following figures are from the Department of Water and Energy guidelines

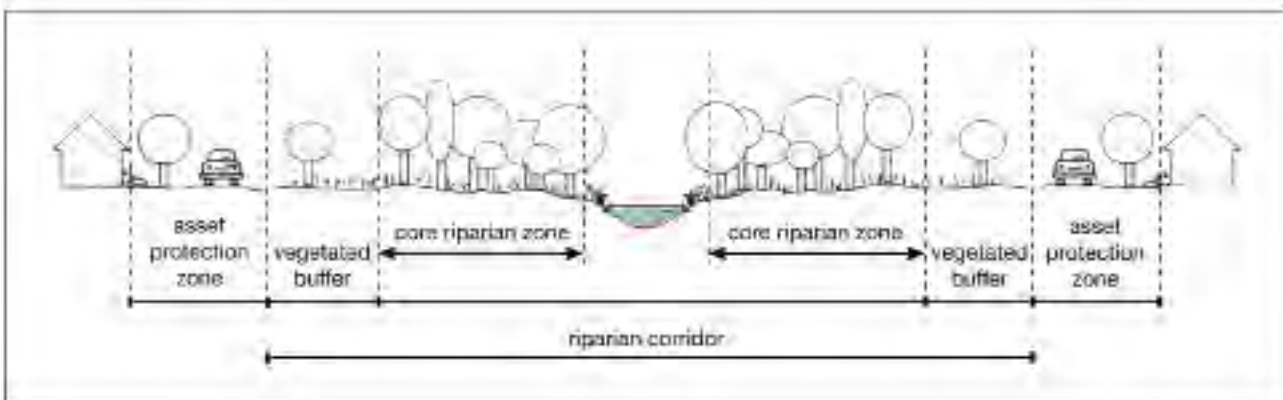


Figure 5.14: Riparian Corridor Zones

(Source: Department of Water and Energy 2008)

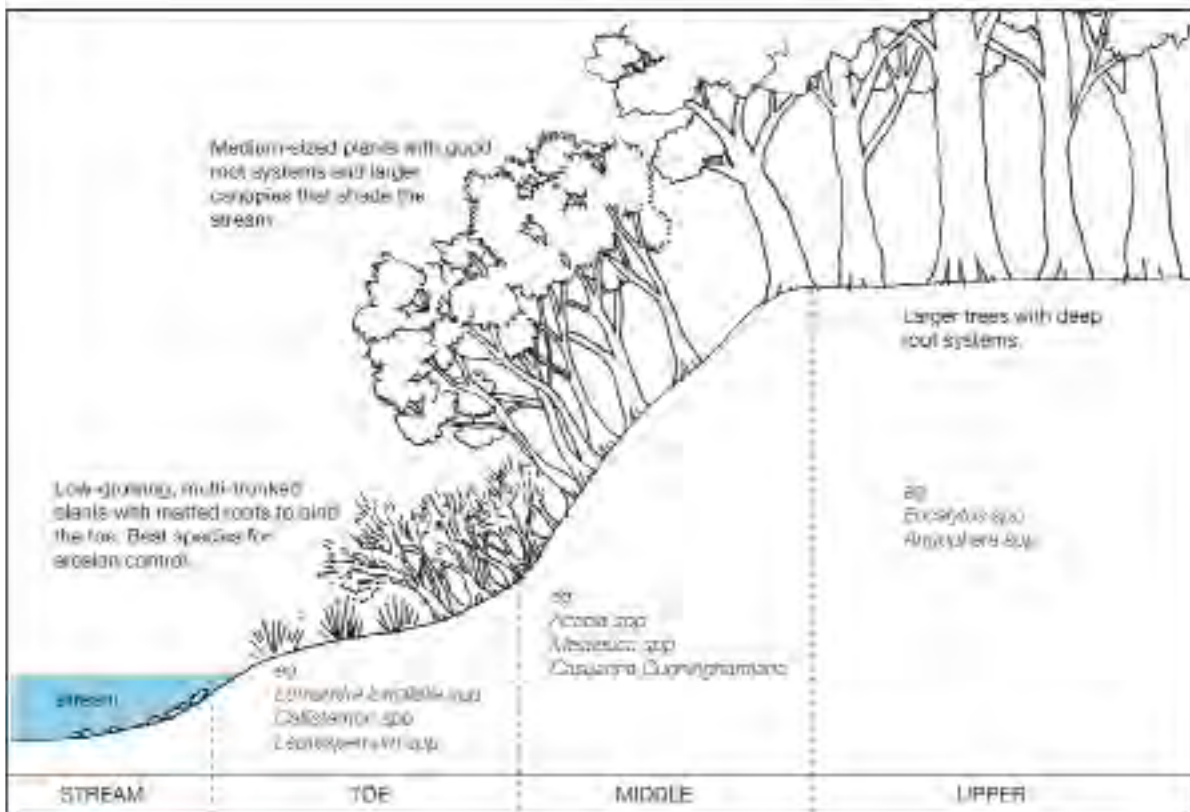


Figure 5.15: Typical Riparian Cross Section

(Source: Department of Water and Energy 2008)

Where there are ornamental planting areas, native plants should be utilised where possible.

Vegetation beside access ways should be low growing, to below 1 metre in height, or with high canopied trees. Tree canopies near access ways should be under pruned to allow for clear sight lines.

Landscaping of surrounding drainage outlets should be considered. Including rip rap rockwork with appropriate riparian plant species would help improve the appearance of the creek and help reduce the velocity of flow from these drains.

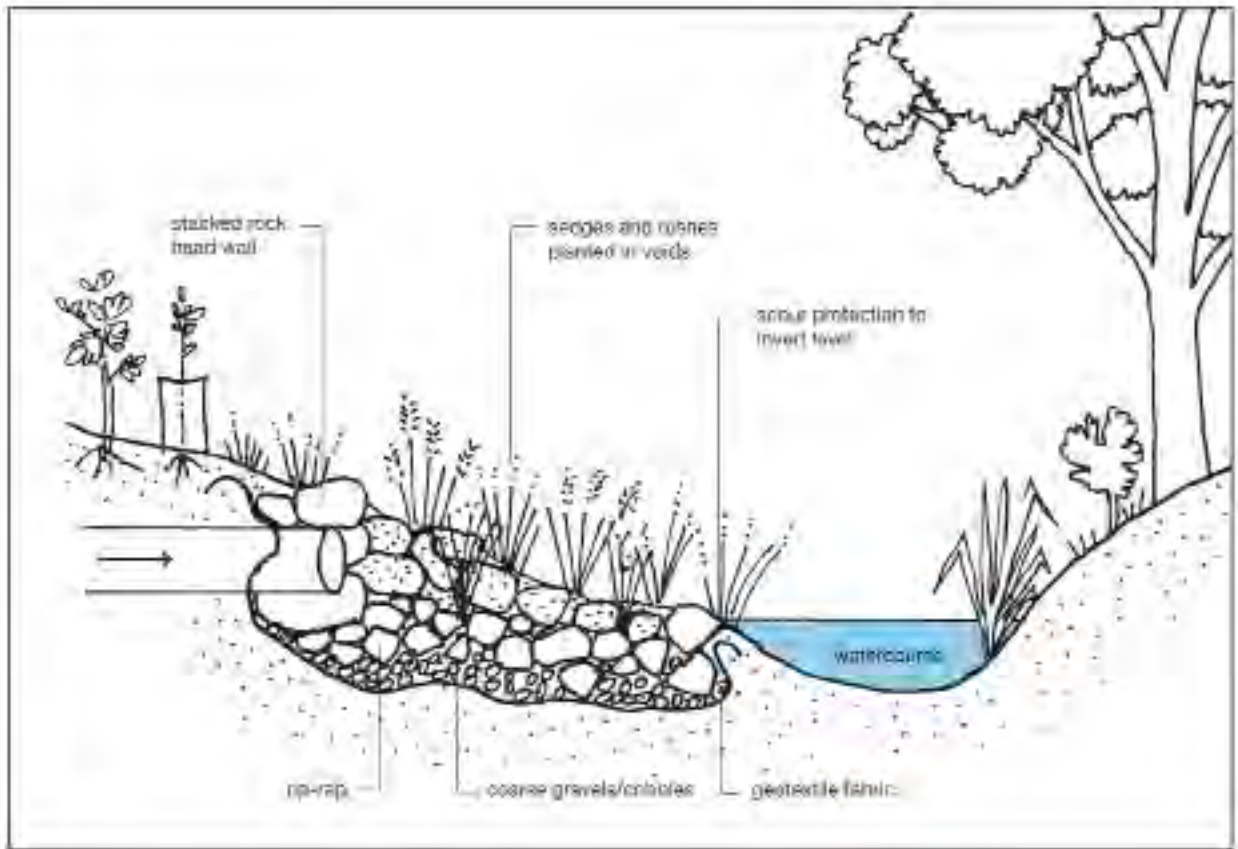


Figure 5.16: 'Natural' Outlet Structure

(Source: Department of Water and Energy 2008)

5.3.6 Public Domain Guidelines

The Macquarie Park Corridor Development Control Plan, Technical Manual and Master Plan should be referred to for streetscapes surrounding Wilga Park. Materials and street furnishing suggested in these documents should be considered for upgrades to Wilga Park.

It may be worth considering a wayfinding logo or design for Shrimptons Creek Parklands that can be incorporated into the paths along Shrimptons Creek, to provide directions and consistency.

Entry points into the parks should be designed using consistent materials so that they can be read as relating to other entries along the recreational 'spine'.

Lighting should be included along the access way, particularly in high usage areas to provide safety for park users. The selection of lighting should be consistent along the entire access way and be guided by the Macquarie Park Corridor DCP, Technical Manual and Master Plan.

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Appendix A - Shrimptons Creek Parklands Usage Plans



LAND USE KEY SITE INFORMATION

NUMBER	DESCRIPTION
1.	Existing playground
2.	Existing car park
3.	Neighbouring property (privately owned)
4.	Building leased to Scout Association of Australia
5.	Existing fence which currently alienates the Quarry Road section of Santa Rosa Park from the rest of the park.
6.	Existing vegetation
7.	Existing shared use pathway located on Sydney Water land
8.	Junior soccer field
9.	Senior soccer field. Field used for cricket in summer.
10.	Grassed embankment between Sydney Water land and playing fields.
11.	Shrimptons Creek. Remediation works in Santa Rosa Park currently occurring
12.	Building leased to Air League with Saints United Soccer Club as transferee
13.	Neighbouring Sydney Water land currently used as storage site.

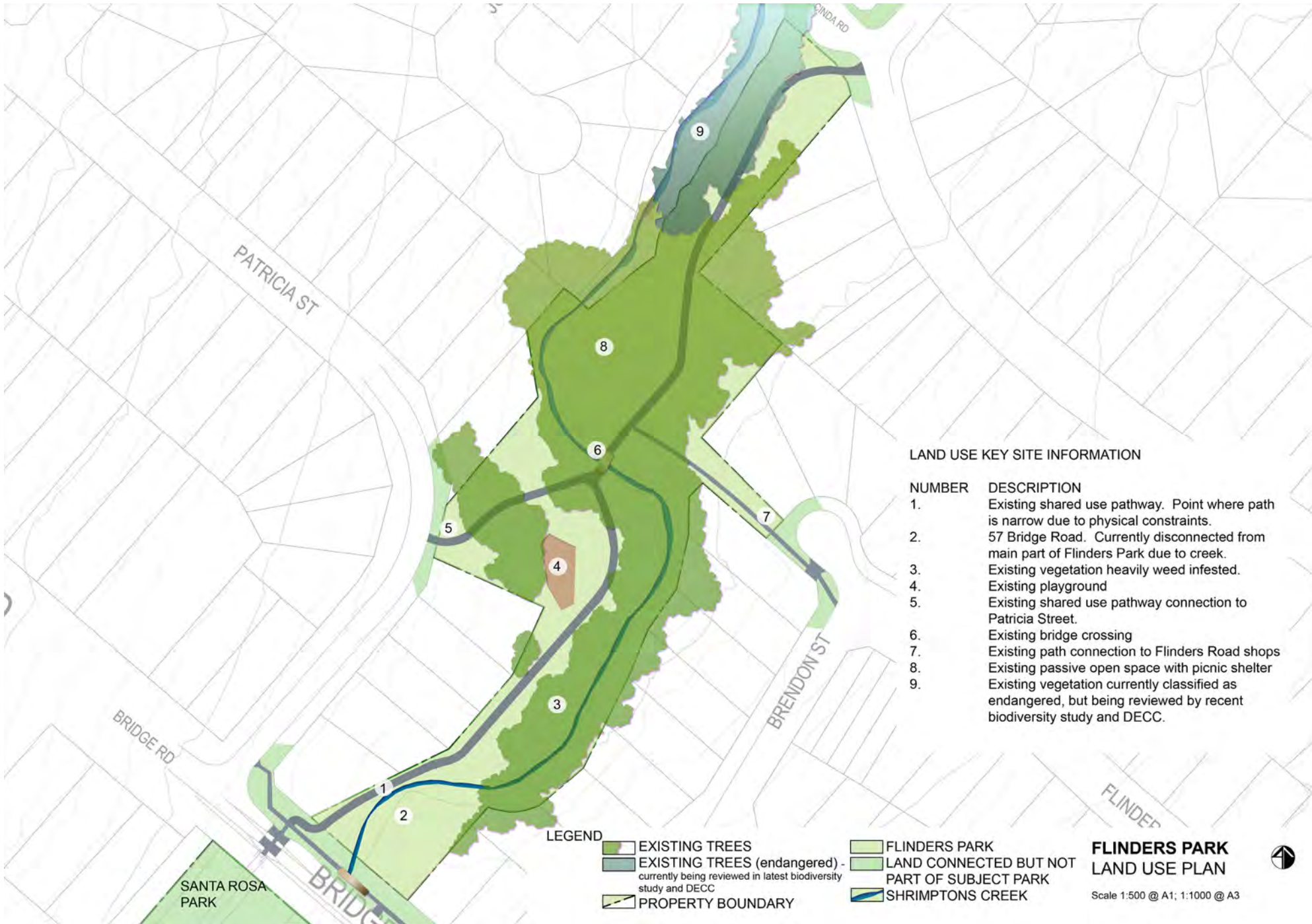
LEGEND

 EXISTING TREES	 LAND CONNECTED BUT NOT PART OF SUBJECT PARK
 PROPERTY BOUNDARY	 SHRIMPTONS CREEK
 SANTA ROSA PARK	

**SANTA ROSA PARK
LAND USE PLAN**



Scale 1:1000 @ A1; 1:2000 @ A3



LAND USE KEY SITE INFORMATION

NUMBER	DESCRIPTION
1.	Existing shared use pathway. Point where path is narrow due to physical constraints.
2.	57 Bridge Road. Currently disconnected from main part of Flinders Park due to creek.
3.	Existing vegetation heavily weed infested.
4.	Existing playground
5.	Existing shared use pathway connection to Patricia Street.
6.	Existing bridge crossing
7.	Existing path connection to Flinders Road shops
8.	Existing passive open space with picnic shelter
9.	Existing vegetation currently classified as endangered, but being reviewed by recent biodiversity study and DECC.

LEGEND

- EXISTING TREES
- EXISTING TREES (endangered) - currently being reviewed in latest biodiversity study and DECC
- PROPERTY BOUNDARY
- FLINDERS PARK
- LAND CONNECTED BUT NOT PART OF SUBJECT PARK
- SHRIMPTONS CREEK

FLINDERS PARK LAND USE PLAN



Scale 1:500 @ A1; 1:1000 @ A3



LAND USE KEY SITE INFORMATION

NUMBER	DESCRIPTION
1.	Existing connection of shared use pathway via Ford Street between Flinders Park and Tindarra Reserve
2.	Existing ornamental native garden maintained by neighbouring resident.
3.	Existing vegetation classified as 'other vegetation' but has some significant remnant trees.
4.	Existing informal access to Ruse Street
5.	Existing shared use pathway.

LEGEND

- EXISTING TREES
- LAND CONNECTED BUT NOT PART OF SUBJECT PARK
- PROPERTY BOUNDARY
- TINDARRA RESEVE
- SHRIMPTONS CREEK

**TINDARRA RESERVE
LAND USE PLAN**

Scale 1:500 @ A1; 1:1000 @ A3



LAND USE KEY SITE INFORMATION

NUMBER	DESCRIPTION
1.	Existing bus stop on Kent Road
2.	Existing concrete culvert and channel
3.	Existing Bushcare revegetation site. Existing vegetation currently classified as endangered, but being reviewed by recent biodiversity study and DECC.
4.	Existing informal access from Wilson Street to Kent Road - point where access is tight because of physical constraints.
5.	Existing shared use pathway
6.	Existing bridge crossing
7.	Existing shared use pathway connection from Leslie Street
8.	Existing shared use pathway connection from Trevitt Road.
9.	Existing creek crossing
10.	Existing passive open space.

- LEGEND**
- EXISTING TREES
 - EXISTING TREES (endangered) - currently being reviewed in latest biodiversity study and DECC
 - GREENWOOD PARK
 - LAND CONNECTED BUT NOT PART OF SUBJECT PARK
 - SHRIMPTONS CREEK
 - PROPERTY BOUNDARY



LAND USE KEY SITE INFORMATION

NUMBER	DESCRIPTION
1.	Existing playground
2.	Tributary of Shrimptons Creek
3.	Existing soccer field
4.	Existing spectator area for soccer
5.	Existing amenities building
6.	Existing car park
7.	Existing picnic shelter
8.	Existing swing
9.	Existing vehicular entry
10.	Existing playground
11.	Existing fitness trail
12.	Existing grassed netball courts
13.	RTA owned proposed county road
14.	Adelphi Road entry - currently fenced.
15.	City of Ryde owned proposed county road
16.	Existing oval
17.	Existing clubhouse / amenities building
18.	Existing natural drainage line
19.	Scott Street entry - cars currently informally park in ELS Hall Park from this entry.
20.	Existing vegetation currently classified as endangered, but being reviewed by recent biodiversity study and DECC.
21.	Existing shared use pathway
22.	Existing oval
23.	Existing picnic shelters
24.	Existing baseball field

LEGEND

- EXISTING TREES
- EXISTING TREES (endangered) - currently being reviewed in latest biodiversity study and DECC
- PROPERTY BOUNDARY
- ELS HALL PARK
- LAND CONNECTED BUT NOT PART OF SUBJECT PARK
- SHRIMPTONS CREEK



LAND USE KEY SITE INFORMATION

NUMBER	DESCRIPTION
1.	Existing vegetation currently classified as endangered, but being reviewed by recent biodiversity study and DECC. Located on Department of Housing land.
2.	Existing shared use pathway connecting to Epping Road.
3.	Existing shared use pathway connecting to Booth Reserve from Epping Road underpass Department of Housing land
4.	Existing skate park (on Dept of Housing land)
5.	Existing picnic shelter known as the 'hut' (on Dept of Housing land)
6.	Existing vegetated easement
7.	Existing shared use pathway
8.	Existing circular passive open space.
9.	Existing alcoves beside shared use pathway connection to Cottonwood Crescent
10.	Straight length of existing shared use pathway. Access to sandstone creekbed is possible in this location.
11.	Existing open space connection to Cottonwood Crescent.
12.	Existing extent of shared use pathway.
13.	Opposite side of Waterloo Road is Macquarie Shopping Centre.
14.	Existing business park.
15.	Existing high density residential.

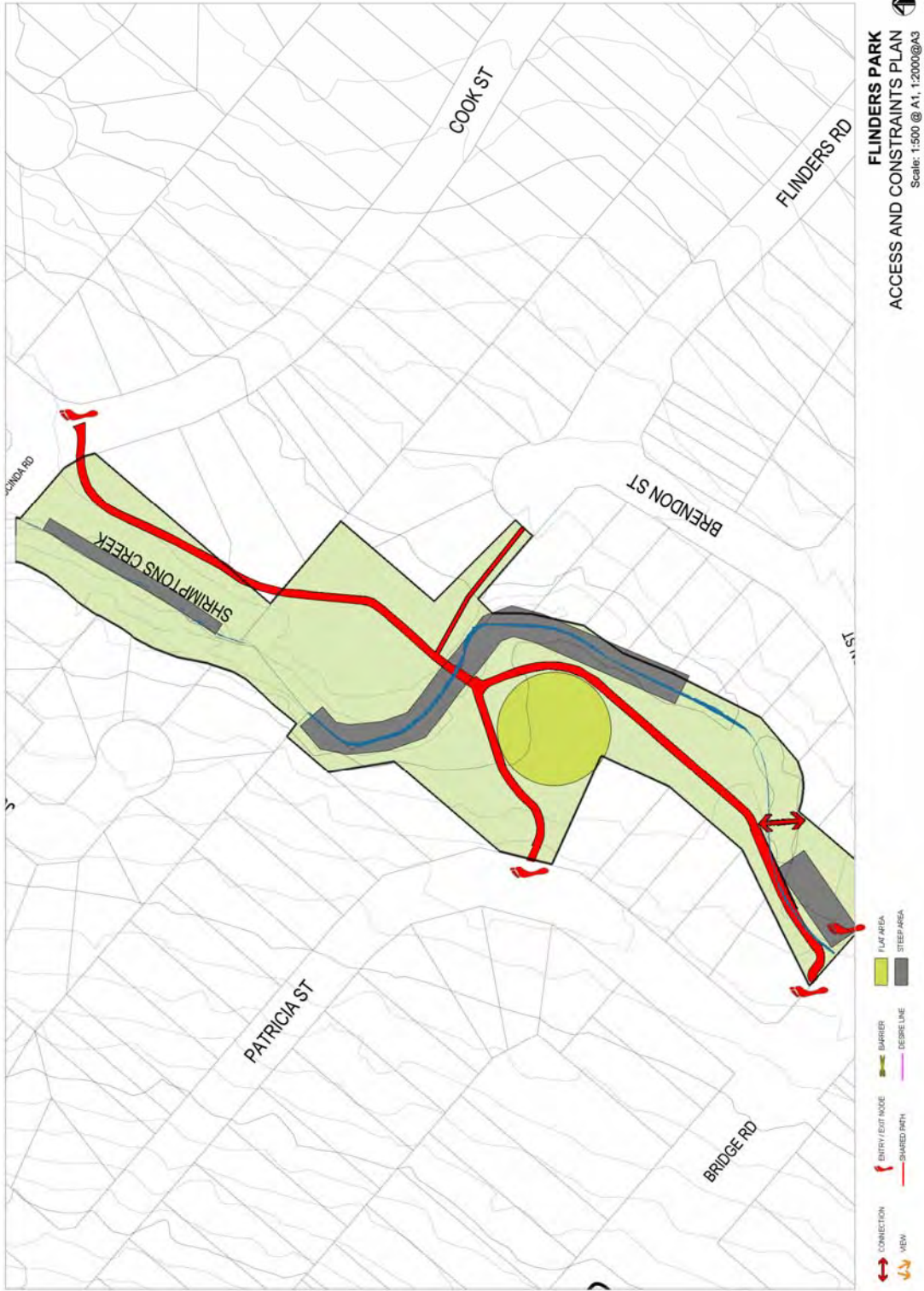
- LEGEND**
- EXISTING TREES
 - EXISTING TREES (endangered) - currently being reviewed in latest biodiversity study and DECC
 - WILGA PARK
 - LAND CONNECTED BUT NOT PART OF SUBJECT PARK
 - SHRIMPINGTONS CREEK
 - PROPERTY BOUNDARY

