Hawkesbury City Council

attachment 3

to

item 280

Redbank Precinct Community Land Plan of Management

date of meeting: 27 November 2018

location: council chambers

time: 6:30 p.m.

Redbank Precinct Community Land Plan of Management

Hawkesbury City Council

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August 2018

The Redbank Precinct Community Land Plan of Management was first adopted on 28 August 2017. It excluded reference to the Peel Park Masterplan which was to be subject to further community consultation.

Following extensive consultation and review of the draft Peel Park Masterplan, an amended version is proposed which incorporates the Peel Park Masterplan and management actions that relate to Peel Park. Once adopted, this Plan of Management will supersede the previous Redbank Precinct Community Land Plan of Management.

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1 Introduction

1.1 Why this plan of management has been prepared

Due to the development of approximately 1,400 new housing lots at Redbank, a significant amount of land will be dedicated to Council as open space. That land will be classified as community land under the Local Government Act (1993) and as such Council is required to prepare a plan of management. A plan of management provides the framework for Council's management of community land and other public open space.

All existing and future community land at Redbank has been included in this specific plan of management as a network of interrelated open space.

This plan of management complies with the Local Government Act (1993) and aims to be performance oriented. It is consistent with the *Planning and Design Guidelines* developed as part of the *Hawkesbury Regional Open Space Strategy* (2013). The *Regional Open Space Strategy* is the guiding strategic document by which Council plans and manages its recreational open space.

1.2 Land management context

This plan of management applies to land at Redbank including:

- Belmont Park – an area of primarily Cumberland Plain Woodland on Grose Vale Road.
- Bell Park – a linear park between Belmont Park and Redbank Creek that includes a residual farm dam. Future facilities proposed include walking paths and associated recreation facilities.
- Redbank Creek Reserve – a significant riparian corridor extending east and west of the site.
- Yeomans Park - a linear park leading to Peel Park and Redbank Creek that includes residual farm dams. Future facilities proposed include walking paths and associated recreation facilities.
- Yeobarnie Park - a linear park draining to Redbank Creek that includes residual farm dams. Future facilities proposed include walking paths and associated recreation facilities.
- Keyline Park and Charley Park – two pocket parks that include residual farm dams. Future facilities proposed include walking paths and associated recreation facilities.
- Peel Park – an existing multiuse reserve at North Richmond that includes sporting facilities, dog-off-leash area, BMX track and borders the ecologically significant Redbank Creek riparian zone. A significant upgrade of sporting facilities is proposed for Peel Park.
- Three (yet to be named) pocket parks on Grose Vale Road – intended to provide opportunities for the public to view the Redbank Creek valley and representation of the former Keyline water management system in the landscape.
- A small (yet to be named) pocket park – used for drainage next to an adjacent property.
- Land adjacent Pecks Road Reserve – a drainage reserve with detention basins.

The land includes existing public land owned by Council and future public land that is currently owned by BD NSW (MR) Project 007 Pty Ltd. The developer of Redbank is Redbank Communities (RC), formerly known as the North Richmond Joint Venture (NRJV). The future public land will be dedicated to Council as the new residential development progresses.

Development of the parks and regeneration of the bushland and riparian zone form part of the development approval conditions. In addition, maintenance of the dedicated community land for a period of five years rests with the North Richmond Joint Venture. Consequently, this plan of management includes the progressive development of the parks, regeneration of the bushland and riparian zone and initial maintenance of the community land. Table 1 describes the development, management and maintenance responsibilities of the two parties as time progresses.

Table 1: Responsibilities over time for land included in this plan of management

	Development responsibility including construction and regeneration	Management responsibility including regulation	Maintenance responsibility
Council owned community land (2016)	Peel Park by NRJV and the remainder by Hawkesbury Council	Hawkesbury Council	Hawkesbury Council with the sports facilities of Peel Park delegated to the Hawkesbury Sports Council
Future community land (prior to dedication)	NRJV	NRJV	NRJV
Future community land (after dedication)	It is not anticipated that any further significant development is required for the life of this plan of management	Hawkesbury Council	NRJV for the first five years after dedication then Hawkesbury Council

The North Richmond Joint Venture retains maintenance responsibilities for community land for a period of time under conditions set in a *Voluntary Planning Agreement*. They are bound by the management requirements of this plan of management until those responsibilities are transferred to Council.

1.2.1 Transitionary elements of this plan of management

All future public land at Redbank that will be dedicated to Council will be classified as 'community land' under the *Local Government Act* (1993). As parcels of land are progressively dedicated to Council the land title details will be updated in the schedule (see Appendix A) and any significant amendments to the masterplan will be included in Appendix C. This plan of management will then be readopted by Council. Other than updating the land titles schedule in Appendix A and land conditions table in Section 2, significant changes to this plan of management are not anticipated.

1.3 Requirements of the Local Government Act (1993)

The *Local Government Act* (1993) sets out a number of statutory requirements for a plan of management (see 0).

Table 2: Requirements of the Local Government Act (1993)

Requirement of the Act	Section in this report
Identify the category of the land	2
Identify objectives for management of the land	3
Identify performance targets	4
Identify the means of achieving the objectives and performance targets	4
Identify how the achievement of objectives and performance targets will be assessed	4
Describe the condition of the land as at the date of adoption of the plan of management	2
Describe the buildings on the land as at the date of adoption of the plan of management	2
State the purpose for which the land will be allowed to be used and the scale and intensity of that use.	5

1.4 Statutory and policy context

A number of pieces of legislation apply to the development and management of community land at Redbank. Table 3 describes the legislation, policies and approval conditions most relevant to the community land at Redbank.

Table 3: Relevant legislation, policies and approval conditions

Legislation, Policy, Regulation or approval	Relevance to this plan of management
NSW Dams Safety Act (1978)	Sets out the requirements for dam safety in NSW and establishes the Dams Safety Committee which is the State's regulator responsible for developing and implementing policies and procedures to protect life, property and the environment from dam failures.
NSW State Regional Environmental Plan No. 20 Hawkesbury River	Controls any development which has the potential to impact on the Hawkesbury River environment.
NSW Heritage Act 1977	The principle legislation governing the management of heritage items (relics and places containing relics) in NSW.
NSW National Parks and Wildlife Service Act 1974	Protection and regulation of Aboriginal heritage including of Aboriginal objects.
NSW Threatened Species Conservation Act 1995	Identifies and protects native plants and animals.
Hawkesbury Development Control Plan 2002	Applying to all land within the Hawkesbury Local Government area this DCP sets some objectives and requirements for open space. Chapter 8 specifically details requirements at Redbank.
Hawkesbury Regional Open Space Strategy 2013 Issue F	The strategic guiding document by which Council plans and manages its recreational open space.
Hawkesbury Open Space Planning and Design Guidelines 2013	Provides more specific guidelines for the management and development of recreational open space.
Yobarnie Conservation Management Plan 2013	Contains recommendations and requirements particularly in relation to dam management and Aboriginal artefacts and sites.
The Voluntary Planning Agreement between Hawkesbury Council and North Richmond Joint Venture	Contains specific requirements for the development of Peel Park.
Various Development Approvals for parts of the Redbank Development	Contains some specific conditions in relation to public land at Redbank. It should be noted that some of the conditions require management plans and strategies, particularly for the vegetated areas.

1.5 Community consultation

The following community consultation was undertaken during the preparation of this plan of management:

- a public hearing to confirm the categorisation of the land, identify issues and consult on details of the Peel Park master plan. Specific invitations were mailed to local interest groups and residents. An on-line survey was also conducted.
- written request for comment and face-to-face meetings with representatives of four local Aboriginal organisations to confirm the significance of some of the land and seek input on management strategies.
- written notice to the Director-General of the NSW National Parks and Wildlife Service of the intention to declare part of the land as an area of cultural significance.
- face-to-face meetings with the Hawkesbury Sports Council.
- the statutory requirements for exhibition and consideration of submissions.
- Three community meetings/workshop, an on-line survey and 8 stakeholder phone interviews were conducted as part of the Peel Park Masterplan review between November 2017 and August 2018. All adjoining neighbours, local residents and future residents were invited to participate.

In addition to the above the views of a broad range of residents had previously been considered via the consultation process during the development of the Hawkesbury Regional Open Space Strategy 2013.

1.5.1 Issues raised during consultation

The following summarised issues were raised by representative groups or more than one local resident:

- general agreement with the proposal to upgrade Peel Park
- recognition of the importance of the riparian zone
- catering for the needs of the future residents of Redbank.

2 Land covered by this plan

2.1 The site

The Redbank precinct is approximately four kilometres north west of Richmond and is accessed from the east by a bridge over the Hawkesbury River and the Bells Line of Road (see **Figure 1**).

The site is within a basin defined by Grose Vale Road and Bells Line of Road, which both run along ridgelines. The land is undulating and generally falling to the north into Redbank Creek which joins the Hawkesbury River approximately three kilometres downstream.

Belmont Grove Estate is a recently developed rural residential community to the west. The existing residential areas of North Richmond are to the east.

The public land has been configured to showcase the former Keyline water management system and to protect and integrate the valuable Aboriginal and natural heritage components of the place. The remnant Keyline dams have become focal points in the open space and drainage networks and the remnant vegetation, particularly along Redbank Creek links with other riparian communities upstream and downstream from the site. Figure 2 shows the community land at Redbank to which this plan of management applies.

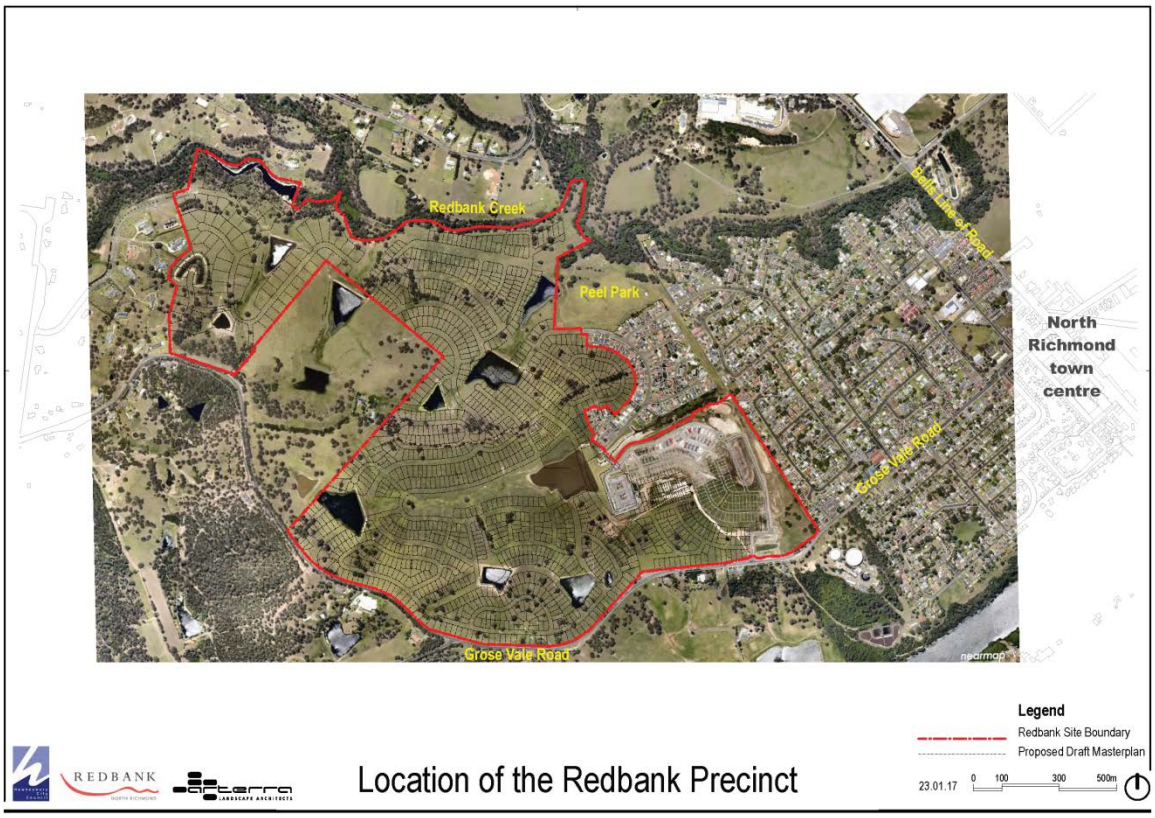

Figure 1: Location of the Redbank precinct

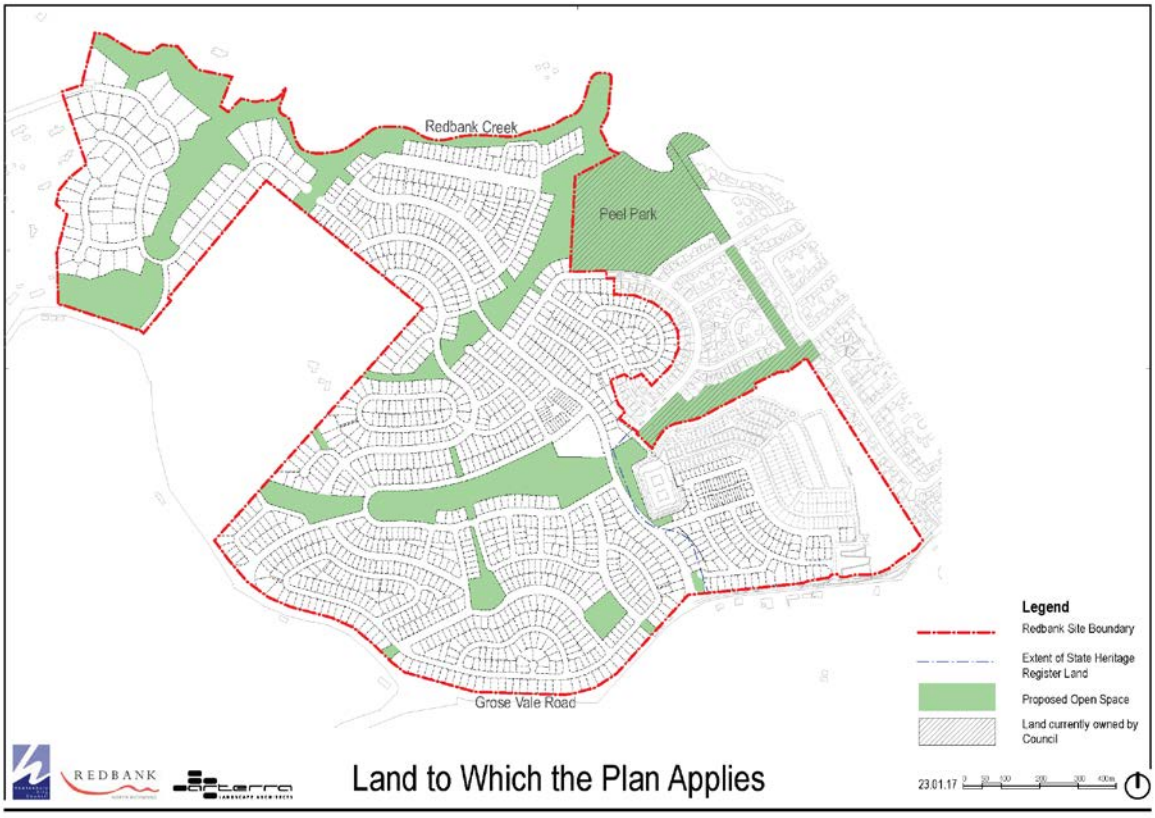

Figure 2: Community Land at the Redbank precinct to which this plan of management applies

2.2 History of the site

2.2.1 Pre-1788 Aboriginal history

The land at Redbank has a long and significant history. The original inhabitants of the Hawkesbury district were the Darug (Dharug or Daruk) Aborigines. The clan was known as the Boorooborongal clan.

