

Redlands Coast Regional Sport and Recreation Precinct Master Plan

2020–2030





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Disclaimers:

This Master Plan was prepared by an independent consultant in conjunction with Redland City Council. The Master Plan is reflective of a higher level vision for the Redlands Coast Regional Sport and Recreation Precinct and is subject to further consultation and consideration by Council.

All illustrative plans, perspectives and imagery contained within this report are indicative impressions to illustrate conceptual ideas only and are subject to further resolution, consultation, detailed design and approvals.

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We acknowledge the Traditional Custodians of the land, the Quandamooka People of the lands, waters and seas. We pay our respects to their Elders past and present, and acknowledge all Aboriginal and Torres Strait Islander people who are part of the Redlands community today.



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Table of contents

Executive summary	5
1.0 Introduction	7
1.1 Project overview.....	7
1.2 What is a Master Plan?.....	7
1.3 Project objectives.....	8
1.4 Process	8
2.0 Strategic context	11
2.1 Literature review.....	11
3.0 Analysis and planning	15
3.1 Site context.....	15
3.2 Planning considerations	16
3.3 Ecological considerations.....	18
3.4 Bushfire considerations.....	26
3.5 Cultural heritage considerations.....	28
3.6 Engineering-based considerations.....	29
4.0 Demand analysis	37
4.1 Demographic considerations	37
4.2 Trends considerations	38
4.3 Gap analysis	41
4.4 Demand directions.....	44
5.0 Master plan	47
5.1 Vision	47
5.2 Master Plan elements	56
5.3 Staged implementation	60
5.4 Management considerations.....	61



Executive summary

In 2017, Redland City Council purchased a large site on Heinemann Road at the southern end of the local government area (LGA) for future development of a regional-level sport and recreation precinct. Council had identified a shortfall of land for formal sporting opportunities across the city. This large land parcel provides an opportunity to begin to address the demand created by this under-supply. To reflect the expected quality embellishments and the potential for development of formal sport, **passive** and active recreation, the site has been identified as the Redlands Coast Regional Sport and Recreation Precinct.

There are currently competing demands for the existing sporting spaces across Redlands Coast. Projected population growth may place additional capacity stress on this existing network. Further, issues have arisen such as difficulty hosting community events at the Redland Showgrounds at Cleveland (given formal sporting uses there) and clashes and capacity issues at venues such as the Pinklands Recreation Reserve. These emerging constraints highlight the need for preparation of the Master Plan and ultimate development of the Precinct.

Existing situation

The 101.2ha site is located approximately 9.5km south of the Cleveland central business district. The site is a rectangular block highlighted by a heavily vegetated conservation area in the southern half and a more cleared section in the northern portion.

The northern section of the site is currently used for cattle grazing while the southern area includes a number of Council-managed multi-use trails.

Demand for development

Demand for development at the Precinct has been established through consultation with Councillors, Council officers, potential user groups and peak bodies, local community groups and the wider community and from consideration of both existing and planned nearby opportunities. Importantly, it is clear that the site will not meet all current or future demands. This will result in a need for planning optimisation at existing facilities and identification of future sport and recreation land.

Key directions influencing the preferred layout include:

- pressures at existing facilities within the city (particularly Norm Price Park - Redland Showgrounds, Pinklands Recreation Reserve and Redlands PCYC and BMX Facility)
- growth in a number of field sports, cycling and BMX
- growth in active recreation groups and programs (e.g. parkrun)
- opportunity for a wide range of recreation options
- opportunity to embrace the significant ecological elements within the site and retain conservation areas
- Council's additional planning and investigation activities.

Design directions

The medium- to long-term vision for the Precinct will:

- provide a high quality multi-sports facility that offers a range of opportunities for locals and visiting teams
- be supported by necessary ancillary facilities
- be used daily for training and competition but also be designed and developed such that it has the capacity to host larger sporting events and carnivals.
- provide quality recreation and physical activity pursuits to be enjoyed by facility users and residents
- rehabilitate key environmental features and retain the conservation area as key aspects of the development.

Proposed ultimate embellishment for the Precinct includes:

- approximately 15ha of lit touch and rugby league fields and associated infrastructure
- bike activity sub-precinct including criterium track, BMX track, pump track, shared clubhouse and parking
- regional-level play, kickabout area and activity node
- network of sealed paths, boardwalks and compacted unsealed tracks
- barbecue and picnic nodes across the recreation areas in the north-west section of the Precinct
- mix of tracks and trails throughout the conservation area at the southern end of the Precinct
- formal and overflow car parking options Precinct-wide.



Introduction

1.1 Project overview

ROSS Planning has been commissioned by Redland City Council to develop a Master Plan for the Redlands Coast Regional Sport and Recreation Precinct located in the southern part of Redlands Coast. The site is undeveloped greenfield land purchased by Council in 2017 for the purpose of delivering sport, recreation and conservation outcomes for the community.

This Master Plan represents an opportunity to build upon the existing conservation uses and to provide a clear strategic (and sustainable) vision for the Precinct.

1.2 What is a Master Plan?

A Master Plan provides a vision for a site, identifying what it should look like and how it should function into the future. It establishes a strong and consistent direction by providing a framework for ongoing improvement. It considers the interrelationship between:

- current character and functionality of the landscape
- public expectations and needs
- emerging issues and trends
- the realities of the economic, social, environmental and legislative context of the time.

The result is a plan that balances needs across a range of often conflicting interests. The Master Plan does not necessarily suggest that all elements of the plan should proceed immediately, or that Council or the user groups should be responsible for all capital costs, in respect of those items that are progressed.

It is important to note that the intent of a Master Plan is to provide a framework for future development of the Precinct over an extended period of time so that ad hoc improvements are avoided, and community use and long-term viability are maximised. To ensure this intent is achieved, a Master Plan should be monitored regularly to ensure the outcomes continue to meet community needs in the best possible way.

Following the completion of the Master Plan process, Council will prepare an implementation plan to direct development of the Precinct.

1.3 Project objectives

The Master Plan will provide a planning and design framework for the future development and enhancement of the Precinct. The Master Plan will guide the creation of sport and recreation facilities to cater for the needs of the community and user groups over the next 20 years. The Master Plan has the following objectives:

- to provide a framework for built infrastructure that appropriately supports sporting activity and recreation
- to encourage informal recreation activities to be enjoyed by the general community
- to consider the wider impacts that can be achieved at other community facilities throughout the city as a result of planned development at the Precinct
- to create safe access and integrated movement through and to the Precinct
- to promote the natural environment, sustainable development, and practicable maintenance regimes
- to foster partnerships for capital development and ongoing management of the Precinct.

1.4 Process

The project program spans across seven stages and has been delivered as follows:

Stage	Task/s
1	Project initialisation <input type="checkbox"/> Inception meeting <input type="checkbox"/> Initial site tours
2	Background research and analysis <input type="checkbox"/> Document and policy review <input type="checkbox"/> Trends analysis
3	Site analysis <input type="checkbox"/> Site assessment <input type="checkbox"/> Open space context <input type="checkbox"/> Technical investigations
4	Consultation <input type="checkbox"/> Council engagement <input type="checkbox"/> Sport and recreation user group and peak body engagement <input type="checkbox"/> External stakeholder engagement <input type="checkbox"/> Wider community engagement
5	Needs assessment <input type="checkbox"/> Current and future gap analysis <input type="checkbox"/> Situational analysis <input type="checkbox"/> Options development
6	Draft plan preparation and presentation <input type="checkbox"/> Preparation of the draft <input type="checkbox"/> Presentation of the draft <input type="checkbox"/> Public review of the draft
7	Review and finalisation <input type="checkbox"/> Draft review <input type="checkbox"/> Finalisation and adoption



View of the proposed location of sporting fields at Heinemann Road site (Redlands Coast Regional Sport and Recreation Precinct)



Aerial imagery of the Heinemann Road site



Strategic context

2.1 Literature review

In order to present a clear picture of the background issues and opportunities influencing the potential development of the Precinct, a literature review has been undertaken. A range of documents have been reviewed and considered in preparation of the draft Master Plan.

Over recent years, Council has undertaken a number of key studies relating to the provision of open space and sporting opportunities across the city. In particular, the outcomes of two key studies led directly to the purchase of the Heinemann Road site:

- Redland Open Space Strategy 2026 (2012)
- Redland Sport Land Demand Study (2016).

2.1.1 Redland Open Space Strategy 2026

This Strategy examines open space using an approach that considers what activities people like to do in the city's parks and open spaces. Activity requirements have been matched to the open spaces and parks in people's neighbourhoods and across suburb catchment areas.

While the Strategy recommended a move away from the traditional desired standards of service (hectares per population approach) to open space planning for more local facilities, this approach was retained for medium density residential areas and for sporting land.

Using the desired standards of service for sport, the Strategy identified that, assuming no land for sport is acquired, the projected 2026 population will require an additional:

- 137ha of land for sport on the mainland
- 2ha of land for sport on the islands.

Further, the Strategy recommends:

- development of a sport land acquisition program for the city to supply sporting facilities both outdoor and indoor
- continued investigation, planning and assessments for the development of new sport facilities in the south of the city to meet current and future unmet demand for sport
- ensure future environmental land acquisitions consider multiple benefits and values of space (importantly outdoor recreation).

Clearly, these recommendations have played a significant role in the acquisition of the Heinemann Road site. The site is located at the southern end of Redlands Coast. It has been purchased for sport and recreation opportunities but also as an environmental land acquisition with important conservation values (that will be retained alongside limited-impact outdoor recreation options).

2.1.2 Redland Sport Land Demand Study

This project was undertaken in 2016 to assess the current and future demand for sport land across the city. The study considered:

- ❑ the capacity of existing facilities
- ❑ membership trends for local clubs
- ❑ wider participation trends for the major sporting codes.

The Study used desired standards of service (facilities per member) to identify predicted 2031 land requirements for each of the major sporting codes. The following codes were noted as facing shortfall by 2031 without additional access to facilities:

- ❑ athletics - 2 track shortfall
- ❑ AFL - 3 oval shortfall
- ❑ cricket - 6 oval shortfall
- ❑ football - 4 field shortfall
- ❑ gymnastics - 1 purpose-built facility shortfall
- ❑ netball - new association complex shortfall
- ❑ rugby league - 5 field shortfall
- ❑ swimming - new aquatic centre shortfall
- ❑ tennis - Mt Cotton district shortfall.

While the Sport Land Demand Study was a key driver in the purchase of the Heinemann Road site, changes in local priorities and State Sporting Organisation directions have occurred in a number of instances since 2016. As a result, the findings of the Study have been re-analysed in the engagement undertaken as part of the Precinct Master Plan process.

2.1.3 Additional corporate documents

Corporate Plan 2018-2023

The Corporate Plan is the key document leading Council delivery. It is underpinned by Council's vision: "Forward thinking, engaged and focused on enriching lifestyles". Key strategies are presented under eight outcome areas. Those with the most direct relevance to the Master Plan include:

- ❑ 1. Healthy natural environment
 - 1.1 Redland's natural assets including flora, fauna, habitats, biodiversity, ecosystems and waterways are managed, maintained and monitored
 - 1.2 Threatened species are maintained and protected, including the vulnerable koala species
 - 1.4 Visitors experience our natural assets through high standard facilities, trails, interpretation and low impact commercial ventures
- ❑ 6. Supportive and vibrant economy
 - 6.2 Redland City Council delivers events, activities and performances that bring economic and social benefits to the community
- ❑ 7. Strong and connected communities
 - 7.2 Council maximises community benefit from the use of its parklands and facilities by improving access to, and the quality and shared use of, public spaces and facilities by groups for sporting, recreational and community activities
 - 7.3 Council's assessment of community issues and needs provides timely opportunities to pursue grants and partnerships that realise long-term benefits.

A number of these strategies provide a clear direction for the future planning and development of the Precinct.

Redlands 2030 Community Plan

The document is a guide to achieve the community's vision for the future "In 2030, the Redlands will be a well-designed, vibrant city of mainland and island communities, each with distinctive character, heritage and lifestyles. Our shared values will shape the way we care for each other and how we protect the land, seas and waters where we choose to be". A range of goals influence the Master Plan process:

HEALTHY NATURAL ENVIRONMENT

- ❑ Goal 3 - Extensive wildlife linkages and corridors
 - Strong physical linkages of ecosystems across the landscape form a natural web which sustains and regenerates the biodiversity of flora and fauna within the Redlands and into surrounding regions
- ❑ Goal 4 - Thriving koala population
 - Koala habitats are protected and new habitat areas established to support the dietary requirements and roaming nature of bushland and urban koalas
- ❑ Goal 6 - Land managed for conservation
 - Land in identified areas is amalgamated to create larger, more viable habitat and conservation reserves which support and protect native flora and fauna

- Goal 8 - Getting around in nature
 - Walking trails and cycling networks in natural areas are sensitively designed to bring people close to nature and keep nature safe with people.

WISE PLANNING AND DESIGN

- Goal 13 - Green, shaded, city
 - Green leafy parklands, selective planting in nature strips, and natural landscaping between buildings and houses all contribute to shading our streets, supporting flora and fauna habitats and beautifying the city
- Goal 14 - Much-loved parklands
 - Well-designed, well-located foreshore and bushland parks, active and passive parks, village greens and local parks spread equitably across the Redlands are attractive places for all

STRONG AND CONNECTED COMMUNITIES

- Goal 11 - Responsive social infrastructure
 - Easily accessible facilities, services and networks cater for the needs of a diverse community to participate fully in arts, heritage and culture, sport and recreation, community development and lifelong learning
- Goal 13 - An active community
 - The community enjoys the many pathways, tracks, trails, skateparks and outdoor, indoor and water-based recreational activities and sports on offer, and community sports centres provide convenient access for community participation and social support

Like the Corporate Plan, the Community Plan provides an overarching guide for the development of the Heinemann Road site.

LITERATURE REVIEW - SUMMARY

When considered together, the literature review highlights a number of key considerations:

- Council and the community acknowledges the importance of sport and recreation facilities and opportunities for the community
- Retaining environmental corridors, conservation areas and habitat are key considerations for the community
- There are a number of local clubs (and sports codes more broadly) likely to be seeking expansion and/or relocation of facilities
- The Heinemann Road site was first acknowledged as a potential site for sports development more than 12 years ago. A number of sports have developed an 'attachment' to the site in terms of expectations for future facilities.

2.1.4 Additional specific documents

Council has developed a number of specific strategies to guide decision-making. While a number of these documents are now aged and priorities are likely to have changed, those that have been considered in the Master Plan project are mentioned briefly below.