Appendix B - Shrimptons Creek Parklands Access and Constraints Plans

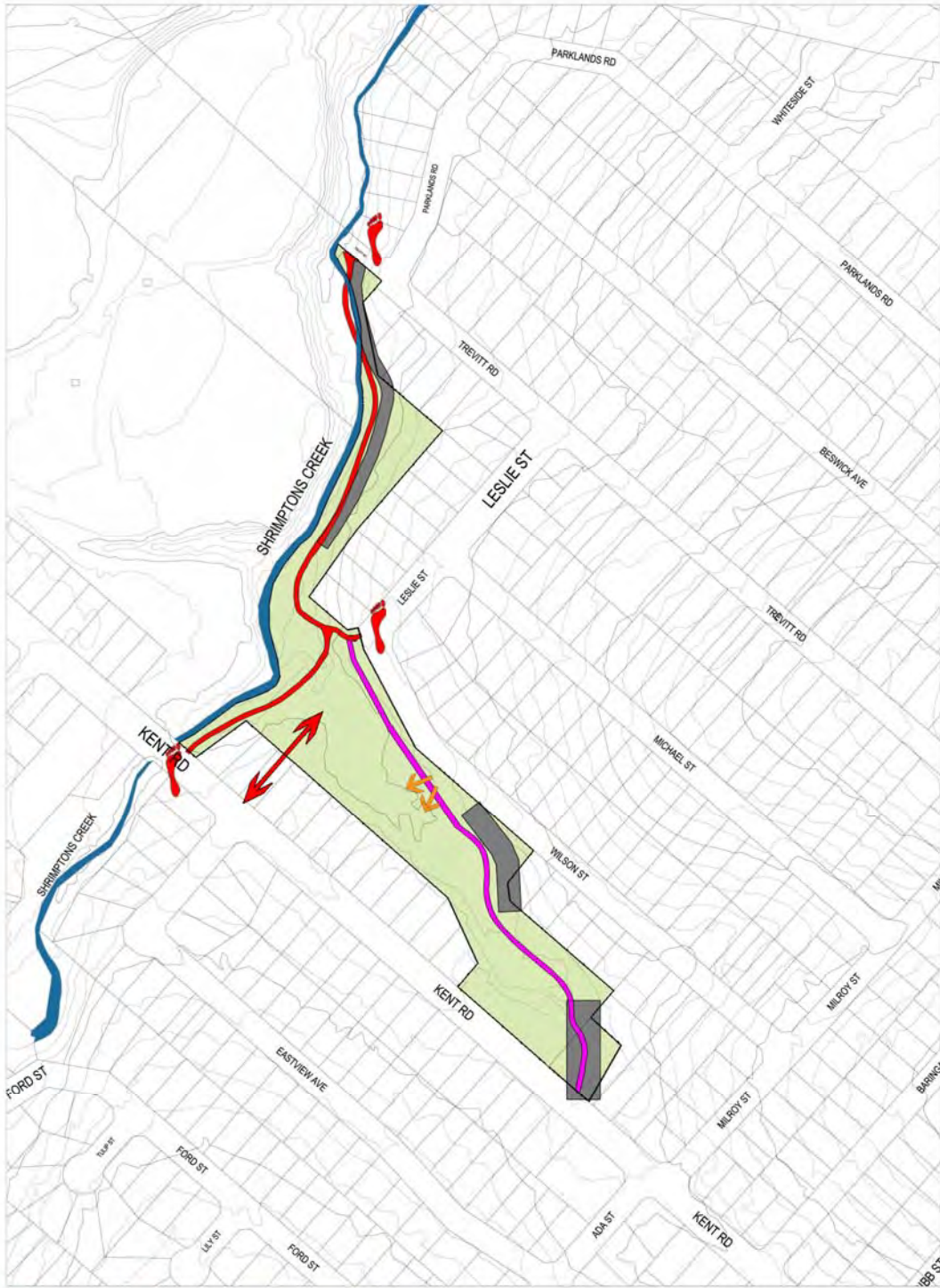
**APPENDIX D:
SHRIMPTONS CREEK PARKLANDS ACCESS AND CONSTRAINTS PLANS**



SANTA ROSA PARK
ACCESS AND CONSTRAINTS PLAN
Scale: 1:1000 @ A1:1,2000@A3



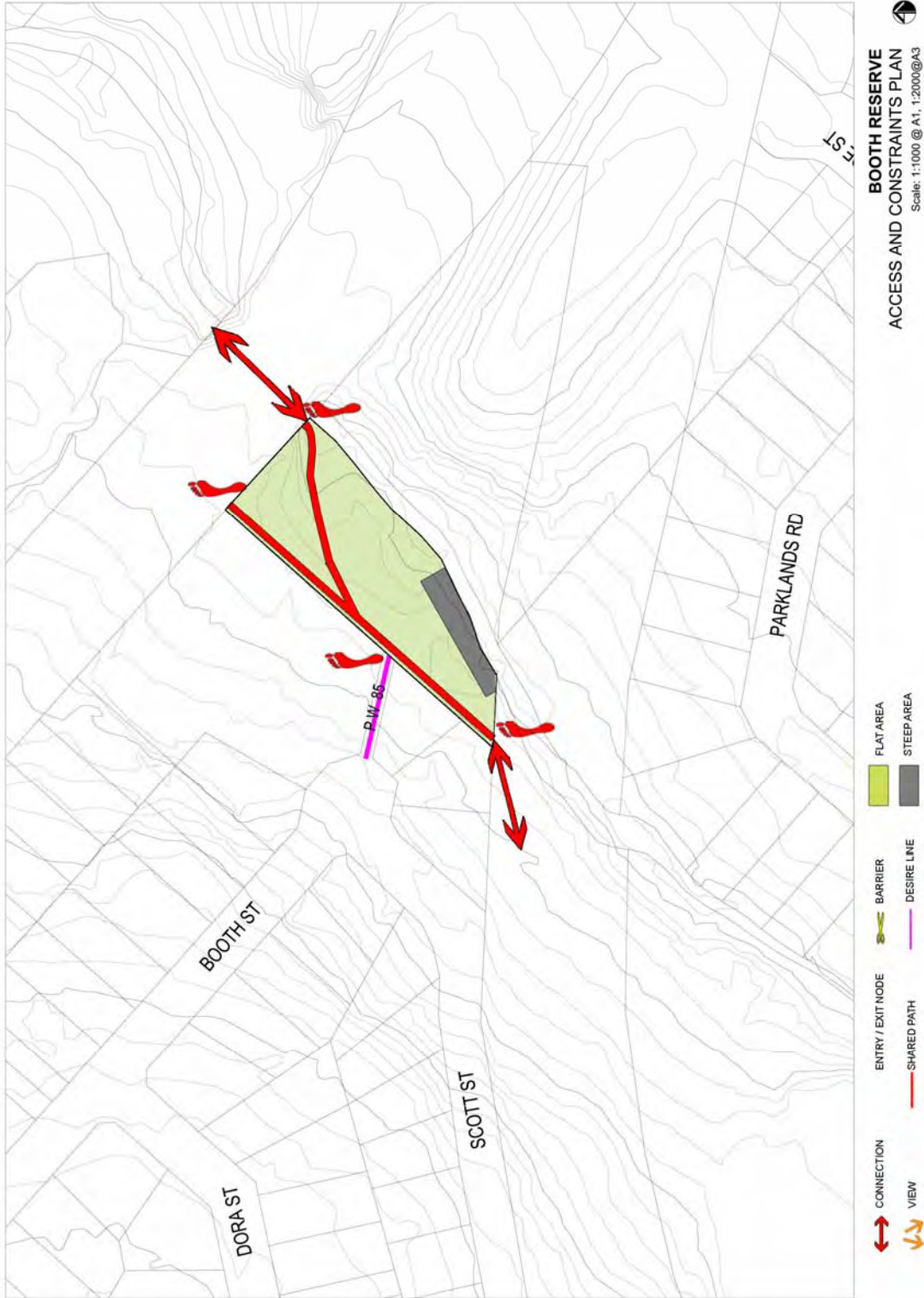


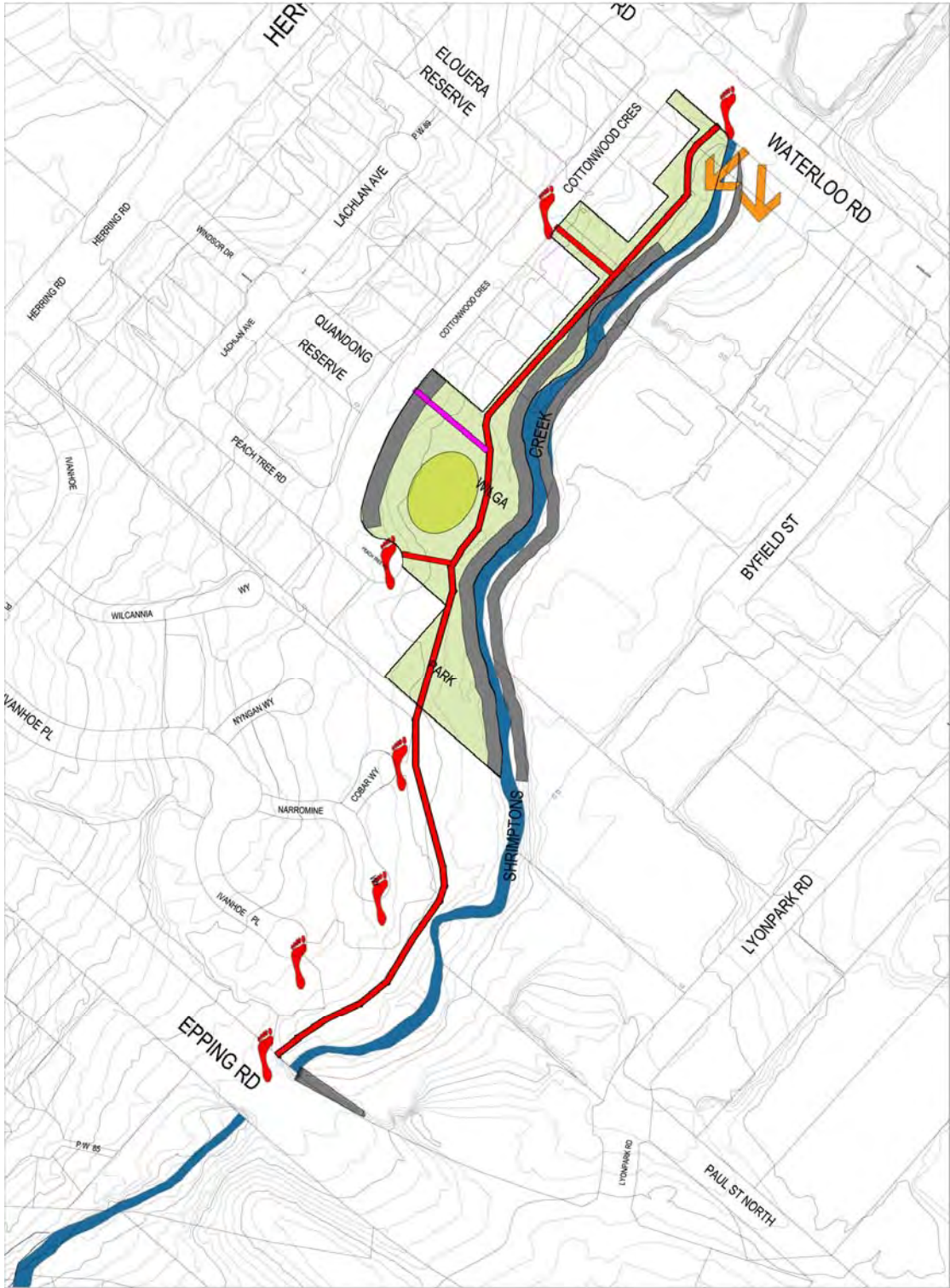


- ↔ CONNECTION
- 🚪 ENTRY / EXIT NODE
- 🚧 BARRIER
- 🟩 FLAT AREA
- 👁️ VIEW
- SHARED PATH
- DESIRE LINE
- ⬛ STEEP AREA

GREENWOOD PARK
ACCESS AND CONSTRAINTS PLAN
 Scale: 1:1000 @ A1, 1:2000 @ A3





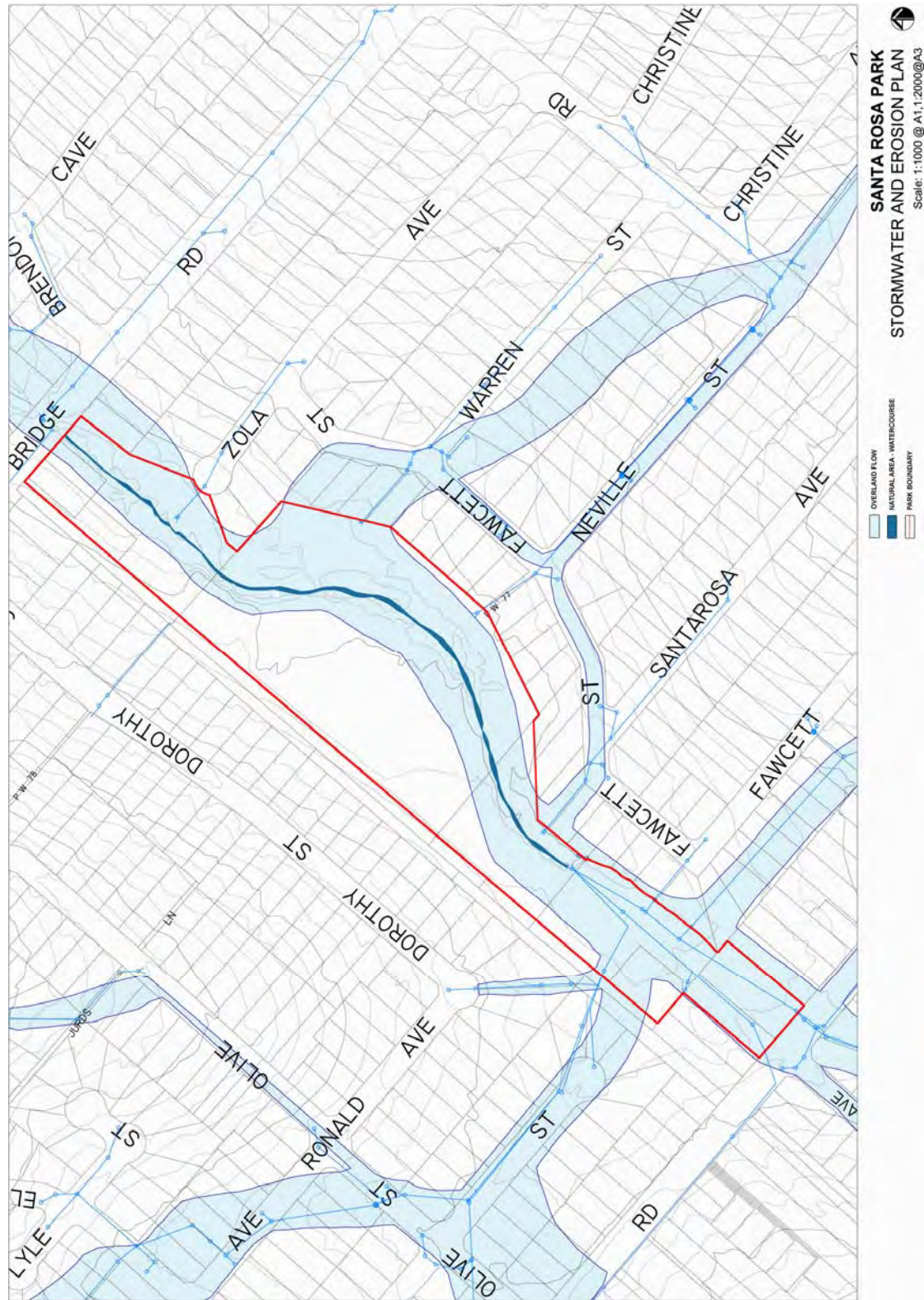


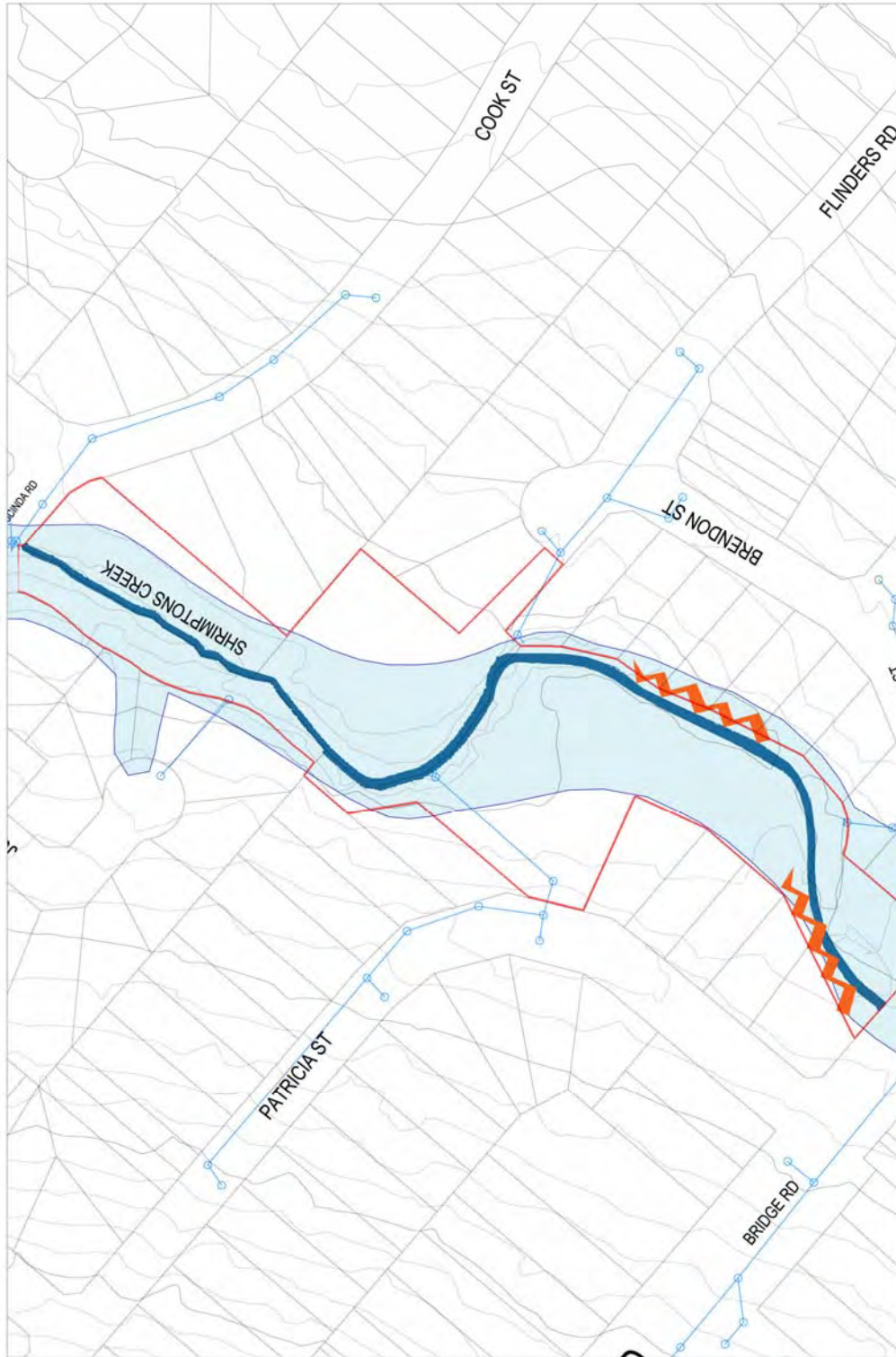
- ↔ CONNECTION
- ↙ ENTRY/EXIT NODE
- BARRIER
- FLAT AREA
- ↘ MEW
- SHARED PATH
- DESIRE LINE
- STEEP AREA