Research suggests that people have been living in the Nepean/Hawkesbury Riparian corridor for 40,000 years and it was used as a walking track along the base of the Blue Mountains. As part of that corridor, Redbank Creek and other nearby areas may have functioned as a domestic base and as sites where stone tools and wooden artefacts were manufactured and maintained. Little is known about how the area outside the base camps was used. Investigations in other parts of the Cumberland Plain show that satellite sites, like those at Redbank Creek, were used for a single purpose such as primary resource procurement, tool making and social activities like ceremonies, women's and men's areas and neophyte camps.

Redbank Creek has been surveyed and demonstrates high archaeological potential. Six sites have been identified typically including axe grinding sites on sandstone slabs within the creek and around rock pools, as well as open camp sites with stone artefacts. One of the groove sites consists of over 70 grooves on one site.

2.2.2 Post 1788 history

In 1788, Governor Arthur Phillip explored the Hawkesbury River by boat and named the river Hawkesbury after the Lord Hawkesbury. Shortly after, settlers were granted farms in Windsor along South Creek. The earliest grants in Richmond were in 1795 and the earliest grants at North Richmond along the river date from 1796. The area became more significant in 1823 when Archibald Bell(Junior), son of Archibald Bell of Belmont, discovered an alternate route over the Blue Mountains which is known as the Bells Line of Road. This launched an expansion of land holdings in the west and a constant flow of traffic through North Richmond to Sydney.

More than 20 years later in 1857 the Richmond Bridge Company replaced the ferry over the Hawkesbury River at North Richmond with a wooden bridge. Around the same time the railway from Blacktown was extended to Richmond. Later, community agitation caused the rail line to be further extended from Richmond to Kurrajong in 1926. Called the Pansy Line after one of the locomotives some of the features, including a small bridge over Redbank Creek, are still visible in the landscape.

The site is part of two early land grants to Archibald Bell in 1810. He built his family home on the grant and called it Belmont. The land changed hands before being purchased in 1889 by Major Philip Charley who went on to develop one of the most famous cattle stations in Australia. Philip Charley died in 1937 having lost most of his wealth in the great Depression. The land then passed through a number of owners including the sale of individual allotments to different owners.

Some 740 acres was purchased in 1947 by Sydney Engineer, Percival Alfred Yeomans. He also purchased a further 601 acres from the Charley estate on the north side of Redbank Creek. The parcels were named Yobarnie (a combination of the names Yeomans and Barnes) and Nevallan (named for his two sons Neville and Allan). Immediately after purchase, Yeomans undertook experiments on the properties which informed the development of the Keyline system.

Early experiments by Yeomans included spray irrigation, improved spray heads, portable irrigation and gravity irrigation systems. The western side of the Nevallan property was developed with experimental soil conservation drains. At this time the basis of the Keyline systems was formulated and the far west section of the property was later developed in less time and for one tenth of the cost of the previous section. Keyline was implemented on Yeobarnie in 1954 following the successful implementation at Nevallan in 1952.

An opportunity to make a large and public display of the new principles and practices of Keyline came in 1952 with a visit of the Australian and New Zealand Association for the Advancement of Science. Two years later Yeomans released his book *Water for Every Farm – Using the Keyline Plan* which greatly increased the number of visitors to the land.

In 1964, both Yeobarnie and Nevallan were sold to the Peel family who operated them as dairy farms. During the 1980's and 1990's two substantial subdivisions were made for residential development – North Richmond and Belmont Grove. In 2010 a Seniors Living Development was approved on part of the site adjoining North Richmond.

2.2.3 The Keyline System explained

Percival Yeomans, over the course of many years at Yeobarnie (and Nevallan), experimented with soil conservation and irrigation techniques that became known as the Keyline system of farm management. The system uses 'off contour cultivation' which allows water to be selectively drifted out of erosion prone valleys.

The Keyline concept proposes that there is a 'keypoint' in a valley which is the point where the relationship changes from the upper, narrower valley slopes to lower flatter slopes. Land is cultivated parallel to the keyline. Furrows slope down towards ridgelines from the flatter slope of the valley to the steeper sections of the ridges.

The system thus prevents the concentration of rainfall in the valleys and redistributes it to the ridges. The slowing of runoff also minimises the erosion of topsoil. The effect of the cultivation is likened to hundreds of small absorbent drains challenging water flow and encouraging a greater retention of water over a larger surface area of steep land. This is of key importance to the development of soil fertility. The system aims to make poor soils fertile and productive, by supplying the needs to complete their full cycle of development.

The system uses dams, drains, irrigation pipes and spray heads, cultivation and even the placement of trees and buildings to manage the water cycle in an advantageous way for soil conservation, soil fertility and fodder production.

Dams are located to enable the farmer to use gravity to provide water pressure. A high contour dam is the highest dam on a property and located above the keyline. The high contour dam is usually located at the lower edge of flatter country where the steep slope commences. The drain to feed the high contour dam is located above the valley heads which further protects the valleys from erosion by preventing flow into them. Dams are interconnected by a system of feeder and irrigation drains and spillways that channel runoff to lower dams in the system and irrigate paddocks.

The placement of trees is also an important part of the keyline system. Trees should be in strips or belts wide enough to resemble the benefits of forests. Deep rooted plants and grasses assist by bringing minerals to the surface.

Keyline therefore controls the usual water runoff into the valleys from the higher land by tremendously increasing the absorption capacity of the land and defusing the excess water prolonging the opportunity to be absorbed into the land over a greater area. **Error! Reference source not found.** shows how the keyline concept was applied at Yobarnie showing the contours and keyline system.

The above description is from the *Conservation Management Plan* (2013). Yeoman's *Water for Every Farm – Using the Keyline Plan* (1981) includes a full description of the philosophy and concept of the Keyline System in practice.

A functional plan of the same area shows the diversion channels as unbroken lines and the irrigation channels as dash-dot lines. Note that the chains of dam are also interconnected below by the irrigation channels. Compare this with the aerial photograph of Yobarnie (see Plate 5).

Figure 3: Plan of Yobarnie showing placement of dams (from Yeomans, 1981)

2.3 Cultural heritage significance of the land

2.3.1 Significance of Yobarnie

The former Yobarnie has been assessed as being of State heritage significance for its historic, associative and aesthetic values and for its research potential and rarity.

The site has historical significance at a State level for its role as one of two demonstration farms where the Keyline system was developed in the early 1950s. The Keyline plan is of significance as a precursor to the Permaculture and Landcare movements and has continued to develop as a land management system.

The site has associative significance at a State level for its direct link to Percival Yeomans, a significant contributor to innovation in agriculture.

The site has aesthetic/technical significance at a State level. Although disused and modified the technologically innovative keyline system remains legible in parts of the landscape.

The site is of State significance for its research potential as the site of the experimental farm where Yeomans investigated soil conservation and water management techniques.

The site is rare at a State level for its ability to demonstrate experimentation in Keyline techniques. Its rarity is enhanced by its scale.

A *Conservation Management Plan* (Urbis, 2013) along with other statutory obligations guide the management of the heritage elements of Redbank. This plan of management aims to set the management framework of community land recognising the broader context of the heritage values of Redbank.

2.3.2 Sites of Aboriginal Significance

This land has been surveyed in 2008 by Kelleher Nightingale Consulting Pty Ltd and it demonstrates a full range of archaeological potential. Nine sites and one potential deposit have been identified along the Redbank Creek riparian corridor. The identified sites typically include axe grinding groove sites as well as open camp sites. One of the sites has over 70 grooves. The sites collectively represent an archaeological complex of the past Aboriginal world and demonstrate how the various parts of the environment functioned together in creating a cultural place.

Whilst the location of the sites are known it is intended to keep most of them protected from accidental or intentional damage and therefore they are not identified here. One of the sites will be identified on site as an example of the remaining sites.

2.4 Parks of the Redbank Precinct

At the time of preparing this plan of management many of the parks of the Redbank Precinct have no formal name. For referencing purposes in this plan of management each piece of community land has been named (see Figure 4). The formalisation of park names will occur and may change as the land is progressively dedicated to Council.

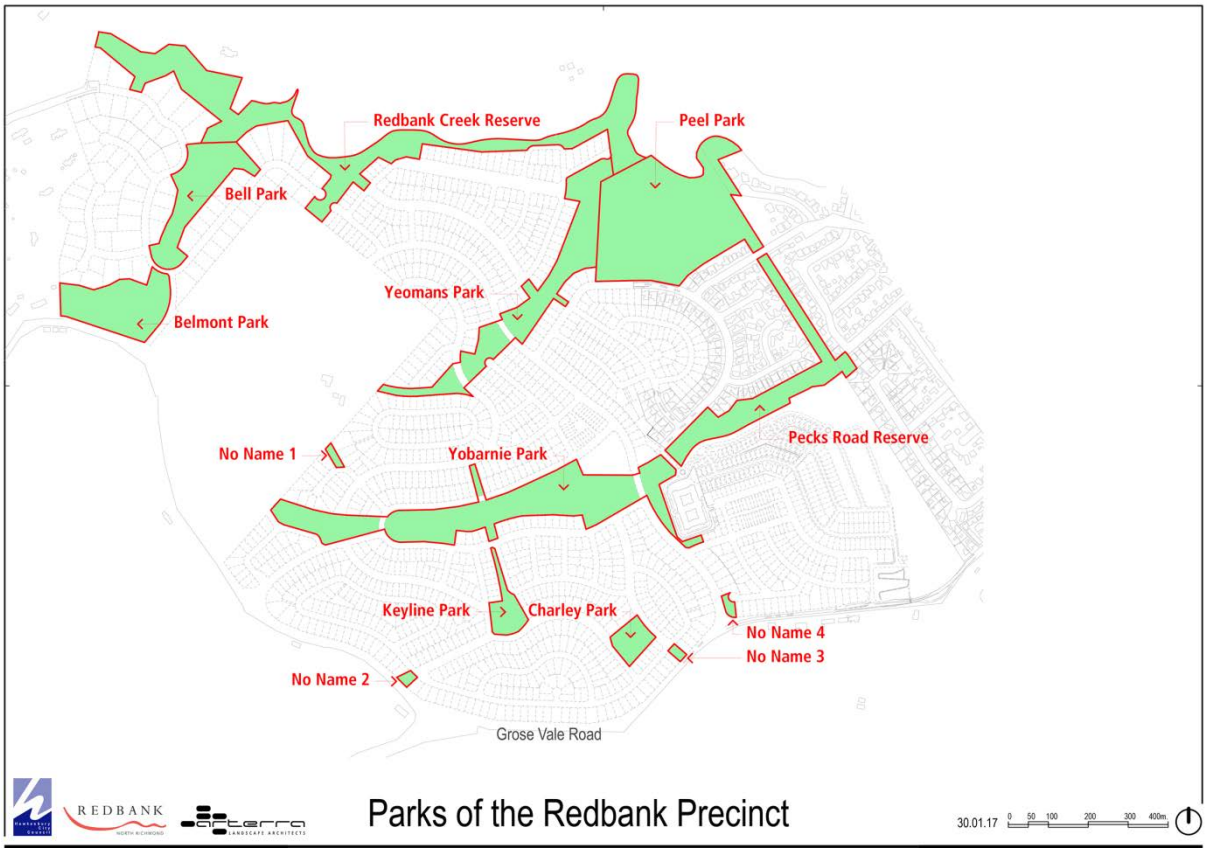

Figure 4: Parks of the Redbank Precinct

2.5 Belmont Park

Belmont Park contains a contiguous 3.2ha of bushland in the form of Cumberland Plain Woodland on gently undulating topography. The Cumberland Plain Woodland is adjacent a larger area of Cumberland Plain Woodland extending to the south and west of the Redbank precinct. The woodland has a well-developed shrub layer and native grasses covering around 50% of the groundcover. At the time of preparation of this plan of management there are also dense thickets of lantana as well as blackberry which are being treated/removed as they are preventing natural regeneration of the woodland. The most recent land use of this bushland has been grazing cattle.

Appendix B contains the flora and fauna species (native and exotic) identified during the 2013 and 2015 assessments and management plan preparation.

Cumberland Plain Woodland is listed as a Critically Endangered Ecological Community under both the *Threatened Species Conservation Act 1995* and the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999.* The Belmont Park remnant has been assessed as meeting the definition of Cumberland Plain Woodland (GHD, 2013). The conservation significance of the remnant Cumberland Plain Woodland has been assessed as 'Support for Core'. Whilst threatened flora species have been recorded in the locality, none have been recorded on the site and it has been assessed that none are likely to occur on the site. The Heritage Council endorsed *Conservation Management Plan* (Urbis, 2013) also identifies this remnant bushland for protection.

A *Cumberland Plain Woodland Management Plan* (Molino Stewart, 2015) has been prepared and the outcomes incorporated into a *Landscape Maintenance Manual*.

2.6 Bell Park, Yeomans Park, Yeobarnie Park, Keyline Park and Charley Park

These five parks make up the majority of developed parkland in the precinct. Bell Park, Yeomans Park and Yeobarnie Park are linear parks set along natural drainage lines that lead into Redbank Creek. Keyline Park and Charley Park are two pocket parks that each incorporate a former farm dam from the Keyline system. Together the parks are meant to showcase the Keyline system and represent the significant cultural heritage values of the land. The parks include modified dams and drainage lines that are part of the Keyline system.

In addition to these five major parks there are four minor parks playing small but important roles in the landscape. A small park to the west of Yeobarnie Park is important for the drainage system. Two small parks on Grose Vale Road are intended to allow the public views and vistas over the valley in order to see the representation of the Keyline system in the landscape. One small park on Grose Vale Road signifies the main entrance to the new suburb.

The five major parks are based on the five catchments that make up the precinct. Grose Vale Road is at the top of each catchment. Three catchments drain directly to Redbank Creek and one drains east into the seniors living development before eventually joining Redbank Creek downstream. **Figure 5** shows the catchments.

Recreation facilities proposed for the parks include playgrounds, picnic shelters, fitness stations and rest areas with seating. The facilities will cater for a range of ages of local residents.

The landscape character will draw heavily on the recent farm land use and incorporate the retention and planting of significant trees amongst broader grassland.

At the time of writing this Plan of Management, Belmont Park and Bell Park have received their landscape treatment, completed in May 2018. Works within Yeomans Park have been approved. Each of these plans can be found in Appendix C.