Redland City Events Strategy and Action Plan 2017-2022

- The purpose of the Strategy is to provide a strategic direction and focus for events in Redlands. The Strategy notes that growing existing events and attracting new, larger events to Redlands Coast is currently hampered by limited event facilities as well as conflicting use and availability of facilities for community and event organisers. For example, accessing Norm Price Park (Redland Showgrounds) at Cleveland is difficult as it is used by several sports associations.
 - Opportunities to free up land area at the Showgrounds that is currently used for formal sport have been considered in the development of the Master Plan

Redlands Netball Strategy 2011-2021

- The Strategy recommends relocation of the Association to a new site in the southern corridor
 - this is no longer a preferred direction for either the Association nor Netball Queensland

Redlands Cricket Strategy 2011

- The Strategy recommended upgrades such as oval lighting and the development of turf wickets at existing facilities, rather than the development of additional ovals
 - Queensland Cricket's Infrastructure Strategy 2018-2028 reflects the 2011 findings. This recent Strategy highlights that the Brisbane East and Redlands area has an appropriate ratio of fields to players and preference is for lighting and universal amenities facilities projects.

Pinklands Equestrian Centre Facilities and Management Plan (2006) and Redland Regional Equestrian Centre Site Identification Project (2007)

- Together, these documents recommend the development of a Regional Equestrian Centre (with the two preferred sites being the Heinemann Road site (subject of this Master Plan) and a former University of Queensland site at Mount Cotton
 - equestrian sports were considered in the demand analysis phase of the Master Plan. Given pressures for alternate field sports and BMX/cycling activities, and limited area for sports development within the site, equestrian activities have not been accommodated in the Master Plan.



Analysis and planning

3.1 Site context

3.1.1 Location

The 101.2ha site (and proposed Regional Sport and Recreation Precinct) is located approximately 9.5km south of the Cleveland central business district. The only road frontage is Heinemann Road that runs along the full length of the eastern boundary of the block.

Much of the immediate surrounding area is rural lands (predominantly poultry farms and hobby farming). However, there is a small area of low density residential housing less than 1km south of the site. Additionally, the communities of Victoria Point and Redland Bay are approximately 3km to the north-east and east respectively. Finally, a residential community of approximately 3,000 residents is planned through the Victoria Point Structure Plan less than 1.5km north-east of the site. It is important to note that this new development has been planned with a new typology of 'active circuit' and an expectation of a strong link to the Precinct. No significant sport and recreation facilities have been planned with this demand expected to be met at the Precinct.

3.1.2 Climate

The climate of Redlands Coast is sub-tropical and maritime. It is characterised by hot, dominantly humid, rainy summer seasons and by short, mild and relatively dry winters. There may be a minor rainfall peak across June-July. On average, two-thirds of the yearly rainfall occurs in the six months from November to April.

The site is subject to moderate to fresh winds (prevailing northerlies and southerlies). These winds further highlight the importance of sporting facility development in north-south aspects where possible (to avoid regular cross-winds).

3.1.3 Landform

The topography of the northern end of the site is characterised by gentle hill slopes in the eastern and western portions of the site that slope downwards towards a flat low-lying central drainage corridor. This corridor has a north to south alignment and ranges up to approximately 150m in width. Throughout the investigation period for the project, the corridor varied from particularly wet with a number of areas of ponded water and lagoons through to very dry with a hard ground surface.

On the western side of the drainage corridor, the ground surface typically slopes gently downwards from the western site boundary at approximately 5 degrees with localised steeper and flatter sections.

On the eastern side of the drainage corridor, the southern boundary of the cleared area forms a localised flat hillcrest that slopes gently downwards towards the north, east and west.

The sloping portions of the northern portion of the site have historically been cleared with only a sparse covering of mature gum trees and short grass. The hill crest in the south eastern portion of the site includes a small shed and cattle fencing.

The southern end of the site (the conservation area) has a raised central area that falls away to drainage lines to the east and west.

3.2 Planning considerations

3.2.1 Redland City Plan

The latest version of the City Plan came into effect in July 2019.

Rural zone code

The site is currently zoned rural. The purpose of the rural zone code is to:

- provide for a wide range of primary production activities while protecting natural resources and significant environmental and landscape values.

The purpose of the code will be achieved through the following overall outcomes:

- ... (d) educational, recreational and tourism uses are accommodated where they do not significantly impact on the environmental and landscape values of the locality
- ... (i) built form is generally a subservient element in the landscape, and does not significantly alter the rural or natural character or scenic quality of the locality
- (j) all forms of development minimise impacts on the natural environment and maintain a connected network of habitat areas and corridors.

City Plan Table 5.4.22-Rural zone identifies the levels of assessment for desired uses:

- a *park* is considered to be an accepted use and therefore does not require planning approval
- *outdoor sport and recreation* will be subject to code assessment.

The proposed outcomes within the Master Plan will alter the current uses at the site. However, it is important to note that due concern has been given to retaining much of the open and natural character of the site, protecting landscape values and avoiding inappropriate environmental disturbance.

Recreation and sport land expectations

City Plan Table 4.4.3 identifies minimum public park land size and accessibility standards for the recreation park hierarchy and sports parks.

The proposed developments at Heinemann Road include formal sport development (*sport park*) and a range of high quality recreation elements and opportunities (recreation park T1-destination). For both sport parks and recreation parks T1-destination, the minimum land size is 5-20ha. While limited development is proposed in the southern end of the site (where conservation will remain the key outcome), the northern portion of the site (approximately 48ha) reflects suitable land size to accommodate both sport and recreation (and meet planning scheme expectations for minimum land size for development of this nature).

Parking guidelines

City Plan Table 9.3.5.3.2 outlines the vehicle parking expectations for a wide range of uses. The guideline with most relevance to the development of the Master Plan is:

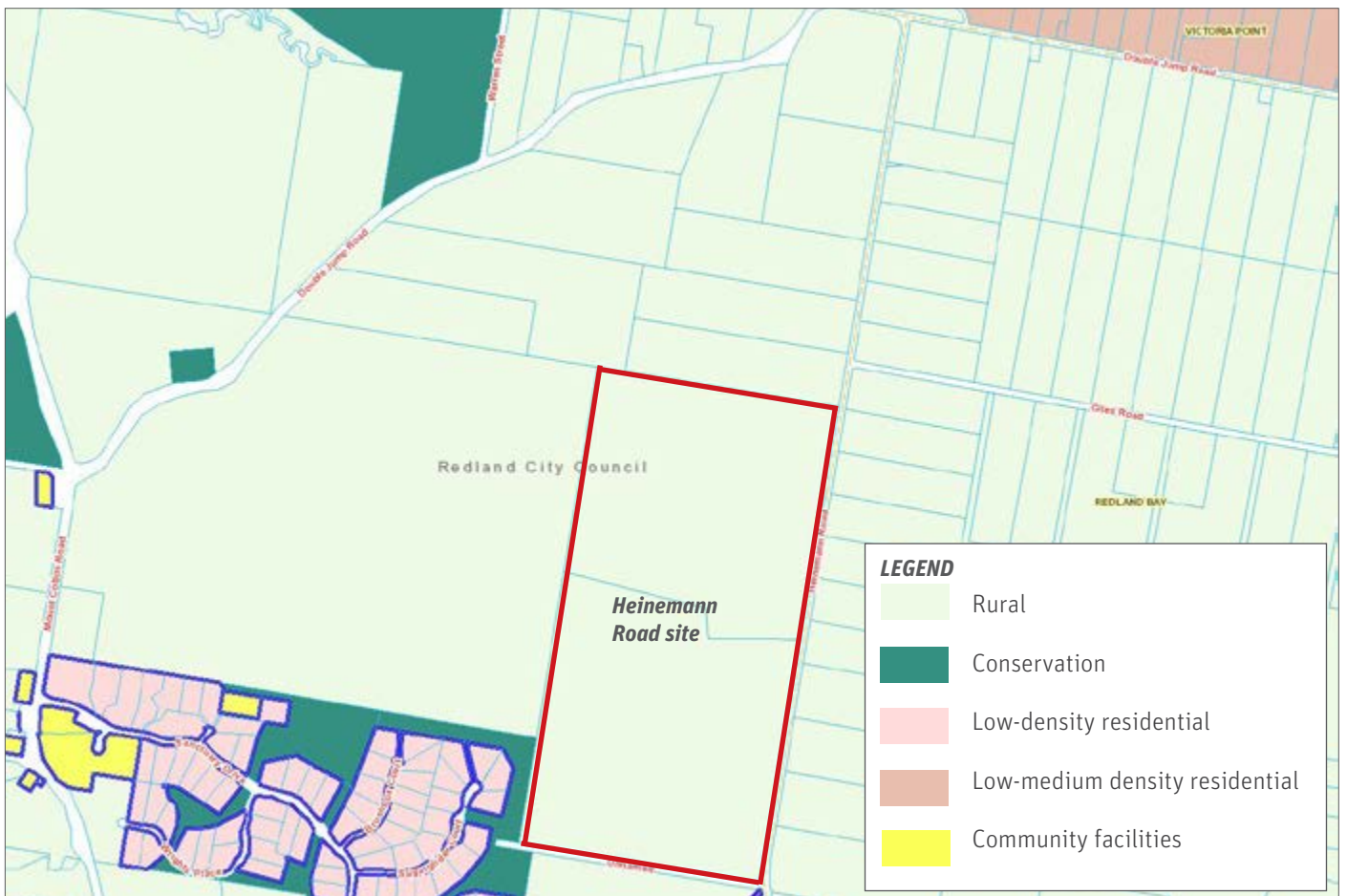
- Sports field - 50 parking spaces per field.

This provision guideline has been used to direct the number of car parks included in the preferred layout plan.



Aerial imagery highlighting the rural nature of the Precinct's immediate surrounds

Redland City Plan - Zones



3.3 Ecological considerations

Council commissioned Cardno in mid-2019 to undertake an ecological assessment of the site (as an adjunct to the Master Plan project). The findings were then reviewed by the ROSS Planning team (led by BAAM Ecological Consultants) to provide further direction for the project.

3.3.1 Vegetation and flora

Vegetation communities

Cardno (2019) reported that the vegetation within the site was found to be generally consistent with the Dept of Natural Resources, Mines and Energy (DNRME) Regulated Vegetation Map. The southern half of the site is mapped as supporting remnant vegetation made up of Endangered RE 12.11.23 and Of Concern RE 12.3.11. The northern half of the site is predominantly cleared, with patches of mapped regrowth vegetation (Category C):

- Endangered RE 12.11.23/12.11.27 adjacent to the remnant vegetation
- Of Concern RE 12.11.24/12.11.25 and 12.3.11 in association with the central creekline and adjacent areas
- Least Concern RE 12.9-10.4 at the northern boundary of the property
- A small patch of remnant Of Concern RE 12.3.11 is also mapped at the northern boundary.

The table below provides descriptions of the REs present from the Regional Ecosystem Description Database (REDD) (DES, 2018).

Table 01: Regional Ecosystem Descriptions

RE 12.3.23 Endangered
<i>Eucalyptus pilularis</i> open forest on coastal metamorphics and interbedded volcanics
RE 12.11.27 Endangered
<i>Eucalyptus racemosa</i> subsp. <i>racemosa</i> and/or <i>E. seeana</i> and <i>Corymbia intermedia</i> woodland on metamorphics +/- interbedded volcanics
RE 12.3.11 Of Concern
<i>Eucalyptus tereticornis</i> +/- <i>Eucalyptus siderophloia</i> , <i>Corymbia intermedia</i> open forest on alluvial plains usually near coast
RE 12.11.24 Least Concern
<i>Eucalyptus carnea</i> , <i>E. tindaliae</i> , <i>Corymbia intermedia</i> +/- <i>E. siderophloia</i> or <i>E. crebra</i> woodland on metamorphics +/- interbedded volcanics
RE 12.11.25 Of Concern
<i>Corymbia henryi</i> and/or <i>Eucalyptus fibrosa</i> subsp. <i>fibrosa</i> +/- <i>E. crebra</i> , <i>E. carnea</i> , <i>E. tindaliae</i> woodland on metamorphics +/- interbedded volcanics
RE 12.90-10.4 Least Concern
<i>Eucalyptus racemosa</i> subsp. <i>racemosa</i> woodland on sedimentary rocks

Much of the northern end of the site includes areas of non-remnant vegetation (pastoral land) that has been subject to historic clearing with the exception of scattered large eucalyptus trees. These large trees include *Eucalyptus tereticornis* and *Eucalyptus pilularis* specimens that often support hollows. In the central and north-west portions of the site, a number of these eucalypts are some of the largest examples within the Redlands Coast area. The ground layer is dominated by exotic *Sporobolus pyramidalis* (Giant Rat's Tail Grass) and *Imperata cylindrica* (Blady Grass), with an abundance of exotic herbs and forbs, including *Senecio madagascariensis* (Fire weed).

Melaleuca-dominated swamp areas are located within the site associated with watercourses and associated alluvial plains. *Melaleuca quinquenervia* and *Eucalyptus tereticornis* dominate the canopy in these areas. The shrub layer, where present, was observed to support a number of *Solanum* species including *Solanum stelligerum* (native) and *Solanum torvum* (exotic weed). The ground layer generally included *Juncus* species and *Axonopus compressus* (Carpet Grass).

No vegetation communities were reported that are Threatened Ecological Communities under the Environment Protection or Biodiversity Conservation (EPBC) Act.



- a. Mature eucalypts at the northern end of the site
- b. Melaleucas located along the watercourse near the centre of the site

Threatened flora species

Three threatened flora species have been identified as possibly being present at the site:

- Macadamia integrifolia* (Macadamia Nut) Nature Conservation (NC) Act & EPBC Act Vulnerable
- Marsdenia longiloba* (Slender Marsdenia) NC Act & EPBC Act Vulnerable
- Corchorus cunninghamii* (Native Jute) NC Act and EPBC Act Endangered.

Field surveys identified 174 flora species (including 64 non-native species). No NC Act listed Endangered, Vulnerable or Near Threatened species and no flora species listed under the EPBC Act were recorded.

A list of locally significant species is provided in the Redland City Plan Planning Scheme Policy 1: Environmental Significance. No flora species recorded from the site are listed as locally significant.