WILGA PARK
ACCESS AND CONSTRAINTS PLAN
 Scale: 1:1000 @ A1, 1:2000@A3

Appendix C - Shrimptons Creek Parklands Stormwater and Erosion Plans

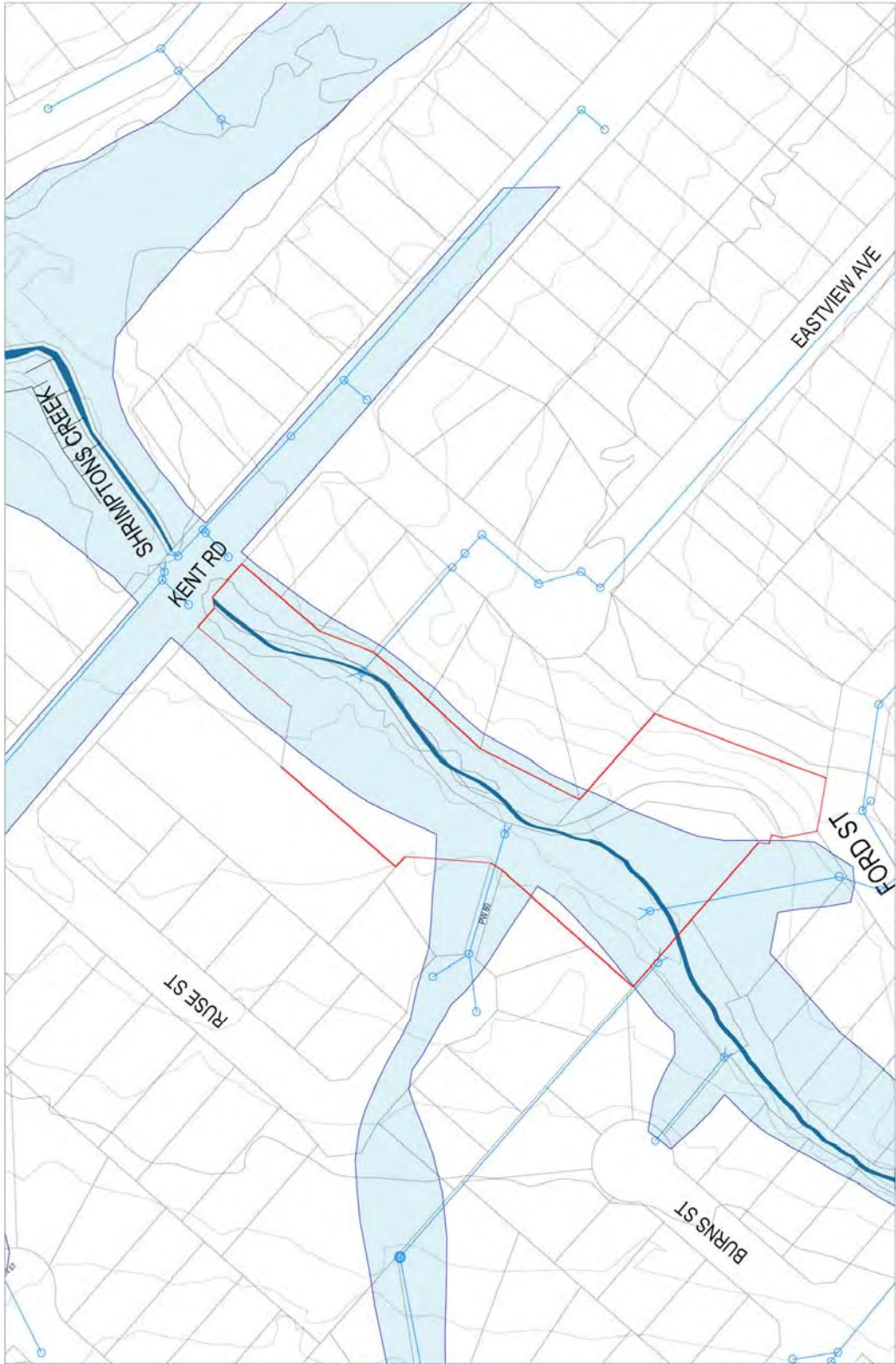
APPENDIX E:
SHRIMPTONS CREEK PARKLANDS STORMWATER AND EROSION
PLANS



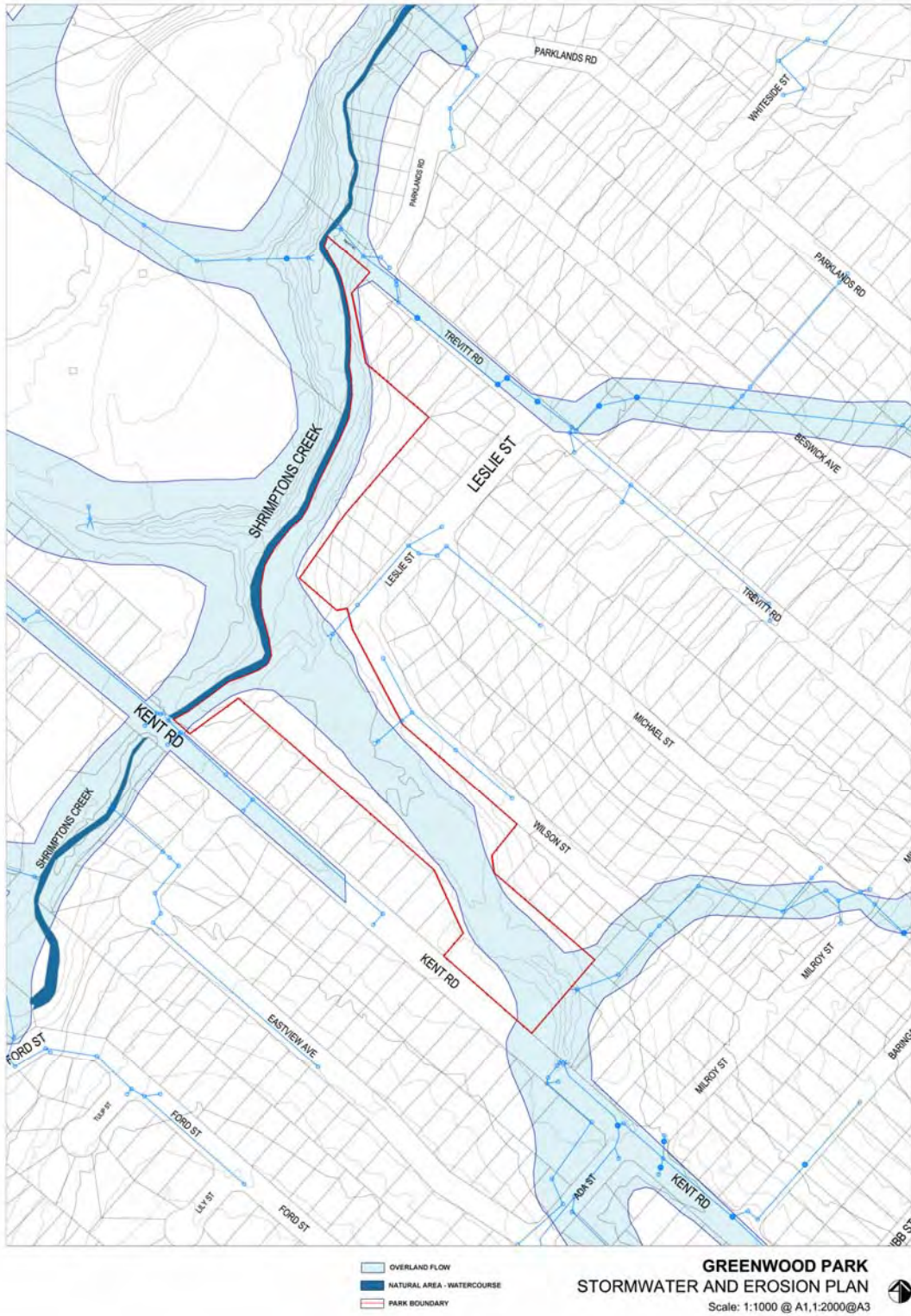


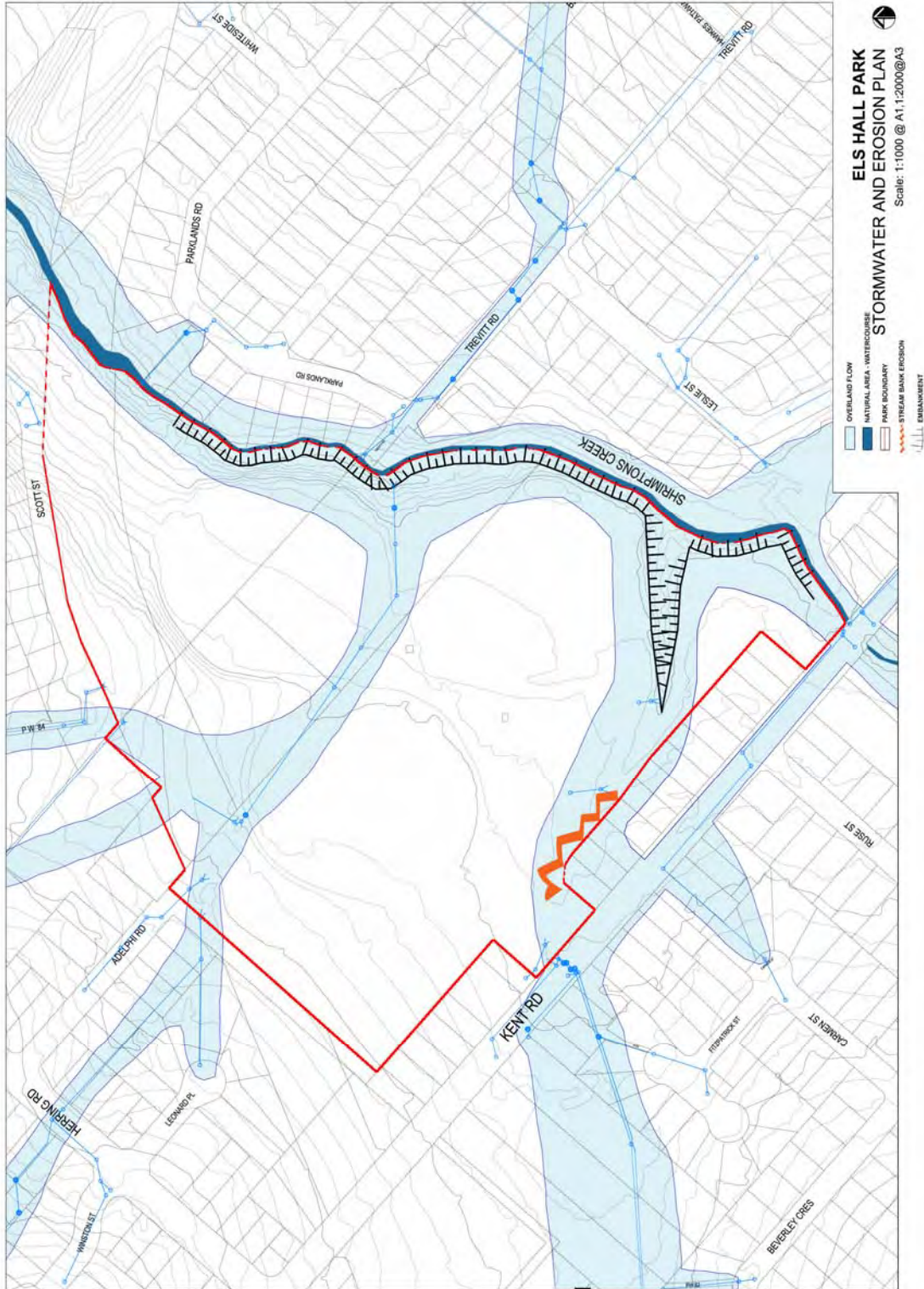
**FLINDERS PARK
OVERLAND FLOW PLAN**
Scale: 1:500 @ A1, 1:2000@A3

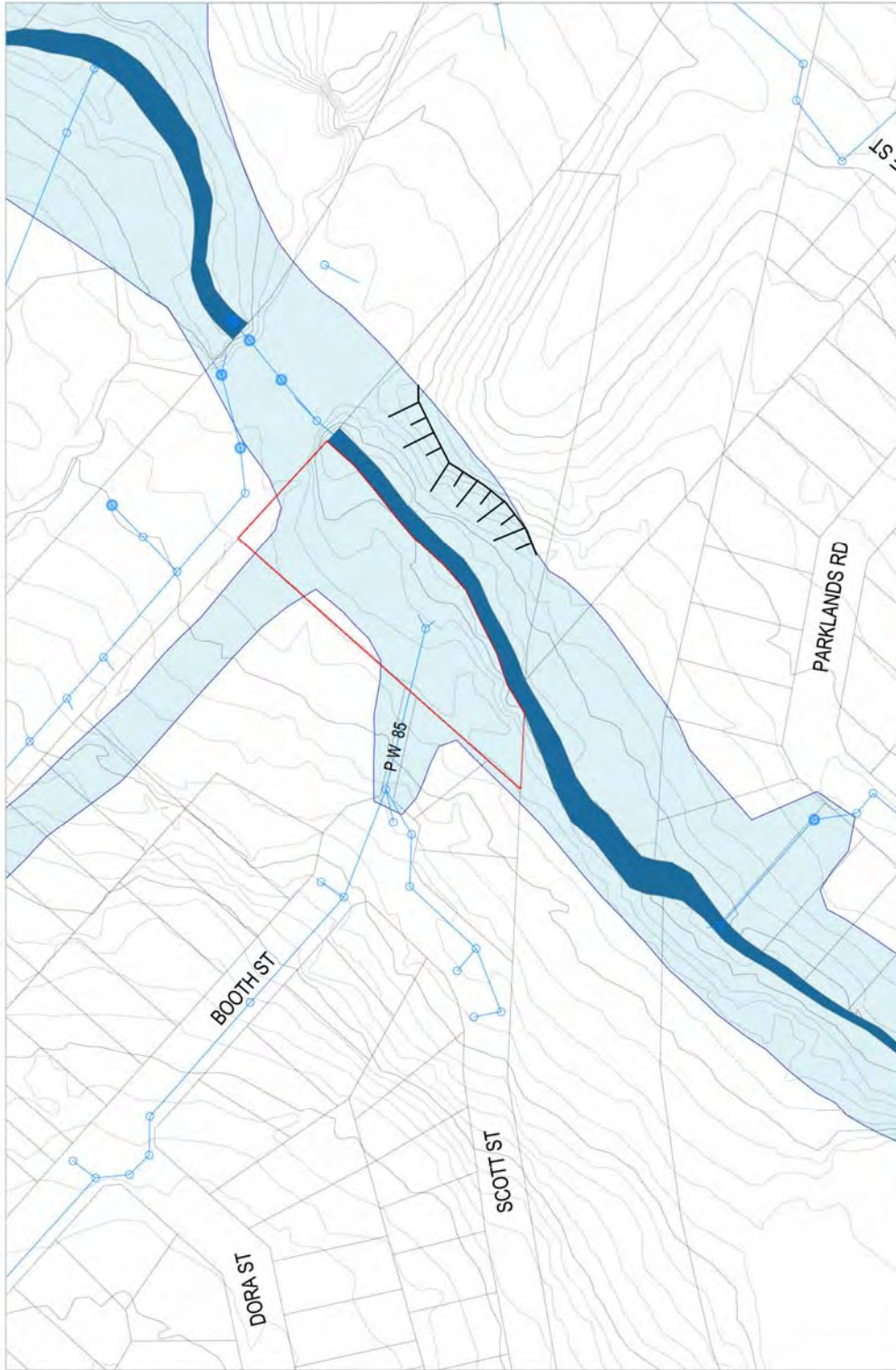
- OVERLAND FLOW
- NATURAL AREA - WATERCOURSE
- PARK BOUNDARY
- STREAM BANK EROSION



TINDARRA RESERVE
STORMWATER AND EROSION PLAN
 Scale: 1:500 @ A1:1:1000@A3

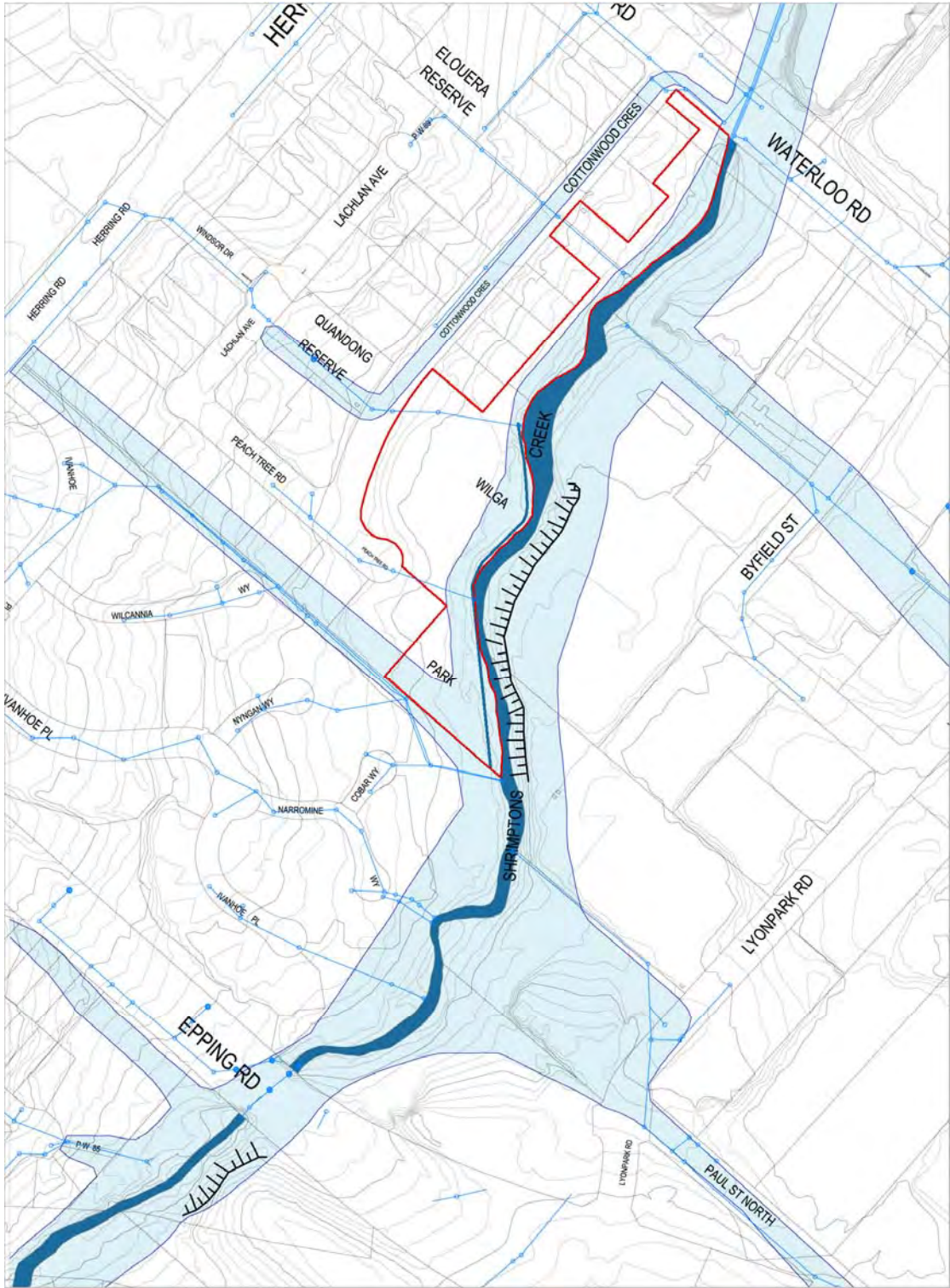






BOOTH RESERVE
LAND CLASSIFICATION PLAN
 Scale: 1:500 @ A1, 1:1000 @ A3

- OVERLAND FLOW
- NATURAL AREA - WATERCOURSE
- PARK BOUNDARY
- STREAM BANK EROSION
- EMBANKMENT



- OVERLAND FLOW
- NATURAL AREA - WATERCOURSE
- STREAM BANK EROSION
- EMBANKMENT
- PARK BOUNDARY

WILGA PARK
STORMWATER AND EROSION PLAN
 Scale: 1:1000 @ A1, 1:2000@A3

Appendix D - Flora and Fauna lists for parks along Shrimptons Creek

**APPENDIX F:
PLANT COMMUNITIES AND FLORA AND FAUNA SURVEY LISTS FOR
INDIVIDUAL PARK**

**Some typical plant species found in a Sydney Turpentine-Ironbark
Forest**

Common Names:	Scientific Names:
Tall trees	
Narrow-leaved Ironbark	(<i>Eucalyptus crebra</i>)
Mountain Grey Gum	(<i>Eucalyptus cypellocarpa</i>)
Round-leaved Gum	(<i>Eucalyptus deanei</i>)
Red Ironbark	(<i>Eucalyptus fibrosa</i>)
Mountain Mahogany	(<i>Eucalyptus notabilis</i>)
Grey Ironbark	(<i>Eucalyptus paniculata</i>)
Grey Gum	(<i>Eucalyptus punctata</i>)
Sydney Blue Gum	(<i>Eucalyptus saligna</i>)
Turpentine	(<i>Syncarpia glomulifera</i>)
Small trees and shrubs	
Parramatta Wattle	(<i>Acacia parramattensis</i>)
Breynia	(<i>Breynia oblongifolia</i>)
Prickly Beard-heath	(<i>Leucopogon juniperinus</i>)
Narrow-leaved Orangebark	(<i>Maytenus silvestris</i>)
Mock Olive	(<i>Notelaea longifolia</i>)
White Dogwood	(<i>Ozothamnus diosmifolius</i>)
Rough-fruit Pittosporum	(<i>Pittosporum revolutum</i>)
Sweet Pittosporum	(<i>Pittosporum undulatum</i>)
Elderberry Panax	(<i>Polyscias sambucifolia</i>)
Native Peach	(<i>Trema aspera</i>)
Herbs, grasses and ferns	
Forest Hedgehog-grass	(<i>Echinopogon ovatus</i>)
Weeping Grass	(<i>Microlaena stipoides</i>)
Basket Grass	(<i>Oplismenus aemulus</i>)
Pastel Flower	(<i>Pseuderanthemum variabile</i>)
Kangaroo Grass	(<i>Themeda triandra</i>)

(source: **Department of the Environment and Heritage. (September 2005) Sydney Turpentine-Ironbark Forest of the Sydney Basin Bioregion, Nationally Threatened Species and Ecological Communities Information Sheet.**)

Flora and Fauna Lists for Individual Parks

The following flora and fauna lists taken from the draft 'Ryde Flora and Fauna Study 2008' (Biosphere Environmental Consultants: 2008) does not include Santa Rosa Park; Tindarra Reserve and Wilga Park.