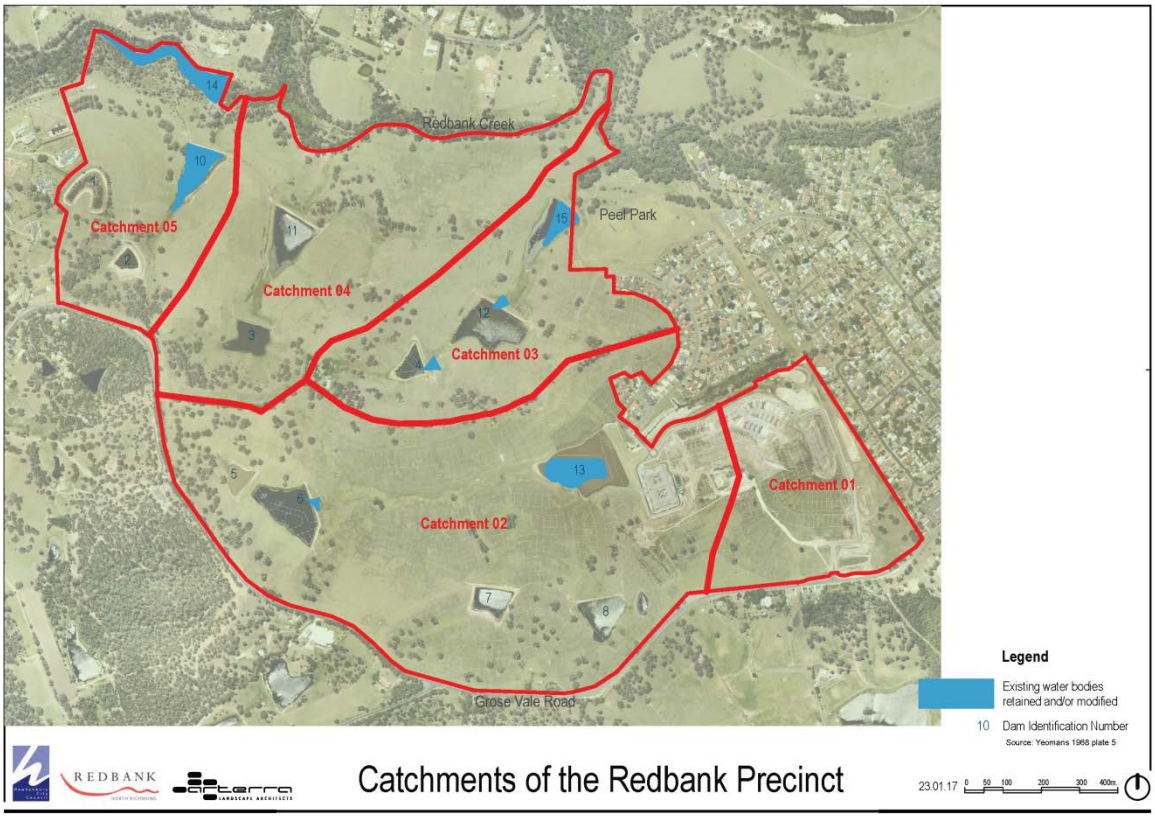

Figure 5: Catchments of the Redbank precinct

The dams from the Keyline system have been the subject of study and analysis during the development of the precinct. A *Conservation Management Plan* (Urbis, 2013) has been prepared to regulate the retention of some dams as part of the overall system. Table 4 describes each of the Keyline dams. The table uses a numbering system that is consistent with the *Conservation Management Plan* which is why the numbers are not consecutive. Some of the dams have been modified from their original state due to lower levels of maintenance since the system was fully operated and the need to manage safety and access within an urban environment.

Table 4: Status of remaining dams

Dam number	Status
4	May be used for water detention but will not be a permanent water body (modified existing dam)
6	May be used for water detention but will not be a permanent water body (modified existing dam)
7	May be used for water detention but will not be a permanent water body (modified existing dam)
8	May be used for water detention but will not be a permanent water body (modified existing dam)
10	Permanent water body (modified existing dam)
12	Permanent water body (modified existing dam)
13	Permanent water body (retained dam)
14	Permanent water body (retained dam)
15	Permanent water body (modified existing dam)

The dams play multiple roles including water quality treatment, heritage recognition and aesthetic focal point. The land between some of the dams is also used for storm water detention.

2.7 Redbank Creek Reserve

Redbank Creek Reserve forms part of a riparian corridor that varies in width from very narrow in places to more than 100m in others. The vegetation is in the form of River-Flat Eucalypt Forest (RFEF) on Coastal Floodplains that has Forest Red Gum, Grey Gum and Narrow-leaved Ironbark shrubby Woodland.

Weed infestation varies along the course of the creek and the condition of the Forest varies from poor to moderate. Appendix B contains the species (native and exotic) identified during the 2014 assessment and management plan preparation.

RFEF is listed as an Endangered Ecological Community under the NSW *Threatened Species Conservation Act (1995).* It is not listed under federal legislation.

The watercourses have been assessed and classified in accordance with the NSW Office of Water's *Riparian Corridor Management Study* and the *Water Management Act 2000*.

A *Belmont Riparian Vegetation Management Plan* (Molino Stewart, 2016) has been prepared and the outcomes incorporated into a *Landscape Maintenance Manual*.

At the time of writing this Plan of Management, the landscape design for Redbank Creek Reserve is being finalized. The draft plan can be found in Appendix C.

2.8 Peel Park

Peel Park is a district level recreation facility bordering Redbank Creek and immediately adjacent to Yeomans Park. At the time of preparing this plan of management it consists of two playing fields used in summer for cricket and for rugby league training in Autumn , a sports amenities block with kiosk, one BMX track, a fenced dog off-lead area, playground, , open passive parkland and some riparian vegetation along Redbank Creek.

Care, control, management and development of Council's sport facilities have been delegated to the incorporated Hawkesbury Sports Council which was formed in 1990. The Sports Council receives an annual budget from Hawkesbury Council, collects and retains all facility hire fees, applies for any grants and retains its own contractors to carry out maintenance of facilities.

The northern edge of Peel Park contains the remnants of the Richmond to Kurrajong Railway. Known as the 'Pansy' line, it was opened in 1926 and closed in 1952 due to a major landslide and unprofitability. The former route is clearly visible in the landscape and there is a small bridge over Redbank Creek.

Included in the *Voluntary Planning Agreement* for the Redbank development is the upgrade of facilities at Peel Park. Appendix C shows a masterplan of Peel Park which addresses the progressive upgrade of the park facilities. Peel Park is intended to be a district level park that also provides for summer and winter sporting activities which will predominantly be used for training and junior sports. Proposed works include: re-grade the field area so that it is suitable for competition sport; upgrade the sports amenities, storage and kiosk facility; formalise and provide additional parking; relocate and expand the playground to better connect with the BMX area; reposition the BMX and Dog off-leash areas; provide a multi-use hardcourt and junior cricket nets; shared pathways; picnic facilities; and retention of native vegetation and riparian areas,

Following adoption of the Peel Park Masterplan, detailed design will commence for the landscape works, BMX upgrade and lighting design. Costings and delivery timelines will then be finalized.

2.9 Land categorisation

The *Local Government Act* (1993) prescribes that all community land must be categorised. The categories determine the core objectives by which the land can be managed. Additional objectives for each category can be declared at the discretion of Council. Figure 6 shows the categories for each piece of community land in the precinct.

2.9.1 Areas of cultural significance

The *Local Government Act* (1993) includes a provision to declare community land as an area of cultural significance. A declaration is at the discretion of Council. The majority of the community land of the Redbank precinct has been categorised as an 'area of cultural significance'. This is because: Most of the community land has been listed by the Heritage Council as State significance due to its historic, associative and aesthetic values and for its research potential and rarity.

A smaller area in Redbank Creek Reserve contains Aboriginal artefacts.

Specific consultation with the Aboriginal community traditionally associated with the land was undertaken. An area of Redbank Creek has been declared as an area of cultural significance due to the significance to the Aboriginal community traditionally associated with the land.

Under the *Local Government Act* (1993) declaration as an area of cultural significance means the following additional requirements apply:

- the land must be dealt with under a specific plan of management
- the plan of management must state the land is declared to be of cultural significance
- the land must be categorised as an area of cultural significance
- the plan must include the core objectives prescribed for an area of cultural significance
- no change of land use is permitted without an adopted plan of management

- no lease or licence can be in place until a plan of management is adopted.

2.9.2 Sub-categories

Council has chosen to add additional objectives for all of the land categorised as culturally significant to describe the full management intent. These additional objectives relate to the sub-categories (see Figure 7) that describe the other uses and values of the land that are to be promoted and protected.

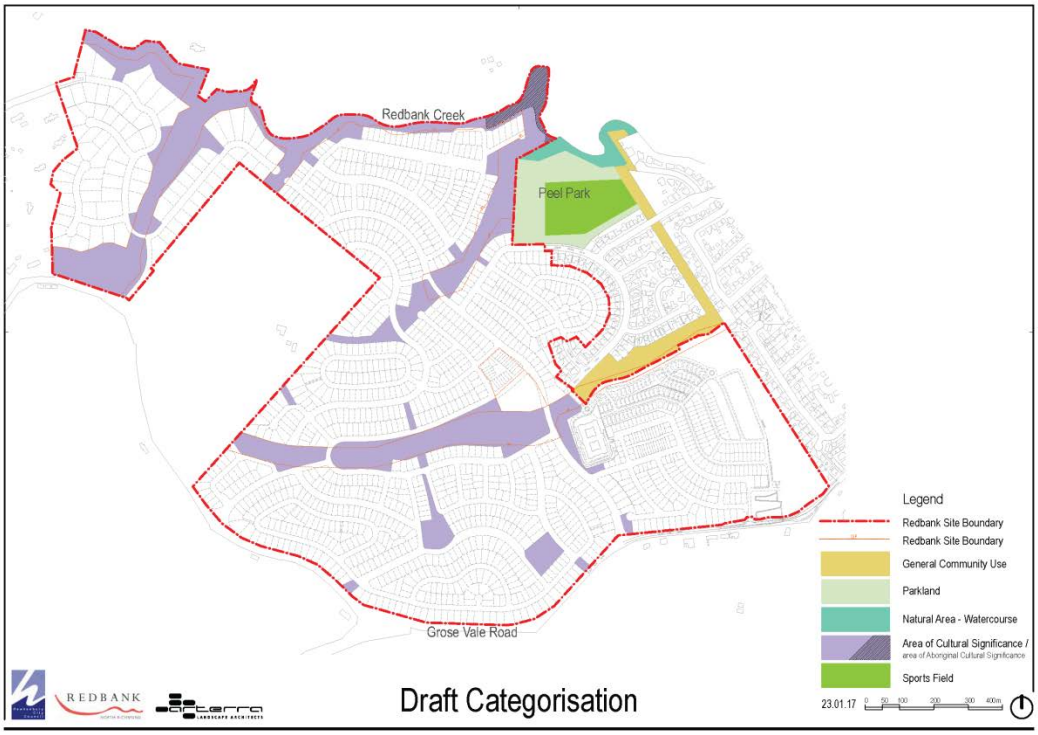

Figure 6: Plan showing categories of the land

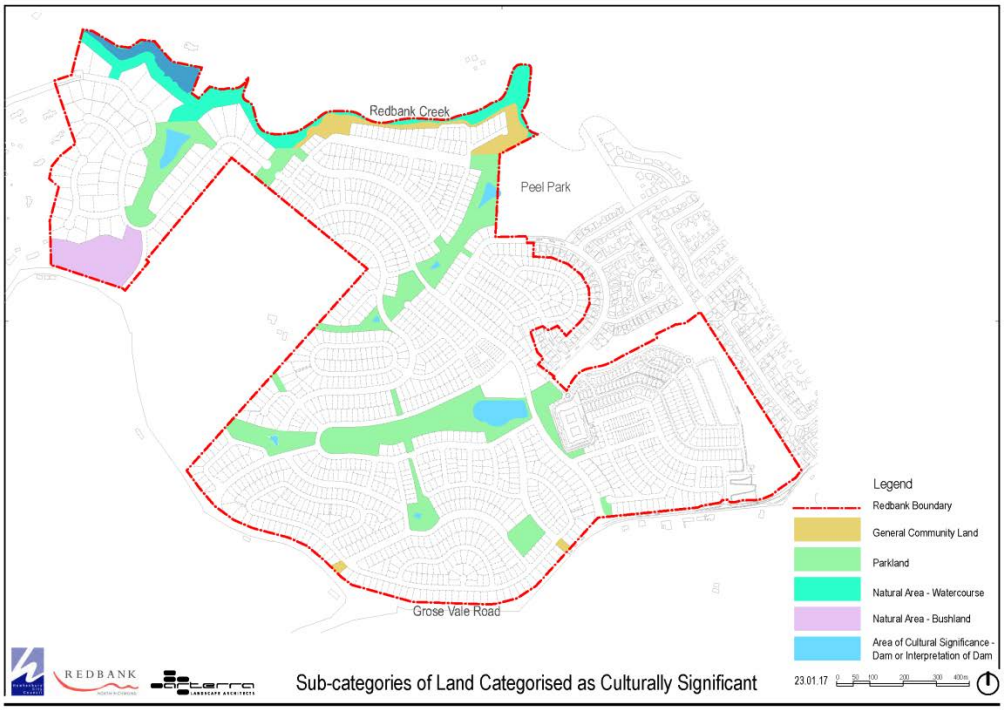

Figure 7: Sub-categories of land categorised as culturally significant

2.10 Summary of the land, uses and conditions

Table 5 describes each piece of community land in the Redbank precinct including buildings, usage and condition at the time of preparation of this plan of management.

Table 5: Summary of the land, uses and conditions

Category (and sub-category)	Description of land and buildings	Current Use	Condition
Belmont Park			
Area of cultural significance (Natural area – bushland)	Stand of Cumberland Plain Woodland with some good understorey and some infestation of weeds. Perimeter fence.	Biodiversity conservation.	The woodland is in fair condition. The perimeter fence has recently been replaced and is in excellent condition.
Bell Park			
Area of cultural significance (Park)	Dam #10, a permanent water body.	Surface and storm water drainage.	Dam#10 and surrounds are in good condition. Landscaping treatment to the park has just been finalised and signage installed. Condition is excellent. Pathways are in good condition (some damage incurred during construction).
Redbank Creek Reserve			
Area of cultural significance (Natural area – watercourse)	Dam #14, a permanent water body. Natural course of Redbank Creek with vegetated banks and a varied stream bed from still pools to flowing streams. Bridge of closed rail line. The area contains a number of sites of Aboriginal significance. There is a small pedestrian bridge and path with steps. 33kV power line and easement.	Biodiversity conservation. Surface and storm water drainage. Cultural heritage conservation.	Dam#14 and surrounds are in good condition. Few weeds exist within the water body. The stream and stream bank varies in condition from poor to fair. Weed infestation (including Lantana and Blackberry) is generally low to moderate. The bridge is in good condition. The creek side path is in poor condition. The newly constructed fire trail in the western portion of the reserve is in excellent condition.
Yeomans Park			
Area of cultural significance (Park)	Dams #4, #12 and #15, which are permanent water bodies.	Grazing. Cultural heritage conservation.	Dams #4, #12, #15 and surrounds are in good condition. Few weeds exist within the water body.