Weeds

Cardno (2019) recorded 64 exotic flora species, of which 11 are listed as Category 3 – Restrictive invasive pest plants under the Biosecurity Act 2014. Five of these are also listed as Weeds of National Significance (WONS, indicated by a *):

- Asparagus aethiopicus* (Asparagus fern)*
- Cinnamomum camphora* (Camphor Laurel)
- Lantana montevidensis* (Creeping Lantana)
- Senecio madagascariensis*1 (Fireweed)*
- Sporobolus pyramidalis* (Giant Rat's Tail Grass)
- Lantana camara* (Lantana)*
- Anredera cordifolia* (Madeira Vine)*
- Bryophyllum delagoense* (Mother-of-Millions)
- Sphagneticola trilobata* (Singapore Daisy)
- Eichhornia crassipes* (Water Hyacinth)*
- Tecoma stans* (Yellow Bells).

The Redlands Coast Biosecurity Plan 2018-2023 categorises introduced plant species in relation to management objectives and includes priorities for management. Those that are listed under the Biosecurity Act 2014 are high-priority management species. There are three species recorded from the site (Cardno, 2019) that are listed under Management Objective 2 – Containment, where core populations should be managed by implementing containment strategies. These are *Solanum torvum* (High - (Devil's Fig)), *Urena lobata* (Medium - (Urena Burr Shrub)) and *Yucca aloifolia* (Low - (Yucca)).

Forty species were recorded that are listed under Management Objective 3 – Asset Protection, for protection of high-value natural environment, community and built assets from the impacts of these invasive species.



- a. *Lantana montevidensis* (Creeping lantana)
- b. *Anredera cordifolia* (Madeira vine)
- c. *Solanum torvum* (Devil's fig)
- d. *Urena lobata* (Urena burr)

1 Council has undertaken treatment for this weed

3.3.2 Fauna

Fauna habitats

Cardno (2019) reported that the site supports a large number of notable habitat features, including hollow-bearing trees, stag trees and logs, permanent watercourses, ephemeral ponds and water bodies. Specifically, the following habitats are discussed:

- ❑ drainage lines, water bodies and fringing vegetation providing habitat for fish and other aquatic species, frogs (such as Dusky Toadlet and Copper-backed Brood Frog) and foraging habitat for transitory wetland and migratory birds
- ❑ hollow-bearing trees providing nesting habitat for hollow-dependent birds (such as Sulphur-crested Cockatoo) and denning habitat for arboreal mammals (such as Brush-tailed Possum and Sugar Glider)
- ❑ hollow logs providing shelter for a number of fauna groups including amphibians and reptiles, as well as Short-beaked Echidna
- ❑ koala food trees throughout the site, with the highest densities recorded within remnant vegetation.

Fauna species

The Cardno (2019) field study recorded a total of 58 fauna species from the site. This included 44 birds, 10 mammals, one reptile species and three amphibians.



Large goanna in a mature eucalypt in the north-west of the site

Conservation significant fauna species

Desktop assessment has identified three threatened and three migratory species that could be present at the site:

- ❑ Greater Glider *Petauroides volans volans* NC Act & EPBC Act Vulnerable (possibly present)
- ❑ Koala *Phascolarctos cinereus* NC Act & EPBC Act Vulnerable (likely present)
- ❑ Grey-headed Flying-fox *Pteropus poliocephalus* NC Act Least Concern, EPBC Act Vulnerable (likely present, foraging)
- ❑ White-throated Needletail *Hirundapus caudacutus* EPBC Act Migratory (possibly present)
- ❑ Black-faced Monarch *Monarcha melanopsis* EPBC Act Migratory (possibly present)
- ❑ Rufous Fantail *Rhipidura rufifrons* EPBC Act Migratory (possibly present).

Of the potential conservation significant species predicted to likely or possibly be present, one was detected. Evidence of Koala was recorded in the form of scats and tree scratches.

It is important to note that the Cardno survey took place during winter which is outside of the optimal timing for surveying a number of species. A winter survey would not have detected species of frogs, reptiles and some migratory birds that would be recorded during warmer months. As such, a warm season survey may also be considered.

A list of locally significant species is provided in the Redland City Plan Planning Scheme Policy 1: Environmental Significance. No fauna species recorded from the site by Cardno (2019) are listed as locally significant.

It should also be noted that fire ants have been observed onsite and necessary treatment has commenced.



Red-necked wallabies near the centre of the site

Habitat connectivity

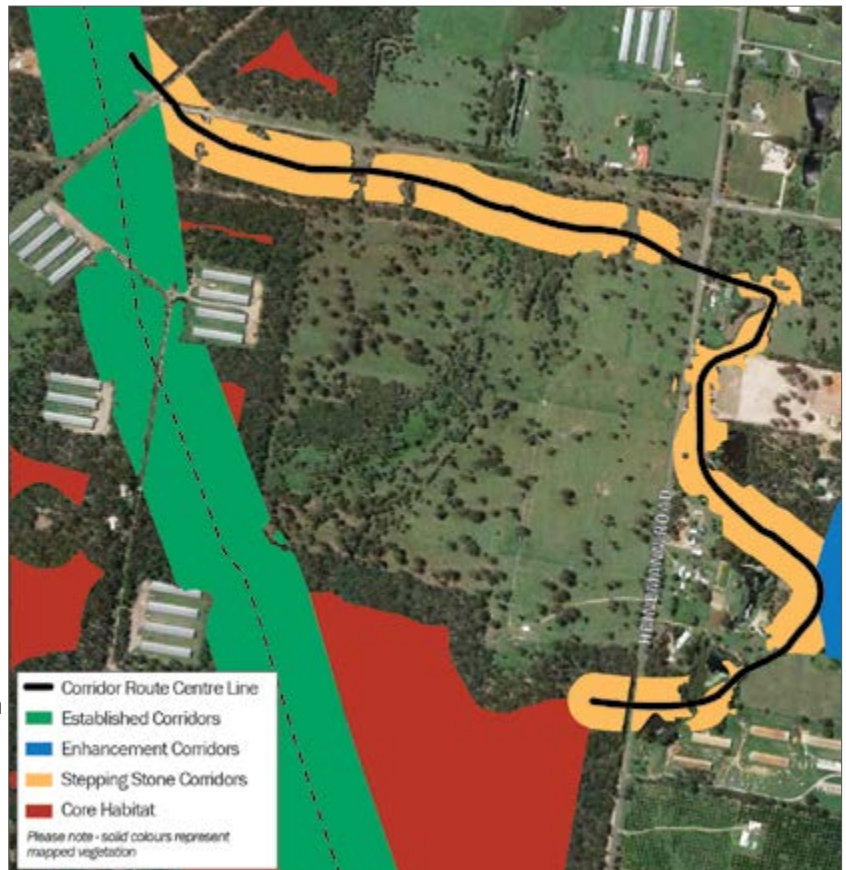
The site maintains ecological connectivity to vegetated areas along its southern and western boundary. Watercourses also provide fauna movement throughout the site and into the surrounding environment.

The site is largely mapped within a State-mapped 'Regional biodiversity corridor'. The Department of Environment and Science defines Regional Biodiversity Corridors as 'areas of ecological value to be maintained and where incremental habitat loss, fragmentation and degradation should be avoided'. They are located to:

- identify and protect terrestrial and aquatic ecological and evolutionary process at a landscape scale
- maximise connectivity between large tracts of remnant vegetation
- identify key areas for rehabilitation.

Consideration of Council's Wildlife Connections Plan (2018) also highlights:

- the southern portion of the site is mapped as core habitat and forms part of the Sandy Creek Conservation Area to Days Road Conservation Area Established Corridor
 - Established Corridors are described by Council as local-scale corridors of particularly high ecological value that hold strong, pre-existing values in providing movement opportunities for wildlife. They are the highest priority for protection and rehabilitation
- a Stepping Stone Corridor has been identified from the central eastern boundary of the site, running north through habitats east of Heinemann Road before continuing westwards along the northern boundary of the property
 - Stepping Stone Corridors are described by Council as local-scale corridors with isolated patches of habitat that, while not physically connected, are functionally connected, allowing movement between larger patches.



Wildlife corridors through and around the northern end of the site

This figure shows the recorded koala impacts on roads in proximity to the site. As development occurs in the area surrounding the Heinemann Road precinct, the following actions are recommended:

- install street lighting on Heinemann Road so that koalas on roadsides and crossing the road surface are more visible
- ensure that there are no shrubby traffic islands on road verges to obscure koala presence from drivers
- establish a 60km/hr speed limit on Heinemann Road
- install koala signage to inform drivers that koalas may be present
- encourage the sporting clubs to educate members on measures they can take to avoid koalas on roads.



Koala vehicle impacts 1996-2017, (DNRME)

3.3.3 Matters of environmental significance

Matters of national environmental significance (MNES)

The following Commonwealth interests are mapped within or proximate to the site:

- the site is within 10km of the Moreton Bay Wetland of international significance
- two Threatened Ecological Communities (TEC) are listed as 'may occur' in the area:
 - *Casuarinza glauca* (Coastal Swamp Oak) Forest of New South Wales
 - South East Queensland and Lowland Rainforest of Subtropical Australia
- 16 listed threatened species are identified as 'known' or 'likely'
- 8 listed migratory species are identified as 'known' or 'likely'.

No Threatened Ecological Communities were recorded at the site survey.

Evidence of one threatened species (Koala) was recorded from the site.

No migratory species were recorded from the site survey, although the winter timing of the survey was not suitable for detecting summer migrants.

Matters of state environmental significance (MSES)

The following state interests are mapped within the site:

- Category B (Remnant) vegetation and Category C (High-value regrowth) vegetation
- one 'moderate risk' waterway and two 'low risk' waterways for waterway barrier works under the Fisheries Act 1994
- Priority Koala Assessable Development Areas
- 'High Value Bushland', 'Medium Value Bushland', 'High Value Rehabilitation' and 'Medium Value Rehabilitation' land for Koala conservation
- the site is largely mapped within a regional biodiversity corridor within the SEQ Regional Plan 2017, and a small area in the south west corner of the site is mapped within a State-wide biodiversity corridor
- essential habitat for the Koala.

Cardno (2019) survey results found that the site supported Category X (Non-remnant) vegetation, Category B (Remnant) vegetation and Category C (High-value regrowth vegetation). Their field survey confirmed that the vegetation within the site was generally consistent with the DNRME Vegetation Management Report and Regulated Vegetation Map. Specifically, the regional ecosystem codes appeared to be accurately applied; Category B areas appeared to support vegetation that met the requisite height, cover and species compositions; and Category C areas had not been cleared in the past 15 years.

A number of indirect observations of Koala were made during the Cardno (2019) field assessment. This included Koala scats and scratches encountered during targeted surveys and opportunistically. The Koala is listed as Vulnerable under the NC Act and EPBC Act. Cardno (2019) advised that if impacts to Koala habitat (e.g. removal of Koala habitat trees) are anticipated as part of the proposed works then undertaking an EPBC Act Significant Impact Self-assessment for the Koala is recommended.

Matters of local environmental significance (MLES)

Review of the Redland City Plan Environmental Significance, Waterway Corridor and Wetland, Flood and Storm Tide Hazard, and Bushfire Hazard Overlay Mapping found that the site is mapped as containing the following ecological constraints:

- areas in the north and west of the site mapped within the Waterway Corridors and Wetlands Overlay
- areas in the north of the site mapped as MLES and areas in the south of the site mapped as MSES within the Environmental Significance Overlay
- areas in the north, western boundary and south-east of the site are mapped as Flood Prone Areas within the Flood and Storm Hazard Overlay.
- areas in the south of the site mapped as Very High Potential Bushfire Intensity and High Potential Bushfire Intensity, areas in the north and western boundary are mapped as Medium Potential Bushfire Intensity. The balance of the site is largely mapped as Potential Impact Buffer within the Bushfire Hazard Overlay.

- a. Significant eucalypt located centrally within the site
- b. Typical waterhole found toward the north-west corner of the site
- c. Views across the more cleared pastoral land in the north-east of the site



3.3.4 Ecological constraints and opportunities

Overview

The site supports a relatively large connected remnant bushland patch in its southern portion and a large partly forested area in the northern portion. The latter area is characterised by wooded patches, with scattered large trees over grazing land and wetland habitats associated with drainage lines.

The important ecological features of the site have been identified as:

- ❑ remnant bushland in the southern portion of the site providing undisturbed flora and fauna habitat. It supports a range of fauna species, including birds, arboreal and ground-dwelling mammals, reptiles and amphibians, including habitat for the NC Act and EPBC Act Vulnerable Koala. It is well connected to both continuous and fragmented bushland to the south and west and forms a component of a larger core habitat area that spans the south-eastern portion of Redlands Coast and adjacent Logan City
- ❑ the site forms a component of recognised regional and local biodiversity/wildlife corridors. A large component of the southern bushland and the western portion of the northern part of the site are within a Regional Biodiversity Corridor as mapped by the State of Queensland. The southern portion of the site and the south-western corner of the northern portion of the site are recognised as a component of the Sandy Creek Conservation Area to Days Road Conservation Area Established Corridor in the Redland City Wildlife Connections Plan 2018, which also identifies a Stepping Stone Corridor from the site, across Heinemann Road and then back across the northern boundary of the site
- ❑ patches of remnant and regrowth vegetation in the northern portion of the site provide habitat for flora and fauna and contribute to fauna movement opportunities in the landscape
- ❑ large eucalypt trees (diameter at breast height (DBH) of >60cm) in the partly cleared northern portion of the site are old growth trees, possibly over 250-years-old. These trees are significant in that they have developed many hollows that support hollow-dependent birds and mammals. It is also likely that they may have scientific significance in that trees of their size and age are rare in Redlands Coast. These trees are also Koala food trees and many of them are recognised as Matters of Local Ecological Significance on the Environmental Significance Overlay of the Redland City Plan
- ❑ wetland habitats associated with drainage lines in the northern portion of the site support many pools and pondage areas that provide sources of fresh water for local fauna and flora during the warmer and wetter months, and the permanent pools provide a year-round water source in seasonally dry periods
- ❑ extensive grasslands in the northern portion of the site provide feeding and breeding habitat for Red-necked Wallabies, woodland birds and feeding habitat for Swamp Wallabies
- ❑ a dense patch of well-developed Melaleuca wetland approximately 6ha in size in the northern portion of the site provides habitat for a range of species, including amphibians, snakes, Swamp Wallabies, Flying-foxes and nectivorous and insectivorous birds. The wetland also provides a broader ecosystem service by absorbing nutrients and trapping sediment from upstream waters, and so improving downstream waterway health.