5.4 BOOTH RESERVE (LANE COVE RIVER CATCHMENT)

5.4.1 Booth reserve Flora

NATIVE PLANT SPECIES LIST			
FAMILY	SPECIES NAME	COMMON NAME	CS
Pteridiophytes			
DENNSTAEDTIACEAE	<i>Pteridium esculentum</i>	Bracken	C
DICKSONIACEAE	<i>Calochlaena dubia</i>	False Bracken Fern	C
Angiosperms-Dicotyledons			
ARALIACEAE	<i>Polyscias sambucifolia</i>	Elderberry Panax	
CASUARINACEAE	<i>Allocasuarina littoralis</i>	Black She-Oak	C
FABACEAE	<i>Acacia decurrens</i>	Sydney Green Wattle	
	<i>Acacia parramattensis</i>	Parramatta Green Wattle	C
MYRTACEAE	<i>Angophora costata</i>	Sydney Red Gum	C
	<i>Callistemon citrinus (p)</i>	Crimson Bottlebrush	U
	<i>Callistemon linearis (p)</i>	Narrow-leaved Bottlebrush	S
	<i>Eucalyptus acmenoides</i>	White Mahogany	R
	<i>Eucalyptus globoidea</i>	White Stringybark	
	<i>Eucalyptus pilularis</i>	Blackbutt	S
	<i>Leptospermum polygalifolium ssp polygalifolium (p)</i>	Lemon-scented Tea-tree	C
	<i>Melaleuca linariifolia</i>	Snow-in Summer	S
	<i>Melaleuca nodosa (p)</i>	Ball Honeymyrtle	
	<i>Melaleuca stypheloides (p)</i>	Prickly-leaved Paperbark	U
	<i>Syncarpia glomulifera</i>	Turpentine	S
PITTOSPORACEAE	<i>Pittosporum undulatum</i>	Sweet Pittosporum	C
RUTACEAE	<i>Zieria smithii</i>	Sandfly Zieria	C
Angiosperms-Monocotyledons			
COMMELINACEAE	<i>Commelina cyanea</i>	Scurvy Weed	S
LOMANDRACEAE	<i>Lomandra longifolia</i>	Mat Rush	C
PHORMIACEAE	<i>Dianella caerulea</i>	Blue Flax Lily	C
POACEAE	<i>Imperata cylindrica var major</i>	Blady Grass	C

EXOTIC AND NON-LOCAL NATIVE PLANTS		
FAMILY	SPECIES NAME	COMMON NAME
Angiosperms-Dicotyledons		
ARACEAE	<i>Calocasia esculenta</i>	Taro
ASCLEPIADACEAE	<i>Araujia sericiflora</i>	Moth Plant
ASTERACEAE	<i>Bidens pilosa</i>	Cobbler's Pegs
	<i>Delairea odorata</i> ²	Cape Ivy
BASELLACEAE	<i>Anredera cordifolia</i> ²	Madeira Vine
BRASSICACEAE	<i>Brassica fruticulosa</i>	Twiggy Turnip
CARYOPHYLLACEAE	<i>Cerastium glomeratum</i>	Mouse Ear Chickweed
FABACEAE subfamily FABOIDEAE	<i>Erythrina X sykesii</i>	Coral Tree
	<i>Medicago polymorpha</i>	Burr Medic
FABACEAE subfamily MIMOSOIDEAE	* <i>Acacia baileyana</i>	Cootamundra Wattle
MALVACEAE	<i>Sida rhombifolia</i>	Paddy's Lucerne
MELIACEAE	* <i>Melia azedarach var australasica</i>	White Cedar
MORACEAE	<i>Morus albus</i>	White Mulberry
OLEACEAE	<i>Jasminum polyanthum</i>	Pink Jasmine
	<i>Ligustrum lucidum</i> ²	Broad-leaved Privet
	<i>Ligustrum sinense</i> ²	Small-leaved Privet

POLYGONACEAE	<i>Acetosa sagittata</i>	Turkey Rhubarb
PROTEACEAE	* <i>Grevillea robusta</i>	Silky Oak
ROSACEAE	<i>Rubus fruticosus</i> species aggregate ^p	Blackberry
VERBENACEAE	<i>Lantana camara</i> ^p	Lantana
	<i>Verbena</i> sp	Purple Top
ZINGIBERACEAE	<i>Hedychium gardnerianum</i>	Wild Ginger
		Jasmine
		Liquid Amber
Angiosperms-Monocotyledons		
COMMELINACEAE	<i>Tradescantia fluminensis</i> ^p	Trad, Wandering Jew
POACEAE	<i>Eleusine indica</i>	Crowsfoot Grass
	<i>Paspalum dilatatum</i>	Paspalum
	<i>Paspalum urvillei</i>	Vasey Grass
	<i>Pennisetum clandestinum</i>	Kikuyu

*Indicates an Australian native plant that is not indigenous to Ryde municipality

(p) Indicates a species that most likely has been planted

Superscript numbers pertain to listed noxious weeds listed in the Weed Control Order No 19 (2005) of the Noxious Weeds Act 1993

5.4.2 Booth Reserve Fauna

Animal Group	Species	Common Name
Mammals	Black Rat *	<i>Rattus rattus</i>
	House Mouse *	<i>Mus musculus</i>
	Dog *	<i>Canis lupus familiaris</i>
	Cat *	<i>Felis catus</i>
Birds	Eurasian Coot	<i>Fulcia atra</i>
	Masked Lapwing	<i>Vanellus miles</i>
	Noisy Miner	<i>Manorina melanocephalus</i>
	New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>
	Red Wattlebird	<i>Anthochaera carunculata</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Grey Fantail	<i>Rhipidura fuliginosa</i>
	Black-faced Cuckoo Shrike	<i>Coracina novaehollandiae</i>
	Grey Butcherbird	<i>Cracticus torquatus</i>
	Australian Magpie	<i>Gymnorhina tibicen</i>
	Pied Currawong	<i>Strepera graculina</i>
	Australian Raven	<i>Corvus coronoides</i>
	Australian Pipit	<i>Anthus novaeseelandiae</i>
	Red-browed Firetail	<i>Neochmia temporalis</i>
Welcome Swallow	<i>Hirundo neoxena</i>	
Common Myna *	<i>Acridotheres tristis</i>	
House Sparrow *	<i>Passer domesticus</i>	
Feral Pigeon *	<i>Columba livia</i>	
Spotted Turtle-dove *	<i>Streptopelia chinensis</i>	
Reptiles	Garden Skink	<i>Lampropholis delicata</i>
	Grass Skink	<i>Lampropholis guichenoti</i>
	Eastern Water Skink	<i>Eulamprus quoyii</i>
	Southern Leaf-tailed Gecko	<i>Phyllurus platurus</i>

	House Mouse *	<i>Mus musculus</i>
	Dog *	<i>Canis lupus familiaris</i>
	Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>
	Goulds Wattled Bat	<i>Chalinolobus gouldii</i>
Birds	Pacific Black Duck	<i>Anas superciliosa</i>
	White-faced Heron	<i>Ardea novaehollandiae</i>
	Black Swan	<i>Cygnus atrus</i>
	White Ibis	<i>Threskiornis aethiopica</i>
	Magpie Lark	<i>Grallina cyanoleuca</i>
	Masked Lapwing	<i>Vanelhus miles</i>
	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>
	Eastern Rosella	<i>Platycercus eximia</i>
	Crimson Rosella	<i>Platycercus elegans</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>
	Koel	<i>Eudynamys scolopacea</i>
	Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>
	Powerful Owl	<i>Ninox strenua</i>
	Tawny Frogmouth	<i>Podargus strigoides</i>
	Laughing Kookaburra	<i>Dacelo novaeguinea</i>
	Spotted Pardalote	<i>Pardalotus punctata</i>
	Brown Thornbill	<i>Acanthiza pusilla</i>
	Noisy Miner	<i>Manorina melanocephalus</i>
	New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>
	Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>
	Red Wattlebird	<i>Anthochaera carunculata</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Grey Fantail	<i>Rhipidura fuliginosa</i>
	Rufous Whistler	<i>Pachycephala rufiventris</i>
	Eastern Whip-bird	<i>Psophodes olivaceus</i>
	Superb Fairy-wren	<i>Malurus splendens</i>
	White-browed Scrub-wren	<i>Sericornis frontalis</i>
	Brown Thornbill	<i>Acanthiza pusilla</i>
	Black-faced Cuckoo Shrike	<i>Coracina novaehollandiae</i>
	Grey Butcherbird	<i>Cracticus torquatus</i>
	Australian Magpie	<i>Gymnorhina tibicen</i>
	Pied Currawong	<i>Strepera graculina</i>
	Australian Raven	<i>Corvus coronoides</i>
	Common Starling *	<i>Sturnus vulgaris</i>
	Common Myna *	<i>Acridotheres tristis</i>
	House Sparrow *	<i>Passer domestica</i>
	Spotted Turtle-dove *	<i>Streptopelia chinensis</i>
Reptiles	Garden Skink	<i>Lampropholis delicata</i>
	Grass Skink	<i>Lampropholis guichenoti</i>
	Weasel Skink	<i>Saproscincus mustelinus</i>
	Eastern Water Skink	<i>Eulamprus quoyii</i>
Frogs	Common Eastern Froglet	<i>Crinia signifera</i>
Fish	Nil	

5.9 ELS HALL PARK (LANE COVE RIVER CATCHMENT)

5.9.1 ELS Hall Park Flora

NATIVE PLANT SPECIES LIST			
FAMILY	SPECIES NAME	COMMON NAME	CS
Pteridiophytes			
ADIANTACEAE	<i>Adiantum aethiopicum</i>	Maidenhair Fern	C
	<i>Pteridium esculentum</i>	Bracken	C
DICKSONIACEAE	<i>Calochlaena dubia</i>	False Bracken Fern	C
Angiosperms-Dicotyledons			
APIACEAE	<i>Centella asiatica</i>		S
	<i>Platysace lanceolata</i>	Native Parsnip	C
	<i>Trachymene incisa ssp incisa</i>		U-R
ARALIACEAE	<i>Polyscias sambucifolia</i>	Elderberry Panax	C
ASTERACEAE	<i>Ozothamnus diosmifolius</i>	Paper Daisy	C
	<i>Sigesbeckia orientalis ssp orientalis</i>	Indian Weed	S
CASSYTHACEAE	<i>Cassytha pubescens</i>	Common Devil's Twine	
CASUARINACEAE	<i>Allocasuarina littoralis (p)</i>	Black She-Oak	C
CHENOPODIACEAE	<i>Einadia hastata</i>		S
CONVOLVULACEAE	<i>Calystegia marginata</i>		R
	<i>Dichondra repens (s.lat.)</i>	Kidney Weed	S
CUNONIACEAE	<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	C
DILLENIACEAE	<i>Hibbertia scandens (p?)</i>	Golden Guinea Flower	R
ELAEOCARPACEAE	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	C
EPACRIDACEAE	<i>Epacris pulchella ?</i>	NSW Coral Heath	C
	<i>Leucopogon juniperinus</i>	Prickly Heath	S
	<i>Woolsia pungens</i>	Snow Wreath	C
EUPHORBIACEAE	<i>Glochidion ferdinandi</i>	Cheese Tree	C
	<i>Homalanthus populifolius</i>	Bleeding Heart	S
	<i>Micranthemum ericoides</i>		C
	<i>Poranthera microphylla</i>		S
FABACEAE	<i>Acacia decurrens (p?)</i>	Sydney Green Wattle	
	<i>Acacia falcata</i>		S
	<i>Acacia floribunda (p?)</i>	White Sallow Wattle	
	<i>Acacia linifolia</i>	Flax-leaved Wattle	C
	<i>Acacia longifolia</i>	Sydney Golden Wattle	C
	<i>Acacia myrtifolia</i>	Myrtle Wattle	C
	<i>Acacia parramattensis</i>	Parramatta Green Wattle	C
	<i>Acacia suaveolens</i>	Sweet-scented Wattle	C
	<i>Acacia terminalis</i>	Sunshine Wattle	C
	<i>Acacia ulicifolia</i>	Prickly Moses	C
	<i>Glycine clandestina</i>	Love Creeper	C
	<i>Glycine microphylla</i>		
	<i>Hardenbergia violacea</i>	Hardenbergia	C

	<i>Kennedia rubicunda</i>	Dusky Coral Pea	C
	<i>Platylobium formosum</i> ssp <i>formosum</i>	Handsome Flat-Pea	C
	<i>Pultenaea flexilis</i>	Graceful Bush-Pea	C
GERANIACEAE	<i>Geranium homeanum</i>	Northern Cranesbill	S
GOODENIACEAE	<i>Goodenia hederacea</i> ssp <i>hederacea</i>	Violet-leaved Goodenia	C
LAMIACEAE	<i>Plectranthus parviflorus</i>		U
LOBELIACEAE	<i>Pratia purpurascens</i>	White Root	C
MYRTACEAE	<i>Acmena smithii</i> (p?)	Lillypilly	U
	<i>Angophora costata</i>	Sydney Red Gum	C
	<i>Callistemon citrinus</i> (p?)	Crimson Bottlebrush	U
	<i>Callistemon linearis</i> (p?)	Narrow-leaved Bottlebrush	S
	<i>Eucalyptus pitularis</i>	Blackbutt	S
	<i>Eucalyptus resinifera</i> ssp <i>resinifera</i>	Red Mahogany	S
	<i>Eucalyptus saligna</i>	Sydney Blue Gum	S
	<i>Kunzea ambigua</i>	Tickbush	C
	<i>Leptospermum polygalifolium</i> ssp <i>polygalifolium</i>	Lemon-scented Tea- Tree	C
	<i>Leptospermum trinerium</i>	Paperbark Tea-Tree	C
	<i>Melaleuca linariifolia</i> (p?)	Snow-in Summer	S
	<i>Syncarpia glomulifera</i>	Turpentine	S
OXALIDACEAE	# <i>Oxalis perennans</i>		
PITTOSPORACEAE	<i>Billardiera scandens</i>	Apple Berry	C
	<i>Bursaria spinosa</i>	Blackthorn	C
	<i>Pittosporum revolutum</i> (p?)	Rough-fruit Pittosporum	S
	<i>Pittosporum undulatum</i>	Sweet Pittosporum	C
PROTEACEAE	<i>Banksia spinulosa</i> var <i>spinulosa</i>	Hair-pin Banksia	C
	<i>Grevillea linearifolia</i> (p?)	White Spider Flower	
	<i>Hakea sericea</i>	Bushy Needlebush	C
	<i>Lomatia silaifolia</i>	Crinkle Bush	C
	<i>Persoonia levis</i>	Smooth Geebung	C
RANUNCULACEAE	<i>Clematis glycinoides</i>	Old Man's Beard	C
RHAMNACEAE	<i>Pomaderris discolor</i> (p?)	Pomaderris	
RUBIACEAE	<i>Opercularia aspera</i>	Thin Stink Weed	C
	<i>Pomax umbellata</i>	Pomax	C
RUTACEAE	<i>Zieria smithii</i>	Sandfly Zieria	C
SAPINDACEAE	<i>Dodonaea triquetra</i>	Hop Bush	C
SCROPHULARIACEAE	<i>Veronica plebeia</i>		C
STYLIDACEAE	<i>Stylidium lineare</i>	Heath Trigger Plant	U
ULMACEAE	<i>Trema tomentosa</i> var. <i>viridis</i> (p?)	Poison Peach	
Angiosperms-Monocotyledons			
COMMELINACEAE	<i>Commelina cyanea</i>	Scurvy Weed	S
CYPERACEAE	<i>Lepidosperma gunnii</i>		S
	<i>Lepidosperma laterale</i>		C

JUNCACEAE	<i>#Juncus subsecundus</i>		
LOMANDRACEAE	<i>#Lomandra confertifolia ssp rubiginosa</i>		
	<i>Lomandra cylindrica</i>		S
	<i>Lomandra longifolia</i>	Mat Rush	C
	<i>Lomandra obliqua</i>	Fish Bones	C
PHILESIACEAE	<i>#Eustrephus latifolius</i>	Wombat Berry	
PHORMIACEAE	<i>Dianella caerulea</i>	Blue Flax Lily	C
	<i>Dianella revoluta var revoluta</i>	Mauve Flax Lily	S
POACEAE	<i>Aristida ramosa var ramosa</i>	Three-awn Speargrass	
	<i>Austrodanthonia tenuior</i>	Wallaby Grass	
	<i>Austrostipa pubescens</i>	Tall Speargrass	C
	<i>#Digitaria parviflora</i>	Fingergrass	
	<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	C
	<i>Entolasia marginata</i>		S
	<i>Entolasia stricta</i>		C
	<i>Imperata cylindrica var major</i>	Blady Grass	C
	<i>Microlaena stipoides var. stipoides</i>	Weeping Grass	C
	<i>Oplismenus aemulus</i>	Basket Grass	S
	<i>Oplismenus imbecillis</i>	Slender-leaf Basket Grass	S
	<i>Panicum simile</i>	Two Colour Panic	S
	<i>Themeda australis</i>	Kangaroo Grass	C
SMILACACEAE	<i>Smilax glycyphylla</i>	Native Sarsaparilla	C
TYPHACEAE	<i>Typha orientalis</i>	Bull-rush	

EXOTIC AND NON-LOCAL NATIVE PLANTS ELS HALL PARK		
FAMILY	SPECIES NAME	COMMON NAME
Angiosperms-Dicotyledons		
ARACEAE	<i>Calocasia esculenta</i>	Taro
ARALIACEAE	<i>Hedera helix</i>	English Ivy
ASCLEPIADACEAE	<i>Araujia sericiflora</i>	Moth Plant
ASPHODELACEAE	<i>Aloe vera</i>	
ASTERACEAE	<i>Bidens pilosa</i>	Cobbler's Pegs
	<i>Bidens bipinnata</i>	Bipinnate Beggar's Ticks
	<i>Conyza sp.</i>	Fleabane
	<i>Delairea odorata*</i>	Cape Ivy
	<i>Galinsoga parviflora</i>	Potato Weed
	<i>Gnaphalium sp.</i>	Cudweed
	<i>Hypochaeris radicata</i>	Catsear
	<i>Taraxacum officinale</i>	Dandelion
	<i>Sonchus oleraceus</i>	Sowthistle
BASSELLACEAE	<i>Anredera cordifolia*</i>	Madeira Vine
CAPRIFOLIACEAE	<i>Lonicera japonica</i>	Honeysuckle
CASUARINACEAE	<i>*Casuarina cunninghamiana ssp cunninghamiana</i>	River She-Oak
CRASSULACEAE	<i>Bryophyllum delagoense</i>	Mother-Of-Millions
FABACEAE subfamily	<i>Erythrina X sykesii</i>	Coral Tree
FABOIDEAE	<i>Genista monspessulana*</i>	Montpelier Broom

	<i>Trifolium repens</i>	White Clover
	<i>Vicia sativa</i>	Slender Vetch
LAURACEAE	<i>Cinnamomum camphora</i> ⁴	Camphor Laurel
MALACEAE	<i>Cotoneaster glaucophylla</i>	Cotoneaster
MALVACEAE	<i>Sida rhombifolia</i>	Paddy's Lucerne
MELIACEAE	* <i>Melia azedarach</i> var <i>australasica</i>	White Cedar
MORACEAE	<i>Morus albus</i>	White Mulberry
	* <i>E. microcorys</i>	Tallow Wood
OCHNACEAE	<i>Ochna serrulata</i> ⁴	Mickey Mouse Plant
OLEACEAE	<i>Ligustrum lucidum</i> ⁴	Broad-leaved Privet
	<i>Ligustrum sinense</i> ⁴	Small-leaved Privet
	<i>Olea europaea ssp cuspidata</i> ⁴	African Olive
PASSIFLORACEAE	<i>Passiflora caerulea</i>	White Passionfruit
PLANTAGINACEAE	<i>Plantago lanceolata</i>	Lamb's Tongue
POLYGONACEAE	<i>Acetosa sagittata</i>	Turkey Rhubarb
PROTEACEAE	* <i>Grevillea robusta</i>	Silky Oak
ROSACEAE	<i>Rubus fruticosus</i> species aggregate	Blackberry
SOLANACEAE	<i>Cestrum parqui</i> ³	Green Cestrum
	<i>Solanum nigrum</i>	Blackberry Nightshade
TROPAEOLACEAE	<i>Tropaeolum majus</i>	Nasturtium
ULMACEAE	<i>Ulmus sp.</i>	Elm
VERBENACEAE	<i>Lantana camara</i> ⁴	Lantana
	<i>Verbena sp</i>	Purple Top
Angiosperms-Monocotyledons		
ASPARAGACEAE	<i>Asparagus aethiopicus</i> ⁴	Asparagus Fern
	<i>Asparagus plumosus</i> ⁴	Climbing Asparagus
COMMELINACEAE	<i>Tradescantia fluminensis</i> ⁴	Trad, Wandering Jew
POACEAE	<i>Axonopus affinis</i>	Narrow-leaf Carpet Grass
	<i>Briza maxima</i>	Blowfly Grass
	<i>Bromus catharticus</i>	Prairie Grass
	<i>Cynodon dactylon</i>	Common Couch
	<i>Digitaria didactyla</i>	Queensland Blue Couch
	<i>Digitaria sanguinalis</i>	Summer Grass
	<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass
	<i>Paspalum dilatatum</i>	Paspalum
	<i>Paspalum urvillei</i>	Vasey Grass
	<i>Paspalum quadrifarium</i>	Tussock Paspalum
	<i>Pennisetum clandestinum</i>	Kikuyu
	<i>Setaria sp</i>	Pigeon Grass
	<i>Sporobolus indicus var capensis</i>	Parramatta Grass
	<i>Stenotaphrum secundatum</i>	Buffalo Grass

*Indicates an Australian native species that is not indigenous to Ryde municipality

Indicates a species not on Kubiak's (2005) plant list

(p)Indicates a species that may have been planted

Superscript numbers pertain to listed noxious weeds listed in the Weed Control Order No 19 (2005) of the Noxious Weeds Act 1993

5.9.2 ELS Hall Park Fauna

Animal Group	Species	Common Name
Mammals	Brush-tail Possum	<i>Trichosurus vulpecula</i>
	Ring-tail Possum	<i>Pseudecheirus peregrinus</i>

	House Mouse *	<i>Mus musculus</i>
	Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>
Birds	Pacific Black Duck	<i>Anas superciliosa</i>
	White-faced Heron	<i>Ardea novaehollandiae</i>
	Black Swan	<i>Cygnus atrus</i>
	White Ibis	<i>Threskiornis aethiopica</i>
	Maggie Lark	<i>Grallina cyanoleuca</i>
	Masked Lapwing	<i>Vanellus miles</i>
	Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>
	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>
	Koel	<i>Eudynamys scolopacea</i>
	Spotted Pardalote	<i>Pardalotus punctata</i>
	Brown Thornbill	<i>Acanthiza pusilla</i>
	Noisy Miner	<i>Manorina melanocephalus</i>
	Red Wattlebird	<i>Anthochaera carunculata</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Black-faced Cuckoo Shrike	<i>Coracina novaehollandiae</i>
	Australian Magpie	<i>Gymnorhina tibicen</i>
	Pied Currawong	<i>Strepera graculina</i>
	Australian Raven	<i>Corvus coronoides</i>
	Common Myna *	<i>Acridotheres tristis</i>
	Spotted Turtle-dove *	<i>Streptopelia chinensis</i>
Reptiles	Garden Skink	<i>Lampropholis delicata</i>
	Grass Skink	<i>Lampropholis guichenoti</i>
	Weasel Skink	<i>Saproscincus mustelinus</i>
	Eastern Water Skink	<i>Eulamprus quoyii</i>
Frogs	Common Eastern Froglet	<i>Crinia signifera</i>
Fish	Plague Minnow	<i>Gambusia holbrooki</i>
	Short-finned Eel	<i>Anguilla australis</i>

5.10 FLINDERS PARK (LANE COVE RIVER CATCHMENT)

5.10.1 Flinders Park Flora

NATIVE PLANT SPECIES LIST			
FAMILY	SPECIES NAME	COMMON NAME	CS
Angiosperms-Dicotyledons			
CASUARINACEAE	<i>Allocasuarina tortulosa</i>	Forest Oak	C
CUNONIACEAE	<i>Callicoma serratifolia (p)</i>	Black Wattle	C
ELAEOCARPACEAE	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	C
EUPHORBIACEAE	<i>Homalanthus populifolius</i>	Bleeding Heart	S
FABACEAE	<i>Acacia floribunda (p)</i>	White Sallow Wattle	
	<i>Acacia linifolia (p)</i>	Flax-leafed Wattle	C
MYRTACEAE	<i>Acmena smithii</i>	Lillypilly	U
	<i>Callistemon citrinus</i>	Crimson Bottlebrush	U
	<i>Eucalyptus saligna</i>	Sydney Blue Gum	S
	<i>Kunzea ambigua</i>	Tickbush	C

	<i>Melaleuca hypericifolia</i>		R
	<i>Melaleuca linariifolia</i>	Snow-in Summer	S
	<i>Syncarpia glomulifera</i>	Turpentine	S
	<i>Tristaniopsis laurina (p)</i>	Water Gum	C
POLYGONACEAE	<i>Persicaria decipiens</i>	Spotted Knotweed	
PROTEACEAE	<i>Banksia ericifolia var ericifolia (p)</i>	Heath-leaved Banksia	C
	<i>Banksia integrifolia (p)</i>	Coastal Banksia	
	<i>Banksia spinulosa var spinulosa (p)</i>	Hair-pin Banksia	C
Angiosperms-Monocotyledons			
COMMELINACEAE	<i>Commelina cyanea</i>	Scurvy Weed	S
LOMANDRACEAE	<i>Lomandra longifolia (p)</i>	Mat Rush	C
PHORMIACEAE	<i>Dianella caerulea (p)</i>	Blue Flax Lily	C
POACEAE	<i>Imperata cylindrica var major</i>	Blady Grass	C
TYPHACEAE	<i>Typha orientalis</i>	Bull-rush	