Category (and sub-category)	Description of land and buildings	Current Use	Condition
			The remaining land is open pasture with some significant trees and is in generally good condition.
Area of cultural significance (Park)	Dams #13 and #6 which are permanent water bodies.	Grazing. Cultural heritage conservation.	Dams #13 and #6 and surrounds are in good condition. Few weeds exist within the water body. The remaining land is open pasture with some significant trees and is in generally good condition.
Keyline Park			
Area of cultural significance (Park)	Dam #7 which is a permanent water body.	Grazing. Cultural heritage conservation.	The remaining land is open pasture with some significant trees and is in generally good condition.
Charley Park			
Area of cultural significance (Park)	Dams #8 which is a permanent water body.	Grazing. Cultural heritage conservation.	The remaining land is open pasture with some significant trees and is in generally good condition.
Peel Park (Lot 1 – DP 786671 and Lot 17 DP 788232)			
Sportsground, Park and Natural area - watercourse	Playground 2 x synthetic cricket wickets and fields. Canteen/facilities building Dirt BMX track Walking track and minor walking paths along the creek. 33kV power line and easement.	Sportsground. Dog off leash area. Passive recreation.	The playground is in good condition. The sporting fields are in average condition as the slope of the fields is more than desirable. The synthetic cricket wickets are in good condition. The canteen/facilities building is well constructed and maintained and is in good condition. Kiosk requires upgrading to current health standards. The BMX track is in poor condition with some moderate erosion, flattened 'jumps' and no other facilities. The walking track is constructed of decomposed granite and is in poor condition.
Pocket parks (4) on Grose Vale Road and adjacent neighbouring property			
Area of cultural significance (Park)	Farmland	Grazing.	The land is open pasture with some significant trees and is in generally good

Category (and sub-category)	Description of land and buildings	Current Use	Condition
			condition.
Lot 274 – DP 1156792 (Adjacent Pecks Road Reserve)			
General community use	Modified drainage line Rain gardens (stormwater treatment) Stormwater detention basin (part) Parkland	Drainage Passive recreation	The drainage infrastructure is in good condition. Crushed granite pathways are in good condition. Fence separating planting area is in good condition. Seats are in good condition.

3 Basis for managing the land

3.1 Management objectives

The *Local Government Act* (1993) prescribes the core objectives by which the land can be managed. The core objectives relate to each category of land. Additional objectives for each category can be declared at the discretion of Council.

For the Redbank precinct a majority of the land is categorised as an area of cultural significance. Council has chosen to adopt additional objectives for that category relating to the sub-category of each park. The sub-category for each park is identified in Figure 7.

3.1.1 Objectives for community land categorised as 'an area of cultural significance'

The core objective is:

- 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.

Other objectives are:

- to retain, conserve and interpret P.A. Yeomans' Keyline system elements within the parks in accordance with recommendations of the Conservation Management Plan (Urbis, 2013)
- to make the heritage values of the community land accessible through interpretation
- to ensure the ongoing ecological viability of the bushland by protecting the ecological, biodiversity and habitat values of the land.

3.1.2 Objectives for community land sub-categorised as 'Natural Area – Bushland'

These objectives apply to Belmont Park, in addition to the objectives for an 'area of cultural significance'.

The objectives are:

- 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
- to maintain the land, or that feature or habitat, in its state and setting
- to provide for the restoration and regeneration of the land
- 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
- 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 *Threatened Species Conservation Act (1995)* or the *Fisheries Management Act (1994)*
- 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) and other ecological values of the land
- to protect the aesthetic, heritage, recreational, educational and scientific values of the land
- 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
- to protect and restore degraded bushland as a natural stabiliser of the soil surface.
- to protect existing landforms such as natural drainage lines, watercourses and foreshores
- 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.

3.1.3 Objectives for community land categorised or sub-categorised as 'Natural Area – Watercourse'

These objectives apply to the natural areas of Peel Park and Redbank Creek Reserve, in addition to the objectives for an 'area of cultural significance'.

The core objectives are:

- 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
- to maintain the land, or that feature or habitat, in its state and setting
- to provide for the restoration and regeneration of the land
- to provide for community use of and access the land in such a manner as will minimise and mitigate disturbance caused by human intrusion
- 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 *Threatened Species Conservation Act* (1995) or the *Fisheries Management Act* (1994)
- to manage watercourses so as to protect the biodiversity and ecological values of the instream environment, particularly in relation to water quality and water flows
- to manage watercourses so as to protect the riparian environment, particularly in relation to riparian vegetation and habitats and bank stability
- to restore degraded watercourses
- to promote community education, and community access to and use of the watercourse, without compromising the other core objectives of the category.

3.1.4 Objectives for community land categorised as 'Sportsground'

The core objectives are:

- to encourage, promote and facilitate recreational pursuits in the community involving organised and informal sporting activities and games
- To ensure that such activities are managed having regard to any adverse impact on nearby residences.

Other objectives are:

- to provide flexible spaces that can accommodate summer and winter sports
- to provide spaces suitable for training activities

3.1.5 Objectives for community land categorised or sub-categorised as 'Park'

These objectives apply to parts of Peel Park, Bell Park, Yeomans Park, Yeobarnie Park, Keyline Park, Charley Park, and the three pocket parks on Grose Vale Road in addition to the objectives for an 'area of cultural significance'.

The core objectives are:

- to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities.
- to provide for passive recreational activities or pastimes and for the casual playing of games.
- to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

Other objectives are:

- to incorporate flexibility for multiple uses of community land
- to foster an events based recreation program
- to provide a recreation network that encourages walking and cycling
- to retain representative features (particularly the waterbodies and keyline) of Yeomans' keyline system as focal points of the open space network

- to maintain some permanent and semi-permanent water bodies that represent the farm dams of the keyline system
- to retain key views and vistas of remaining keyline features in the landscape
- to protect the aesthetic, heritage, recreational and educational values of the land
- to provide pedestrian and ecological connections between major parks, particularly in bell park between belmont reserve and redbank creek reserve
- to optimise opportunity for disability access to all parks and reserves
- to enhance basic amenity in all parks (seating, paths, shade, shelter and play).

3.1.6 Objectives for community land categorised as 'General Community Use'

The core objectives are:

- to promote, encourage and provide for 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:
  - in relation to public recreation and the physical, cultural, social and intellectual welfare or development of individual members of the public
  - 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).

Other objectives are:

- to accommodate public benefit services such as storm water drainage and electricity transmission.

3.2 Community values

Values are the things that make a place important to the community. Along with management issues they guide the management and day-to-day maintenance of the land. The community values in Table 6 have been determined through analysis and assessment of the *Conservation Management Plan* (Urbis, 2013), the *Hawkesbury Regional Open Space Strategy* (Clouston, 2013), the outcomes of community consultation and assessment of the determined values of other similar community land in the Hawkesbury.

Table 6: Community values of the land

Community value	Local significance	Regional significance	State significance
Cultural heritage values			
Darug community heritage values	Local		
Former Yobarnie farm history, aesthetics, research potential and rarity			State
Keyline system			State
Natural heritage education	Local		
The 'Pansy Line' – Richmond to Kurrajong railway.	Local		
Environmental values			
Cumberland Plain Woodland remnant			State
River Flat Eucalypt Forest remnant			State
Redbank Creek riparian zone	Local		
Surface water quality treatment	Local		
Social values			
Passive recreation and walking	Local		
Organised sport		Regional	
Landscape setting	Local		

3.3 Management issues

Following is a description of the major issues that are considered in the management of the community land.

3.3.1 Dams and water cycle management

The dams and stormwater management system determined the location of the community land at Redbank. The stormwater management strategy for the area includes the retention and augmentation of existing dams, the addition of detention basins and constructed wetlands and active management of water levels via connected dams.

The majority of community land that has a trunk drainage role also needs to provide for a number of other functions including improving storm water quality, contributing to maintaining the required water balance across the dams and aesthetic and recreation uses of the local community.

Dams 13 (near the retail centre) and 15 (close to Peel Park) have been 'prescribed' by the NSW Dam Safety Committee in 2016. The Dam Safety Committee oversights the safety of prescribed dams under the NSW Dams Safety Act, 1978. The Dams Safety Committee determines the surveillance frequency and reporting for prescribed dams and can require the owners of dams to do things to ensure safety of their dams. Owners of prescribed dams with 'extreme', 'high' or 'significant' categories must have an effective *Operations and Maintenance Manual*. Both Dams 13 and 15 fall into these categories. In addition, the other dams also require maintenance and observation.

The major management issues associated with the dams and water cycle management are:

- protection of the downstream population, buildings and infrastructure against dam failure
- water safety for the local community
- active management of the water cycle
- aquatic weed control
- maintenance of the steep face of dam walls.

3.3.2 Riparian zone ecology

The riparian zone of Redbank Creek is contiguous through the whole of the precinct. The River-Flat Eucalypt Forest (RFEF) on Coastal Floodplains of the riparian zone is listed as an Endangered Ecological Community under the NSW *Threatened Species Conservation Act 1995* and must be protected and restored in the interests of this and succeeding generations.

The condition of the RFEF varies along Redbank Creek as does the width of the zone. The zone suffers from edge effects as it is bounded by developed land uses which increase the likelihood of weed infestation, nutrient run-off, rubbish dumping and other impacts.

The riparian zone must also cater for other uses including public recreation and bushfire management. The fire trail along the corridor does provide a cleared edge to the developed area and a defined maintenance edge for the bushland. However, the fire trail also utilises some land that would otherwise be vegetated as part of the riparian zone.

The major management issues associated with the riparian zone are:

- weed management including managing the ongoing threat from nearby developed areas
- restoration of some areas particularly where the zone is narrow
- greater threat to fauna from predation as a result of domestic pets (cats and dogs) and the nature of a long narrow corridor providing limited refuge.

3.3.3 Threatened fauna species

Three threatened bat species have been recorded at the Redbank site (GHD, 2013). They are:

- Large-footed Myotis – forages over streams and feeds on fish and insects. Breeding takes place during November or December and roosting occurs in caves, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage.
- Eastern Bentwing-bat – uses caves and culverts feeding mostly on moths and breeding takes place from October to April.
- Eastern Free-tail bat – occurs in dry sclerophyll forest and woodland roosting primarily in tree hollows and man-made structures. This species is solitary and insectivorous.

Two migratory bird species listed as 'Matters of National Environmental Significance' under the Federal EPBC Act were recorded within the study area. They are the Cattle Egret (*Ardea ibis*) and the Great Egret (*Ardea alba*).

Other threatened species that possibly occur at the site are listed in Appendix B.

The major issues associated with these threatened species are:

- protection of enough remnant habitat to be sustainable
- harm caused by domestic animals
- available safe nesting and roosting sites.

3.3.4 Increased sporting use of Peel Park

Peel Park has been used for summer and winter sports. At the time of preparation of this plan of management there are no lights, and facilities are adequate. An upgrade of Peel Park is to be undertaken as part of the Redbank development including higher standard playing fields that can accommodate at least one summer sport and two winter sports codes, training spaces, and is irrigated and lit for night time use. It is expected that there will be greater demand for, and use of the sporting facilities at Peel Park due to the increased population associated with the Redbank development.

The *Regional Open Space Strategy* (2013) considered sporting needs across the local government area and made the following statements relevant to the Redbank Precinct and Peel Park in particular:

- There is no adopted Sports Plan for the local government area to guide decision making at a local level. The *Strategy* has identified the need for a plan but at the time of preparation of this plan of management no plan exists.
- There is a high level of sports provision across the local government area which matches high current demand.
- Formal sports facilities provided are predominately limited to traditional codes at present, however changing demographics suggest the need to cater for a broader demand.
- There are no significant sporting demands that have not been met within the Hawkesbury local government area. However, with the development of approximately 1,400 new houses at Redbank there will be a significant increase in the demand for sporting facilities and increased pressure on existing nearby playing fields, some of which are already at capacity.

Consultation with the Hawkesbury Sports Council revealed a rise in participation numbers for cricket and rugby league – the two sports currently using Peel Park. In addition, the Sports Council reports the netball facilities at nearby Turnbull Oval are at capacity. Discussions with Colo Soccer indicate that additional areas suitable for training will be required to meet expected future demand.

The Sports Council would prefer that Peel Park has lights for night training of rugby league teams to the 'preferred standard' proposed by the National Rugby League which is 150lux.

The Sports Council also noted that only one of the two current cricket ovals is sufficiently flat to accommodate matches, which in recent years has been U10 and U11 matches.

Feedback from the community during the review of the Masterplan has reinforced the fact that people do not want sports to be a dominant use of the park.

The major management issues associated with the increased sporting use of Peel Park includes:

- Potential impact of light spill on nearby residents
- Location and use of parking areas that might impact on local residents
- Potential for increased noise particularly at the end of evening training sessions when users leave the area by car
- Sports infrastructure reducing the flexible use of the space and cluttering the open nature of the park.

Actions to reduce the potential impact of these activities are outlined within the Action Plan on page 35.

3.3.5 Aboriginal artefacts

Many locally significant Aboriginal artefacts exist along the Redbank Creek riparian corridor. The artefacts illustrate the long term use of the area by Darug Aborigines. A significant number of the known artefacts exist in a small area of Redbank Creek.

Showcasing and interpreting the artefacts could lead to a richer and deeper understanding of Aboriginal culture and relationships with this place. However, showcasing the artefacts could lead to inadvertent or deliberate damage. A careful balance must be struck in the protection and interpretation of the artefacts. *Policy 44* of the *Conservation Management Plan* (Urbis, 2013) states:

- Long-term management of the Aboriginal sites and PADs should ensure that there is no surface impact on these areas. This includes avoiding adverse impacts from future uses of the area such as unformed walking tracks, placement of facilities and surface erosion. This is especially true for sites along Redbank Creek. Management of these areas could include revegetation, the strategic placement of managed paths and avoiding the construction of facilities in areas of known archaeological significance.

The *Conservation Management Plan* (Urbis, 2013) identified that best practice conservation involves ensuring that there is a connection between the archaeological sites (*Policy 39*), as complete cultural landscapes are of higher value than individual sites.

The major issue associated with Aboriginal artefacts is:

- publication and showcasing the location of the artefacts could lead to their inadvertent or deliberate destruction.

3.3.6 Heritage Council approval of major works

The endorsed *Conservation Management Plan* (Urbis, 2013) includes specific exemptions from approval under Section 57(2) of the *Heritage Act* for various 'developments'. One of the exemptions specifically relates to open space management and is intended to allow day-to-day maintenance, routine works and maintenance and repair of assets without the need for Heritage Council approval.

The exemption reads:

- general maintenance and repair by Hawkesbury City Council for:
  - tree surgery where considered necessary for the health of a tree
  - removal or pruning of trees considered a danger to the public or staff
  - minor works to reduce risks to public safety
  - repair of damage caused by erosion control measures
  - routine horticultural maintenance, including lawn mowing, cultivation and pruning.

3.3.7 Fire Trail

The vegetation along Redbank Creek is mapped as being Category 1 Bushfire Prone Vegetation as it forms a continuous corridor of vegetation within an area of more than one hectare. It is a Rural Fire Service requirement that there is a permanent fire trail along the riparian zone of Redbank Creek. The fire trail is to be maintained for emergency access including maintenance of clear verges. Most of the land on which the fire trail is located is narrow and adjacent the rear boundaries of multiple properties. Private landowners of these properties are likely to have varying attitudes towards the land adjacent their boundaries.

The major issues associated with bushfire protection are:

- maintenance of any fire trail
- ensuring that maintenance of a cleared edge of the fire trail road does not encroach into the riparian zone
- the active maintenance of residual land between the fire trail and property boundaries to avoid unusable open space.

4 Masterplan, action plan and performance measurement

4.1 Masterplans

Most of the developed parks covered by this plan of management will be progressively built by the developer of Redbank. Peel Park will also be refurbished with new sporting and recreation facilities. The riparian zone of Redbank Creek Reserve and the Cumberland Plain Woodland of Belmont Park will be regenerated.