Implications for the Master Plan

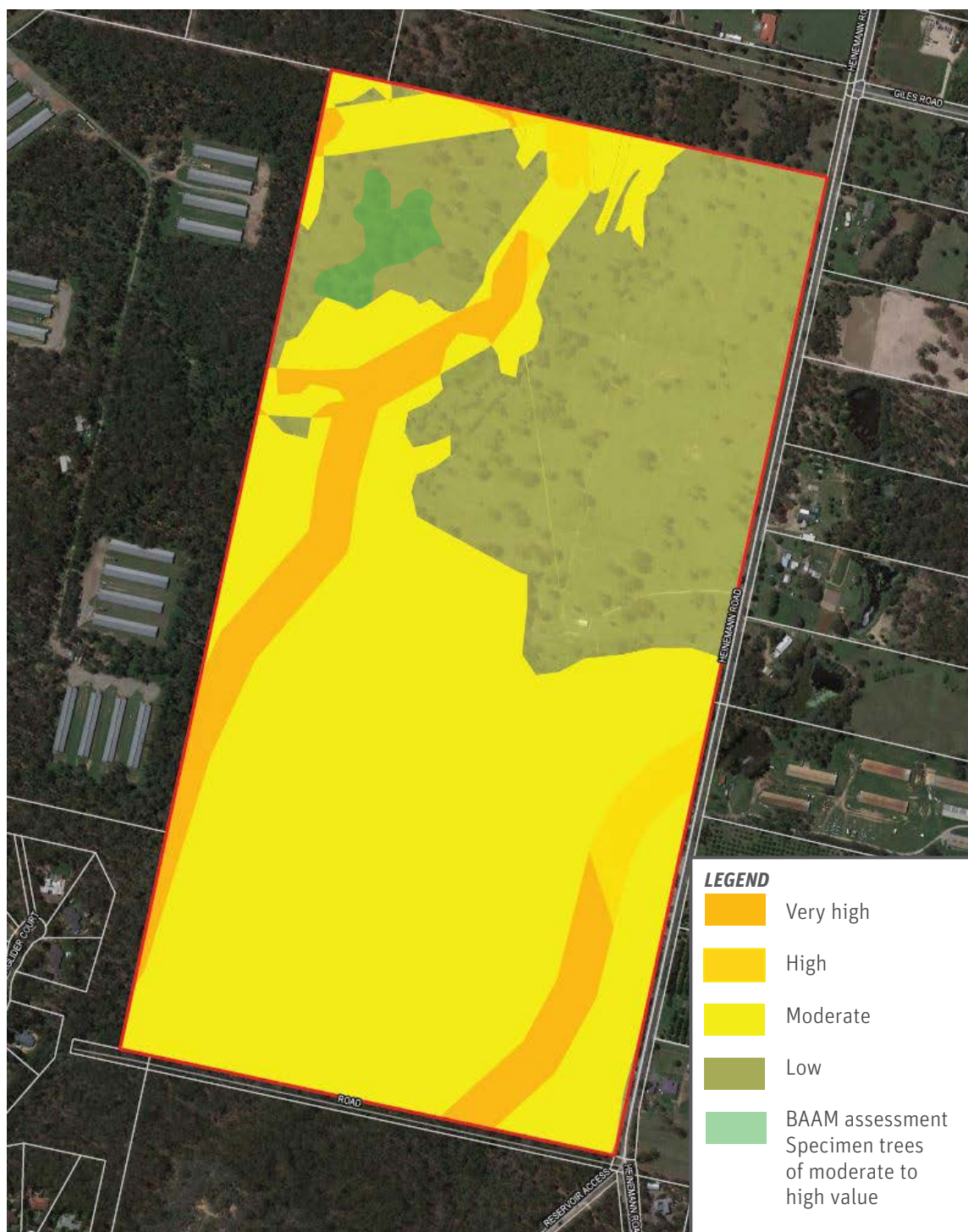
The development of the preferred layout and ultimate uses for the site has involved consideration of:

- ❑ limiting tree clearing to low value areas (principally the north-east corner of the site) where this is required to allow the construction of sporting facilities and car parks
- ❑ proposing more low to medium impact activities (e.g. walking, picnicking, cycling) in those areas with moderate value vegetation
- ❑ maintaining high-value vegetation areas and key corridors
 - recognising that an increase in traffic on Heinemann Road may potentially result in an increased number of animals being struck by vehicles
 - recognising that night lighting and noise associated with sporting facilities may impact on resident fauna in adjacent habitats
 - retaining the southern section of the site primarily for conservation with recreation elements limited to walking, bird watching, nature appreciation, mountain biking and horse riding.



Typical lower value area where ground disturbance will be focused

Levels of ecological constraint
(Cardno, with BAAM
inset), 2019)



Cardno (2019) prepared the map above to highlight over-arching environmental constraints for the site. They concluded that the north-east portion of the site was most conducive to formal sporting facility development. A small section to the west of the water course and toward the north-west corner of the site was also considered of low constraint. However, BAAM Ecological Consultants have identified a number of moderate to high value mature trees in this north-west area that are considered to be of significance. This area is, therefore, considered appropriate for more limited disturbance development, while the north-east portion of the site remains the target for more significant groundworks.

3.4 Bushfire considerations

As highlighted in the image below, the site is affected by the Redland City Plan 2018 Bushfire hazard overlay map for medium, high and very high potential bushfire intensity and potential impact buffer. Therefore, outcomes sought under the Redland City Plan 2018 Bushfire Hazard Overlay Code are relevant to development, management and community access arrangements for the Precinct.

3.4.1 Vegetation hazards

Vegetation hazard class (VHC) mapping for Queensland and corresponding estimates of potential fuel load are based on regional ecosystem mapping, land use mapping and foliage projection cover mapping.

Data used to prepare VHC mapping is broad scale and not always accurate at a site-specific level. As a result, VHC mapping was ground-truthed at assessment reference points across the perimeter of the sites. (The outcomes of this assessment have been provided to Council under separate cover).

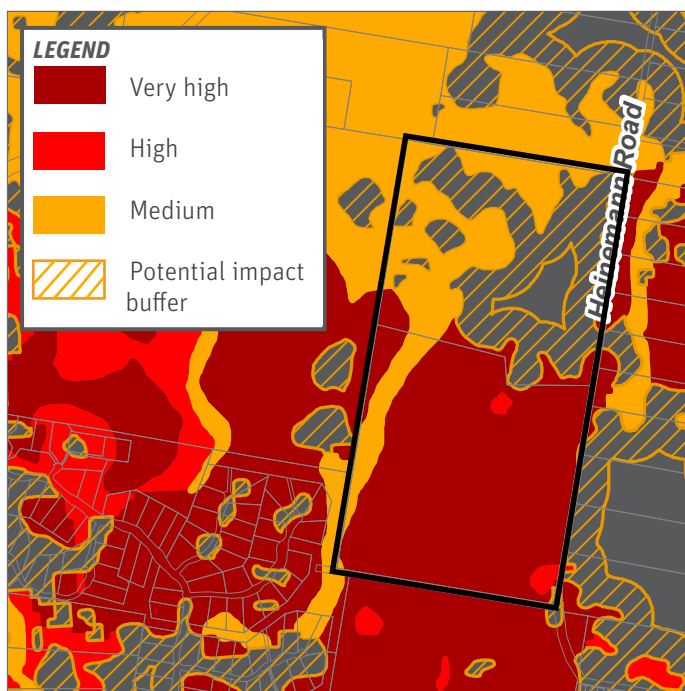
Potential bushfire intensity calculations and radiant heat exposure calculations are based on ground-truthed VHCs.

3.4.2 Slope

The slope of land under hazardous vegetation will affect the rate of spread of fire. The steeper the slope, the faster the fire will spread.

The northern part of the Precinct, where the majority of infrastructure is proposed, is undulating with slope measurements up to 3 degrees. Slope will not significantly influence fire behaviour in this area.

Redland City Plan 2018 Bushfire hazard overlay
- potential bushfire intensity



In contrast, the southern part of the area, where bushland vegetation will be retained, has rolling hills with slope measurements up to 12 degrees. Slope will increase the rate of spread and intensity of fires in this area.

3.4.3 Access

The Redland Bay Fire Station is less than 5km from the site via public roads that are capable of accommodating emergency service vehicles.

3.4.4 Fire-fighter water supply

Asset mapping indicates reticulated hydrants are located in the Heinemann Road road reserve.

3.4.5 Bushfire hazard assessment

The potential bushfire intensity of assessment reference points was determined using the Public Safety Business Agency (PSBA) Potential Bushfire Intensity Calculator (version November 2014) which models the method in Part B of the State Planning Policy (SPP) bushfire hazard assessment manual.

Results confirm the southern part of the site is a bushfire hazard area with high to very high potential bushfire intensity. It is also relevant to note that land with bushland vegetation adjoining the southern and western boundaries of the site is also a bushfire hazard area with high to very high potential bushfire intensity.

Development within 100m of a bushfire hazard area is vulnerable from exposure (ie radiant heat, ember attack, burning debris). Therefore, the SPP bushfire hazard assessment manual defines this land as a potential impact buffer, and deems it to be a bushfire hazard area for planning purposes.

3.4.6 Vegetation restoration

Vegetation restoration with a full suite of species from the regional ecosystems that occur in the area will result in a bushfire hazard area when the restoration plantings reach a mature state. For example, any plans for full vegetation restoration of waterways, flood prone areas and areas of vegetation in the northern part of the site, would reduce the area of potentially developable land in this part of the site due to a need to implement an appropriate setback.

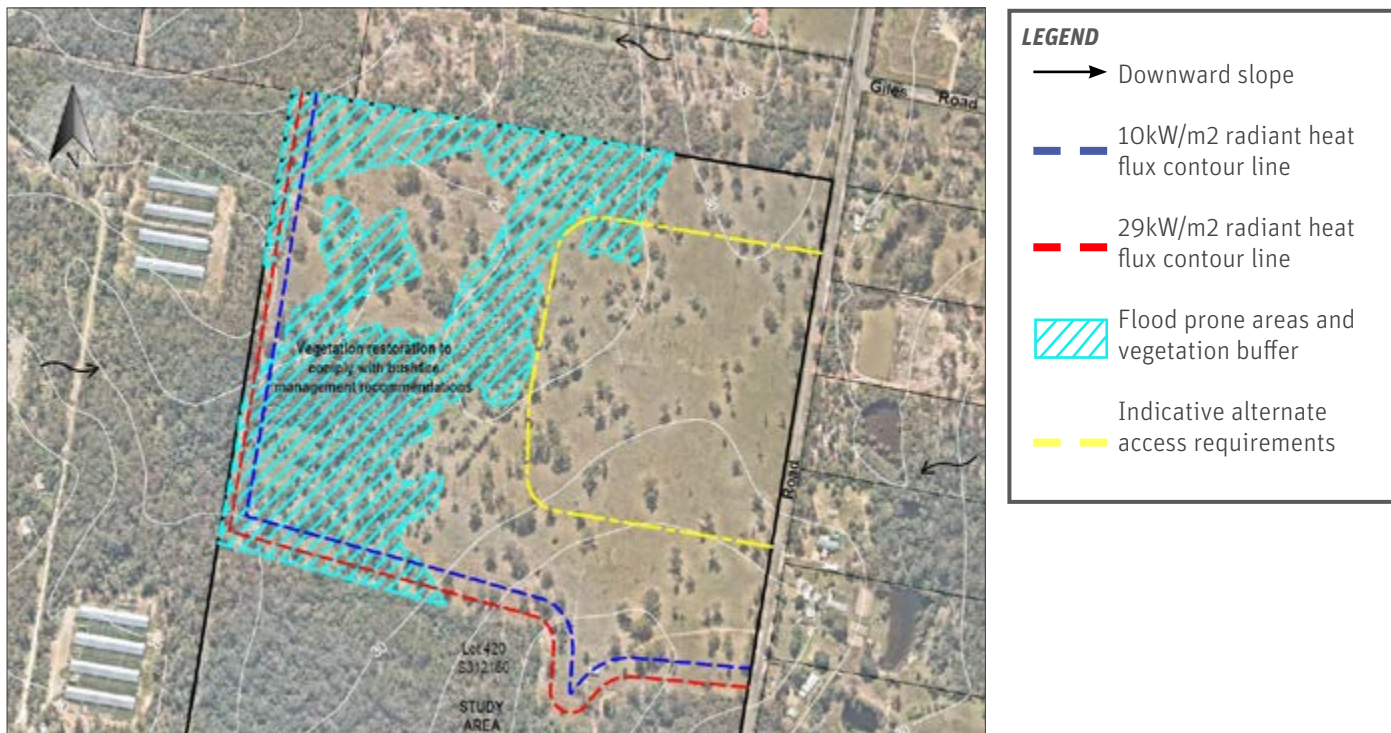
3.4.7 Bushfire attack

The likely directions of bushfire attack on the northern part of the site are from the south and west where bushfire hazard areas occur.

3.4.8 Radiant heat exposure assessment

The Bushfire Hazard Overlay Code requires development to be located and designed to ensure proposed buildings or building envelopes achieve a radiant heat flux of 10 kW/m² where involving a 'vulnerable use' (e.g. a building designed for gathering) and 29 kW/m² otherwise.

As previously highlighted, the likely directions of bushfire attack on the northern part of the site are from the south and west where bushfire hazard areas occur. Results from bushfire attack modelling indicates the 10 kW/m² radiant heat flux contour is 43.6m from hazardous vegetation to the south and 30.6m from hazardous vegetation to the west. The 29 kW/m² radiant heat flux contour is 18.6m from hazardous vegetation to the south and 12.1m from hazardous vegetation to the west.



3.4.9 Mitigation measures

- Bushfire protection zones
 - Buildings should be sufficiently separated from hazardous vegetation to achieve the appropriate radiant heat exposure outcome based on the use definition of the building, ie 10 kW/m² where involving a 'vulnerable use' and 29 kW/m² otherwise
- Vegetation restoration
 - Vegetation restoration in the northern part of the site should be designed so that it does not result in a large continuous area of bushland vegetation aligned with waterways, flood prone areas and mapped areas of significant vegetation. It should seek to achieve a more 'park-like' landscape with trees, managed grass cover and narrow corridors/small isolated patches of groundcover, shrub and tree plantings
 - A vegetation restoration plan will be required which complies with bushfire management recommendations. It should facilitate efficient access for emergency services and the evacuation of occupants and provide ongoing protection from bushfire for assets and buildings
- Vehicle access
 - Service roads should be designed to provide efficient access for emergency services and the evacuation of occupants. They should have a dual-lane, all-weather surface and load bearing capacity and turning radii which is suitable for heavy rigid urban fire-fighting appliances
 - Where practical, service roads should be used to separate buildings from hazardous vegetation
 - Given that the Precinct will involve the congregation of large numbers of people, alternative access/egress should be included in the service road layout
- Fire-fighter water supply
 - Connection to mains water and provision of hydrants should be in accordance with applicable Australian standards and building codes.