EXOTIC AND NON-LOCAL NATIVE PLANTS		
FAMILY	SPECIES NAME	COMMON NAME
Angiosperms-Dicotyledons		
ACERACEAE	<i>Acer negundo</i>	Box Elder
ARACEAE	<i>Monstera deliciosa</i>	Fruit Salad Plant
ASTERACEAE	<i>Bidens pilosa</i>	Cobbler's Pegs
	<i>Conyza sp.</i>	Fleabane
BASELLACEAE	<i>Anredera cordifolia¹</i>	Madeira Vine
BIGNONIACEAE	<i>Jacaranda mimosifolia</i>	Jacaranda
FABACEAE subfamily	<i>Erythrina X sykesii</i>	Coral Tree
FABOIDEAE		
	<i>Trifolium repens</i>	White Clover
LAURACEAE	<i>Cinnamomum camphora⁴</i>	Camphor Laurel
MALACEAE	<i>Eriobotrya japonica</i>	Loquat
MORACEAE	<i>Morus albus</i>	White Mulberry
MUSACEAE	<i>Musa sp</i>	Banana
MYRTACEAE	<i>*Corymbia maculata</i>	Spotted Gum
	<i>*E. microcorys</i>	Tallow Wood
OLEACEAE	<i>Ligustrum lucidum⁴</i>	Broad-leaved Privet
	<i>Ligustrum sinense⁴</i>	Small-leaved Privet
PLANTAGINACEAE	<i>Plantago lanceolata</i>	Lamb's Tongue
PROTEACEAE	<i>*Grevillea robusta</i>	Silky Oak
ROSACEAE	<i>Rubus fruticosus species aggregate⁴</i>	Blackberry
SOLANACEAE	<i>Solanum nigrum</i>	Blackberry Nightshade
STERCULACEAE	<i>*Brachychiton acerifolius</i>	Illawarra Flametree
VERBENACEAE	<i>Lantana camara⁴</i>	Lantana
Angiosperms-Monocotyledons		
COMMELINACEAE	<i>Tradescantia fluminensis⁴</i>	Trad, Wandering Jew
HALORAGACEAE	<i>Myriophyllum aquaticum</i>	Brazilian Water Milfoil
POACEAE	<i>Cynodon dactylon</i>	Common Couch
	<i>Pennisetum clandestinum</i>	Kikuyu
	<i>Setaria palmifolia</i>	Palm Grass
	<i>Stenotaphrum secundatum</i>	Buffalo Grass

*Indicates an Australian native plant that is not indigenous to Ryde municipality
 (p) Indicates a species that most likely has been planted
 Superscript numbers pertain to listed noxious weeds listed in the Weed Control Order No 19 (2005) of the Noxious Weeds Act 1993

5.10.2 Flinders Park Fauna

Animal Group	Species	Common Name
Mammals	Dog *	<i>Canis lupus familiaris</i>
	Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>
	Goulds Wattleed Bat	<i>Chalinolobus gouldii</i>
Birds	White Ibis	<i>Threskiornis aethiopica</i>
	Magpie Lark	<i>Grallina cyanoleuca</i>
	Masked Lapwing	<i>Vanellus miles</i>
	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>
	Yellow-tailed Black Cockatoo	<i>Calyptorhynchus funereus</i>
	Crimson Rosella	<i>Platycercus elegans</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Koel	<i>Eudynamys scolopacea</i>
	Laughing Kookaburra	<i>Dacelo novaeguineae</i>
	Noisy Miner	<i>Manorina melanocephalus</i>
	Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>
	Red Wattlebird	<i>Anthochaera carunculata</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Black-faced Cuckoo Shrike	<i>Coracina novaehollandiae</i>
Australian Magpie	<i>Gymnorhina tibicen</i>	
Pied Currawong	<i>Strepera graculina</i>	
Australian Raven	<i>Corvus coronoides</i>	
Common Myna *	<i>Acridotheres tristis</i>	
Spotted Turtle-dove *	<i>Streptopelia chinensis</i>	
Reptiles	Garden Skink	<i>Lampropholis delicata</i>
	Grass Skink	<i>Lampropholis guichenoti</i>
	Weasel Skink	<i>Saproscincus mustelinus</i>
	Eastern Water Skink	<i>Eulamprus quoyii</i>
Frogs	Common Eastern Froglet	<i>Crinia signifera</i>
Fish	Plague Minnow	<i>Gambusia holbrooki</i>

5.11 GLADES BAY PARK (PARRAMATTA RIVER CATCHMENT)

5.11.1 Glades Bay Park Flora

NATIVE PLANT SPECIES LIST			
FAMILY	SPECIES NAME	COMMON NAME	CS
Pteridiophytes			
ADIANTACEAE	<i>Adiantum aethiopicum</i>	Maidenhair Fern	C
ASPLENICACEAE	<i>Asplenium australasicum</i>	Bird's Nest Fern	

	Weasel Skink	<i>Saproscincus mustelinus</i>
	Eastern Water Skink	<i>Eulamprus quoyii</i>
Frogs	Common Eastern Froglet	<i>Crinia signifera</i>
Fish	Nil	

5.12 GREENWOOD PARK (LANE COVE RIVER CATCHMENT)

5.12.1 Greenwood Park Flora

NATIVE PLANT SPECIES LIST			
FAMILY	SPECIES NAME	COMMON NAME	CS
Pteridiophytes			
DENNSTAEDTIACEAE	<i>Pteridium esculentum</i>	Bracken	C
DICKSONIACEAE	<i>Calochlaena dubia</i>	False Bracken Fern	C
Angiosperms-Dicotyledons			
ACANTHACEAE	<i>Pseuderanthemum variabile</i>	Pastel Flower	C
APIACEAE	<i>Centella asiatica</i>	Centella	S
ARACEAE	<i>#Allocasia brisbanensis</i>	Conjevoi	
ARALIACEAE	<i>Polyscias sambucifolia</i>	Elderberry Panax	C
ASTERACEAE	<i>Ozothamnus diosmifolius</i>	Paper Daisy	C
	<i>Sigesbeckia orientalis ssp orientalis</i>	Indian Weed	S
BIGNONIACEAE	<i>Pandorea pandorana</i>	Wonga Wonga Vine	C
CONVOLVULACEAE	<i>Calystegia marginata</i>		R
	<i>Dichondra repens (s.lat.)</i>	Kidney Weed	S
CUNONIACEAE	<i>Callicoma serratifolia</i>	Black Wattle	C
ELAEOCARPACEAE	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	C
EUPHORBIACEAE	<i>Homalanthus populifolius</i>	Bleeding Heart	S
FABACEAE	<i>Acacia linifolia</i>	Flax-leaved Wattle	C
	<i>Acacia longifolia</i>	Sydney Golden Wattle	C
	<i>Acacia parramattensis</i>	Parramatta Green Wattle	C
	<i>Acacia ulicifolia</i>	Prickly Moses	C
	<i>Pultenaea daphnoides</i>		C
GERANIACEAE	<i>Geranium homeanum</i>	Northern Cranesbill	S
LOBELIACEAE	<i>Pratia purpurascens</i>	White Root	C
MYRTACEAE	<i>Callistemon citrinus</i>	Crimson Bottlebrush	U
	<i>Eucalyptus saigna</i>	Sydney Blue Gum	S
	<i>Leptospermum polygalifolium ssp polygalifolium</i>	Lemon-scented Tea-tree	C
	<i>Melaleuca linariifolia</i>	Snow-in Summer	S
	<i>Melaleuca stypheloides (p)</i>	Prickly-leaved Paperbark	U
	<i>Syncarpia glomulifera</i>	Turpentine	S
	<i>Tristaniopsis laurina</i>	Water Gum	C

PITTOSPORACEAE	<i>Pittosporum revolutum</i>	Rough-fruit Pittosporum	S
	<i>Pittosporum undulatum</i>	Sweet Pittosporum	C
POLYGONACEAE	# <i>Persicaria lapathifolia</i>	Knotweed	
PROTEACEAE	<i>Hakea salicifolia</i> ssp <i>salicifolia</i>	Willow-leaved Hakea	S
	<i>Hakea sericea</i>	Bushy Needlebush	C
RUTACEAE	<i>Zieria smithii</i>	Sandfly Zieria	C
SAPINDACEAE	<i>Dodonaea triquetra</i>	Hop Bush	C
Angiosperms-Monocotyledons			
CYPERACEAE	<i>Gahnia</i> sp	Sawsedge	S
LOMANDRACEAE	<i>Lomandra longifolia</i>	Mat Rush	C
PHORMIACEAE	<i>Dianella caerulea</i>	Blue Flax Lily	C
POACEAE	<i>Dichelachne micrantha</i>	Short-hair Plume Grass	
	# <i>Digitaria parviflora</i>	Fingergrass	
	<i>Echinopogon caespitosus</i>	Hedgehog Grass	
	<i>Imperata cylindrica</i> var <i>major</i>	Blady Grass	C
	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass	C
	<i>Oplismenus aemulus</i>	Weeping Grass	S

EXOTIC AND NON-LOCAL NATIVE PLANTS		
FAMILY	SPECIES NAME	COMMON NAME
Pteridiophytes		
CYATHEACEAE	* <i>Cyathea cooperi</i>	Straw Treefern
Angiosperms-Dicotyledons		
ACERACEAE	<i>Acer negundo</i>	Box Elder
ALSTROEMERACEAE	<i>Alstroemeria pulchella</i>	Parrot Alstroemeria
ARALIACEAE	<i>Hedera helix</i>	English Ivy
ARECACEAE	<i>Phoenix canariensis</i>	Phoenix Palm
ASCLEPIADACEAE	<i>Araujia sericiflora</i>	Moth Plant
ASTERACEAE	<i>Ageratina adenophora</i>	Crofton Weed
	<i>Bidens pilosa</i>	Cobbler's Pegs
	<i>Conyza</i> sp.	Fleabane
	<i>Delairea odorata</i> [†]	Cape Ivy
	<i>Galinsoga parviflora</i>	Potato Weed
	<i>Gnaphalium</i> sp.	Cudweed
	<i>Hypochaeris radicata</i>	Catsear
	<i>Taraxacum officinale</i>	Dandelion
	<i>Sonchus oleraceus</i>	Sowthistle
	<i>Xanthium</i> spp	Cockle Burr
BASELLACEAE	<i>Anredera cordifolia</i> [†]	Madeira Vine
BIGNONIACEAE	<i>Jacaranda mimosifolia</i>	Jacaranda
BRASSICACEAE	<i>Brassica fruticulosa</i>	Twiggy Turnip
CANNACEAE	<i>Canna indica</i>	Canna Lily
CAPRIFOLIACEAE	<i>Lonicera japonica</i>	Honeysuckle
CASUARINACEAE	* <i>Casuarina cunninghamiana</i> ssp <i>cunninghamiana</i>	River She-Oak
CONVOLVULACEAE	<i>Ipomoea indica</i> [†]	Blue Morning Glory
EUPHOBACEAE	<i>Euphorbia peplus</i>	Petty Spurge

FABACEAE subfamily CAESALPINOIDEAE	<i>Senna pendula</i> var <i>glabrata</i> [#]	Easter Senna
FABACEAE subfamily FABOIDEAE	<i>Vicia sativa</i>	Slender Vetch
FABACEAE subfamily MIMOSOIDEAE	* <i>Acacia elata</i>	Mountain Cedar Wattle
LAURACEAE	<i>Cinnamomum camphora</i> [#]	Camphor Laurel
MALVACEAE	<i>Malva parviflora</i>	Smallflower Mallow
	<i>Sida rhombifolia</i>	Paddy's Lucerne
MELIACEAE	* <i>Melia azedarach</i> var <i>australasica</i>	White Cedar
MORACEAE	<i>Morus albus</i>	White Mulberry
MYRTACEAE	* <i>Corymbia maculata</i>	Spotted Gum
	* <i>Eucalyptus microcorys</i>	Tallow Wood
	* <i>Melaleuca armarillis</i>	Giant Honeymyrtle
OLEACEAE	<i>Ligustrum lucidum</i> [#]	Broad-leaved Privet
	<i>Ligustrum sinense</i> [#]	Small-leaved Privet
	<i>Olea europaea</i> ssp <i>cuspidata</i> [#]	African Olive
PASSIFLORACEAE	<i>Passiflora edulis</i>	Common Passionfruit
PLANTAGINACEAE	<i>Plantago lanceolata</i>	Lamb's Tongue
POLYGONACEAE	<i>Acetosa sagittata</i>	Turkey Rhubarb
RANUNCULACEAE	<i>Ranunculus repens</i>	Buttercup
ROSACEAE	<i>Rubus fruticosus</i> species aggregate [#]	Blackberry
SAPINDACEAE	<i>Cardiospermum grandiflorum</i> [#]	Balloon Vine
	<i>Triadica sebifera</i>	Chinese Tallow
SOLANACEAE	<i>Cestrum parqui</i> [#]	Green Cestrum
	<i>Solanum nigrum</i>	Blackberry Nightshade
TROPAEOLACEAE	<i>Tropaeolum majus</i>	Nasturtium
VERBENACEAE	<i>Lantana camara</i> [#]	Lantana
	<i>Verbena</i> sp	Purple Top
VIOLACEAE	<i>Viola odorata</i>	Sweet Violet
ZINGIBERACEAE	<i>Hedychium gardnerianum</i>	Wild Ginger
Angiosperms-Monocotyledons		
ASPARAGACEAE	<i>Asparagus aethiopicus</i> [#]	Asparagus Fern
COMMELINACEAE	<i>Tradescantia fluminensis</i> [#]	Trad, Wandering Jew
IRIDACEAE	<i>Dietes</i> sp.	Dietes
LILIACEAE	<i>Chlorophytum comosum</i>	Ribbon Plant
POACEAE	<i>Bromus catharticus</i>	Prairie Grass
	<i>Cynodon dactylon</i>	Common Couch
	<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass
	<i>Paspalum dilatatum</i>	Paspalum
	<i>Paspalum quadrifarium</i>	Tussock paspalum
	<i>Paspalum urvillei</i>	Vasey Grass
	<i>Pennisetum clandestinum</i>	Kikuyu
	<i>Setaria</i> sp	Pigeon Grass
	<i>Sporobolus indicus</i> var <i>capensis</i>	Parramatta Grass
	<i>Stenotaphrum secundatum</i>	Buffalo Grass

* Indicates an Australian native plant that is not indigenous to Ryde municipality

Indicates a species not listed on Kubiak's (2005) plant list

(p) Indicates a species that has most likely been planted

Superscript numbers pertain to listed noxious weeds listed in the Weed Control Order No 19 (2005) of the Noxious Weeds Act 1993.

5.12.2 Greenwood Park Fauna

Animal Group	Species	Common Name
Mammals	Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>
Birds	White Ibis	<i>Threskiornis aethiopicus</i>
	Magpie Lark	<i>Grallina cyanoleuca</i>
	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
	Koel	<i>Eudynamis scolopacea</i>
	Noisy Miner	<i>Manorina melanocephalus</i>
	Red Wattlebird	<i>Anthochaera carunculata</i>
	Willie Wagtail	<i>Rhipidura leucophrys</i>
	Australian Magpie	<i>Gymnorhina tibicen</i>
	Pied Currawong	<i>Strepera graculina</i>
	Australian Raven	<i>Corvus coronoides</i>
	Common Myna *	<i>Acridotheres tristis</i>
	Spotted Turtle-dove *	<i>Streptopelia chinensis</i>
Reptiles	Garden Skink	<i>Lampropholis delicata</i>
	Grass Skink	<i>Lampropholis guichenoti</i>
	Eastern Water Skink	<i>Eulamprus quoyii</i>
Frogs	Common Eastern Froglet	<i>Crinia signifera</i>
Fish	Nil	

Appendix E - Public Hearing Report

Lantz Marshall

PLANNING - COMMUNITY - ECONOMIC - RECREATION

PUBLIC HEARING REPORT

SHRIMPTONS CREEK

COMMUNITY LAND RE-CATEGORISATION

1.0 Introduction

City of Ryde has proposed the re-categorisation of two (2) areas within the Shrimpton's Creek Plan of Management. The two re-categorisations are:

- I. Portion of Santa Rosa Park from a categorisation of a 'Park' to 'General Community Use'
- II. Portion of ELS Hall Park from a categorisation of a 'Park' to 'General Community Use'

In accordance with section 40A of the *Local Government Act 1993*, a Council must hold a public hearing in respect of a plan of management preparation of the proposal would have the effect of categorising or re-categorising community land under s.36(4). Whenever there is a proposed change in the categorisation of community land (for example, where community land has been previously categorised in a plan of management) a public hearing must be held with respect to the proposed change in categorisation.





It was considered by City of Ryde that a public hearing would also assist the community in understanding and clarifying any issues associated with the proposed re-classification.

It is a legislative requirement of the Local Government Act, 1993 (s47G) that public hearings be conducted by an independent person and this cannot be a Councillor or Council staff member.

The public hearing and associated process was presided over by Mr Joe Lantz of Lantz Marshall Pty Ltd. Mr Lantz is the Managing Director of the recreation planning consultancy and has over 20 years experience in both local government and open space planning.

2.0 Purpose of the Public Hearing

The purpose of the public hearing is outlined as follows:

-  To provide clarification and consistency in categorisation of community land.
-  To formalise categorisation of community land in accordance with s40A of the Local Government Act, 1993.
-  To present a forum for community consultation.
-  To respond to any further issues and questions raised by the local community.

The public hearing was held in relation to two re-categorisations:

- I. Portion of Santa Rosa Park from a categorisation of a 'Park' to 'General Community Use'
- II. Portion of ELS Hall Park from a categorisation of a 'Park' to 'General Community Use'

Five (5) members of the community and representatives of special interest groups attended the public hearing. Minutes of the meeting are contained within the appendices.

3.0 Portion of Santa Rosa Park

The Shrimpton's Creek Plan of Management was adopted in 2009 and since then Council has been in negotiations with a community group to provide space for a community nursery and garden within Santa Rosa Park. The following maps depict the overall site and associated specific area proposed for re-categorisation:



Area to be re-categorised is denoted within the red lines in the southern portion of the site.



Area to be re-categorised is denoted within the red lines in the southern portion of the site.

Council has been in discussions with the IEWF Habitat Network for the past 18 months. The aim was to determine a suitable location to establish a community nursery and garden. Through a sieve planning process Council identified the portion of space at Santa Rosa Park. The current Shrimpton's Creek Plan of Management and categorisation is not consistent with the proposed project. As such, Council has commenced the process of ensuring the consistency including:

- ☞ Re-categorisation of a portion of the site from 'Park' to 'General Community Use'.
- ☞ Updating Master Plan. Sym Studio architects was engaged by Council to prepare a master plan for the site consist with the proposed re-categorisation and proposed future use. The master plan was presented at the public hearing. A full copy of the presentation document is contained within the Appendices - B.
- ☞ Updating the Shrimpton's Creek Plan of Management.

Following are extracts from the updated Santa Rosa Park master plan depicting the overall site and associated re-categorisation area:






Sym Studios – extract of Santa Rosa Park master plan.



Sym Studios – extract of Santa Rosa Park master plan highlighting proposed re-categorisation area (incorporating points 2-8).

During the preparation of the updated Santa Rosa Park master plan a community consultation process was implemented. It is understood that there were no objections to the re-categorisation and associated establishment of a community nursery and gardens (refer to appendices).

The public hearing did not receive any written or verbal objections to the re-categorisation. A number of issues were raised for consideration by Council during the master planning and Shrimpton's Creek updating processes, namely:

-  Establishment of an appropriate management and operational model for the community gardens and nursery.
-  Detailed design of the nursery.
-  Ensuring new public toilets are designed to complement the site. Council has funding in the 2011/12 budget for the construction phase.

4.0 Portion of Santa Rosa Park - Recommendations

The proposed re-categorisation from 'Park' to 'General Community Use' is recommended to proceed as there is no community objections and the proposal provides a clear community benefit.

It is further recommended that Council continue to proceed with updating the Santa Rosa Park master plan and Shrimpton's Creek Plan of Management noting the specific issues raised through the public hearing process.

5.0 ELS Hall Park

The Shrimpton's Creek Plan of Management was adopted in 2009 and since then Council has constructed an indoor sport centre at ELS Hall Park. The Ryde Community Sports Centre consists of two-court basketball (multi-purpose), meeting rooms, amenities and canteen facilities. The centre was primarily funded through the Commonwealth stimulus funding programs. The centre is to be managed and operated by the YMCA – Sydney on behalf of Council.

The following maps depict the overall site and associated specific area proposed for re-categorisation:



Area to be re-categorised is denoted within the red lines in the southern portion of the site.



Area to be re-categorised is denoted within the red lines in the southern portion of the site.

The current Plan of Management does not make provision for the establishment of the centre and any associated leases or licences in accordance with the *Local Government Act, 1993*. Due to the nature and timing of the stimulus funding for the project the proposed re-categorisation is considered administrative in intent as it aims to make provision for the established facility and its associated operations.

The public hearing did not receive any written or verbal objections to the re-categorisation. There was no discussion on the matter.

6.0 ELS Hall Park - Recommendations

The proposed re-categorisation from 'Park' to 'General Community Use' is recommended to proceed as there are no community objections and the proposal provides a clear community benefit.

It is further recommended that Council continue to proceed with updating the Shrimpton's Creek Plan of Management including the need to make provision for adequate leases and licences.

7.0 Conclusions

City of Ryde has proposed the re-categorisation of two (2) areas within the Shrimpton's Creek Plan of Management. The two re-categorisations are:

- I. Portion of Santa Rosa Park from a categorisation of a 'Park' to 'General Community Use'
- II. Portion of ELS Hall Park from a categorisation of a 'Park' to 'General Community Use'

In accordance with section 40A of the *Local Government Act 1993*, an independent hearing was held in respect to the proposed re-categorising community land under s.36(4).

Both of the proposed re-categorisations from 'Park' to 'General Community Use' are supported as there are no community objectives and the proposals provides a clear community benefit.

It is further recommended that Council continue to proceed with updating the Shrimpton's Creek Plan of Management to address site specific issues with the respective sites.

Please do not hesitate to contact me as required.