The actions to develop and restore these areas are included in the relevant action plans of this section. Appendix C includes drawings of the following:

- an *Open space Masterplan* which includes the concept details for the developed parks and the location of seating, exercise and other facilities throughout all parks.
- a *Masterplan for Peel Park* which includes the layout details of new facilities proposed at Peel Park.
- A Landscape plan for Belmont Park which shows the park and associated fire trial.
- A landscape plan for Bell Park which shows the landscape features as built May 2018.
- A landscape plan for Yeomans Park which shows proposed landscape features.
- A draft landscape plan for Redbank Creek Reserve which shows proposed landscape features.

For all the facilities included in the masterplans the final detail and location of facilities will be determined at detailed design stage. The location, number and extent of facilities may change during the detailed design stage, however the intent is described in the masterplans.

4.2 Configuration of the action plan

This action plan is structured on the categories and sub-categories of land described in Section 2.9. Each category has a relevant action plan (in table format) that includes performance targets, means of achievement (the actions) and how Council will assess performance. For the majority of the site which is categorised as 'area of cultural significance' a sub-category also applies. Table 7 describes which action plan applies to which park.

Table 7: The application of action plans for the various parks at the site

Park	Action plan for culturally significant category apply	Action plan for 'natural area – bushland' category apply	Action plan for 'natural area – watercourse' category apply	Action plan for 'sportsground' category apply	Action plan for 'park' category apply	Action plan for 'general community use' category apply
Belmont Park	☐ (see **Table 1**Table 8)	☐ (see Table 9)				
Bell Park	☐ (see **Table 1**Table 8)				☐ (see Table 12)	
Redbank Creek Reserve	☐ (see **Table 1**Table 8)		☐ (see Table 10)		☐ (see Table 12)	
Yeobarnie Park	☐ (see **Table 1**Table 8)				☐ (see Table 12)	
Keyline Park	☐ (see **Table 1**Table 8)				☐ (see Table 12)	

Park	Action plan for culturally significant category apply	Action plan for 'natural area – bushland' category apply	Action plan for 'natural area – watercourse' category apply	Action plan for 'sportsground' category apply	Action plan for 'park' category apply	Action plan for 'general community use' category apply
Charley Park	☐ (see **Table 1**Table 8)				☐ (see Table 12)	
Peel Park			☐ (see Table 10)	☐ (see Table 11)	☐ (see Table 12)	
Three pocket parks on Grose Vale Road					☐ (see Table 12)	
Adjacent Pecks Road Reserve, power easement						☐ (see Table 13)

4.3 Area of cultural significance

The land in the precinct categorised as culturally significant includes various parks that have multiple values and uses. The action plan below describes the performance targets for the protection of cultural heritage values including Yeomans Keyline system and Aboriginal heritage.

Table 8: Action plan – community land categorised as 'an area of cultural significance'

Performance target	Means of achievement	Assessment of performance
Park names		
The culturally significant people and places of the precinct are reflected in the names of each park.	At the time of dedication of each park to Council, adopt the park names used in this plan of management.	Names adopted as per this plan of management.
Interpretation plan		
The cultural significance of the site is intellectually and emotively accessible to the public (Policies 27 and 33 of the *Conservation Management Plan*).	Implement an *Interpretation Strategy* that principally considers P.A Yeomans and the development of the Keyline system as well as highlighting and explaining the representative physical fabric retained in the landscape.	Interpretation Strategy fully implemented.
Physical fabric in the landscape		
Selected interconnected features representing the Keyline system are retained in the landscape (Policy 28 and 34 of the *Conservation Management Plan*).	Retain the following interconnected elements in the landscape: some dams (modified or not modified), some contour drains, tree planting and examples of Yeomans' inventions such as value outlets and lock pipes.	Selected features are retained.
Aboriginal heritage		
No surface impact on Aboriginal sites, artefacts and potential archaeological deposits.	Undertake detailed design and construction of the Redbank Creek Reserve including bush regeneration, path placement and facility placement identifies and	No impacts of sites or artefacts.

	avoids the location of known sites. Retain data base records of the known and potential sites.	
Aboriginal site interpretation		
The rich Aboriginal history of the site is visible to Redbank Creek Reserve visitors.	Install and maintain interpretive signage at or near the location of a robust artefact (probably a sharpening groove).	Redbank Creek Reserve visitors are aware of the sites Aboriginal history.

4.4 Natural area – bushland

The land relating to this action plan is Belmont Park which contains the only Cumberland Plain Woodland of the precinct. The woodland is in fair condition and this action plan targets the regeneration, weed control and maintenance of the bushland.

Table 9: Action plan – community land sub-categorised as 'natural area – bushland'

Performance target	Means of achievement	Assessment of performance
Community engagement		
A bush care group of local residents are operating in Belmont Park.	Pursue partnerships between bush care groups and Council for the long-term regeneration and maintenance of the Cumberland Plain Woodland.	Annual audit of the vitality of bush care groups.
Bush regeneration		
The quality and sustainability of the Cumberland Plain Woodland improves over time.	Bush regeneration is undertaken to the extent and frequency described in the *Landscape Maintenance Manual* and associated *Schedule of Maintenance Works*.	Annual audit of program completion.
Weed management		
The number of weeds in the bushland reduces over time. The significant current weeds include: • blackberry • lantana • thistle • tobacco weed • cobblers pegs.	Weed eradication is undertaken to the extent and frequency described in the *Landscape Maintenance Manual* and associated *Schedule of Maintenance Works*.	Annual audit of program completion.
Threatened flora and fauna		
Threatened flora and fauna species are protected, particularly from domestic animals.	Monitor the occurrence of domestic animals in the natural area – bushland.	Evidence of domestic animals is regularly collected.
Ecological burns		
Ecological burns are occasionally used to replicate a natural fire cycle.	Undertake ecological burns in accordance with the recommended period for biodiversity retention.	Ecological burns undertaken at variable intervals between four and 12 years.
Domestic animal exclusion		
Domestic animals do not cause harm to flora and fauna.	Signage communicating the exclusion of domestic animals (particularly dogs and horses) from the bushland (other than along formal paths).	Annual audit of signage.
Cycling exclusion		
Cycling does not cause erosion.	Signage communicating the exclusion of cyclists within the bushland area (other than along formal paths).	Annual audit of signage.
Rubbish removal		
Discouragement of anti-	Removal of rubbish within 72 hours of	Annual audit of clean up

social behaviour.	report.	response times.

4.5 Natural area - watercourse

Table 10 below describes the management actions for community land categorised or sub-categorised as 'natural area - watercourse. This land is generally the riparian zone within Peel Park and Redbank Creek Reserve.

Table 10: Action plan – community land categorised as 'natural area – watercourse'

Performance target	Means of achievement	Assessment of performance
Safety and risk management		
Recreation facilities including seats, structures, paths and the like shall be maintained in accordance with acceptable standards.	Regular inspection and repair of all facilities.	Unsafe facilities are repaired prior to next scheduled regular inspection.
Community awareness		
The local community is aware of the importance of the riparian zone and the ongoing threats to that ecosystem.	Promotion of the *Living Along Redbank Creek* (Bennett and Booth, 2005) booklet.	Annual audit of promotional activity.
Community engagement		
Multiple bush care groups of local residents are operating in the Redbank Creek corridor.	Pursue partnerships between bush care groups and Council for the long-term regeneration and maintenance of the riparian zone.	Annual audit of the number and vitality of bush care groups.
Water quality monitoring		
The water quality of Redbank Creek at the site is known and compared to other similar streams in the Hawkesbury.	Streamwatch groups supported.	Annual inclusion of water quality data into environment reporting.
Bush regeneration		
The quality and sustainability of the riparian bushland improves over time. Of particular importance is the Blue Box (*Eucalyptus baueriana*) which is important to the area.	Bush regeneration is undertaken to the extent and frequency described in the *Landscape Maintenance Manual* and associated *Schedule of Maintenance Works*.	Annual audit of program completion.
Weed management		
The number of weeds in the riparian zone reduces over time.	A weed eradication program is implemented in conjunction with the Greater Sydney Local Land Services and neighbouring properties and to the methods, extent and frequency described in the *Belmont Riparian Vegetation Management Plan* (Molino Stewart, 2016)	Annual audit of program completion.
Nest boxes		
Nesting sites are available as the bush regeneration	Install and maintain 10 nest boxes for various fauna species listed in Appendix	Annual audit of the nest boxes.

Performance target	Means of achievement	Assessment of performance
matures.	B for every 200m of stream bed and 50 bat roosting boxes (overall).	
Felled trees		
Trees felled during construction relocated into the riparian corridor to provide habitat and protection to ground dwelling mammals.	Locate felled trees in the riparian zone of Redbank Creek Reserve to the direction of an experienced landscape architect or bush regeneration professional.	Inspection of placed trees.
Facilities development		
The recreation facilities and access paths meet the future needs of the community.	Detailed design, construction and establishment of recreation facilities and paths as described in the *Open Space Masterplan* (see Appendix C).	Audit against masterplan at time of determining the relevant Construction Certificate.
Threatened flora and fauna		
Threatened flora and fauna species are protected, particularly from domestic animals.	Monitor the occurrence of domestic animals in the natural area – watercourse.	Evidence of domestic animals is regularly collected.
Ecological burns		
Ecological burns are occasionally used to replicate a natural fire cycle.	Undertake ecological burns in accordance with the recommended period and intensity for biodiversity retention.	Ecological burns undertaken no more frequently than every 25 years.
Access causing erosion		
Pedestrian access to stream bank does not cause erosion.	Monitor unmanaged pedestrian access to stream bank and 'close' using temporary (star picket and tape) fencing.	Number of unmanaged pedestrian access points to the stream bank.
Domestic animal exclusion		
Domestic animals do not cause harm to riparian flora and fauna.	Signage communicating the exclusion of domestic animals (particularly dogs and horses) within 30m of stream bank other than on formal pathways.	Annual audit of signage.
Cycling exclusion		
Cycling does not cause stream bank erosion.	Signage communicating the exclusion of cyclists within 30m of stream bank other than on formal pathways.	Annual audit of signage.
Rubbish removal		
Discouragement of anti-social behaviour.	Removal of rubbish within 72 hours of report.	Annual audit of clean up response times.
Public safety		
The public is safe from the threat of flooding.	Close the park when there is a flood threat.	No public injury from flood.
Safe work methods		
A safe maintenance program is in place.	Safe work method statements in place for all maintenance procedures.	Annual audit of safe work method statements.
Electrical easements		
All development and management practices	Adherence to Endeavour Energy's 'General Restrictions for Overhead	No public injuries or damage to property.

Performance target	Means of achievement	Assessment of performance
undertaken near the electricity easements meet the requirements of the relevant legislation and guidelines.	Power Lines' including earthing of structures close to the power lines and maintaining vehicular access to the easement. Always consider safety clearances, earthing, noise, electric and magnetic fields, vegetation conflicts and 'Dial before you Dig' requirements.	

4.6 Sportsground

Table 11 below describes the management actions for community land categorised as 'Sportsground'. This land it refers to is Peel Park.

Table 11: Action plan – community land categorised as 'sportsground'

Performance target	Means of achievement	Assessment of performance
Safety and risk management		
Recreation facilities including playing facilities, seating, structures, amenities buildings and the like shall be maintained in accordance with acceptable standards.	Regular inspection and repair of all facilities. Car park and high volume access paths have appropriate lighting for night time training. Lighting is connected to 'Cloudmaster' management system.	Unsafe facilities are repaired prior to next scheduled regular inspection.
Community engagement		
Encourage community involvement in the recognition and reporting of public risk.	Prompt response to reports of hazards on community land.	Annual review of response times.
Public safety		
The health and safety of the community is not threatened by contact with dogs.	Maintenance of appropriate signage highlighting location of 'off-leash' facility and the fact dogs are not permitted on sportsgrounds.	Annual audit of signage.
Facilities development		
The sports and other facilities of the park meet the future recreational needs of the community.	Detailed design, construction and establishment of park upgrade facilities as described in the *Peel Park Masterplan* (see Appendix C). Upgrade and relocate the BMX track to better connect to the play space. Lighting to be provided to training spaces. Play space to be relocated and expanded over time to better connect with the BMX area and incorporate play for all ages and abilities, shade, fencing, seating, fitness area, toilets, shelters, BBQ and picnic facilities. Relocate dog off-leash area to better allow the BMX area to integrate with play space. Upgrade paths and link to wider path network Upgrade sports amenities building so kiosk meets relevant standards and includes storage for kiosk supplies and equipment for summer and winter sports. Formalise and seal car parks off Pecks Road, O'Dea Place and Arthur Phillip Drive as funding becomes available.	Audit against masterplan at time of determining the relevant Construction Certificate.

Performance target	Means of achievement	Assessment of performance
	Upgrade sports fields to be able to accommodate two cricket fields and modified fields for winter sport. No permanent goal posts to be installed. Provide Junior cricket practice nets. Provide irrigation to fields. Provide a multi-use court (Basketball / netball) as part of the play space.	
Sports injury prevention		
Minimisation of injuries due to wet or soggy grounds.	Advertise ground closures through Council's website and via Sports Councils communication channels.	Audit of Sports Council's monitoring of injuries.
Use management		
Balanced use and resting of grassed playing fields to maximise availability.	Ensure the Sports Council adopts a long term monitoring system with active control over ground opening, closing and frequency of use. Balance the use of Peel Park as part of a network of available playing surfaces in the Hawkesbury region.	Actual use equals long term forecast availability.
Access		
Motor vehicles are prohibited from playing fields and general park areas.	Vehicle prevention devices (bollards and gates) are in place and fully operational.	Number of vehicles accessing the playing surface.
Access maintenance		
Paths, roads and carparks have limited impact on the sportsground.	Maintain roads and walking paths to ensure safety, prevent erosion and limit unauthorised parking.	Access infrastructures operates as intended.
Maximum usage		
The sports grounds are available for casual use by schools and community groups.	Include in Sports Council responsibilities the requirement to provide casual access to sports facilities for schools, community groups and individuals (subject to availability, weather and insurance cover). The cricket ovals remain unfenced. No permanent sporting infrastructure other than cricket pitches and practice nets are to be installed.	Number of legitimate complaints about access from schools and community groups.
Responsibility of sportsground users		
Fixtures and events in parks are conducted with minimised impact on neighbours.	Ensure responsibilities of all event organisers are identified clearly and accountable. An Event management plan will be required to addresses overflow parking, minimizing impact to neighbours and to sports fields.	Number of disturbances reported.
Impact on neighbours		
The impact on neighbours, particular during weekday	Raise awareness amongst users of the noise impact especially during weekday	Number of disturbances reported.

Performance target	Means of achievement	Assessment of performance
evening training sessions, is minimised.	training evenings. Car Parks are to have gates that can be locked if/when required.	
Impact of lighting		
Light spill from floodlights onto neighbours properties is minimised.	Field lighting design to be undertaken by qualified personnel. Field lighting design to comply with current Australian Standards and to minimize glare and light spill (AS-2560.2.3 and AS-4282-1997). Floodlights to be controlled through the Cloudmaster system and are to be turned off by 8.30pm when in use.	Number of disturbances reported.
Safe work methods		
A safe maintenance program is in place.	Safe work method statements in place for all maintenance procedures.	Annual audit of safe work method statements.
Electrical easements		
All development and management practices undertaken near the electricity easements meet the requirements of the relevant legislation and guidelines.	Adherence to Endeavour Energy's 'General Restrictions for Overhead Power Lines' including earthing of structures close to the power lines and maintaining vehicular access to the easement. Always consider safety clearances, earthing, noise, electric and magnetic fields, vegetation conflicts and 'Dial before you Dig' requirements.	No public injuries or damage to property.