3.5 Cultural heritage considerations

In early 2019, Everick Heritage was engaged by Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) to undertake a Part 6 Cultural Heritage Study for the site for Council consideration.

The Study was undertaken using historic information, oral history and local knowledge, aerial photographs and field observations.

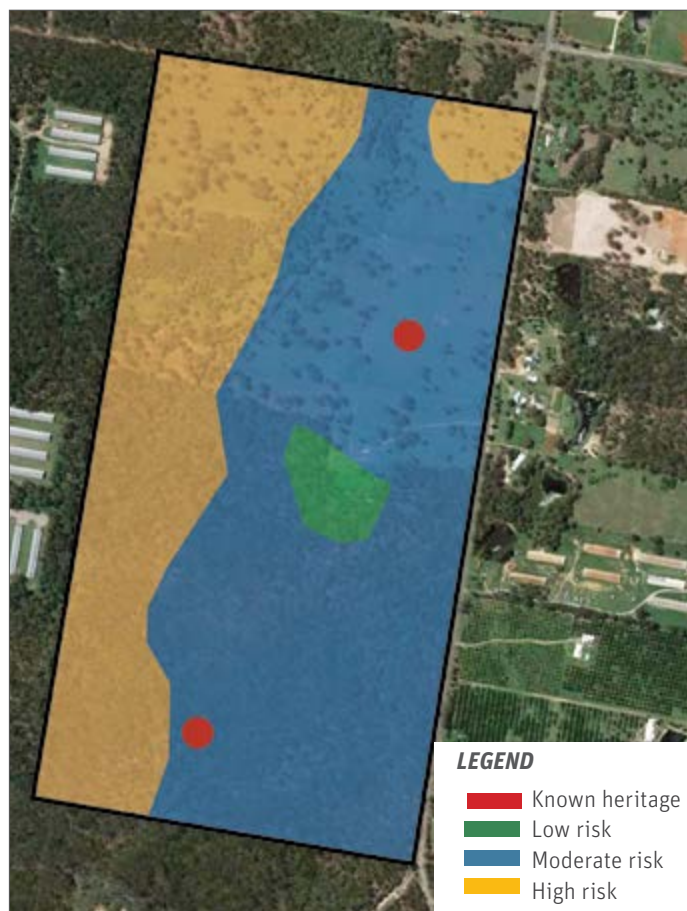
Key findings from the Cultural Heritage Study have been summarised to highlight impacts on the development of the Master Plan.

3.5.1 Previous site disturbance

A review of historical photography indicates that the area has been subject to significant ground disturbance - as such, the site can be classified as Category 4 within the meaning of the Duty of Care Guidelines.

'Disturbance', in this instance includes:

- the post-1955 quarry in the south of the site
- the post-1983 clearing event in the north
- further evidence of forestry in the south amidst the dense woodland. However, it has been deemed that it is likely that only one clearing event took place and that disturbance was limited.



Areas of known heritage and risk (Everick, 2019)

3.5.2 Areas of known heritage

Potential scar tree

A potential scar tree was identified on an upslope adjacent east to tributaries and wetland areas in the south-west of the site. The living, standing ironbark tree exhibits a single, large oval scar orientated south-east. Due to growth of the tree, the scar has a warped appearance. The scar is approximately 550mm above ground, is 1650mm long, 150mm deep and is currently 205mm wide.

It was determined that the original width was likely closer to 300mm judging by regrowth within the scar, and an apparently original outer circumference visible around the scar. The tree has an approximate circumference of 2140mm at 1500mm above the ground surface.

No axe marks were identified on the tree.

Isolated artefact

The isolated artefact was observed centrally within the cleared section of the north-east portion of the site. The artefact is a single flake of retouched red silcrete identified within an exposure at the base of a box tree.

The flake is fine grained, approximately 15mm in diameter and exhibits slight signs of retouch towards the distal end.

3.5.3 Areas of potential high risk

Two areas were identified as being of high risk to cultural heritage. The two locations are along the western boundary for the full length of the site and in the far north-east corner. These are elevated areas near a water source with minimal history of ground disturbance and, therefore, demonstrate reasonable potential for sub-surface materials.

The remainder of the site has been assessed as having moderate and low potential to contain cultural heritage sites that may be impacted by sport and recreation development.

3.5.4 Impacts for future site development

The cultural heritage results highlight that, despite vegetation clearance within the site, it still has cultural heritage value. Future disturbance activities in the areas of known heritage and the high risk areas should be avoided where possible, unless with the express agreement of QYAC.

In the event that impacts are required to allow development, works plans should be referred to QYAC for consideration. Responsibilities of QYAC may include:

- consideration of the proposal to fully understand likely direct and ancillary impacts
- completion of subsurface investigations (if necessary)
- salvage of surface artefacts (if necessary)
- development of agreed terms to allow works.

Where possible, the proposed development has tried to largely direct the key disturbances to the low risk areas.

3.6 Engineering-based considerations

3.6.1 Geotechnical

Pacific Geotech undertook geotechnical investigations for the site in mid-2019.

Earthworks and site preparation considerations

The majority of the top soil on site was found to be suitable for re-use as structural fill, provided the material is free of organic matter and deleterious material.

It is likely that the soils may require conditioning to bring the soils to optimum standard. If the clays were overly moist, difficulty in achieving compaction of the materials will be encountered and moisture conditioning will be required.

While the top soil is appropriate, the natural clays (generally encountered in the central portion of the site in the overland flow path) would be expected to be highly reactive. If they are reused as structural fill on site, an increase in the potential ground surface movements may result. Difficulties in reusing these high-plastic clay soils as structural fill are expected. Additionally, construction in these areas (such as the lower sections of the criterium track and the access roadway leading to the cycling and bmx facilities) will require modifications such as removal of and/or limiting water infiltration to reactive clays and expansion joints in concrete.

Batters

Maximum short-term batter slopes of 45 degrees and maximum long-term batter slopes of 26 degrees are recommended for the natural clay soils subject to new fill material placed in accordance with AS3798.

Where weathered sandstone and siltstone rock are exposed in cut batters, short-term batter slopes of 60 degrees and maximum long-term batter slopes of 45 degrees are recommended. Steeper batters are also possible by use of retaining structures.

Benches may be required to reduce the total height of both cut and fill batters. However, maximum cut and fill depths should remain below 6m.

Building foundations

Given the largely varied ground conditions across the site, the appropriate foundation system for the support of the proposed structures will be dependent on:

- location within the site
- the final loads
- ability of the structure to tolerate the settlement and potential ground surface movements
- scale of building and inclusions.



- a. Overland flow areas where natural clays are more common
- b. Batters and benching will be required to create suitable areas for sports fields

3.6.2 Stormwater and flooding

Existing context

The site is located within the upper reaches of the Eprapah Creek catchment, approximately 8km south-west from the Eprapah Creek delta debouching into Point Halloran Conservation Area.

A well-defined ephemeral creek/overland flow path runs centrally through the site. This flow path conveys runoff from a 320 hectare rural catchment and is the subject of the flood investigation.

The highest point of the site is at approximately 69m AHD towards the south, falling to 23m AHD towards the north. The site has well defined overland flow paths towards the south at grades ranging from 1% to 2%, flattening to 0.5% towards the northern open grassed areas.

Modelling

Flood modelling of the 1% AEP (100-year ARI) storm indicates relatively slow flowing waters (<1.3 m/s). Maximum flow depths only range between 0.5m and 1m in the main flow path for a duration of approximately 65 minutes.

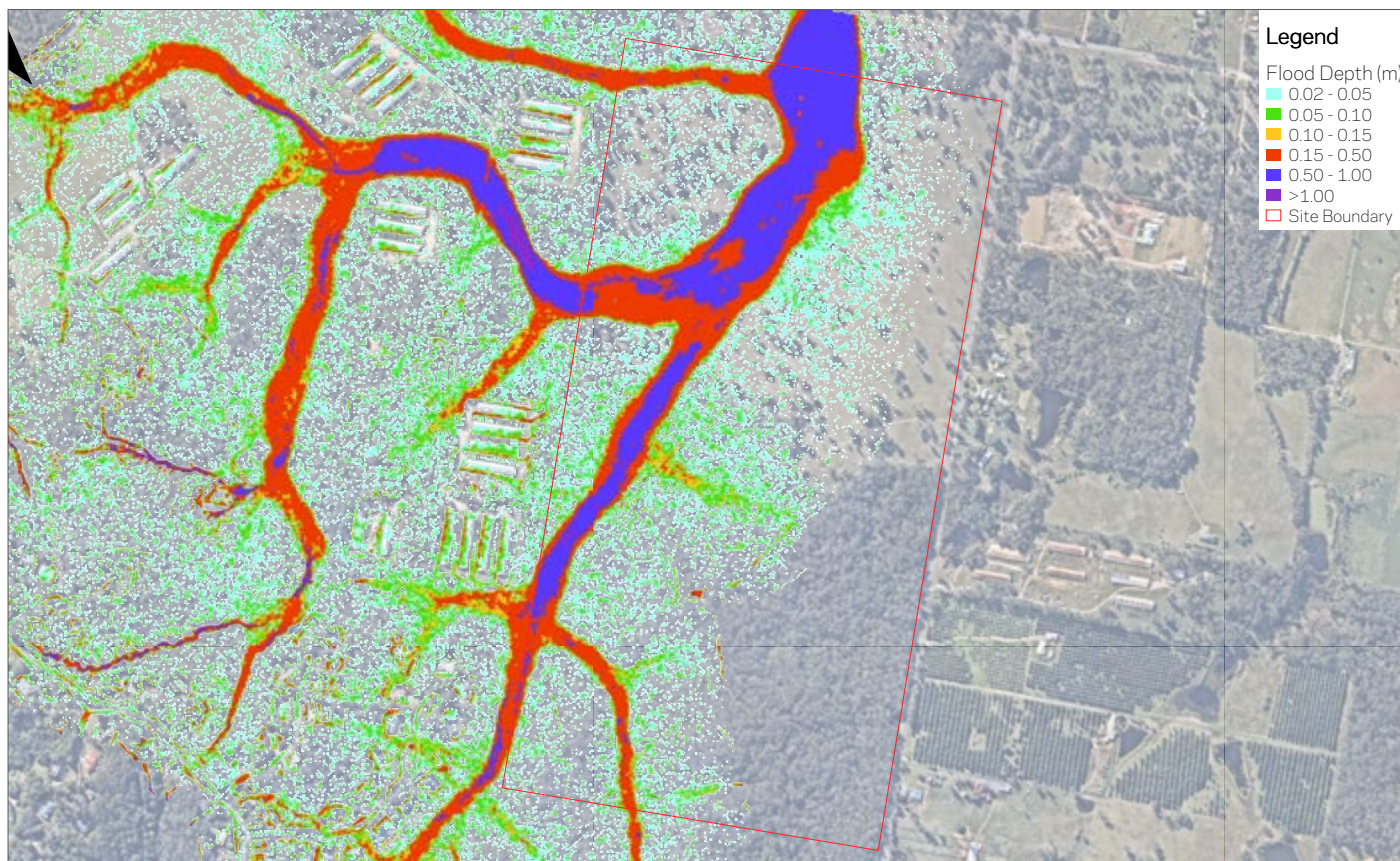
Hazard values, a function of depth and velocity, indicate extreme hazard in the main flow path for a duration of approximately 40 minutes (65 minutes for children).

There is also a risk users could become isolated in the western end of the site by floodwaters in the major flow path. However, this is unlikely as people tend to evacuate open space areas upon the onset of storm events (and there is also opportunity for the internal road way to be built up above this flooding level).

In the rare instance users were isolated, there is ample high ground outside of flood extents for refuge and the impact will be relatively short lived (<65 minutes).

Flooding in open space areas is shallow (less than 10cm) and slow flowing and, as such, is only considered a minor nuisance.

1% AEP (100-year ARI) maximum depths



3.6.3 Sewerage

Stormwater management

The proposed stormwater strategy is focused on stormwater retention via stormwater harvesting from sporting fields and infiltration via permeable pavements from internal driveways and car parks. These features will reduce stormwater runoff and satisfy the SPP stormwater quality requirements.

The development of the site will increase the hardstand areas associated with proposed structures and paved areas. The increase in site imperviousness is likely to increase peak flows in localised areas within the site. However, these will be mitigated by improvements in soil infiltration associated with proposed sports fields including topsoiling, subsoil drainage and stormwater harvesting.

Impervious areas will also be buffered by grass and bushland. These features will reduce stormwater runoff, satisfy the SPP stormwater quality requirements and prevent actionable nuisance on downstream areas.

Stormwater can be captured via sand strips, cut-off drains, swales and inlet pits, and transported to storage tanks for irrigation re-use. Implementation of permeable pavements in internal driveways and car parks can also unlock an additional stormwater source.