Yours sincerely,


Joe Lantz
LANTZ MARSHALL

Appendix F - Review of Environmental Protection Zones - Reports



REVIEW OF ENVIRONMENTAL PROTECTION ZONES

Shrimpton's Creek Parklands

Prepared for
City of Ryde

28 November 2011

DOCUMENT TRACKING

ITEM	DETAIL
Project Name	Review of Environmental Protection Zones: Shrimpton's Creek Parklands
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File location	G:\Synergy\Projects\11SYDPLA\11SYDPLA-0015 E2 Zone Review Shrimpton's Creek Parklands\Report
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Abbreviations

ABBREVIATION	DESCRIPTION
CEEC	Critically Endangered Ecological Community
EEC	Endangered Ecological Community
ELA	Eco Logical Australia
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
LEP	Local Environmental Plan
TSC Act	<i>Threatened Species Conservation Act 1995</i>

Executive Summary

The City of Ryde is currently reviewing the Plan of Management (PoM) for Shrimpton’s Creek Parklands. The Parklands are comprised of Santa Rosa Park, Flinders Park, Tindarra Reserve, Greenwood Park, ELS Hall Park, Booth Reserve, and Wilga Park.

In conjunction with its review of the PoM, Council has engaged Eco Logical Australia to review the land zonings within the Parklands, with specific focus on the environmental zones and to advise on their suitability, accuracy and to provide recommendations to inform the updated Plan of Management.

The assessment completed for this project has identified that the Parklands contain a mix of environmental values including both natural and non-natural items.

Our recommendations include the introduction of the E3 zoning, targeting specific intentions based around the zones’ objective of providing

- Rehabilitation and restoration of special environmental qualities. Specifically, our recommendation to use the E3 zoning to ensure the Critically Endangered Ecological Community STIF, having special environmental quality, is managed from a current assessed state of low environmental value to an improved higher environmental value and resilience.
- Support for the transition from high ecological value land to other land. Specifically, our recommendation to use the E3 zoning to ensure the Critically Endangered Ecological Community STIF is buffered from residential or special purpose zones, particularly where the majority of adjoining vegetation is zoned E2.

It is noted that there is currently no provision in Ryde LEP 2010 for an E3 zone. As such, an additional recommendation is that for future LEPs, Council develops specifications for E3 zones and land use tables in line with DoP Practice Note 09-002 and the LEP Standard Instrument (LEP Template).

Recommended future environmental zoning is shown on **Figures 7 to 11** along with a comparison of the current zoning under Ryde LEP 2010.

1 Background

1.1 INTRODUCTION

The City of Ryde is currently reviewing the Plan of Management (PoM) for Shrimpton's Creek Parklands (herein termed 'The Parklands') as shown on **Figure 1**. The Parklands are comprised of Santa Rosa Park, Flinders Park, Tindarra Reserve, Greenwood Park, ELS Hall Park, Booth Reserve, and Wilga Park. These parks provide an almost continual link of open space, including an existing pedestrian and cycle way, from the centre of the City of Ryde to the boundaries of the Ryde council area, creating a significant environmental and recreational 'spine'. While still maintaining a bushland character, the seven parks that form the Parklands include well utilised sporting fields and facilities such as those at ELS Hall Park and Santa Rosa Park (City of Ryde, 2011). The current Master Plan and Plan of Management have been developed to better manage the creek, its surrounding environment and ultimately the parks along it.

In conjunction with its review of land categories for the PoM, Council has engaged Eco Logical Australia to review the land zonings within the Parklands, with specific focus on the environmental zones and to advise on their suitability, accuracy and to provide recommendations to inform the updated Plan of Management.

1.2 LEGISLATIVE CONTEXT

1.2.1 EP&A Act, LEP & Current Zoning

The Ryde Local Environmental Plan (LEP) was updated to the Department of Planning Standard Instrument (LEP template) in 2010 under Part 3 of the *Environmental Planning and Assessment Act 1979*. Current zoning for the Parklands is primarily RE1 (Public Recreation) with areas of E2 (Environmental Conservation). It is noted that Ryde LEP 2010 does not contain any E3 (Environmental Management) zones. The Parklands are bordered by single dwelling housing (R2), with medium density and commercial buildings beside Wilga Park (B7).

The specifics of the relevant zones for the Reserve according to the landuse table found within Ryde LEP 2010 are as follows:

Zone E2 Environmental Conservation

1 Objectives of zone

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Drainage; Environmental facilities

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; any other development not specified in item 2 or 3.

Zone RE1 Public Recreation

1 Objectives of zone

- To enable land to be used for public open space or recreational purposes.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.
- To provide adequate open space areas to meet the existing and future needs of the residents of Ryde.
- To protect and enhance the natural bushland in a way that enhances the quality of the bushland and facilitates public enjoyment of the bushland in a way that is compatible with its conservation.

2 Permitted without consent

Environmental protection works.

3 Permitted with consent

Business identification signs; Community facilities; Environmental facilities; Kiosks; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Restaurants; Roads.

4 Prohibited

Any development not specified in item 2 or 3.

1.2.2 Environment Protection Zones

The Department of Planning LEP practice note PN 09-002 (reproduced in full at Appendix 1) describes the relevant environment protection zones as follows:

E2 Environmental Conservation

This zone is for areas with high ecological, scientific, cultural or aesthetic values outside national parks and nature reserves. The zone provides the highest level of protection, management and restoration for such lands whilst allowing uses compatible with those values.

It is anticipated that many councils will generally have **limited areas** displaying the characteristics suitable for the application of the E2 zone. Areas where a broader range of uses is required (whilst retaining environmental protection) may be more appropriately zoned E3 Environmental Management.

Relevant examples provided include land containing:

- Endangered ecological communities;
- Very high conservation values;
- High conservation coastal foreshores;
- Coastal foreshores and land subject to coastal processes; and
- Land with significant aboriginal heritage values.

E3 Environmental Management

This zone is for land where there are special ecological, scientific, cultural or aesthetic attributes or environmental hazards/processes that require careful consideration/management and for uses compatible with these values.

Relevant examples provided include:

- Areas of special ecological, scientific, cultural or aesthetic attributes that require management;
- Land where rehabilitation and restoration of its special environmental qualities are the primary purpose.

1.2.3 Local Government Act

Shrimpton's Creek Parklands are classified as community land under the *Local Government Act 1993*. Under this Act section 35 states that community land is required to be used and managed in accordance with the following the plan of management applying to the land (NSW Govt 1993:s35).

As a part of the review of the PoM, Council is proposing the re-categorisation of part of Santa Rosa Park from 'Park' to 'General Community Use' for the purposes of permitting the future development of a community nursery and garden and the re-categorisation of part of ELS Hall Park from 'Park' to 'General Community Use' and 'Sportsground' for the purposes of clarifying the use and operation of the newly constructed indoor sports centre.

1.3 OBJECTIVES & APPROACH

The key tasks of this project are as follows:

1. Review the existing E2 zones identified under the Ryde LEP 2010 to determine if they satisfy the intent and objectives of Department of Planning's LEP Practice Note PN09-002 Environmental Protection Zones;
2. Identify other areas within the Reserve that should be considered appropriate for an E2 zone;
3. Consider the use of other environmental protection zones within the Parklands; and
4. To accurately map all environmental protection zones.
5. Determine if buffer zones are required around the recommended E2 zones.

The approach taken for this study was to complete a desktop review of the characteristics (spatial and textual) followed by a site inspection to examine the environmental values of the Parklands. This information was analysed and considered alongside the Environmental Protection Zone Practice Note (PN09-002). A set of considerations for determining environmental significance and value was developed in order to formulate recommendations on the most appropriate environmental protection zones for the Parklands.

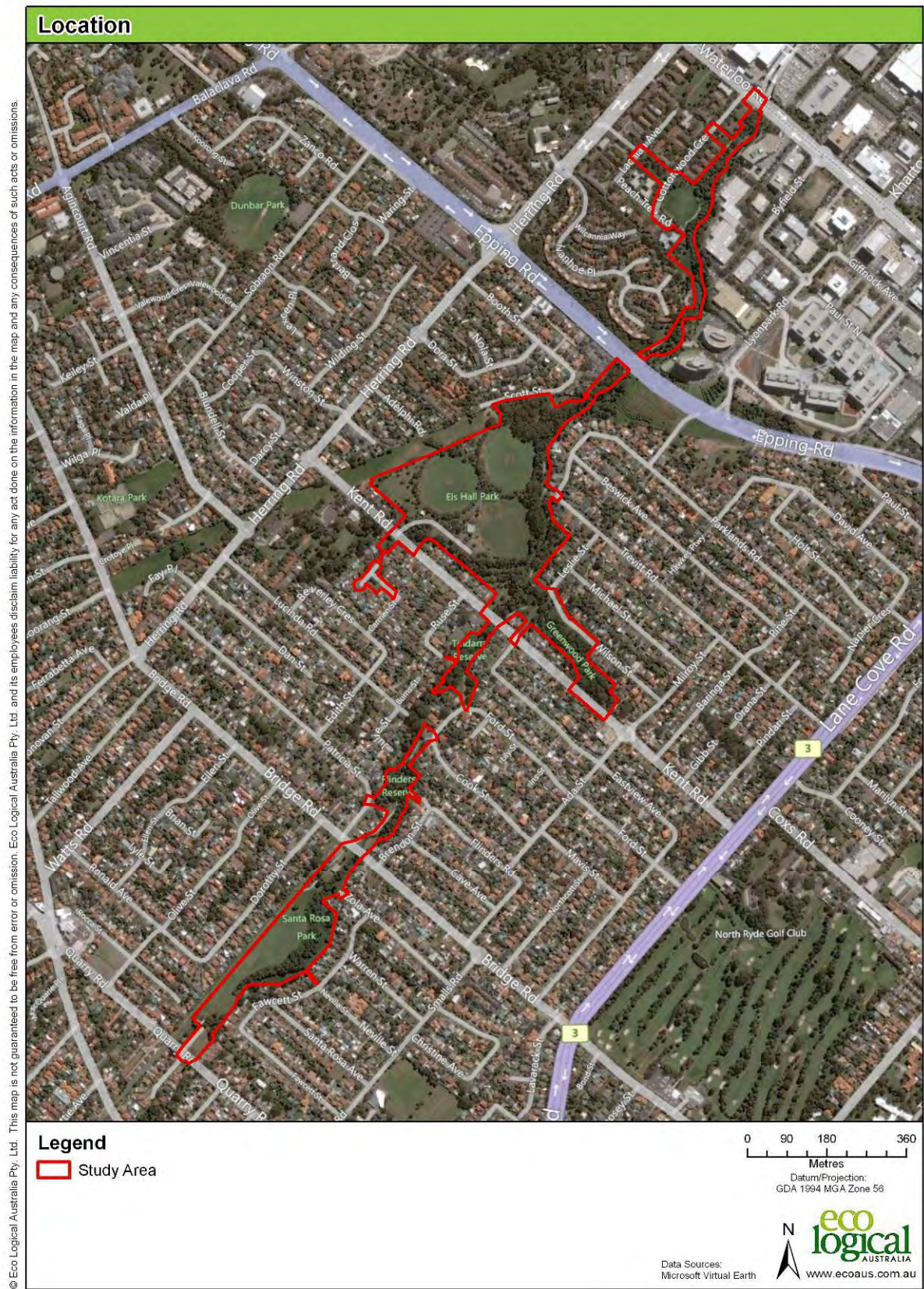


Figure 1: Location map

2 Methods

2.1 LITERATURE & SPATIAL REVIEW

All readily available literature describing the environmental characteristics of the Parklands was reviewed and their relevance to the project considered, including:

- Native Vegetation Mapping (DECCW 2009, Oculus 2001, Tozer 2003);
- Ryde Bushland Reserves Flora and Fauna Study (Biosphere 2008);
- Potential Regional Corridor Values (ELA 2008, ELA 2010)

In addition, the Ryde LEP 2010 was reviewed along with the Department of Planning's Practice Note PN09-002 (Environmental Protection Zones) and the City of Ryde Land Use and Planning Environmental Strategy (ELA 2009).

Spatial (GIS) data held by ELA and that provided by Council was also reviewed to further inform the project. Spatial data examined included:

- Aerial photographs;
- Current LEP zoning;
- Vegetation mapping;
- Threatened flora and fauna records in the locality;

It was determined that the best basis for the assessment was the draft vegetation mapping for Sydney Metropolitan CMA (DECCW 2009). This data was validated during the site inspection and where differences were observed to previous studies (Biosphere, Oculus and ELA) the draft mapping was generally adopted.

Where existing E2 zones were mapped over roads, this zoning was removed. All other roads with a non-E zone were reverted back to their adjoining zoning, or their original zoning (whichever was most appropriate).

2.2 SITE INSPECTION

The Parklands were inspected by two of Eco Logical Australia's ecologists (Tammy Haslehurst and Steve Dimitriadis) on the 9th June 2010. The purpose of the site inspection was to confirm the environmental characteristics of the Parklands documented in the literature and spatial data as well as to record any other features of relevance to the study. The primary observations noted were as follows:

- Vegetation type (including listing status), condition, resilience/recovery potential;
- Habitat characteristics, value, connectivity; and
- Management related information including current reserve use, management needs and observed issues.

2.3 CRITERIA DEVELOPMENT

From the background of the above works the criteria for assigning environmental value was selected. These criteria were developed and discussed in collaboration with the City of Ryde at a workshop on 17th December 2010, for previous zone reviews (ELA 2011), and have been accepted as an appropriate and uniform approach for this study. The characteristics considered in developing the environmental value criteria include:

- Listed status according to the TSC Act and EPBC Act including Critically Endangered Ecological Communities (CEEC) and Endangered Ecological Communities (EEC) or regional protection (recognised as being regionally significant vegetation or foreshore vegetation) and other vegetation (not listed);
- Patch size, being the collective area of contiguous native vegetation (assessed as being the collective total area of any mapped polygons of native vegetation adjacent or within 20m of other mapped polygons of native vegetation);
- Vegetation condition, based on an objective assessment of disturbances including weeds, erosion, vegetation clearance and structure;
- Edge to area ratio, based on an objective assessment of the edge (perimeter) to area ratio where a long and skinny polygon would typically have a high or very high ratio whereas a large and round polygon would generally have a low ratio;
- Connectivity to nearest patch of native vegetation (where patches are greater than 2ha);
- Threatened species utilisation, being the recorded presence of a threatened species in or within 500m of the vegetation patch. This criteria was limited by the paucity of detailed threatened species records in the study area. Data from the NSW Wildlife Atlas was used in this assessment as well a review of background literature for the Parklands;
- Habitat values based on an assessment of habitat resources including tree hollows, ground logs, litter, vegetation structure and complexity, surface rock and the like;
- Recovery potential, being an objective assessment of resilience or ability to recover with management actions/intervention. Based on the type and severity of weed abundance, current vegetation characteristics and disturbance history of both vegetation and the soil substrate;
- Recorded aboriginal or cultural heritage (items or sites). Data from Council's GIS database was used in this assessment, although should not be considered comprehensive; and
- Current landuse covering recreational uses, remnant bushland (with or without active management actions) and a range of other uses.

Aesthetic values were also considered although given their highly subjective nature this report does not incorporate these values into the assessment.

3 Results

The findings of the background work and site inspection for the Parklands are shown in **Figures 2 to 6**. In each map, a call out box for each patch of native vegetation illustrates the application of the criteria for assessment.

The following sections summarise these findings for each park within the Parklands. Vegetation connectivity for each of the parks was considered high due to the proximity of vegetation within each of the parks (<100m).

3.1 VEGETATION COMMUNITY CLASSIFICATION

Historically much of the vegetation in Ryde was Turpentine Ironbark Forest. In high rainfall areas, remnants of Blue Gum High Forest were present and these are situated in parts of the area where the shale soils are deep (Benson & Howell 1990).

Blue Gum High Forest (BGHF) and Sydney Turpentine Ironbark Forest (STIF) are highly similar vegetation communities. In the absence of full floristic surveys and given the highly disturbed nature of the study area, determining the vegetation community present was difficult. Previous mapping undertaken by Oculus (2001), Biosphere (2008), Sydney CMA (2009), and Tozer (2003) was reviewed. There are inconsistencies between the mapping across this literature and this is a reflection of the degraded condition of the vegetation being considered. A number of plantings have been undertaken throughout the communities making it even more difficult to determine the historical vegetation community. Regardless, both these communities have the same TSC Act and EPBC Act listing status, thus this limitation in assigning vegetation community is somewhat of a moot point to the task of assigning ecological value with regards to listed status.

Given the difficulties, vegetation mapping for this study has been based on a combination of observable floristic characteristics as well as on landscape characteristics and context, and soil landscapes. There is also the potential for some areas mapped as remnant vegetation to be comprised largely of planted individuals, particularly canopy species. However, in the context of the landscape and absence of planting information, this is extremely difficult to verify and therefore a precautionary approach has been taken and the vegetation mapped as remnant.

3.2 SANTA ROSA PARK

Santa Rosa Park is located in the suburb of Ryde and is mostly landscaped around three large open space playing fields. The landscaped areas along the banks of the creek contain native plantings, and the established vegetation is a mix of exotics and mature native species. The creek itself shows signs of erosion and evidence of weed removal works. The remaining parts of the park are turfed playing fields. A community group hall is located in the park, and as with most of the Parklands, an excellent formal shared use path provides good access for walkers and cyclists.

Habitat value and condition of Santa Rosa Park are considered to be low given the highly disturbed nature of the site, the sparse occurrence of native vegetation, and its predominant use as a major playing field/open space area. However due to the restoration works being undertaken at the site

recovery potential was considered to be high. The threatened species, Grey headed Flying Fox, listed on the TSC Act and the EPBC Act, has been observed in close proximity to the southern portion of the reserve, however utilisation of the park is unlikely given the life cycle and habitat preferences of this species.

No heritage items of local or Aboriginal significance have been identified on Council’s database for this reserve.

Ecological values for Santa Rosa Park were assessed as low due to the highly modified and non-natural landscape.

3.3 FLINDERS PARK,

Flinders Park adjoins Shrimpton’s Creek and the cycle way through North Ryde. It is located north of Santa Rosa Park and connects with Tindarra Reserve. Land use in the park includes a children’s playground and the shared use path.

Vegetation within this park has been assessed as likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act. In addition there is a small patch of exotic and planted native species adjacent to Bridge Road. Vegetation has been underscrubbed where it is adjacent to houses at Patricia Street. Most of the weeds present in the park are associated with the creek line and there is a very high edge to area ratio due to the narrowness of the corridor.

Condition of vegetation in the reserve was assessed as being low, given the current disturbance from clearance of vegetation, hydrological change, structural simplification, erosion and presence of weeds and exotics along the creek line and in the canopy. Recovery potential was considered to be low to moderate based upon restoration works being undertaken and the presence of native canopy species and native shrubs at the top of bank.

Fauna habitat values were considered to be moderate due to the presence of Lily Pilly and Blueberry Ash that may serve as a foraging resource for birds, as well as presence of bedrock in creek and relatively higher levels of leaf litter.

No heritage items of local or Aboriginal significance have been identified on Council’s database for this reserve.

Ecological values for Flinders Park were assessed as low to moderate.

3.4 TINDARRA RESERVE,

Tindarra Reserve runs adjacent to the Shrimpton’s Creek cycle way and is just south of Kent Road in North Ryde. It is contiguous with Flinders Reserve, Greenwood and ELS Hall Parks.

The majority of the vegetation within this park has been assessed as likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act. There is a small patch of exotic species at the south-western tip of the park, which is of very low ecological value. The planted native garden in the south-east of the park is maintained by one of the residents and contains species that are not of local provenance. Overall there is a very high edge to area ratio due to the narrowness of the park corridor.

Condition of the vegetation community in the reserve was assessed as being low, given the current disturbance from clearance of vegetation, hydrological change, structural simplification, erosion and presence of weeds and exotics along the creek line, and underscrubbing to the top of bank. Recovery potential was considered to be low.

Fauna habitat values were considered to be moderate due to the presence of bush rock and leaf litter. A concrete bench in the creek (possibly a remnant culvert) has created a small variation in stream levels and thus a minor waterfall and riffing was observed.

No heritage items of local or Aboriginal significance have been identified on Council's database for this reserve.

Ecological values for Tindarra Reserve were assessed as low.

3.5 GREENWOOD PARK

Greenwood Park lies southeast of ELS Hall Park along Kent Road, North Ryde and Shrimpton's Creek divides the two parks. At the southern end, the park has a large stormwater culvert and cemented channel entering from under Kent Road and another drain enters from Wilson Street to flow into Shrimpton's Creek (Biosphere, 2008).

Vegetation within this park has been assessed as likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act. In addition there is a small patch of exotic and planted native species adjacent to Kent Road in the far south-east of the park. There is a very high edge to area ratio due to the narrowness of the corridor, although this park is part of one of the largest contiguous patches of vegetation in the Parklands (the entire patch is just over 3 ha in area).

Condition of the vegetation community in the park was assessed as being moderate, with the presence of native species in the mid-story and canopy. As with most of the parklands, the groundcover was dominated by weeds and vegetation has been subject structural simplification. There is evidence of erosion along the creek line. Recovery potential was considered to be moderate based upon restoration works being undertaken and the presence of native canopy species and planted native shrubs in the wider corridor.

Fauna habitat values were considered to be moderate due to the presence of large native trees, and a standing dead tree was observed with hollows and hollow bearing potential. Some areas, however, were underscrubbed or contained lawn to the top of bank.

No heritage items of local or Aboriginal significance have been identified on Council's database for this reserve.

Ecological values for Greenwood Park were assessed as moderate. The small patch of exotic vegetation in the south-east was assessed as being of low ecological value.

3.6 ELS HALL PARK

ELS Hall Park is a mostly landscaped park, with three large sports fields dominating the land use. The park is split into three levels or 'terraces'. The lower terrace is where the central arm of Shrimpton's

Creek is located. ELS Hall Park caters to numerous sporting groups as well as the recreational needs of the local community (City of Ryde, 2009).

Vegetation within this park is divided between that which is landscaped around the sports fields and that which is closer to the creekline on the lower terrace. Vegetation along the creekline has been assessed as likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act, although vegetation adjacent to the east of the northernmost oval is so degraded it has been classified as Urban exotics/natives. In addition there is a small patch of exotic vegetation abutting the large patch of STIF to the north. There is a very high edge to area ratio due to the large perimeter delineated by vegetation, although vegetation to the creekline is part of one of the largest contiguous patches in the Parklands (the entire patch is just over 3 ha in area and is contiguous with Greenwood Park).

A small pocket park on the opposite side of Kent Road exists as planted vegetation, and a narrow urban walkway leads to the cul-de-sac at the end of Fitzpatrick Street which also has kerbside vegetation that is included in the study area but has very low environmental value.

Condition of the STIF vegetation community along the northernmost section of the creekline to Scott Street was assessed as being high, with the presence of native species in the ground cover, mid-storey and canopy. Vegetation immediately to the south adjacent to the northernmost oval is degraded and of low quality, however the batter on the boundary of the oval contains an intact native canopy.

Landscaped areas around the parks and buildings are a mixture of urban exotics and natives and have all likely been planted. There is little to no mid-storey and groundcovers range from landscaped areas to hardstand, lawn and gravel.