4.7 Park

Table 12 below describes the management actions for community land categorised as 'park'. This land includes Bell Park, Yeomans Park, Yeobarnie Park, Keyline Park, Charley Park, parts of Peel Park, part of Redbank Creek Reserve and the three pocket parks on Grose Vale Road.

Table 12: Action plan – community land categorised as 'park'

Performance target	Means of achievement	Assessment of performance
Community engagement		
The community is involved in the recognition and reporting of public risk.	Prompt response to reports of hazards on community land.	Annual review of response times.
Facilities development		
The recreation facilities and landscape of the parks meet the future needs of the community.	Detailed design, construction and establishment of park facilities as described in the *Open Space Masterplan addressing each park* (see Appendix C).	Audit against masterplan at time of determining the relevant Construction Certificate.
Awareness of risks		
Park users are aware of hazards and risks.	Signage alerting park users of hazards, risks and prohibiting dangerous behaviour is well placed and appropriately maintained.	Signage in place.
Anti-social behaviour		
Discouragement of anti-social behaviour.	Removal of graffiti and clean-up of rubbish within 72 hours of report. Lock gates to car parks if anti-social behaviour is a problem.	Annual audit of clean up response times.
Safety and risk management		
Recreation equipment, carparks, fences and infrastructure is maintained in accordance with acceptable standards.	Ensure damaged or dangerous equipment, fences and infrastructure is removed or replaced.	Quarterly inspections.
Public safety		
The health and safety of park users is not threatened by contact with dogs.	Include "dog on lead at all times" in park signage.	Number of complaints received.
Water safety		
All park users are aware of safety around dams and water bodies.	Warning signage is in place notifying of safety risks at dams and water bodies including prohibiting diving.	Signage in place.
Playground safety		
Playground users are safe from nearby hazards.	Fencing maintained around playgrounds.	Annual inspection of fencing.
Dog safety		
Dogs and dog owners are catered for without increasing risks to other park users.	Maintain fenced (and earthed) 'dog off leash' area with signage, faeces collection bags and dog owner seating.	Number of complaints about dog off leash in parkland.

Performance target	Means of achievement	Assessment of performance
Safe work methods		
A safe maintenance program is in place.	Safe work method statements in place for all maintenance procedures.	Annual audit of safe work method statements.
Dam management		
The dams are managed and maintained to the appropriate standard.	Dam management and maintenance is undertaken to the extent and frequency described in the Dam Management Plans (adopted as part of the development approval process) or Dam Safety Plans (for 'prescribed dams' under the *Dam Safety Act 1978* [NSW]) adopted for the site.	Annual audit of program completion.
Public access		
Park access caters for all mobility types and is convenient for walkers and cyclists.	Walking and bike paths are maintained to an acceptable standard.	Annual audit of path system.
Protection of the 'Pansy Line'		
Earthworks are carefully managed near the remnants of the 'Pansy Line'.	The assessment of any future development applications to include impacts on the Pansy Line.	Occasional inspection of conditions.
Linking bushland pockets		
Tree species chosen for parkland planting assist in linking bushland pockets.	Bell Park and Yeomans Park are to include tree species that could provide fauna links between Belmont Park and Redbank Creek Reserve.	On site audit after planting.
Identity		
All community land is identifiable.	All community land has signage that identifies the land.	Signs in place.
Community involvement		
The local community have a sense of ownership of the park system.	Encourage the participation of the local community in the *People for Parks* program.	Number of active *People for Parks* groups.
Impact on neighbours		
Events in parks are conducted with minimised impact on neighbours.	Ensure responsibilities of all Event Organisers are identified clearly and accountably. An Event management plan will be required to addresses overflow parking, minimizing impact to neighbours and to sports fields.	Number of disturbances reported.

4.8 General Community Use

Table 13 below describes the management actions for community land categorised as 'general community use'. This land is generally a drainage reserve east from Arthur Philip Drive and a powerline easement perpendicular to Pecks Road.

Table 13: Action plan – community land categorised as 'general community use'

Performance target	Means of achievement	Assessment of performance
Safety and risk management		
Recreation equipment, carparks, fences and infrastructure is maintained in accordance with acceptable standards.	Ensure damaged or dangerous equipment, fences and infrastructure is removed or replaced.	Quarterly inspections.
Community involvement		
The community is involved in the recognition and reporting of public risk.	Prompt response to reports of hazards on Community Land.	Annual review of response times.
Anti-social behaviour		
Discouragement of anti-social behaviour.	Removal of graffiti and clean-up of rubbish within 72 hours of report. Lock gates to car parks if anti-social behaviour is a problem.	Annual audit of clean up response times.
Safe work methods		
A safe maintenance program is in place.	Safe work method statements in place for all maintenance procedures.	Annual audit of safe work method statements.
Identity		
All community land is identifiable.	All community land has signage that identifies the land.	Signs in place.
Storm water functions		
Effective operation of the storm water management infrastructure.	Ensure stormwater infrastructure remains clear.	No repeat incidence of faulty operation.

5 Activities, leases and licences

5.1 Scale and intensity of use

Table 14 describes the intended use of each park plus the scale and intensity of the use.

Table 14: Scale and intensity of park uses at the Redbank precinct

Park Name	Intended Use	Scale and intensity of the use
Belmont Park	Nature conservation and appreciation.	Limited human use with occasional access for bush regeneration and weed control.
Bell Park	Informal recreation including activities such as walking, cycling, jogging and fitness. Appreciation of the former Keyline system and visual quality. On-site management of stormwater. Partially vegetated link between Belmont Park and Redbank Creek Reserve to provide habitat/refuge for fauna.	Moderate intensity use on a daily basis as a local park by the local community. Not intended for visitors from other areas except for special events such as festivals or markets.
Redbank Creek Reserve	Nature conservation recognising the important role linking upstream and downstream riparian vegetation. Cultural heritage conservation. Bush walking and cultural and natural heritage appreciation.	Walking access via track system for local and regional use on a daily basis.
Yeomans Park	Informal recreation including activities such as walking, cycling, jogging and fitness. Appreciation of the former Keyline system and visual quality. On-site management of stormwater.	Moderate intensity use on a daily basis as a local park by the local community. Not intended for visitors from other areas except for special events such as festivals or markets.
Yeobarnie Park	Informal recreation including activities such as walking, cycling, jogging and fitness. Appreciation of the former Keyline system and visual quality. On-site management of stormwater.	Moderate intensity use on a daily basis as a local park by the local community. Not intended for visitors from other areas except for special events such as festivals or markets.
Keyline Park	Informal recreation including activities such as walking, cycling, jogging and fitness. Appreciation of the former Keyline system and visual quality. On-site management of stormwater.	Moderate intensity use on a daily basis as a local park by the local community. Not intended for visitors from other areas except for special events such as festivals or markets.

Park Name	Intended Use	Scale and intensity of the use
Charley Park	Informal recreation including activities such as walking, cycling, jogging and fitness. Appreciation of the former Keyline system and visual quality. On-site management of stormwater.	Moderate intensity use on a daily basis as a local park by the local community. Not intended for visitors from other areas except for special events such as festivals or markets.
Peel Park	Informal recreation including activities such as walking, cycling, jogging and fitness. Dog walking (on and off leash). Sporting use predominantly for training and junior sports - summer and winter.	Moderate intensity recreational use on a daily basis as a local park by the local community. Moderate sporting use for training and playing year round. Weekday evening training is not to extend past 8.30pm. Fields predominantly to be used for junior sport, with winter fields modified in size with no permanent goal posts. Kiosk to be available for use by all codes. Multiple winter codes to be accommodated if required – eg Rugby League and Soccer.
Pocket parks (3) on Grose Vale Road	View points to see the former Keyline system represented in the landscape.	Occasional local use by walkers.
Land adjacent Pecks Road Reserve and small pocket park	On-site management of stormwater. Informal recreation including activities such as walking, jogging and fitness.	Low intensity use on a daily basis as a local park by the local community.

5.2 Leases and licences

5.2.1 Leasing and licencing community land

Leases and licences formalise the use of community land by groups such as sporting clubs, community groups and schools, or by commercial organisations and individuals providing facilities or services for public use. Wherever there is exclusive use, a lease or licence is required.

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 the purpose prescribed in s.46 of the *Local Government Act* (1993). The purpose must be consistent with core objectives for the category of community land.

Council must not grant a lease, licence or other estate 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) and cannot exceed a term of five 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.

5.2.2 Authorised leases and licences of the Redbank Precinct

Table 15 below describes the uses for which a lease, licence or other estate is authorised for land covered by this plan of management.

Table 15: Authorised leases and licences of the Redbank precinct

Use	Express authorisation	Land excluded from authorisation
Community Garden	Development and management of community gardens provided the membership is open to the general public.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park, Peel Park
Easements	Easements for public utilities, providing pipes, conduits or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility on the community land provided that: • there is no feasible alternative to connecting to a facility on the community land • there is no significant impact on the park • in all cases, the applicant is to be responsible for all costs incurred by Council in the creation of the easement.	
Festivals, events and ceremonies	Festivals, events and ceremonies including the temporary erection of food stalls, stages, seating and amusement rides.	Belmont Reserve, Redbank Creek Reserve
Filming	Commercial photographic sessions and filming.	
Helicopters	Helicopter take-off and landing. This may require the temporary erection of exclusion fencing or other measure required to ensure public safety.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park

Use	Express authorisation	Land excluded from authorisation
Hot air balloons	Hot air balloon take-off and landing. This may require the temporary erection of exclusion fencing or other measure required to ensure public safety.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park
Markets	Markets and similar activities.	Belmont Reserve, Redbank Creek Reserve
Personal training	Commercial personal training activities.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park
Picnics	Picnic and private celebrations such as weddings and family gatherings.	Belmont Reserve, Redbank Creek Reserve
Playing of musical instruments	Playing of a musical instrument or singing for a fee or reward.	Belmont Reserve, Redbank Creek Reserve
Public address	Delivering a public address.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park
Roads, access paths and services	Where the road is necessary for the enjoyment of the land including fire trails.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park
Seed collection	Collection of native flora seed for the purposes of growing stock for Council or commercial use.	
Skate parks	For the use of skate parks by community groups and non-profit organisations.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park
Sport	For summer or winter sport, including training. All lights are to be turned off by 8.30pm. Competition sport is to be predominantly for juniors. No overflow parking is to be provided on site unless for authorized special events which requires a separate licence. No permanent goal posts are to be installed.	Belmont Reserve, Bell Park, Redbank Creek Reserve, Keyline Park, Charley Park, Yeomans Park, un-named pocket parks
Storage sheds	For the storage of equipment used by community groups and non-profit organisations where that equipment is regularly used at the park.	Belmont Reserve, Redbank Creek Reserve, Keyline Park, Charley Park
Communications towers	Telecommunication towers, provided the proposal is put on public exhibition prior to any Council resolution and a rental fee is payable.	Keyline Park, Charley Park
Tourism activities	Tourism activities such as guided walks, horse or camel rides and bicycle tours.	Belmont Reserve, Redbank Creek Reserve
Trade or business	Engaging in a trade or business.	Belmont Reserve, Redbank Creek Reserve

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Appendix A Community land schedule

Table 16: Schedule of land covered by this plan of management

Park name	Park size	Description	Owner	Category
Belmont Park		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Bell Park		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Redbank Creek Reserve		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Redbank Creek Reserve		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Redbank Creek Reserve		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Yeomans Park		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Yeobarnie Park		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Keyline Park		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Charley Park		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Four pocket parks		To be gazetted	BD NSW (MR) Project 2007 Pty Ltd	Area of Cultural Significance
Adjoining Pecks Road Reserve		Lot 274 DP 1156792	HCC	General Community Use
Peel Park	9.7ha	Lot 1 DP 786671 Lot 17 DP 788232	HCC	Sportsground, Natural Area – Watercourse, Park, General Community Use

Appendix B Flora and fauna species of the bushland and riparian zone

Table 17: Threatened fauna species of the bushland and riparian zone

Scientific name	Common name
Myotis macropus	Large-footed Myotis
Miniopterus schreibersii oceanensis	Eastern Bentwing-bat
Mormopterus norfolkensis	Eastern Freetail-bat
Ninox connivans	Barking Owl
Stagonopleura guttata	Diamond Firetail
Falsistrellus tasmaniensis	Eastern Failisistrelle
Callocephalon finbriatum	Gang-gang Cockatoo
Scoteanax reuppelii	Breat Broad-nosed Bat
Litoria aurea	Green and Golden Bell Frog
Pteropus poliocephalus	Grey-headed Flying fox
Chalinolobus dwyeri	Large-eared Pied Bat
Tyto novaeholandiae	Masked Owl
Ninox strenua	Powerful Owl
Lophoictinia isura	Square-tailed Kite
Lathamus discolour	Swift Parrot
Neophema pulchella	Turquoise Parrot
Petautus australis	Yellow – bellied Glider

Table 18: Fauna species identified in the area

Scientific name	Common name
Coturnix chinensis	King Quail
Uperoleia laevigata	Smooth Toadlet
Falcunculus frontatus	Eastern Shrike-tit
Macropus giganteus	Eastern Grey Kangaroo
FROGS	
Litoria verreauxii	Verreaux's Frog
Crinia signifera	Common Eastern Froglet
Limnodynastes peronii	Brown-striped Frog
Limnodynastes tasmaniensis	Spotted Grass Frog
Uperoleia laevigata	Smooth Toadlet
BIRDS	
Acanthiza nana	Yellow Thornbill
Acanthiza reguloides	Buff-rumped Thornbill
Sericornis frontalis	White-browed Scrubwren
Accipiter fasciatus	Brown Goshawk
Elanus axillaris	Black-shouldered Kite
Dacelo novaeguineae	Laughing Kookaburra
Anas gracilis	Grey Teal
Anas superciliosa	Pacific Black Duck

Aythya australis	Hardhead
Chenonetta jubata	Australian Wood Duck
Bubulcus ibis	Cattle Egret
Egretta novaehollandiae	White-faced Heron
Cracticus torquatus	Grey Butcherbird
Gymnorhina tibicen	Australian Magpie
Strepera graculina	Pied Currawong
Cacatua sanguinea	Little Corella
Eolophus roseicapillus	Galah
Coracina novaehollandiae	Black-faced Cuckoo-shrike
Elseyornis melanops	Black-fronted Dotterel
Vanellus miles	Masked Lapwing
Cormobates leucophaea	White-throated Treecreeper
Columba livia*	Rock Dove
Ocyphaps lophotes	Crested Pigeon
Streptopelia chinensis*	Spotted Turtle-Dove
Corvus coronoides	Australian Raven
Chalcites osculans	Black-eared Cuckoo
Grallina cyanoleuca	Magpie-lark
Rhipidura albiscapa	Grey Fantail
Rhipidura leucophrys	Willie Wagtail
Neochmia temporalis	Red-browed Finch
Psophodes olivaceus	Eastern Whipbird
Falco cenchroides	Nankeen Kestrel
Falco longipennis	Australian Hobby
Hirundo neoxena	Welcome Swallow
Malurus cyaneus	Superb Fairy-wren
Anthochaera carunculata	Red Wattlebird
Lichenostomus chrysops	Yellow-faced Honeyeater
Manorina melanocephala	Noisy Miner
Manorina melanophrys	Bell Miner
Philemon corniculatus	Noisy Friarbird
Turdus merula*	Eurasian Blackbird
Colluricincla harmonica	Grey Shrike-thrush
Falcunculus frontatus	Eastern Shrike-tit
Pachycephala pectoralis	Golden Whistler
Pardalotus punctatus	Spotted Pardalote
Pardalotus striatus	Striated Pardalote
Passer domesticus*	House Sparrow
Eopsaltria australis	Eastern Yellow Robin
Phalacrocorax melanoleucos	Little Pied Cormorant
Coturnix chinensis	King Quail
Tachybaptus novaehollandiae	Australasian Grebe
Platycercus adscitus eximius	Eastern Rosella