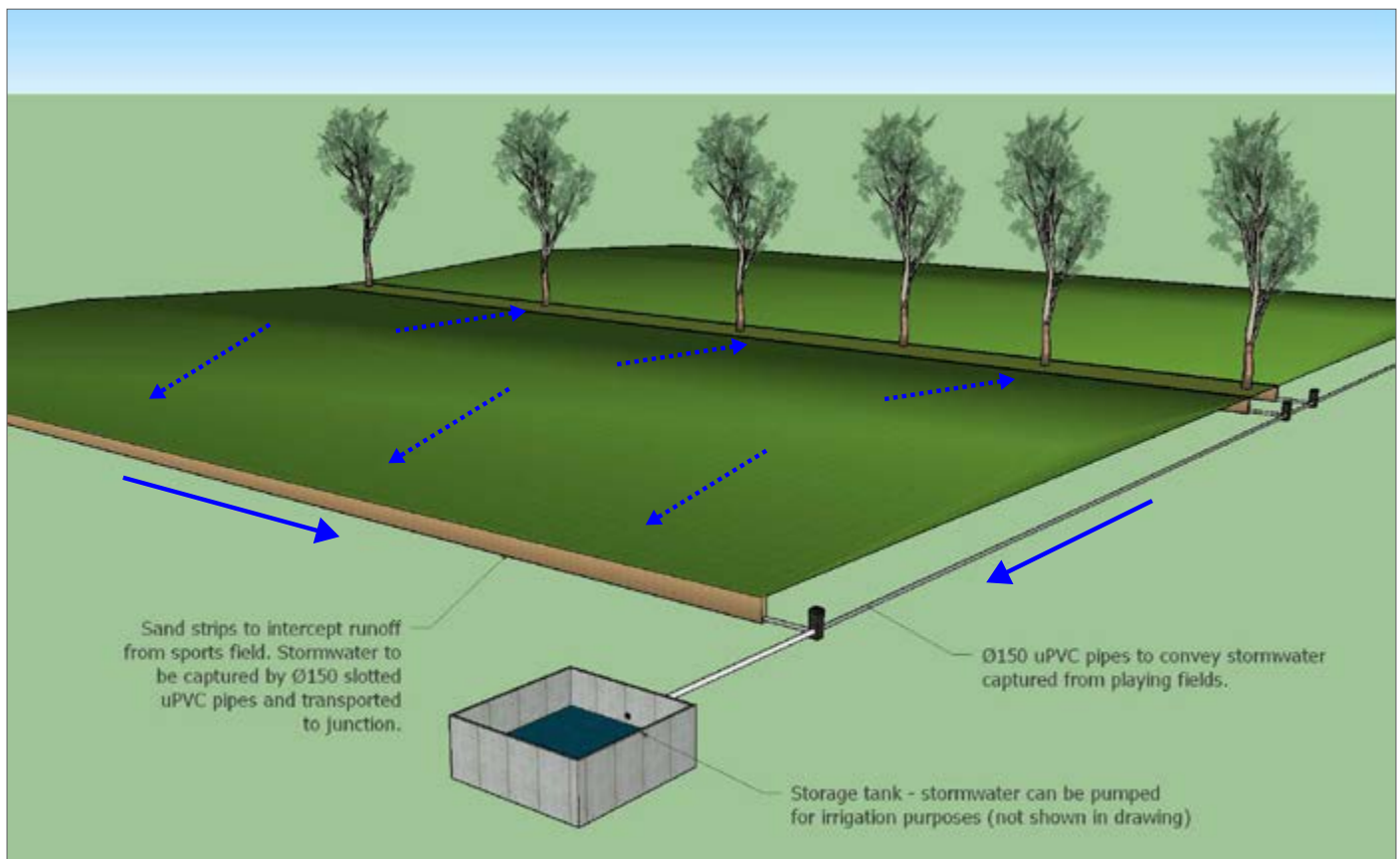
Options to connect with existing mains sewerage are limited. The nearest point to the north is almost 2.5km away and, given elevations, would require a pump station. Similarly, to come from the south is more than 1.5km and would also require a pump station. However, depending on the ultimate timing of development, the preference is to link into the new system that will be required as part of the Victoria Point Structure Plan. If this Structure Plan sewerage work becomes significantly delayed, an on-site sewerage treatment system may be established.

If required, an on-site system would comprise four 2m (diameter) treatment tanks and 200m² land application area. Set-back requirements are detailed by the Queensland Plumbing and Wastewater Code (2011). There is a 50m clearance requirement of the entire system from the top of the bank of the ephemeral waterway. However, 50m clearance from the flood extent is preferred.

There are also local clearance requirements for the land application area specifically:

- 10m from recreation and dwelling areas
- 2m from property boundaries, pedestrian paths and walkways.

Indicative stormwater harvesting schematic



3.6.4 Traffic and transport

Site access

Several site access options were explored from adjacent easements and properties. However, Council does not own this land, therefore, Heinemann Road is considered the most feasible option.

Heinemann Road is sub-arterial in accordance with Council's road hierarchy. The road reserve measures approximately 20m in width, falling short of the 29m sub-arterial standard. The road cross section provides a 6.0m road width lined pavement with table drains and no pedestrian paths. Utilities poles line the western edge of the road and non-frangible vegetation lines the eastern side of the road. Further, a crest is located approximately 750m south of Giles Road that limits sight distances. As a result, site land resumption may be required for incorporation of intersection treatments and bus services.

Heinemann Road is posted as an 80km/h speed limit past the site. However, lower speed limits are noted in the vicinity to the site which include:

- 60km/h posted speed limit between Valley Way and 260 Heinemann Road
- 60km/h posted speed limit in vicinity of:
 - Double Jump Road/Heinemann Road intersection
 - Double Jump Road/Boundary Road intersection
 - Valley Way/Heinemann Road Roundabout
- 60km/h posted speed limit off Giles Road heading east.

Sight distance assessment

The figure below highlights that access closest to Giles Road achieves the preferred standard defined within Council's Transport, Servicing, Access and Parking Planning Scheme Policy (TSAP PSP). However, sight distances in the central section of the site are reduced due to the vertical crest and should be subject to more detailed design development. Noting the above consideration and the existing 60km/h posted speed limits on sections of Heinemann Road, a reduced posted speed limit of 60km/h in the central section should be implemented.

Based on the sight line assessment, three possible locations and treatments have been adopted, as follows:

- the use of roundabouts to access the site to provide both speed control and improved traffic flow during peak demands over priority intersection control at the two more northern access locations (roughly either end of the longer green 'preferred' line shown below)
- the use of a left-in/left-out only intersection for the southern access location (roughly the location of the shorter green line shown below).

A left-in/left-out only approach will require the use of an auxiliary turning lane heading north and a separator island to restrict right turn movements. A roundabout option could also be reviewed for this location during design development.

Preferred (green) and not preferred (red) locations of site access points



Infrastructure planning

Review of Council's Local Government Infrastructure Planning Table SC 3.1.4 reveals there is strategic planning to upgrade the surrounding road network with no direct upgrades bordering the site. Key upgrades in the vicinity include:

- Heinemann Rd (Sub Arterial Road): Intersection upgrade at Double Jump Rd (2017-2021)
- Double Jump Rd: Realignment Heinemann to Kingfisher, new intersection Heinemann Rd (2017-2021)
- Double Jump Rd: Seal widening from Cleveland-Redland Bay Rd to Heinemann Rd (2022-2026)
- German Church Rd: Seal widening from Cleveland-Redland Bay Rd to Heinemann Rd (2027-2031)
- Giles Rd: Road improvement and upgraded intersection from Heinemann Rd to Cleveland-Redland Bay Rd (2027-2031).

Vehicle queueing

The queue provisions of the site were reviewed against Council's TSAP PSP.

Table O2: Queue provision assessment

Assessed queue	Proposed access	Queue provision	Required queue provision (TSAP PSP)	Adequacy
Standard queueing provisions (more than 100 cars)	Access 1 North	Greater than 16 car lengths (100m min.)	45 car lengths total	AO18.1 achieved
	Access 2 Central	Greater than 40 car lengths (240m min.)		
	Access 3 South	Greater than 16 car lengths (130m min.)		

Based on the above assessment, the proposed queue provisions achieve Acceptable Outcome 18.1 (AO18.1) of Council's TSAP Code and appear more than adequate from a traffic engineering perspective.

Public transport

Council's PSP Infrastructure works 5.6.1 (5)(i) states T1 parks generally require good public transport access. However, a review of the public transport in the immediate vicinity of the site demonstrates limited existing public transport options:

- Bus stop on Valley Way (Stop: 31846 & 318464 near Taffeta Drive) located approximately 3.2km from the south access
- Bus stop terminates on Bunker Road (Stop: 313499, Stop: 313500 Brookvale Drive) located approximately 4.9km from the north access
- Cleveland-Redland Bay Road (Stop: 311162, Stop: 310912) located approximately 3.9 km from the north access
- Cleveland Railway Station located approximately 12km from the north access.

As more detailed planning is undertaken for the site, additional consultation with the State Government will be important to advocate for additional public transport opportunities such as extending services from either Bunker Road or Valley Way.

Active transport opportunities

Currently, Heinemann Road has no shared paths, is posted at 80km/h and has no road shoulder. This is undesirable from an active transport and safety perspective. Council's Cycling and Walking guide denotes Double Jump Road as an on-road recreational cycling link and Valley Way as an on-road commuter link with a shared path option. There is an opportunity to provide a connection between Double Jump Road, Valley Way and the site with a shared path running along the western verge. This will be particularly important as the Victoria Point Structure Plan residential area to the north is developed.

Council's mapping system denotes mountain bike trail connections through the southern boundary of the site, adjoining lot (Lot 2 RP227426) and connecting Valley Way via Balthazar Circuit and Taffeta Drive. Consideration should be given to establishing trails for all users across the site. This will form part of a growing trail network including trails between Bayview Conservation Park, recently completed Gramzow Road trail link, Cornubia Forest Nature Refuge and Daisy Hill Conservation Park via Leo Lindo Drive, Kimberly Park.

Car parking requirements

Council's TSAP PSP prescribes the following parking rates - Outdoor sports (sports fields) - 50 spaces per field and Outdoor sports (other) - 20 spaces per other use.

Given that the playing fields have an undefined sporting use, it is difficult to accurately assess the parking demand. However, the proposed number of formal and overflow car parking spaces included in the Master Plan appears acceptable from a traffic engineering perspective and should be adequate to accommodate the anticipated design peak parking demand on site. Final parking provisions are subject to design development once playing field uses are resolved.

Traffic impact assessment

Council has provided 2018 daily traffic data that summarises the Annual Average Daily Traffic (AADT) in proximity to the site.

Table O3: Annual average daily traffic (AADT)

Road	Location	AADT
Heinemann Road	South of Giles Road	1725
Heinemann Road	North of Giles Road	1256
Giles Road	Running east-west	3300
Double Jump Road	Running east-west	6776

A first principal approach of 10% of the AADT is adopted to determine the peak hour traffic that is passing the site. There are approximately 173 vehicles passing the site in a peak hour event. Further, a review of Council's Road Infrastructure Planning: Traffic Forecasts and Assessments (Veitch Lister Consulting, 2014) was undertaken to understand the traffic development in the vicinity. It is noted that the 2018 recorded AADT are already greater than the 2021 forecasts presented in Veitch Lister Consulting's report for Heinemann Road south of Giles Road. Clearly, residential developments and road network upgrades have increased vehicle usage.

Traffic generation

A review of the potential traffic generation based on the expected uses (and uses to be decided) for the site has been undertaken. A highly conservative 3,200 potential users has been adopted for the playing fields based on the area nominated. The assumption also considers that both training and matches are participated in during the week with only matches undertaken on the weekend. Further, it is recognised that while some sports are seasonal, overlaps will occur.

Weekday training and mid-week matches are conducted approximately between 5:00pm to 9:00pm. Therefore, the potential attendance was distributed across this period based on time slots. Weekend racing and matches are more challenging to estimate due to larger cycling races taking place less frequently (once or twice each month). Races start at varying times across the day, i.e. cycling may start at 5:00am while BMX racing at 8:00am. As an assumption for this assessment, half of the potential attendance to arrive during the peak hour was conservatively adopted.

Table O4: Adopted weekday PM trip generation

Land use	Weekday	Potential attendance	Period	Frequency	Peak hour trips
BMX	Training	70	5:00pm - 9:00pm	4-5 nights	25
Cycling	Training	40		1-2 nights	15
Playing fields	Training and mid-week matches	1,200		5 nights	400
Total					440

Table O5: Adopted weekend PM trip generation

Land use	Weekday	Potential attendance	Period	Frequency	Peak hour trips
BMX	Racing	235	8:00am - 3:00pm	Monthly	118
Cycling	Racing	200	5:00am - 12:00pm	Weekly	100
Playing fields	Matches	700	8:00am - 8:00pm	Weekends	100
Total					318

Uses outside touch, rugby league, bmx and cycling include:

- regional-level play and picnic node
- pump track
- boardwalks, viewing platforms and path network
- trail head and trails through the conservation area.

Such use is not expected to generate a material traffic peak during the standard weekday commuter peak hour periods. Instead, the proposed development is expected to generate peak traffic volumes on Saturdays and Sundays when the adjacent road network is significantly less trafficked.

Notwithstanding, the expected traffic volumes to be generated by these uses has been quantified from a first principles perspective. The adopted trip generation rate is summarised in the table below. This rate has been determined based on the parking space within the vicinity to the regional-level play and activity node turning over in 2.5 hours. This is a conservative approach.

Table 06: Adopted trip generation rate

Land use	Weekend peak hour trips	Unit
Park - car park supporting recreation areas	0.8	Trips per car parking space

Based on the above the weekend peak hour trip generation, park-related generation associated with the proposed development is summarised below.

Table 07: Development trip generation

Land use	Yield	Weekend peak hour trips
Park - car park supporting recreation areas	227 spaces	182 trips per hour

Further, during a standard weekday commuter peak the estimated trip generation is expected to be significantly less than estimated for a weekend peak period. In the order of 60 trips per hour is considered a conservative estimate (approximately one third of the trips generated during a typical weekend peak hour).

The approximate (conservative) trip generation associated with the proposed development is summarised below.

Table 08: Development trip generation

Land use	Weekday peak hour trips	Weekend peak hour trips
BMX	25	118
Cycling	15	100
Playing fields	400	100
Park	60	182
Total	500	500

Land resumption

Potential land resumption will be required along the frontage of the site to incorporate turn treatments and intersections that may include:

- an auxiliary left turn lane for priority intersection control heading north along Heinemann Road at the most southern access point (left-in/left-out intersection)
- area surrounding roundabouts to contain island, trafficked lanes and standard width verges
- potential bus bay indents for public transport bus stops
- shared pedestrian/cycling path on the western side of Heinemann Road.

Summary

While the formal sports provided for at the facility have been identified, there are a number of development details that are currently unknown but may affect traffic operations e.g. the exact types of events/carnivals that will be held at the site, the timing of individual events/carnivals and when the Precinct may be ultimately developed.

There are also likely to be several other factors, potentially unrelated to the development, that may ultimately affect traffic operations e.g. traffic volumes created by the Victoria Point Structure Plan.

It is recommended that a detailed traffic impact assessment be undertaken after further planning has been completed, the Master Plan has been refined and matters such as those mentioned above are confirmed.



4

Demand analysis

Demand for development at the Precinct has been established through consultation with Council, potential user groups, peak bodies and external stakeholders; review of demographics, participation and facility design trends and impacts; combined with an analysis of key open space issues existing within the city.

4.1 Demographic considerations

In order to understand the make-up for the Precinct 'catchment', a snapshot of existing and future population and demographic characteristics has been undertaken.

Given the Redlands Coast Regional Sport and Recreation Precinct's proposed position as a future premier sport and recreation facility, population characteristics for the entire city area have been the focus where possible. It is acknowledged that some participants will come from outside this catchment. Core participation, however, will come from within the City's boundaries. It is also important to note that the site will also play a role as the 'local' park for nearby residents. As a result, demand created for this facility 'role' has also been included.