Recovery potential of the vegetation along the creekline was considered to be very high, with the exception of the poorer quality patch that will require management and restoration work. Fauna habitat values were the highest found in the parklands due to the structural integrity of the vegetation, the presence of potential hollow bearing trees, abundant leaf litter and bushrock

No heritage items of local or Aboriginal significance have been identified on Council's database for this park.

Ecological values for the vegetation community along the creek line at ELS Hall Park were assessed as high. The degraded vegetation was assessed as low, as were the landscaped areas surrounding the oval.

3.7 BOOTH RESERVE

Booth Reserve follows the walkway/cycle track along Shrimpton's Creek just to the southwest of Epping Road and north from ELS Hall Park.

The majority of the vegetation within this park has been assessed as likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act. There is a small patch of exotic vegetation at the northernmost tip of the park, adjoining Epping Road, and where the reserve is adjacent to residences; which is of very low ecological value. Overall there is a very high edge to area ratio due to the narrowness of the park.

Condition of the vegetation community in the reserve was assessed as being high, being associated

and contiguous with the high condition rated vegetation that adjoins it at ELS Hall Reserve, and with similar values. Approaching the road, this value declines, however there is still a sparse yet present mid-storey and canopy of native species. Recovery potential was considered to be low.

Fauna habitat values were considered to be high due to the presence of fallen branches, bush rock and abundant leaf litter.

No heritage items of local or Aboriginal significance have been identified on Council's database for this reserve.

Ecological values for Booth Reserve were assessed as High to Very High.

3.8 WILGA PARK

Wilga Park is a long thin reserve bordering Shrimpton's Creek north of Booth Reserve and Epping Road. Land use includes large areas that are turfed and landscaped, containing picnic tables, play equipment and a bike ramp (Biosphere, 2008).

As with ELS Hall Park, vegetation within this park is divided between that which is landscaped around open space and that which is closer to the creekline. Vegetation along the creekline has been assessed as likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act, although there is a significant stretch of vegetation that is mainly weeds and exotics. There is a very high edge to area ratio due to the large perimeter delineated by vegetation.

Vegetation associated with the landscaped areas are a mixture of urban exotics and natives with little to no mid-storey, and very low recovery potential.

Condition of the STIF vegetation community along the creekline in the park was assessed as being moderate. Again, approaching Epping Road, this value declines. Patches of native grasses are interspersed amongst a groundcover of weeds, with little to no mid-storey native species. Recovery potential was considered to be low.

Fauna habitat values were considered to be low to moderate due to the presence of fallen branches, bedrock in the creek, bushrock and leaf litter. There is a record of a Rufous Fantail, listed on the Federal EPBC Act as a migratory species, associated with this park. This is not surprising considering the thickets formed by the abundant weeds along the Shrimpton's Parklands.

No heritage items of local or Aboriginal significance have been identified on Council's database for this reserve.

Ecological values for vegetation along the creekline were assessed as moderate. Ecological values of the landscaped areas were assessed as Low.

3.9 CRITERIA ANALYSIS

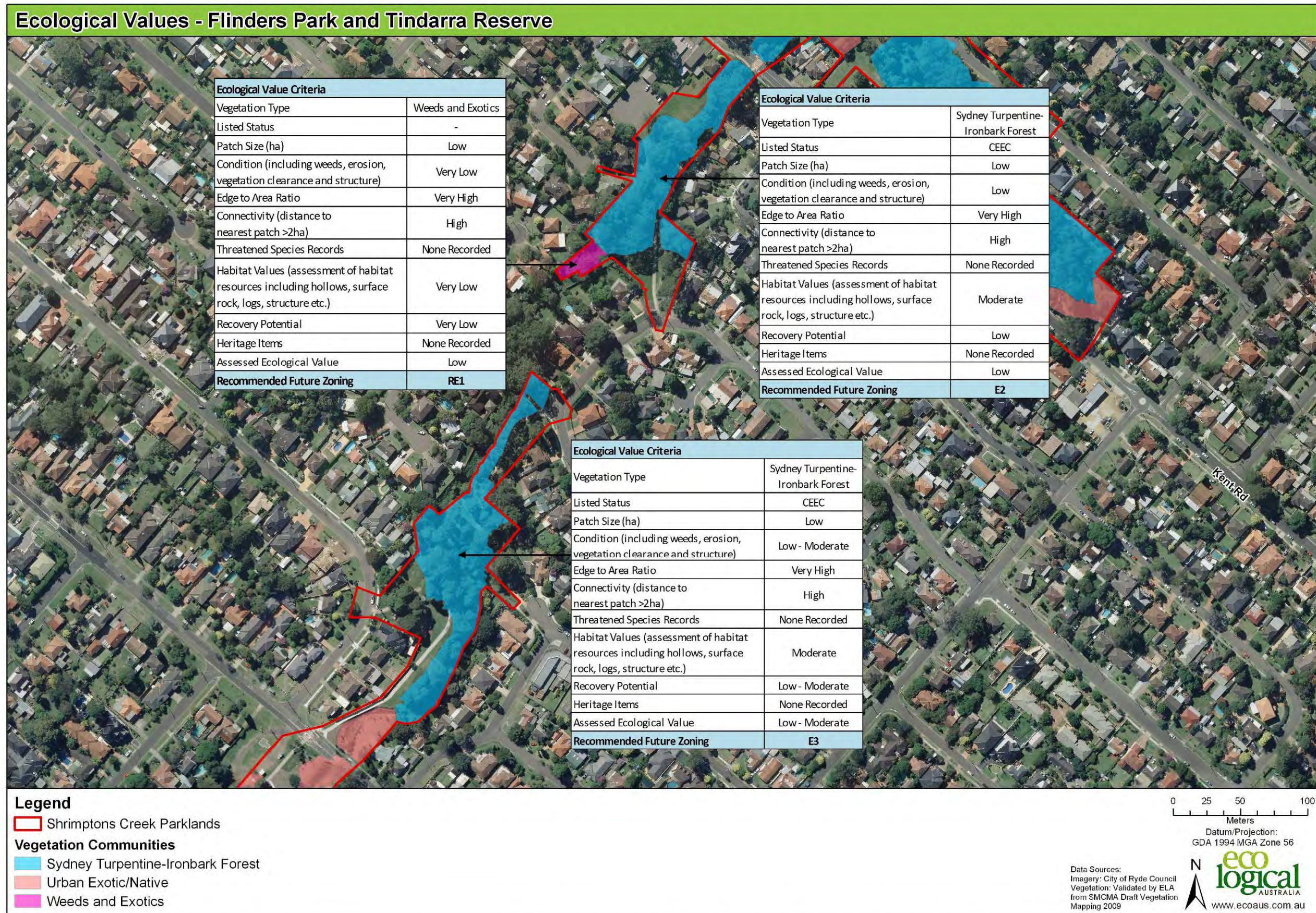
The environmental value criteria utilised to classify the values of the Reserve are found in **Table 1** following. Each criterion was considered firstly in isolation, then collectively to assign an overall ecological value. This overall ecological value was then considered (with specific criteria where relevant) for the recommendation of appropriate environmental protection zones for the Reserve.

Table 1: Environmental value decision matrix

Ecological Value Criteria	Very High	High	Moderate	Low
Listed Status	CEEC (EPBC or TSC)	EEC	Regional Protection (Regionally significant, foreshore/estuarine vegetation)	Other vegetation
Patch Size (ha)	>20	4-20	2-4	<2
Condition (including weeds, erosion, vegetation clearance and structure)	High	Moderate	Low	Very Low
Edge to Area Ratio	Low	Moderate	High	Very High
Connectivity (distance to nearest patch >2ha)	High (<100m)	Moderate (100 - 500m)	Low (500m - 2km)	Very Low (2km - 5km)
Threatened Species Records	Recorded presence (in or within 500m)		No presence recorded	
Habitat Values (assessment of habitat resources including hollows, surface rock, logs, structure etc)	High	Moderate	Low	Very Low
Recovery Potential	High	Moderate	Low	Very Low
Heritage Items	National and State		Local	
	Aboriginal			



Figure 2: Environmental values – Santa Rosa Park



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Figure 3: Environmental values – Flinders Park and Tindarra Reserve

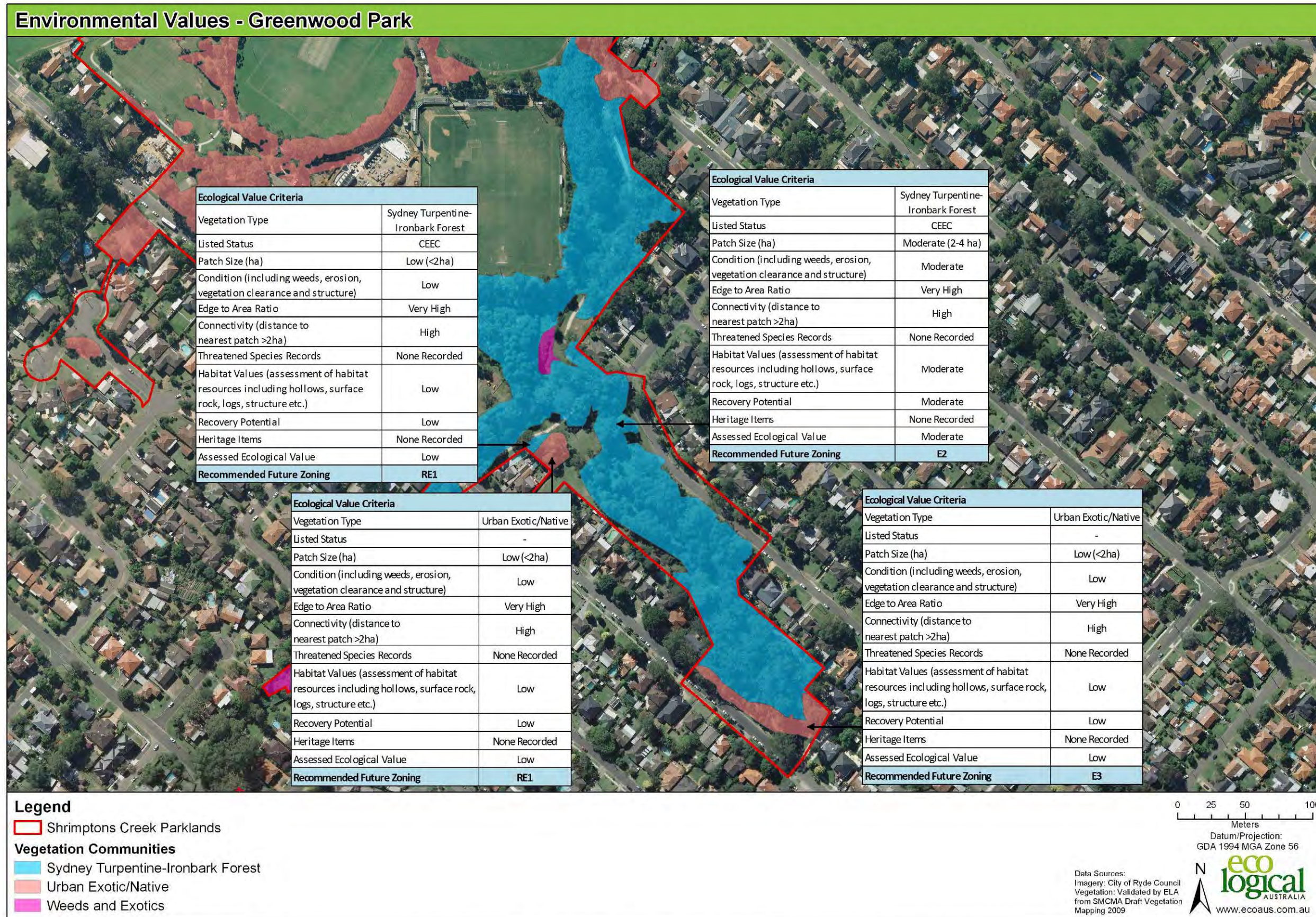


Figure 4: Environmental values – Greenwood Park

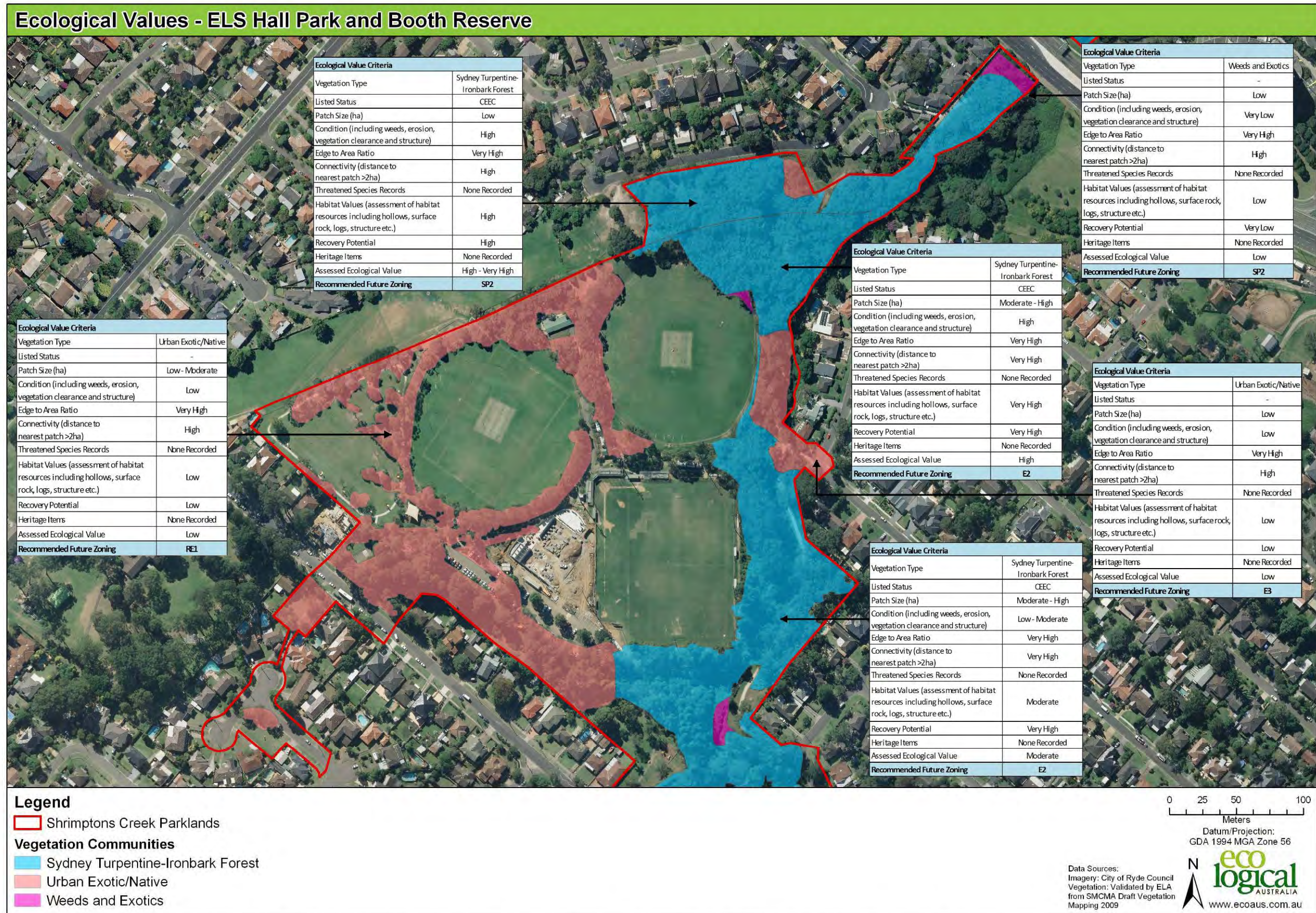


Figure 5: Environmental values – ELS Hall Park and Booth Reserve

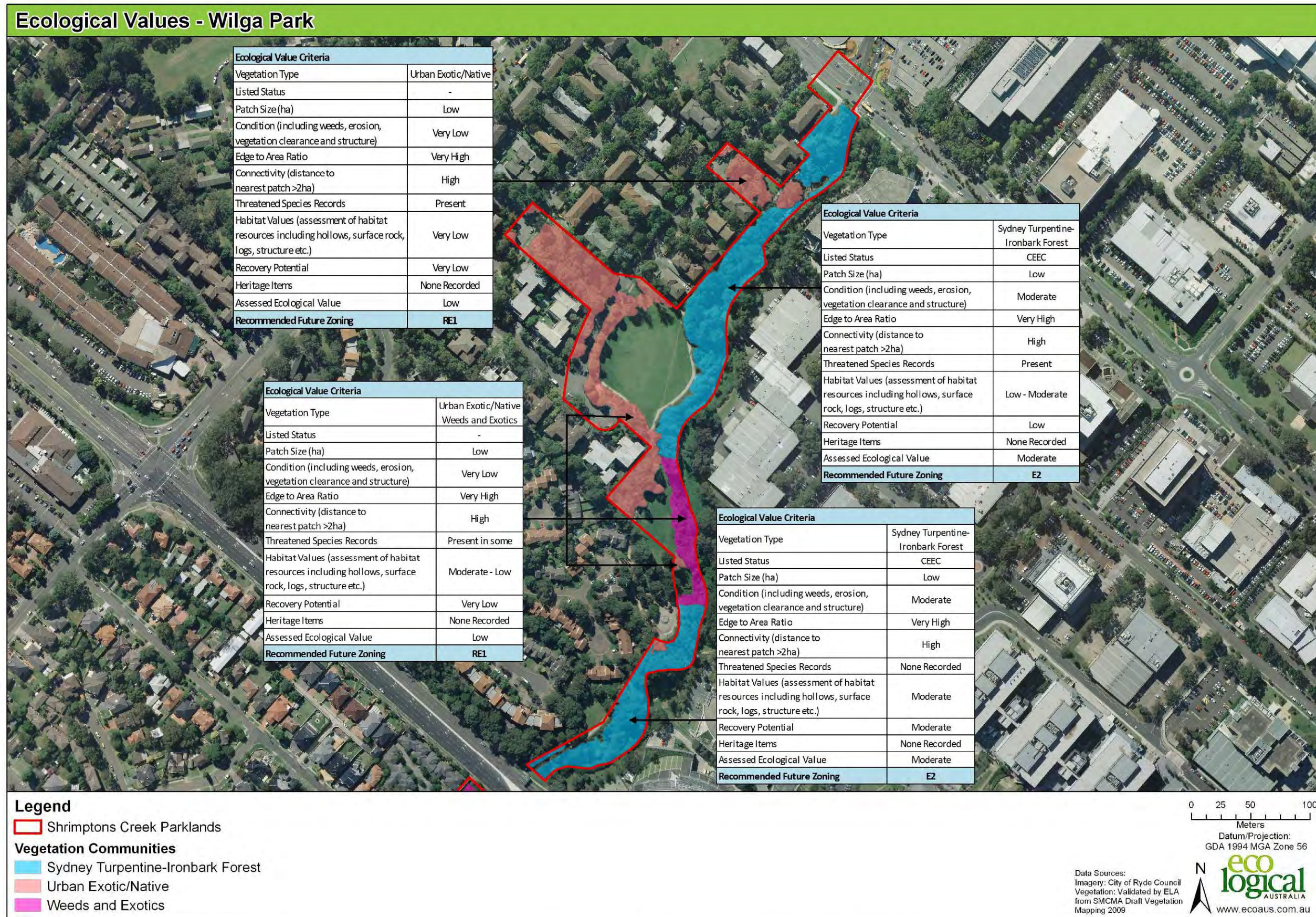


Figure 6: Environmental Values – Wilga Park

4 Recommendations

4.1 RECOMMENDED FUTURE ENVIRONMENTAL ZONING

The assessment completed for this project has identified that the Parklands contain a mix of environmental values including both natural and non-natural items.

Our recommendations include the introduction of the E3 zoning, targeting specific intentions based around the zones objective of providing:

- Rehabilitation and restoration of special environmental qualities. Specifically, our recommendation to use the E3 zoning to ensure the Critically Endangered Ecological Community STIF, having special environmental quality, is managed from a current state of assessed low environmental value to improvement higher environmental value and resilience.
- Support for the transition from high ecological value land to other land. Specifically, our recommendation to use the E3 zoning to ensure the Critically Endangered Ecological Community STIF is buffered from residential or special purpose zones, particularly where the majority of adjoining vegetation is zoned E2.

It is noted that there is currently no provision in Ryde LEP 2010 for an E3 zone. As such, an additional recommendation is that for future LEPs, Council develops specifications for E3 zones and land use tables in line with DoP Practice Note 09-002 and the LEP Standard Instrument (LEP Template).

Recommended future environmental zoning is shown on **Figures 7 to 11** along with a comparison of the current zoning under Ryde LEP 2010. The recommendations are:

- Santa Rosa Park:
 - Restoration areas that are subject to current and future restoration works have been zoned as E3 to better reflect status as a rehabilitated natural area.
 - Park retains RE1 zoning.

Table 2 below shows the overall retention of the RE1 zoning area.

Table 2: Santa Rosa Park Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Santa Rosa Park	RE1	4.79	To	RE1	3.42
				E3	1.37
Total		4.79			4.79

- Flinders Park:
 - Conversion of E2 areas to an E3 zone to better reflect on-ground characteristics and

management intent – that being restoration. The park contains vegetation that is likely to conform to Sydney Turpentine Ironbark Forest, a listed EEC under the TSC Act and EPBC Act. Fauna habitat values were considered to be moderate due to the presence of Lily Pilly and Blueberry Ash that may serve as a foraging resource for birds, as well as presence of bedrock in creek and relatively higher levels of leaf litter. Therefore this area is a prime candidate for restoration works. Restoration works have previously been undertaken in the reserve, and the proposed conversion of RE1 area between existing E2 to E3 will form a consolidated patch of vegetation that is managed for restoration.

- The above has the effect of increasing the overall ‘E’ zoning and providing for a more suitable framework for the management of the larger patch as a single entity, supporting the higher quality vegetation whilst restoring areas of lower quality that provide a linkage between the former E2 zones, that may have otherwise remained as RE1.

Table 3 shows the overall increase in E zoning.

Table 3: Flinders Park Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Flinders Park	E2	0.28	To		
	RE1	1.11		RE1	0.69
				E3	0.70
Total		1.39			1.39

- Tindarra Reserve:
 - Rationalisation of the E2 zone to better reflect on-ground characteristics and management intent.

Table 4 shows the overall increase in E2 zoning as a result of the rationalisation.

Table 4: Tindarra Reserve Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Tindarra Reserve	E2	0.26	To	E2	0.57
	RE1	0.61		RE1	0.30
Total		0.87			0.87

- Greenwood Park:
 - Rationalisation of the E2 zone to better reflect on-ground characteristics, including areas previously zoned as E2 over hardstand (roads) and landscaped areas, and areas subject to structural simplification due to underscrubbing, or containing lawn at top of

bank. E2 zones over hardstand areas are not an appropriate use of this zoning and devalue other areas that are zoned as E2.