Platycercus elegans	Crimson Rosella
Psephotus haematonotus	Red-rumped Parrot
Trichoglossus haematodus	Rainbow Lorikeet
Pycnonotus jocosus*	Red-whiskered Bulbul
Porphyrio porphyrio	Purple Swamphen
Acridotheres tristis*	Common Myna
Sturnus vulgaris*	Common Starling
Threskiornis molucca	Australian White Ibis
Threskiornis spinicollis	Straw Silvereye -necked Ibis
Zosterops lateralis	
MAMMALS	
Bos taurus*	European cattle
Canis lupus*	Dingo, domestic dog
Vulpes vulpes*	Fox
Oryctolagus cuniculus*	Rabbit
Macropus giganteus	Eastern Grey Kangaroo
Trichosurus vulpecula	Common Brushtail Possum
Pseudocheirus peregrinus	Common Ringtail Possum
Myotis macropus	Large-footed Myotis
Mormopterus norfolkensis	Eastern Freetail Bat
Mormopterus species 2	A Freetail Bat
Minopterus schreibersii oceanensis	Eastern Bentwing-bat
Tadarida australis	White-striped Freetail-bat
Scotorepens orion	Eastern Broad-nosed Bat

Table 19: Flora species found in the Cumberland Plain Woodland (Belmont Park) and riparian zone of Redbank Creek Reserve in 2014

Common name	Scientific name	Common name
Acanthaceae	*Pseudoanthemum Variabile*	Pastel Flower
Adianataceae	*Adiantum aethiopicum*	Maidenhair Fern
Amygdalaceae	*Prunus sp*	
Apiaceae	*Centella asiatica*	Indian Pennywort
Apiaceae	*Hydrocotyle peduncularis#*	Native Pennywort
Aponcynaceae	*Parsonsia straminea*	Common Silk Pod
Araceae	*Zantedeschia aethiopica*	Arum Lily
Asclepiadaceae	*Araujia hortorum**	Moth Vine
Asclepiadaceae	*Gomphocarpu aethiopicus**	Aspargus Fern
Asteraceae	*Aster subbulata**	Aster Weed
Asteraceae	*Bidens pilosa**	Cobblers Pegs
Asteraceae	*Conyza bonariensis**	Fleabane
Asteraceae	*Cotula australis*	Carrot weed
Asteraceae	*Delairea odorate*	Cape Ivy

Asteraceae	*Euchiton sphaericus*	Cudweed
Asteraceae	*Hypochoeris radicata**	Cats Ear
Asteraceae	*Onopordum acanthium**	Scotch Thistle
Asteraceae	*Ozothamnus diosmifolius*	Dogwood
Asteraceae	*Senecio madagascariensis**	Fireweed
Asteraceae	*Senecio sp*	Native Fireweed
Asteraceae	*Sigesbeckia orientalis*	Indian Weed
Asteraceae	*Sonchus oleraceus**	Milk Thistle
Blechnaceae	*Blechnum cartiligeneum*	Gristle Fern
Brassicaceae	*Brassica sp**	
Brassicaceae	*Lepidium sp*	A Peppercress
Caesalipinioideae	*Senna pendula**	Senna
Campanulaceae	*Wahlenbergia communis*	Tufted Bluebell
Caprifoliaceae	*Lonicera japonica*	Japanese Honeysuckle
Caryophyllaceae	*Cerastium vulgare*	Mouse Eared Chickweed
Caryophyllaceae	*Stellaria media**	Chickweed
Casuarinaceae	*Allocasurina littoralis*	Black She Oak
Casuarinaceae	*Allocasurina torulosa*	Forest Oak
Casuarinaceae	*Casuarina cunninghamiana*	River She-Oak
Chenopodiaceae	*Einadia hastata*	A Salt Bush
Chenopodiaceae	*Einadia trigonos#*	A Salt Bush
Commelinaceae	*Tradescantia fluminensis**	Wandering Jew
Convolvulaveae	*Convolvulus erubescens*	Australian Birdweed
Convolvulaveae	*Cuscuta australis#*	Australian Dodder
Convolvulaveae	*Dichondra repens*	Kidney Weed
Crassulaceae	*Bryophyllum delagonense*	Mother of Millions
Cyperaceae	*Cyperus brevifolius*	Mullumbimby Couch
Cyperaceae	*Cyperus imbecilis#*	
Cyperaceae	*Cyperus polystachyos*	
Cyperaceae	*Eleocharis cylindrostachyos#*	Spike Rush
Cyperaceae	*Elecharis sphacelata*	Tall Spike-rush
Cyperaceae	*Schoenoplectus mucronatus#*	
Dennstaedtiaceae	*Pteridium esculentum*	Bracken
Dilleniaceae	*Hibbertia diffusa*	
Eriaceae	*Leucopogon juniperinus*	
Euphorbiaceae	*Phyllanthus Tenellus**	Hen and Chicken
Euphorbiaceae	*Ricinus communis**	Caster Oil Plant
Fabaceae	*Daviesia genistifolia*	
Fabaceae	*Desmodium varians*	
Fabaceae	*Dillwynia sieberi*	
Fabaceae	*Glycine clandestina*	Love Creeper
Fabaceae	*Glycine microphylla*	

Fabaceae	*Glycine tabacina*	Love Creeper
Fabaceae	*Hardenbergia violacea*	Purple Twining-pea
Fabaceae	*Jacksonia scoparia*	
Fabaceae	*Kennedia rubicunda*	
Fabaceae	*Podolobium iliciifolium*	Native Holly
Fabaceae	*Podolobiu scandens*	Netted Shaggy Pea
Fabaceae	*Senna pendula**	Cassia
Fabaceae	*Trifolium repens**	White Clover
Fabaceae	*Vicia sativa**	Vetch
Gentianaceae	*Geranium homeanum*	Northern Cranesbill
Goodeniaceae	*Goodenia hederacea*	Violet-leaved Goodenia
Goodeniaceae	*Goodenia ovata*	
Halagoracaeae	*Myriophyllum aquaticum*	Water Milfoil
Hydrocharitaceae	*Vallisneria gigantea*	Ribbon Weed
Juncaeae	*Juncus prizmatocarpus*	
Juncaeae	*Juncus usitatus*	Common Rush
Lamiaceae	*Ajuga australis*	Austral Bugle
Lamiaceae	*Clerodendrum tormentosum*	
Lamiaceae	*Plectranthus parviflorus*	
Lauraceae	*Cinnamomum camphora**	Camphor Laurel
Lobeliaceae	*Pratia purpurascens*	
Lomandraceae	*Lomandra filiformis*	
Lomandraceae	*Lomandra longifolia*	Mat Rush
Lomandraceae	*Lomandra multiflora*	
Luzuriagaceae	*Eustrephus latifolius*	Wombat Berry
Luzuriagaceae	*Geitonoplesium cymosum*	Scrambling Lily
Malvaceae	*Malva parviflora**	Marshmallow
Malvaceae	*Modiola caroliniana**	Redflower Mallow
Malvaceae	*Sida Rhombifolia**	Paddy's Lucerne
Mavaceae	*Sida sp.*	
Marsileaceae	*Marsilea Mutica#*	Large-leaved Nadoo
Meliaceae	*Melia azedarach var. asutralasica*	White Cedar
Mimosoideae	*Acacia falcata*	Sickle Wattle
Mimosoideae	*Acacia fimbriata#*	
Mimosoideae	*Acacia implexa*	Hickory
Mimosoideae	*Acacia parramattensis*	Sydney Green Wattle
Myrsinaceae	*Myrsine variabillis*	
Myrtaceae	*Angophora floribunda*	Rough-barked Apple
Myrtaceae	*Angophora sunvelutina#*	Braod-leaved Apple
Myrtaceae	*Backhousia myrtifolia*	Grey Myrtle
Myrtaceae	*Corymbia maculata*	Spotted Gum

Myrtaceae	*Eucalyptus sideroxelon^*	Iron Bark
Myrtaceae	*Eucalyptus agglomerata*	Blue-leaved Stringybark
Myrtaceae	*Eucalyptus amplifolia#*	Cabbage Gum
Myrtaceae	*Eucalyptus baueriana#*	Blue Box
Myrtaceae	*Eucalyptus botryoides^*	
Myrtaceae	*Eucalyptus cinera^*	Argyle Apple
Myrtaceae	*Eucalyptus crebra*	Narrow-leaved Ironbark
Myrtaceae	*Eucalyptus eugenoides*	Thin-leaved Stringybark
Myrtaceae	*Eucalyptus microcorys^*	Tallowwood
Myrtaceae	*Eucalyptus moluccana*	Grey Box
Myrtaceae	*Eucalyptus punctate*	Grey Gum
Myrtaceae	*Eucalyptus rubis ssp rubida^*	Candle Bark
Myrtaceae	*Eucalyptus sp^*	Red-flowering Ironbark
Myrtaceae	*Eucalyptus species^*	Planted Gums
Myrtaceae	*Eucalyptus tereticomis*	Forest Red Gum
Myrtaceae	*Syncarpia glommulifera*	Turpentine
Myrtaceae	*Tristaniopsis laurina*	Water Gum
Ochnaceae	*Ochna serrulata*	Mickey Mouse Plant
Oleaceae	*Ligustrum Lucidum*	Large-leaf Privet
Oleaceae	*Ligustrum sinense*	Small-leaf Privet
Onagraceae	*Ludwigia peploides ssp. Montevidensis*	
Oxalidaceae	*Oxalis corniculata**	Yellow Wood Sorrel
Oxalidaceae	*Oxalis perennans*	
Passifloraceae	*Passiflora*	
Phylidraceae	*Phylidrum lanuginosum*	Woolly Frogmouth
Phyllanthaceae	*Breynia australis*	Coffee Bush
Phyllanthaceae	*Glochidion ferdinandi*	Cheese Tree
Phyllanthaceae	*Phytolacca octandra**	Ink Weed
Pinaceae	*Pinus radiata**	Pine Tree
Pittosporaceae	*Bursaria spinosa*	Blackthorn
Plantaginaceae	*Plantago lanceolata**	Common Plantain
Poaceae	*Agrostis avenacea var. avenacea*	Blown Grass
Poaceae	*Andropgon virginicus*	Whiskey Grass
Poaceae	*Aristida sp*	Three-awn Speargrass
Poaceae	*Austrostipa ramosissima*	Bamboo Spear Grass
Poaceae	*Axonopus fissifolius*	Narrow-leaf Carpet Grass
Poaceae	*Briza minor*	Shivery Grass
Poaceae	*Bromus catharticus**	Prairie Grass
Poaceae	*Chloris gayana**	Rhodes Grass
Poaceae	*Chloris truncata*	Windmill Grass
Poaceae	*Chloris ventricosa*	Tall Windmill Grass

Poaceae	*Cymbopogon refractus*	Barbed-wire Grass
Poaceae	*Cynodon dactylon*	Common Couch
Poaceae	*Digitaria ciliaris**	Crab Grass
Poaceae	*Digitaria sanguinalis**	Summer Grass
Poaceae	*Echinopogon ovatus*	Hedgehog Grass
Poaceae	*Ehrharta erecta*	Panic Veldtgrass
Poaceae	*Entolasia marginata*	Right-angle Grass
Poaceae	*Entolasia stricta*	Right-angle Grass
Poaceae	*Eragrostis brownii*	Brown's Love Grass
Poaceae	*Eragrostis curvula**	African Lovegrass
Poaceae	*Eragrostis leptostachya*	Paddock Love Grass
Poaceae	*Microlaena stipoides*	Weeping Meadow Grass
Poaceae	*Oplismenus aemulus*	Basket Grass
Poaceae	*Oplismenus imbecillis*	Basket Grass
Poaceae	*Panicum effusum*	
Poaceae	*Paspalum dilatatum**	Paspalum
Poaceae	*Pennisetum clandestinum**	Kikuyu
Poaceae	*Phragmites australis*	Native Reed
Poaceae	*Poa annua**	Winter Grass
Poaceae	*Setaria gracilis**	Slender Pigeon Grass
Poaceae	*Sporobolus creber#*	
Poaceae	*Stenotaphrum secundatum**	Buffalo Grass
Poaceae	*Themeda australis*	Kangaroo Grass
Polygonaceae	*Persicaria decipiens*	Spotted Knotweed
Polygonaceae	*Rumex crispus**	Curly-leaved Dock
Potamogetonaceae	*Pottamogeton sp*	Pondweed
Proteaceae	*Persoonia linearis*	Narrow-leaf Geebung
Ranunculaceae	*Clematis glycinoides*	
Ranunculaceae	*Ranunculus inundatus*	River Buttercup
Ranunculaceae	*Epidisma minus*	
Rhamnaceae	*Alphitonia exeisa*	Red Ash#
Rosaceae	*Rubus fruticosus**	Blackberry
Rosaceae	*Rubus parvifolius*	Native Raspberry
Santalaceae	*Exocarpus cupressiformis*	Cherry Ballart
Schizaeaceae	*Cheilanthes sieberi*	Mulga Fern
Scrophulariaceae	*Veronica plebea*	Veronica
Solanaceae	*Cestrum parqui**	Green Cestrum
Solanaceae	*Lycium feroissimum**	African Boxthorn
Solanaceae	*Solanum nigrum**	Deadly Nightshade
Solanaceae	*Solanum prinophyllum*	Forest Nightshade
Solanaceae	*Solanum pseudocapsicum**	Madeira Wintercherry
Solanaceae	*Solanum sp.**	

Typhaceae	*Typha orientalis*	Native Bulrush
Verbenaceae	*Lantana camra**	Lantana
Verbenaceae	*Verbena bonariensis**	Purple top
Violaceae	*Viola hederacea*	Native Violet
Vitadaceae	*Kayratia clementida*	Native Grape

* Denotes non-native species

From: Cumberland Plain Woodland Management Plan –Molino Stewart (2015)
Table20: Flora species found in the riparian zone of Redbank Creek Reserve in 2014