4.1.1 Population changes

Analysis of city-wide population characteristics² reveals:

- a population of 151,987 for 2016 with population increases of approximately 33,600 by 2036. Of this increase, the vast majority is predicted to be from older adults 65+yrs (an increase of more than 24,000). By comparison, the number of young people 0-34yrs is only expected to increase by less than 3,000 residents
- a median age of 41 that has increased by more than 3 years over the last 10 years. This trend is expected to continue with the proportion of older adults 65+yrs predicted to increase from 17% in 2016 to 27% by 2036. Across the same time span, the proportion of young people 0-34yrs is predicted to decrease from 43% to 37%

4.1.2 Household considerations³

- City-wide high SEIFA Index (1,027) - reflecting lower levels of disadvantage
- very few households without a motor vehicle
- most households with internet connection.

3

ABS Census QuickStats, 2016

DEMOGRAPHIC CONSIDERATIONS - KEY IMPLICATIONS

In terms of impacts for the future development of the Precinct, these demographic considerations suggest:

- a range of sport and recreation opportunities that are attractive across the ages should be made available at the Precinct (e.g. both formal sport and passive recreation activities)
- younger people make up a large proportion of formal sport participants. With only slight increases predicted in the number of young people living in the area, formal sports that offer opportunities for older adults and masters participants should prove particularly successful. Additionally, this suggests that demand for new facilities will not necessarily come from growth in junior numbers at existing clubs or the development of new clubs, rather demand will result from changing trends, facility requirements and other external influences
- the vast majority of Precinct users are likely to drive to the facility. However, those attending cycling activities or recreation pursuits may ride (or walk) to the venue if suitable off-road links are available
- internet- and social media-based advertising will continue to prove a preferred method for activity providers.

2

Queensland Government Statistician's Office (medium series)

4.2 Trends considerations

4.2.1 Formal sport trends

Masters sport

There are indications that people may continue to engage in sport later into their old age⁴. The Australian Sports Commission highlights that organisations may need to provide a wider range of products tailored to meet the needs of older Australians.

The provision of opportunities for older participants will be particularly important in Redlands Coast, where the population is projected to age markedly. The development of the preferred layout at the site has clearly considered the need for formal and informal activities that are attractive across the ages.

Busy lifestyles

Shift work, increases in part-time and casual employment and family commitments influence participation as:

- people do not have the time to commit as a regular participant or volunteer
- people seek facilities and participation opportunities with flexible hours.

If membership stagnation or decline became a concern for the user groups based at the Precinct, additional delivery models such as social fixtures or 'pay as you play' approaches should be considered.

From extreme to mainstream

There has been a recent rise in adventure, extreme and alternative sports that are proving particularly popular with younger generations. These sports typically involve complex and advanced skills and often have some element of inherent danger and thrill-seeking. Examples include freestyle BMX and rock-climbing. These sports are also characterised by a strong lifestyle element and participants often obtain cultural self-identity and self-expression through their involvement.

International associations for adventure sports are working hard to obtain inclusion in Paralympic and Olympics events (with both skate boarding and rock climbing included as exhibition sports in the delayed Tokyo 2020 Olympic Games).

While participation rates in some mainstream and organised sports have held constant (or slightly) declined over the past decade, extreme and action sports have risen in both demand (participation) and supply (industry). These sports are gaining popularity among large segments of Generation Y who connect to a counter-culture of adventure and freedom of expression. At this point, however, solid longitudinal participation data in these sports and activities remains scant.

Diversification of sport

Road cycling, mountain biking and eco-tourism activities are all growing as non-traditional activities, while modified sports such as T20 cricket and 7s rugby are burgeoning. Changes are placing additional pressure on councils with regard to playing field capacity, facility flexibility and need to plan for additional demand.

Field and court quality

Facility providers face an increasing trend to develop and re-develop sporting fields and courts to a higher level in order to increase carrying capacity. Upgrades, such as lighting and field irrigation, allow training and competition times to be extended and increases the ability of turf playing fields to cope with the resulting wear and tear. Further, to achieve ongoing field quality, fields need 'rest periods' (of up to four weeks) where necessary maintenance can be undertaken.

The replacement of turf fields with synthetic fields, however, can significantly increase carrying capacity by limiting maintenance-required field down time. A number of facility providers are moving toward the provision of synthetic fields (particularly for football and hockey where internationally certified surfaces are available). In determining the preferred sports for the rectangular field space area within the site, Council may consider demand for synthetic surfaces.

Field sharing

With many sports extending the lengths of pre-season and season fixtures, sports are no longer classifying themselves as strictly summer or winter sports, this has led to the sharing of field space becoming more difficult. While providers strive to maximise the use of community resources (and State Government espouses field sharing), the reality is that shared use of ancillary facilities (e.g. clubhouses, car parks) rather than fields will be more likely.

The proposed north-west bike activity sub-precinct includes shared use of a clubhouse and car parking. Council will also be looking at shared-use models for the rectangular fields (touch and rugby league) to allow flexibility of use. Many of the formal and overflow car parking areas will also be shared by formal sport participants and recreation users.

Facility management

Councils across Australia employ various management structures over their sport and recreation facilities. Where resources allow, there is a growing trend towards councils taking on more responsibility for the overall management (and maintenance) of facilities. This involves users (tenant clubs) paying higher user fees, but being able to focus more on their core function of providing the relevant sport/activity, rather than face the burden of maintenance and asset management.

4.2.2 Recreation trends

Park design

Parks play multiple roles in establishing and maintaining a community's quality of life; ensuring the health of residents and visitors and contributing to economic and environmental well-being. The design of a park is critical in ensuring that it is successfully utilised by the community. Public open spaces should include:

- a range of recreation nodes that comprise clustered activities such as picnic and play areas that are attractive and safe open areas with good lighting, seating, shade, shelters and areas for play
- well-lit, level and shaded walk/cycleways that provide links to open space, community, commercial areas, and public transport (where available)
- a range of infrastructure that supports all abilities participation.

Creating connections

Numerous studies highlight the need for trails linking residential areas with parks and other types of open spaces. Walking continues to be the preferred physical activity for both men and women. ParkRun has experienced unprecedented growth and is one of the largest running events in the world. There is, therefore, a recognised need for path systems that provide good connectivity between places of activity, are aesthetically appealing, provide safe links for users, and are easy to navigate.

Rationalisation

Where open space parcels are undeveloped, are poorly located, are attracting regular anti-social behaviour and/or are not providing recreation opportunities desired by the nearby catchment (and are thus sitting idle), opportunities may exist to rationalise the land. Depending on the land tenure, this may include re-purposing as an alternate use, 'planting out' with trees to reduce maintenance, sale of the land or returning the land to the State.

Councils are becoming more cognisant of not retaining (and maintaining) open space that does not serve a community recreation function.

'Challenge' parks (with nature play)

Challenge parks are an emerging type of park. They generally feature multiple play nodes to cater for different ages, gardens, water play areas and lagoons, large open grassy spaces, shady picnic spots with quality facilities, ponds and water features, areas of natural woodland and vegetation and kilometres of shared paths and boardwalks to explore. High tree house structures, sky walks and natural elements are introducing risk back into play, enabling children to develop an awareness of limits and boundaries.

Excitingly, the Precinct has clear potential to provide a facility of this nature.

Ageing communities

Redlands Coast is an aging community, with a median age of 41 (higher than the State with a median age of 37).

An ageing community requires:

- greater emphasis on low-impact physical activity
- ability to compete in age-appropriate formal sport opportunities (e.g. masters)
- access to community infrastructure that requires wider paths, improved wheelchair/disabled access/parking, more lighting, shaded seats for resting along pathways
- places offering a sense of safety and serenity
- increased use of mobility scooters as a convenient method of transportation.

Impacts of technology

Technology remains one of the main contributors towards decreased physical activity and increased sedentary behaviour. However, many councils are now using technology within recreation areas to attract users. Opportunities such as the provision of WiFi in key parks, and by using digital tools for information and marketing on tracks and signage can help to reinvigorate parks and recreation areas.



Examples of challenge play and nature play

4.2.3 Outdoor recreation trends

Participation trends

Longitudinal outdoor recreation participation data (at a wider population level) is becoming more readily available through publications such as the SEQ Outdoor Recreation Demand Study, and more recent studies such as QSERSA (Queensland Sport Exercise and Recreation Survey of Adults) and AusPlay.

Unfortunately, it is very difficult to compare results across these studies given the different methodologies used. For example, QSERSA specifically assessed mountain bike and bushwalking participation whilst the Outdoor Recreation Demand Study analysed bicycle riding and walking more generally. Additionally, there are marked differences in some results that make direct comparisons questionable (e.g. horse riding that varies from 1.6% to 7% participation rate between surveys).

Regardless, when the results are considered together, it is appropriate to ascertain that bushwalking and water activities remain popular while participation in horse riding and mountain biking activities appears steady.

Increasing health and environmental awareness

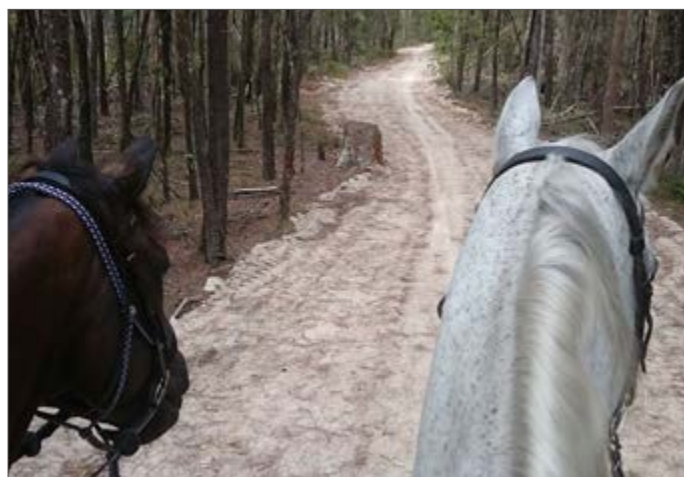
People are becoming increasingly concerned about their health, with conditions such as obesity and stress on the rise. Surveys conducted in Melbourne and Sydney⁵ indicated that residents having good access to the natural environment reported a higher quality of life. The surveys showed steady increases in people's preference for large, managed and accessible natural areas. This, combined with a growing awareness of the environment and its challenges (global warming, pollution and urbanisation), has led to a growth in visitation to natural areas.

A term referred to as 'returning to nature' has emerged where people feel the desire to become reconnected to their natural environments.

The Precinct includes more than 50ha of heavily treed conservation area, ephemeral ponds and drainage lines. The site also links well with more developed natural areas such as Days Road and Sandy Creek Conservation Areas and is well-positioned to establish a role as an outdoor recreation hub.

Tourism – cultural and nature appreciation

It is estimated that the market for nature-based tourism is increasing at six times the rate of tourism overall. Some of the factors that have contributed to this growing trend in nature-based tourism are that people are looking for new experiences, adding diversity to their experiences, combining business travel with holidays, and looking to "get back to nature".



Mountain biking and horse riding within Redlands Coast

Impacts of technology

Technology is also bringing about an increasing divergence of outdoor recreation activities. Participants are able to map their route, record their times and upload digital images of their experience. This allows them to compete and compare results with past and/or future users (Strava, Map My Ride etc). Growth in these activities has encouraged research into more refined technologies to engender wider participation in activities such as geocaching and mountain biking.

Increasing affluence and expectations of recreation

As a society, Australians are becoming more affluent - the proportion of income being spent on recreation goods and leisure is increasing. While outdoor recreation equipment such as kayaks, mountain bikes and camping goods may have previously been considered too expensive for many in the community, discount department stores are increasing access to affordable options. As people spend more money on outdoor recreation and associated equipment, an increase in outdoor recreation activities previously offered by commercial operators has been observed.

Despite cost being a barrier to participation in organised sport, participants appear more prepared to make a one-off investment in equipment for outdoor recreation that they can use at their convenience. As such, demand is increasing for a diversification of natural areas offering unique experiences and higher levels of infrastructure.

4.3 Gap analysis

The supply and demand (gap analysis) has been prepared by considering a range of inputs. Consultation has been undertaken with Councillors, Council officers, wider community, potential local sporting clubs (and their peak bodies) and additional identified stakeholders (school sport providers, environmental groups, adjoining councils etc). Further, the team has reviewed previous research and Council's sports club 'health check' survey data and considered wide-ranging trends.

4.3.1 Council engagement

Each councillor was invited to have an individual discussion with the project team to share their thoughts on the site. Additionally, separate councillor workshops were conducted regarding initial findings, concept option review, draft and final Master Plan. A wide range of individual and group discussions were held with Council staff across many work areas. Key outcomes from this Council engagement includes:

Issues

- importance of data-driven (evidence-based) demand and transparent outcomes
- need to address both future demand from population changes and existing city-wide open space issues - particularly capacity concerns at Pinklands Recreation Reserve and the Redland Showgrounds at Cleveland (where the presence of sport impacts availability of space for community events)
- need to be careful in selecting future uses at the site to ensure a sustainable approach (that does not result in ongoing capacity issues nor extensive environmental limitations)

Opportunities

- in addition to formal sport, the site can be a key venue for a wide range of recreation opportunities. It is quite unique to be developing a single site that can offer formal sport, recreation and conservation. It is very important that key links to the wider trails network are established
- connectivity with the Victoria Point Structure Plan and to meet some unfilled demand at Shoreline (e.g. AFL).

Additional considerations

- Heinemann Road is not the preferred location for a feature rectangular field facility with premier grandstand seating given its location away from business districts, residential areas and a range of public transport options
- Heinemann Road is not considered a potential venue for indoor sport and recreation development, aquatic facility development nor community centre development given city-wide location, current low level of public transport and the potential of other locations and development opportunities Council is investigating.



Pinklands Recreation Reserve



Norm Price Park - Redland Showgrounds at Cleveland

4.3.2 Formal sport engagement

While the Heinemann Road site was only purchased in 2017, Council’s desire to identify and develop a new site for sport and recreation had been discussed for a number of years prior. As such, there are a number of formal sporting bodies that have approached Council staff and Councillors with regards to the potential project.

A number of groups are keen to relocate, whilst others have voiced concern of perceptions of being ‘forced’ to relocate. Finally, there are also groups currently without a ‘home’ that see the Precinct as an opportunity for facility development. The groups (and peak bodies) chosen for consultation were either identified by Council officers or Councillors, came forward as a result of Council informing all existing sporting groups of the project or as a result of a review of background studies. Findings from this engagement are summarised in the Directions table in the following section. Additionally, the table below compares national, state and local participation trends for key sports considered in the development of the Master Plan.