- Conversion of RE1 to E3 to support the adjacent E2 zone and better reflect management intent.

Table 5 shows the changes in distribution as a result of rationalisation.

Table 5: Greenwood Park Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Greenwood Park	E2	2.90	To	E2	1.88
	RE1	0.08		RE1	0.88
				E3	0.22
Total		2.98			2.98

- ELS Hall Park:
 - Rationalisation of the E2 zone along the creekline to better reflect on-ground characteristics and management intent, including removing E2 zoning over an area of road. E2 zones over hardstand areas are not an appropriate use of this zoning and devalue other areas that are zoned as E2.
 - Conversion of E2 parallel to Kent Road to RE1 to better reflect on-ground characteristics of the vegetation that include little to no mid-storey and groundcovers ranging from landscaped areas to hardstand, lawn and gravel.
 - Convert zoning of infrastructure areas on the opposite side of Kent Road and cul-de-sac at the end of Fitzpatrick Street to appropriate SP zoning.

Table 6 shows the changes in area and an increase in ‘E’ zoning as a result of rationalisation and conversion of areas to E3.

Table 6: ELS Hall Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
ELS Hall Park	E2	2.71	To	E2	2.06
	RE1	8.61		RE1	9.01
	SP2	0.80		SP2	0.80
				E3	0.25
Total		12.12			12.12

- Booth Reserve:

- Current SP2 zoning will need to remain as is due to restrictions on changing this zoning type.
- However, as Council has care, control and management of this reserve, it is recommended that it is managed for all intents and purposes as an E2 zone, as it’s ecological values meet the criteria suitable for E2 zoning. Restoration works for this reserve are also recommended.

Table 7: Booth Reserve Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Booth Reserve	SP2	0.32	To	SP2	0.32
Total		0.32			

- Wilga Park:
 - Rationalisation of the E2 zone along the creekline to better reflect on-ground characteristics and management intent.
 - Conversion of RE1 to E2 in the south of the park to better reflect on-ground characteristics
 - Conversion of E2 to RE1 adjacent to open space to better reflect on-ground characteristics, namely the significant stretch of vegetation that is mainly weeds and exotics.
 - Convert zoning of infrastructure areas on Waterloo Road and Cottonwood Crescent to appropriate SP zoning.

Table 8 shows the increase in area of E2 zone.

Table 8: Wilga Park Zoning Areas

Park/Reserve Name	Current Zoning	Area (ha)		Future Zoning	Area (ha)
Wilga Park	E2	0.79		E2	1.43
Wilga Park	RE1	2.85		RE1	2.21
Total		3.64			3.64

4.2 INTERPRETATION OF MAPPING

Mapping for this project is based on the available mapping data acquired for analysis, field observations and interpretation of information from literature and data review. Lines that are printed on a map are often limited by factors of scale, particularly when drawing from data sources that have been prepared at different scales. Furthermore, assessment is based on the most practical delineation of values on the ground, which has often translated to interpreting vegetation boundaries based on type and condition.

Therefore, when formulating LEP mapping, there will be a pragmatic requirement to smooth lines, adjust boundaries, consolidate fragments and slivers in order to obtain a uniform map for zoning purposes. This can be done without losing the intent of the recommendations made on the maps and tables provided by referring back to this report and the rationale behind zoning recommendations.



Figure 7: Recommended future environmental zoning – Santa Rosa Park



Figure 8: Recommended future environmental zoning – Flinders Park and Tindarra Reserve



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Figure 9: Recommended future environmental zoning – Greenwood Park



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Figure 10: Recommended future environmental zoning – ELS Hall Park and Booth Reserve



Figure 11: Recommended future environmental zoning – Wilga Park

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Appendix A: LEP Practice Note PN09-002 Environmental Protection Zones



LEP practice note

STANDARD INSTRUMENT FOR LEPS

Standard zones

Note	PN 09-002
Date	30 April 2009
Related	

Environment Protection Zones

The purpose of this practice note is to provide guidance to councils on the environment protection zones in the standard instrument and how they should be applied in the preparation of local environmental plans.

Overview

The standard instrument for principal local environmental plans (LEPs) contains four environment protection zones specifically for land where the primary focus is the conservation and/or management of environmental values. The zones provide for varying levels of environmental protection from zone E1 to E4:

- **E1 National Parks and Nature Reserves**
This zone is for existing national parks, nature reserves and conservation areas and new areas proposed for reservation that have been identified and agreed by the NSW Government.
- **E2 Environmental Conservation**
This zone is for areas with high ecological, scientific, cultural or aesthetic values outside national parks and nature reserves. The zone provides the highest level of protection, management and restoration for such lands whilst allowing uses compatible with those values.
It is anticipated that many councils will generally have **limited areas** displaying the characteristics suitable for the application of the E2 zone. Areas where a broader range of uses is required (whilst retaining environmental protection) may be more appropriately zoned E3 Environmental Management.
- **E3 Environmental Management**
This zone is for land where there are special ecological, scientific, cultural or aesthetic attributes or environmental hazards/processes that require careful consideration/management and for uses compatible with these values.
- **E4 Environmental Living**
This zone is for land with special environmental

or scenic values, and accommodates low impact residential development.

As with the E3 zone, any development is to be well located and designed so that it does not have an adverse effect on the environmental qualities of the land.

Additional considerations of each zone are located in Attachment 1.

Application of environment protection zones

The environment protection zone E1 is only to be applied to existing areas identified under the *National Parks and Wildlife Act 1974* or areas identified as proposed for national park or nature reserves agreed by the NSW Government.

The environment protection zones E2 through to E4 are applied where the protection of the environmental significance of the land is the primary consideration. Their importance for visitation, tourism and job creation should also be carefully considered.

Prior to applying the relevant zone, the environmental values of the land should be established, preferably on the basis of a strategy or from an environmental study developed from robust data sources and analysis. This is particularly important where land is identified as exhibiting high ecological, scientific, cultural or aesthetic values outside national parks and nature reserves. For example, in most cases, council's proposal to zone land E2 needs to be supported by a strategy or study that demonstrates the high status of these values. Under such a strategy or study, zoning would need to be appropriate and land uses would need to be capable of being sustained.

The application of these zones is also to be consistent with relevant legislation, State and regional planning policies and subregional strategies.

The zones are to be applied consistently so that their value is not diminished by inappropriate application or by permitting incompatible uses.

The detailed zone guide attached to this practice note will assist council's application of the environment protection zones. In selecting additional uses, council is supported by the requirement that these be consistent with the mandatory zone objectives and any mandatory uses.

Supplementary detail

Zones E2 to E4 will generally need to be supplemented by detailed provisions in the development control plan. These would most likely cover the design, construction and management of uses in these zones, particularly with respect to eco-tourism, tourist accommodation and dwellings (where permissible).

Identification of areas for future acquisition

Land to be acquired for certain public purposes

Where council is aware of land to be reserved for future acquisition for certain public purposes, such land will be identified according to its intended future public purpose under the *Environmental Planning and Assessment Act 1979*.

The land reserved for future acquisition is to be identified on the Land Reservation Acquisition Map accompanying the principal LEP and the acquiring authority of the State shown in clause 5.1.2 of the principal LEP. Land listed in clause 5.1.2 requires the relevant authority to consent to the listing.

Other circumstances

The range of uses proposed to be permitted in the E zones is a consideration for council in consultation with the Department of Planning. In determining uses, council should be aware that the range of uses should not be drawn too restrictively as they may, depending on circumstances, invoke the *Land Acquisition (Just Terms Compensation) Act 1991* and the need for the Minister to designate a relevant acquiring authority.

Unless a relevant acquisition authority has been nominated and that authority has agreed to the proposed acquisition, council should ensure, wherever possible, that the range of proposed land uses assists in retaining the land in private ownership.

Use of alternative zones

Where the primary focus is not the conservation and/or management of environmental values, a different zone type should be applied.

Such zones may be applied in conjunction with local environmental provisions and maps in the principal LEP to identify any special considerations.

Local environmental provisions

Local environmental provisions may be applied where zone provisions need to be augmented in order to ensure that special environmental features are considered. For example, rural land that is still principally for agriculture but which contains environmentally sensitive areas may be zoned RU1 or RU2 and the environmental sensitivities managed through a local provision and associated ('overlay') map.

The benefits of this approach include:

- The intended conservation or management outcomes for land can be clearly articulated in the LEP.
- Areas are clearly defined and controls streamlined.
- Sub-zones are not created. (These are not permitted under the standard instrument).

Provisions for environmentally sensitive areas may include multiple natural resource or other features such as acid sulfate soils and riparian land. A local provisions clause may include objectives and, where the sensitivity is a mappable attribute, a map would accompany the provision.

Any local provision will apply in addition to the objectives and land use table for zones. The local provision must be consistent with mandated objectives and permissible or prohibited uses of the relevant zone/s.

Split zone considerations

Where council wishes to acknowledge different land capabilities on a single allotment, council may consider applying more than one zone across the land. For example, this approach may be considered appropriate over an allotment to distinguish between areas of environmental value and areas for agricultural purposes.

In choosing this approach, council needs to consider the implications of such splits. Appropriate minimum lot sizes and development standards are to be selected to support the intent of the zones and identify a suitable scale and intensity of development. Identifying appropriate minimum lot sizes at the same time as zone splitting would reduce the potential for future uncertainty if land is proposed for subdivision at a later stage.

Application of legislation

Council needs to be aware of the following:

- section 117 directions apply, including Direction 1.3—*Mining, petroleum and extractive industries* and Direction 2.1—*Environment protection zones*. Council must check the relevance of all directions and justify any proposed inconsistency
- State and regional environmental planning policies apply and may include other uses that may be permissible in a particular zone. Other uses may be provided in other planning instruments, e.g. State Environmental Planning Policy (Infrastructure) 2007 and State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

Further information

A copy of this practice note, the standard instrument, and other specific practice notes and planning circulars on using the standard instrument for principal LEPs, can be accessed on the Department's website at <http://www.planning.nsw.gov.au/planningsystem/localplanning.asp>.

Authorised by:

Sam Haddad
Director-General

Attachment 1 – Additional zone considerations
Attachment 2 – Frequently asked questions

Important note

This note does not constitute legal advice. Users are advised to seek professional advice and refer to the relevant legislation, as necessary, before taking action in relation to any matters covered by this note.

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E1

National Parks and Nature Reserves



Application

This zone is for land reserved under the *National Parks and Wildlife Act 1974*, including existing national parks, reserves and conservation areas. This zone is also to be applied to new areas proposed for reservation as identified and agreed by the NSW Government.

This zone is not generally intended to apply to Crown land reserved for conservation purposes under the *Crown Lands Act 1989*.

Objectives and uses

It is not necessary to add any additional objectives or uses to this zone, as the relevant matters are already covered by the standard provisions.

Uses currently authorised under the *National Parks and Wildlife Act 1974* are permitted without consent within the zone.

Other considerations

Land reserved for acquisition for future national park should be identified on the Land Reservation Acquisition Map. The approval of the Department of Environment and Climate Change must be obtained for the reservation of such land.

Waterways within a National Park will also be zoned E1.

E2 Environmental Conservation



Application

Use of the zone will depend on land capabilities and the proposed future uses based on environmental protection values and strategic directions.

The use of the E2 zone needs to be supported by an appropriate assessment of the area meeting the zone objectives of high ecological, scientific, cultural or aesthetic values of this zone.

The following are examples of where the E2 zone should also be applied:

- lands with very high conservation values such as old growth forests, significant wildlife, wetlands or riparian corridors or land containing endangered ecological communities
- high conservation coastal foreshores and land acquired, or proposed for acquisition, under a Coastal Lands Protection Scheme
- some land with a registered BioBanking agreement
- land under the care, control and management of another catchment authority such as the Department of Water and Energy or a council for critical town water supply, aquifer or catchment as appropriate
- land with significant Aboriginal heritage values, if appropriate
- coastal foreshores and land subject to coastal hazards, including climate change effects
- land currently zoned for environmental protection where strict controls on development apply, e.g. steeply sloping escarpment lands, land slip areas.

The section 117 Direction 5.2—*Sydney drinking water catchments* identifies Special Areas (owned or under the care, control and management of the Sydney Catchment Authority). In the hydrological catchments in this direction, an E2 zone is to be applied to those parts of the Special Areas above the full water supply level.

Objectives

The mandatory zone objectives focus on protecting land with high conservation value and preventing development that could destroy, damage or otherwise have an adverse effect on that value.

Local objectives may reflect the particular types of values in the E2 zone within the council area. For example, an LEP might include an additional objective to identify the protection of drinking water catchment lands.

Objectives referring to land uses need to be carefully worded to avoid reducing the conservation focus of the zone. For example objectives such as ‘to provide uses compatible with the high ecological, scientific, cultural or aesthetic values of this zone’ may be appropriate under carefully controlled conditions.

Uses

There are no mandatory permitted uses for this zone.

Councils should carefully choose uses that protect the high conservation value of the land and avoid adverse effects in relation to natural hazards.

Additional uses that may be suitable (as permitted with consent) depending on location, include, but are not limited to:

- bed and breakfast accommodation
- eco-tourism¹
- environmental facility
- farm stay accommodation
- Information and education facility (environmental information and education)
- water recreation structure
- wetland rehabilitation.

It is important that councils maintain the integrity of the E zones by including only uses consistent with the zone objectives. As well, **councils should, wherever appropriate, retain existing uses that maintain conservation land capabilities.**

In relation to the standard instrument for principal LEPs the following uses are mandatory prohibited uses: business premises, hotel or motel accommodation, industries, multi dwelling housing; recreation facilities (major), residential flat buildings, retail premises, seniors housing,

¹ The draft definition of ‘eco-tourism development’ means nature-based tourism development with a primary focus on the education, interpretation, cultural understanding and appreciation of the natural environment that is managed to be ecologically sustainable.

service stations, and warehouse or distribution centres.

Councils should be aware that uses should not be drawn too restrictively as they may, depending on circumstances, invoke the *Land Acquisition (Just Terms Compensation) Act 1991* and the need for the Minister to designate a relevant acquiring authority.

In selecting additional uses, the following are unlikely to be suitable in the E2 zone:

- intensive agriculture
- rural industry
- signage (other than as ancillary to environmental facilities).

Where conservation is not the main objective, another zone series is appropriate, e.g. the residential or rural zone series.

Other considerations

Generally an acquisition authority for E2 land would not be identified unless the land is expressly set aside for a public purpose under section 26(1)(c) of the *Environmental Planning and Assessment Act 1979*, e.g. as public open space or a public reserve.

However, depending on circumstances, if the permitted uses are considered to be drawn too restrictively, a relevant acquiring authority may need to be designated.

E3 Environmental Management

Application

The following are examples of where the E3 zone may be applied:

- areas of special ecological, scientific, cultural or aesthetic attributes that require management in conjunction with other low-impact uses, e.g. scenic protection areas, areas with contiguous native vegetation or forest cover.
- as a transition between high conservation value land, e.g. land zoned E1 or E2 and other land such as that zoned rural or residential.
- where rehabilitation and restoration of its special environmental qualities are the primary purpose.
- highly constrained land where elements such as slope, erodible soils or salinity may have a key impact on water quality within a hydrological catchment.

There are instances where environmentally significant land has been zoned rural in the past but has not been used primarily for agriculture. Such lands should be zoned E3.

However, the zone is generally not intended for cleared lands including land used for intensive agriculture.

Objectives

The mandatory zone objectives focus on protecting, managing and restoring areas with special ecological, scientific, cultural or aesthetic values and to provide for a limited range of development that does not have an adverse effect on those values.

Additional local objectives may be applied if they are compatible with the mandatory objectives and uses.

Uses

Mandatory uses

Dwelling houses are a permitted use (with consent) in this zone. Home occupations may be carried out without consent.

In accordance with the direction for this zone, environmental protection works and roads must be permitted with or without consent.



A number of land uses considered to be inappropriate for this zone are listed as mandatory prohibited uses.

Additional uses

Councils can specify additional uses to be permitted in the zone at Items 2 and 3.

Councils may generally (but need not) permit, with consent, home industries, kiosks, cellar door premises, neighbourhood shops and roadside stalls in the zone. All other forms of retail premises and industries are prohibited in the zone.

Councils should choose uses that do not have an adverse effect on the special values of the land. Generally, if intensive forms of agriculture are proposed, a rural zone would be more appropriate (than an E zone). Additional uses that may be suitable (as permitted with consent) depending on location, include, but are not limited to:

- bed and breakfast accommodation
- building/identification signs and business identification signs, e.g. as exempt or complying development
- community facility
- dwelling house
- eco-tourism²
- environmental facility
- farm stay accommodation
- home business, home industry and home-based child care
- information and education facility
- kiosk
- recreation area
- water recreation structure
- wetland rehabilitation

It is important that councils maintain the integrity of the E zones by including only uses consistent with the zone objectives. As well, councils should, wherever appropriate, retain existing uses that maintain conservation land capabilities.

Unless they are existing uses in the zone, the following uses are generally considered to be unsuitable:

² The draft definition of 'eco-tourism development' means nature-based tourism development with a primary focus on the education, interpretation, cultural understanding and appreciation of the natural environment that is managed to be ecologically sustainable.

- intensive plant agriculture and intensive livestock agriculture
- residential accommodation other than detached dwelling houses
- retail premises (excluding neighbourhood shops)
- rural industry
- storage premises.

Councils should be aware that uses should not be drawn too restrictively as they may, depending on circumstances, invoke the *Land Acquisition (Just Terms Compensation) Act 1991* and the need for the Minister to designate a relevant acquiring authority.

Consideration of mining

As part of council's consideration of whether or not to apply the E3 zone, council must take into account the section 117 Direction 1.3—*Mining, petroleum production and extractive industries* in relation to significant resources and Direction 2.1—*Environmental protection zones* and justify any inconsistency.

Under the State Environmental Planning Policy (SEPP) (Mining, Petroleum Production and Extractive Industries) 2007, underground mining can be carried out on any land with development consent. Under this SEPP, surface mining can be carried out with consent on land for which agricultural and industrial uses are permitted (with or without consent).

Where there are mining, petroleum or extractive industries resources identified in a section 117 Direction, and a council proposes to apply the E3 zone, council needs to clarify the permissibility of mining in this zone. Councils are therefore advised to include the following note at the beginning of the E3 land use table:

'Note. State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 may apply to land within this zone.'

E4 Environmental Living



Application

This zone will be typically applied to existing low impact residential development. This may include areas already zoned for rural residential that have special conservation values. Where lands have higher conservation values and fewer intended land uses than the E4 zone, an E2 or E3 zone may be appropriate.

Regional councils should distinguish carefully between the E4 zone, the RU4 Rural Small Holdings and R5 Large Lot Residential zones to address environmental, agricultural and residential land capabilities respectively.

Where small holdings undertake agricultural production such as viticulture or cropping such as growing berries, the RU4 zone should be considered. If there are few environmental considerations, then R5 may be the appropriate zone.

Objectives

The mandatory zone objectives seek to provide for low-impact residential development in areas with special ecological, scientific or aesthetic values and to ensure that residential development does not have an adverse effect on those values.

Any additional objectives should reflect local characteristics and not duplicate the matters covered in the core objectives.

Uses

Mandatory uses

The zone permits dwelling houses (with consent) and home occupations (without consent).

In accordance with the direction for this zone, councils must permit environmental protection works and roads with or without consent in the zone.

Additional uses

Councils can specifically list additional uses to be permitted in the zone at items 2 and 3. The direction for this zone allows home industries to be permitted if desired (they would otherwise be prohibited under the term industries).

Care should be taken to select uses that are in keeping with the special conservation values of the land and complement low impact residential development. Additional uses that may be suitable (as permitted with consent), depending on location, include, but are not limited to:

- bed and breakfast accommodation
- building identification signs and business identification signs
- caravan park
- community facility
- dwelling house
- eco-tourism³
- environmental facility
- home business, home industry and home-based child care
- information and education facility
- kiosk
- recreation area
- secondary dwellings, e.g. attached to the principal dwelling
- tourist and visitor accommodation.

Additional uses that are generally unsuitable in the zone include:

- business premises
- office premises
- residential accommodation (other than dwelling houses and secondary dwellings)
- retail premises
- rural industry
- storage premises.

Other considerations

Where environmental capabilities are the primary concern on land that may be zoned R5 Large Lot Residential, RU4 Rural Small Holdings or E4 Environmental Living, preference should be given to the E4 zone.

³ The draft definition of 'eco-tourism development' means nature-based tourism development with a primary focus on the education, interpretation, cultural understanding and appreciation of the natural environment that is managed to be ecologically sustainable.

Frequently asked questions

Q. How are additional local environmental provisions to be referenced in LEPs?

A. Areas should be mapped and a separate clause included. For example a map identifying scenic protection areas should be referred to as follows:

6.1 Scenic protection

- (1) The objective of this clause is _____.
- (2) This clause applies to land identified as a scenic protection area on the Scenic Protection Map.
- (3) Before granting consent to development to which this clause applies, the consent authority must be satisfied that the development:
 - (a) _____.
 - (b) _____.
- (4) For the purpose of this clause, Scenic Protection Map means the [Name of local government area or other relevant name] Local Environmental Plan [Year] Scenic Protection Map.

It is important that the map clearly identifies ‘Scenic protection area’ in the legend and is prepared in accordance with the LEP Mapping Requirements.

Q. Is the E2 zone suitable for public open space land that has high conservation value?

A. Public open space principally used for public recreation purposes should be zoned RE1 Public Recreation, as this zone includes the protection of the natural environment among its core objectives. (Where recreational space is to be used for golf courses, registered clubs, caravan parks and the like it should be zoned RE2).

Areas of bushland within a public reserve will be protected under the plan of management required for community land under the *Local Government Act 1993*.

The E2 or E3 zone can be applied to public land such as bushland reserves with very high conservation value if the land meets the criteria for the application of the zone, for example where future land use is restricted for conservation reasons. This may be considered particularly where a bushland park offers recreation on walking trails and in the form of lookouts rather than as sporting fields and children’s playgrounds.

Q. How would zone changes affect existing uses?

A. Existing legal land uses will not be affected, providing these remain in use.

Q. Can dwelling houses be prohibited in the E2 zone?

A. Yes, however, this needs to be adequately justified on conservation grounds. Note, if dwelling houses and other uses were previously permitted on this land and uses including dwelling houses are then proposed to be prohibited, the land may be considered to be an acquisition zone if a reasonable range of uses are not permitted.

Q. Council has recent detailed mapping of vegetation that differs from areas identified in SEPP 14 and SEPP 26. Should the new information be used to determine the zone boundaries or should the mapping be based on the SEPP maps?

A. The extent of SEPP lands remains that identified in the relevant SEPP map. Where new information identifies additional land with conservation value assets, these lands may be considered for inclusion in an appropriate environment protection zone, e.g. land including old growth forest.

Q. How should land be zoned which is owned by the Sydney Water Catchment Authority but which lies below the high water mark or is operational land.

A. This land should be zoned SP2 Infrastructure and the uses annotated on the relevant land zone map.



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