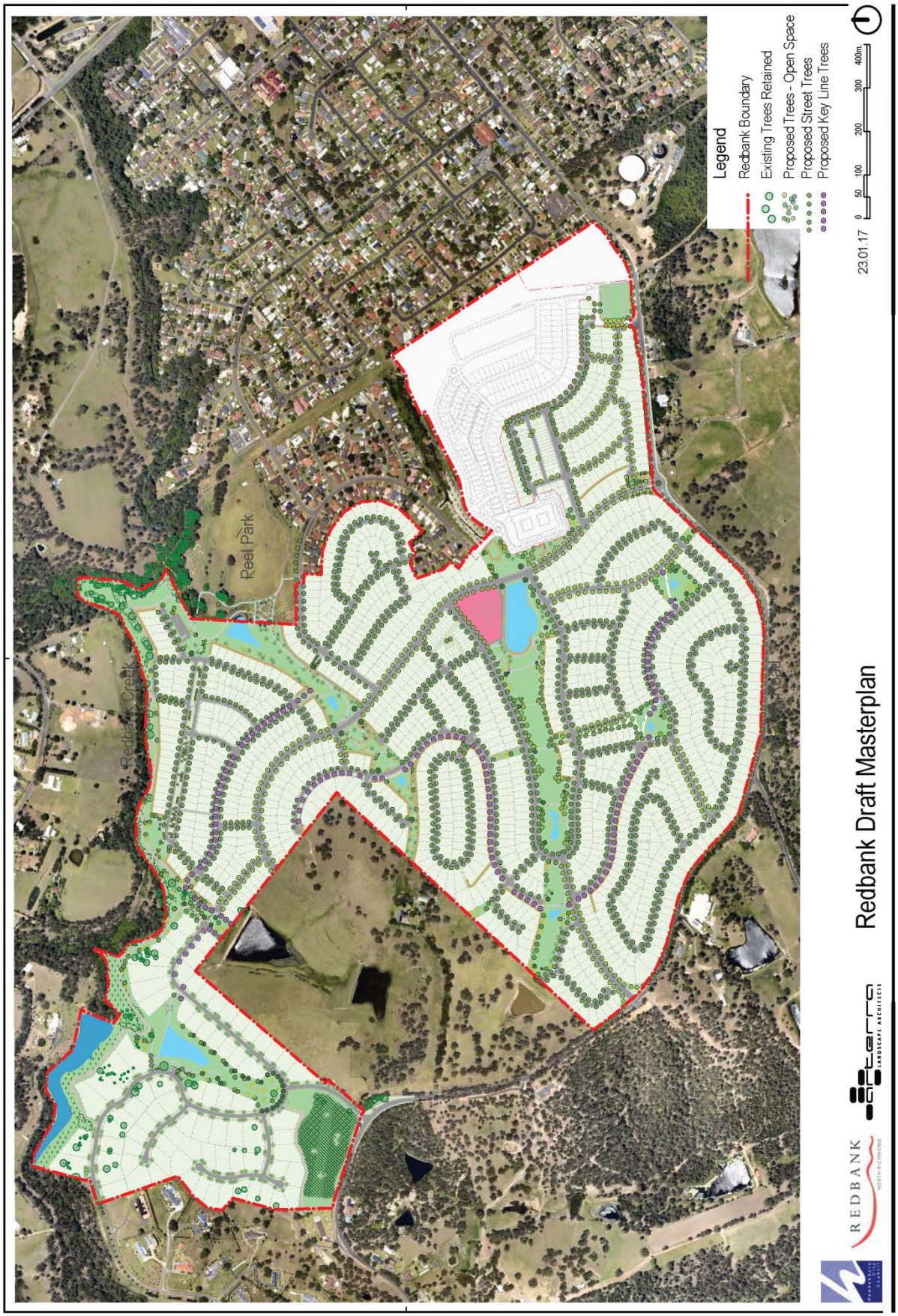
Family	Botanical name	Common name
Asparagaceae	*Asparagus aethiopicus**	Asparagus Fern
Asteraceae	*Bidens pilosa**	Cobblers Pegs
	*Conyza bonariensis**	Fleabane
	Euchiton sphaericus	Cudweed
	Hypochoeris radicata	Cats Ear
	*Senecio madagascariensis**	Fireweed
Convolvulaceae	*Convolvulus erubescens*	Australian Bindweed
Cyperaceae	*Cyperus polystachyos*	
	Cyperus imbecillis	
	Eleocharis cylindrostachys	
	Schoenoplectus mucronatus	
Dilleniaceae	*Hibbertia diffusa*	
Eriaceae	*Leucopogon juniperinus*	
Fabaceae	*Acacia fimbriata*	Fringing Wattle
	Acacia parramattensis	Sydney Green Wattle
	Daviesia genistifolia	
	Glycine clandestina	Purple Twining-pea
	Podolobrium ilicifolium	Native Holly
Goodeniaceae	*Goodenia hederacea*	Violet-leaved Goodenia
Junaceae	*Juncus prizmatocarpus*	
	Juncus ustatus	Common Rush
Lobeliaceae	*Pratia purpurascens*	White Root
Loandraceae	*Lomandra filiformis*	
	Lomandra longifolia	Mat Rush
Marsileaceae	*Marsilea mutica*	Large-leaved nardoo
Moraceae	*Ficus rubignosa*	Port Jackson Fig
Myrtaceae	*Angophora subvelutina*	Broad-leaved Apple
	Angophora floribunda	Rough barked Apple
	Backhousia myrtifolia	Grey Myrtle
	Eucalyptus amplifolia	Cabbage Gum
	Eucalyptus baueriana	Blue Box

Family	Botanical name	Common name
	Eucalyptus crebra	Narrow-leaved Ironbark
	Eucalyptus punctata	Grey Gum
	Eucalyptus teretecornis	Forest Red Gum
	Syncarpia glommulifera	Turpentine
	Syzygium australe	Brush Cherry
Oxalidaceae	*Oxilais perennans*	
Pittosporaceae	*Bursaria spinosa*	Blackthorn
Poaceae	*Andropogon virginicus**	Whiskey Grass
	Aristida sp.	Three-awned Speargrass
	Axonopus fissifolius	Narrow-leaf Carpet Grass
	Bothriochloa macra	Redgrass
	*Bromus catharticus**	Prairie Grass
	Cymbopogon refractus	Barbed Wire Grass
	*Cynodon dactylon**	Couch
	Ehrharta erecta	Panic veldt grass
	Entolasia stricta	Right-angle Grass
	Eragrostis brownii	Brown's Lovegrass
	Eragrostis leptostachya	Paddock Lovegrass
	Microlaena stipoides	Weeping Meadow Grass
	Oplismenus imbecillis	Basket Grass
	*Paspalum dilatatum**	Paspalum
	*Setaria gracillis**	Slender Pigeon Grass
	Sporobolus creber	
	Stenotaphrum secundatum	Buffalo Grass
	Themda australia	Kangaroo Grass
Plantaginaceae	*Veronica plebea*	Trailing speedwell
Pteridaceae	*Adiantum aethiopicum*	Maidenhair Fern
Restionaceae	*Epidisma minus*	
Rhamnaceae	*Alphitonia excels*	Red Ash
Rosaceae	*Rubus fruiticosus**	Blackberry
Santalaceae	*Exocarpus cupressiformis*	Native Cherry
Sapindaceae	*Dodonaea triquetra*	Hop Bush
Schizaeaceae	*Cheilanthes sieberi*	Mulga Fern
Solanaceae	*Solanum nigrum**	Deadly Nightengale
Verbenaceae	*Lantana camara**	Lantana

* Denotes non-native species

From: Belmont Riparian Vegetation Management Plan –Molino Stewart (2015)

Appendix C Masterplans

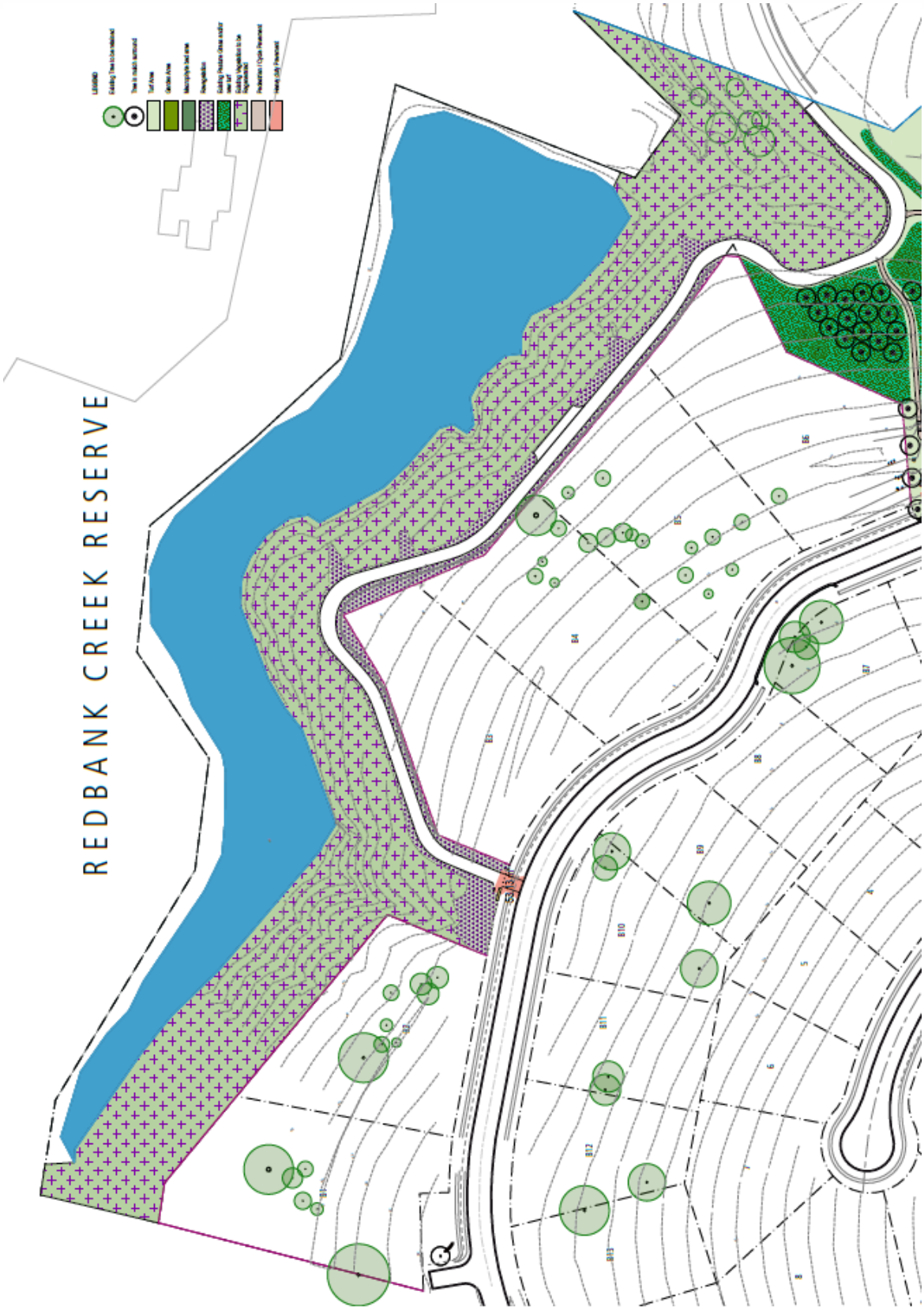



Peel Park Masterplan 1:750
DRAFT
Landscape Design Intent
- Retain high value trees
- Retain regional character
- Sports field upgrade for training & junior games
- 2 x Cricket Pitches
- 1 x Junior Cricket Nets
- Multi-purpose Hard-court
- Playground Precinct
- Proposed shade trees
- Accessible shared pedestrian / cycle paths and circuit
- Multiple car-park options to disperse traffic & access various parts of the park
O'Dea Place
Road
Peels
Arthur Phillip Drive
Informal space for training & kick-a-bout
Possible future Sydney Water infrastructure site
Existing car park at O'Dea Place to be upgraded
'Wet Meadow' landscape element
Upgrade amenities building and new sports storage
Formalised and sealed car park
Shared path entry
Sports field lighting - specification and design and location will minimise glare and light spill)
Sports field to be irrigated
Investigate as potential overflow parking area*.
Potential future path connection
Possible perpendicular car parking subject to further investigation and approval from Sydney Water
Possible future connecting path across Redbank Creek
Cricket Pitch
Sports Field
Dog On-leash Area
BMX
Retain
Multiuse Hardcourt
Playground Precinct
Park Entry
Bus Stop
Existing Playground
Bush regeneration including weed removal and supplementary planting along Redbank Creek
Existing track to be retained and updated where required
Existing path to be upgraded & all paths to be shared pedestrian / cycle paths
Link to wider Redbank path network
'Penny Railway Line' interpretive sculpture
Existing spillway retained, weeds removal and vegetation regeneration to be carried out
Additional tree planting adjacent existing tree
Link to wider Redbank path network
Existing dam to be retained and modified with improved safety measures
Playground Precinct - Existing playground to be relocated and expanded over time to better connect with the BMX area and incorporating play for all ages and abilities, shade, fencing, seating, fitness area, toilets, shelters and picnic facilities
Link to wider Redbank path network
REDBANK
terra
LANDSCAPE ARCHITECTS

Landscape Plan – Belmont Park

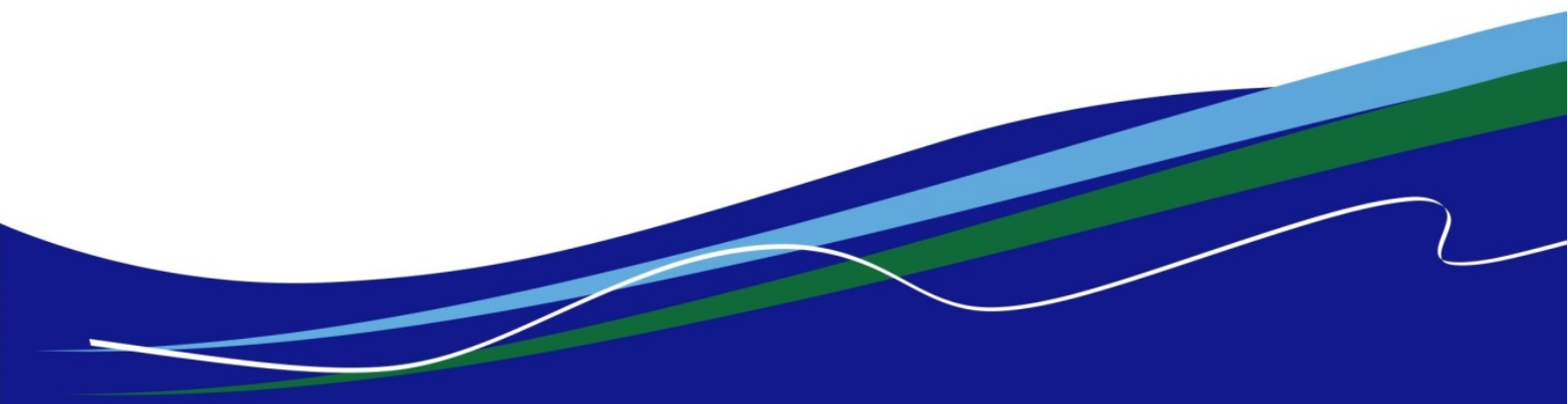
Landscape Plan – Bell Park

Landscape Plan - Yeomans Park (adjacent to Peel Park)



Landscape Plan - Redbank Creek Reserve - East

Draft Landscape Plan - Redbank Creek Reserve (west)



HAWKESBURY CITY COUNCIL
Plan of Management - Redbank Precinct