Table 09: Formal sport participation trends

Sport	National trends		State trends		Local trends*	
	Children	Adults	Children	Adults	Children	Adults
AFL	steady	steady	increasing	steady	increasing	steady
Baseball	decreasing	decreasing	steady	steady	decreasing	decreasing
BMX	increasing	increasing	steady	decreasing	increasing	increasing
Cricket	decreasing	decreasing	increasing	decreasing	decreasing	steady
Cycling	increasing	increasing	increasing	increasing	increasing	increasing
Equestrian	steady	steady	increasing	increasing	steady	steady
Football (soccer)	increasing	increasing	increasing	increasing	increasing	increasing
Hockey	decreasing	decreasing	steady	steady	steady	decreasing
Mountain biking	increasing	increasing	increasing	increasing	increasing	increasing
Netball	steady	decreasing	increasing	steady	increasing	steady
Pony club	steady	steady	increasing	increasing	increasing	increasing
Rugby league	decreasing	steady	increasing	steady	increasing	steady
Rugby union	steady	decreasing	steady	steady	steady	steady
Touch football	increasing	decreasing	increasing	increasing	steady	steady

* trends are taken from Council’s sports club surveys and engagement undertaken with clubs and peak bodies throughout the development of the Master Plan

4.3.3 Environmental and wildlife group engagement

A workshop was conducted to introduce the project to local environmental groups and to discuss directions with regards to the project. Key considerations included:

- fauna and flora
 - importance of protection of habitat
 - fauna movements in, around and through the site need to be recognised
 - impacts of floodlighting on nocturnal fauna
 - protecting valuable koala trees (including lone trees)
 - retaining vegetation (including grasses and reeds) that support wetland areas and attract birds
 - recognising the needs of bird and nature watchers
- waterways
 - options to establish permanent water bodies/flow
 - downstream impacts from development at the site
- tracks and trails
 - balance the number of trails required across the site with potential environmental impacts
 - develop separate trails (and at varied widths) for different users groups.

4.3.4 Wider community engagement

The general public has been kept well informed of the project process and afforded opportunities to provide input. Council has provided regular project updates through the ‘yoursay’ section of their website (and social media platforms). Additionally, a list of Frequently Asked Questions is also provided on the website. Information flyers have also been hand-delivered to nearby residents.

A community drop-in session provided the opportunity for the community to further understand the need for the project, to appreciate the site constraints and to provide early feedback in the Master Plan process. Key outcomes include:

- important that the site includes both formal sport and recreation/play elements
- ensure the environmental aspects (significant trees, fauna and drainage areas) at the site are retained
- consider options to limit impacts on neighbouring properties.

Further opportunity for feedback will be available when the draft is released for formal public review as part of a draft engagement process.

Formal sports action

- a. Equestrian
- b. BMX
- c. Football
- d. Baseball
- e. Touch Football



4.4 Demand directions

The table below summarises the key drivers that have influenced the preferred layout for the site. There are also additional sport and recreation demands that cannot be met at the site that Council is considering in alternate planning activities. Examples of existing facility demand include AFL, hockey, football and recreation activities (e.g. flyball, dog obedience, aeromodelling, drone flying).

Table 10: Precinct design considerations

Direction	Rationale	Master Plan implications
Conservation		
Very limited disturbance in the southern portion of the site	This area provides key habitat and is an important environmental corridor	Only trails to be developed in this area
Consider a range of potential users	The conservation area is attractive to bushwalkers, bird watchers (and nature appreciation), mountain bikers and horse riders	Develop a variety of trails - single use track to wider multi-purpose trails. Encourage user groups to assist identify preferred locations
Recreation		
Provide both a local and regional function	The Precinct needs to provide recreation opportunities for locals (including the future Victoria Point Structure Plan residential area). Also, as a recognised regional-level facility, the activities need to be attractive for residents from further afield within the LGA and to visitors	Ensure a wide range of quality recreation options are available at the site. Design these options with a view to the Precinct attracting significant numbers at peak times
Embrace the natural aspects of the site	Where possible, the vision is for the proposed development to embrace the naturalness of the site	Consider the development of nature play elements, boardwalks and viewing points around water bodies and limited-impact walking tracks through vegetated areas
Build upon the expansive nature of the site	Encourage users to explore large sections (and the variety of attributes) of the Precinct	Rather than retain all recreation elements in one node, develop multiple nodes with various levels of embellishment
Recognise the recreation 'role' that formal sport facilities can play	Many formal sport facilities can also offer important recreation functions when not being used for formal training or competition. This dual role helps to reduce unnecessary potential duplication of facilities	Where practical, ensure facilities such as playing fields, sealed cycling tracks and bmx tracks are available for public use when not required for formal activities
Provide facilities that encourage all ages and abilities	A well-planned Precinct will offer a wide range of opportunities that attract people of all ages and abilities. This will ensure a vibrant community hub is established	Develop play elements for all ages. Provide wide sealed paths suitable for prams, bicycles and mobility scooters. Establish quieter areas for picnics and reflection and active nodes for loud play and adventure
Sport		
Develop a lower impact formal sport and recreation node amongst the trees in the north-west corner of the site	<p>While this area has fewer constraints than many other areas within the site, a number of significant trees need to be protected. As a result, significant clearing for playing fields or courts is not considered appropriate.</p> <p>Demand has been identified for a cycling facility that provides a range of opportunities including criterium racing, learn-to-ride and junior development and duathlon. Demand has also been established for a new BMX facility within the LGA that allows for expansion and is not located in a residential area.</p>	<p>Develop a quality bike activity sub-precinct suitable for both local and state-level events. The sub-precinct should include a criterium track and additional looped opportunities, BMX facility and community pump track. Establish a shared clubhouse and both formal and overflow car parking</p>
Provide a central hub for infrequent mountain bike events	<p>The Redlands is growing in popularity as a mountain biking area. Facilities such as the Redlands Track Park and Bayview Conservation Park and successful events such as the Bayview Blast have helped to drive this status</p> <p>Mountain bike enthusiasts and event promoters have noted the possibility of establishing a 100km event linking areas such as the Heinemann Road site, Bayview Conservation Park, Sandy Creek and Eastern Escarpment Conservation Areas and Daisy Hill Conservation Park. A large staging area with room for extensive parking and camping and access to amenities and canteen would be essential for such an event</p>	<p>Ensure there are track and trail links across the length and breadth of the site to allow for future links beyond the Precinct</p> <p>Facilities required for parking, camping and amenities and canteen will be developed for the on-site formal user groups. Arrangements can be made between these user groups and the mountain bike event team to organise access to necessary facilities (and to avoid event clashes)</p>

Direction	Rationale	Master Plan implications
Develop playing fields in the north-east corner of the site and ensure planning reflects the topography of the site	<p>Much of the site has medium- to high-level environmental value. The area in the north-east corner along Heinemann Road has previously been cleared and offers the best opportunity for playing field development</p> <p>Rectangular fields built into benches will ensure most efficient use of this area and will require less earthworks than large oval fields</p>	Develop rectangular playing fields using benches and batters that reflect the topography in the north-east corner of the site
Develop a new home for the Redlands Touch Association as part of the rectangular playing field node (in order to facilitate relocation from the Cleveland Showgrounds)	<p>As noted in a number of sections of the Master Plan, opportunities for event expansion at the Cleveland Showgrounds are limited given the current (10-field) footprint and operational arrangements of touch</p> <p>Similarly, ongoing growth in player numbers and carnival hosting is difficult for the Touch Association given the event and activity requirements of the Showgrounds. Indeed, a 'forced break' in touch activities occurs across most of September due to the Showgrounds hosting Redfest and the Caravan, Camping, Boating and 4x4 Expo</p> <p>Car parking and access at the Showgrounds site during large touch carnivals are also problematic</p> <p>The largest carnival currently hosted by the Touch Association requires 16 fields (achieved by setting up fields on the Showgrounds multi-purpose field and adjoining football facility)</p> <p>The location at the southern end of the LGA is likely to offer an opportunity for Association growth as it will be attractive for players from areas such as Logan and Beenleigh where existing touch competitions are not affiliated with Queensland Touch, limiting playing pathways</p> <p>A facility with access to at least 18 quality fields (potentially some fields could be marked on field space for other sports) and large areas for car parking would be highly attractive for hosting a range of large multi-day carnivals</p>	<p>Ensure that at least 14 quality lit touch fields are developed as part of the rectangular playing field node</p> <p>Potential for access to additional sporting code field space for irregular large carnivals would also be advantageous</p>
Develop a new home for the Redlands Rugby League Club as part of the rectangular playing field node (in order to facilitate relocation from the Pinklands Recreation Reserve)	<p>As noted in a number of sections of the Master Plan, the Pinklands Recreation Reserve is a very busy site throughout the winter sporting season</p> <p>The Rugby League Club and adjoining Redlands Netball Association continue to achieve growth in both membership and carnival attendees. This has caused significant angst as the site has issues with access and parking and has very little capacity to encourage further growth amongst the tenant groups. In fact, the Rugby League Club has noted that, with only two fields, it will need to cap membership in the very near future whilst the Netball Association has contacted Council regarding their need for additional court space in order to accommodate for training and fixture requirements</p> <p>The local dressage group (Redlands and Southern District Equestrian Group) currently share the Pony Club facilities at Pinklands Recreation Reserve. The group is keen to access additional land in order to provide a range of quality equestrian experiences</p>	<p>Ensure that 3 quality lit rugby league fields are developed as part of the rectangular playing field node</p> <p>Potential for access to additional sporting code field space for training and irregular large carnivals would also be advantageous</p>



Master plan

Maintaining a current Master Plan is a key requirement to guide facility development (to avoid ad hoc and piecemeal progress) and can be a key resource in assisting to attract funding.

The Redlands Coast Regional Sport and Recreation Precinct draft Master Plan has been developed by considering all consultation, appropriate strategic contexts and previous research. Overall, it provides an ideal opportunity to develop the facility to meet the identified needs of the sporting community, the recreation needs of Precinct visitors and locals whilst also maintaining and rehabilitating key environmental areas within the site.

The draft Master Plan integrates the existing environmental features with a range of new elements and embellishments. The provision of quality sport and recreation facilities and a more attractive environment will encourage passive recreation use from the non-sporting community. Additionally, with the range of facilities and programs available, all age groups will find activities to enjoy.

A set of guiding design principles has been developed based on the issues and opportunities identified.

The Redlands Coast Regional Sport and Recreation Precinct draft Master Plan can be found on the following pages. The draft includes an overall layout and perspective illustrations.

5.1 Vision

The medium- to long-term vision for the Precinct will:

provide a high quality multi-sports facility that offers a range of opportunities for local members and visiting teams

be supported by necessary ancillary facilities

be used daily for training and competition but also be designed and developed such that it has the capacity to host larger sporting events and carnivals.

provide quality recreation and physical activity pursuits to be enjoyed by facility users and residents

rehabilitate key environmental features and retain the conservation area as fundamental aspects of the development.

GUIDING DESIGN PRINCIPLES

The guiding design principles outlined below describe the over-arching intentions for the planning and design of the Redlands Coast Regional Sport and Recreation Precinct. They should be considered as key drivers for decision-making.

Adaptable

Precinct facilities will reflect 'smart design' so they can be adapted to support the varied needs of the community. Importantly, Council will look to cater for current and future sports and recreation demands through an evidence-based strategic approach that reflects a clear understanding of quantified needs and trends.

Quality (and value for money)

Quality infrastructure design and provision will encourage the community to value the Precinct and its facilities, and to foster high levels of use. Importantly, facilities will be designed considering the resource limitations of both Council and the community.

Partnership-driven

The Redlands Coast key user groups and community stakeholders, including sport and recreation clubs, will be provided with opportunities to be involved in the design processes for relevant components. Additionally, Council will look to foster partnerships for capital development and ongoing management.

Accessible and connected

Quality access to and circulation through the Precinct is critical. Further planning and upgrade of the surrounding road network will be undertaken to reflect nearby residential development and impacts from the Precinct. As many users are likely to travel to the Precinct by car, the surrounding road network will be upgraded and reflect nearby residential development and Precinct impacts. Access for users who walk or cycle to the site will also be developed, and supported by a system of integrated walk and cycle opportunities via a range of path, track and trail types across the site.

Sustainable

Sustainability will be key to the planning, development, ongoing management and use of the Precinct. Sustainability will be assessed and managed through regular audits and evaluation processes. Sustainable outcomes may include:

- considering the orientation of buildings to enhance the use of solar options
- water harvesting initiatives
- potential use of recycled water and other recycled materials
- waste minimisation
- maintaining natural drainage lines wherever possible, via turf and/or vegetated swales and integrated within passive recreation elements
- incorporating biofiltration devices, appropriately integrated as part of the Precinct's overall character and amenity
- ensuring car parks are landscaped and designed to contain recessed areas that encourage the detention and treatment of stormwater
- innovative management and maintenance practices to reduce resource requirements.

Environmentally-aware

While recognising the need for selective clearing to create sport and recreation spaces, key habitats and areas of environmental value will be retained, protected and rehabilitated where practical. The Precinct will offer a wide range of recreation spaces, offering users the opportunity to experience our bushland and to walk 'within and above' the wetlands, vegetation and fauna.

Wide-range appeal

The Precinct will provide sport and recreation opportunities for all ages and abilities. The Precinct will support the community's existing health and wellbeing facilities by providing areas for contemplation, recreation areas including intergenerational play and opportunities for activities such as bird watching and nature appreciation. Importantly, the Precinct also includes a number of sports recognised for providing masters opportunities.

Inclusive play design will be incorporated in the regional-level play area to ensure access for those with a disability. Embellishment and landscaping will provide tactile and sensory opportunities, and many of the paths, trails and boardwalks will be designed to allow access for all.

Clearly signed

Wayfinding will be primary to all aspects of the Precinct ensuring quality experiences. Wayfinding will include directional signage on the roads leading to the Precinct, gateway signs into key entry points, directional roadway and pedestrian signs within the Precinct and interpretive signage to tell the 'stories' related to the history, flora and fauna of the site.

Establishing a vibrant well-used community Precinct - a key goal for Council





Redlands Coast Regional Sport and Recreation Precinct Master Plan - Sub-precincts

1 *Sports field sub-precinct*
Includes lit rectangular playing fields on benches, two clubhouses, formal and overflow car parking and small recreation node

2 *Recreation sub-precinct*
Includes regional-level play and activity node, barbecues and picnic facilities, kickabout and field games area, sealed multi-use paths and formal car parking

3 *Bike activity sub-precinct*
Includes criterium track incorporating three loops, bmx track with track marshal's observation tower and administration booth, pump track, shared clubhouse, formal and overflow car parking

4 *Wetland and forest sub-precinct*
Includes sealed multi-use paths, raised boardwalks, unsealed tracks amongst inviting vegetation and wetland areas

5 *Conservation sub-precinct*
Includes unsealed tracks and trails for a mix of users



Redlands Coast Regional Sport and Recreation Precinct Master Plan

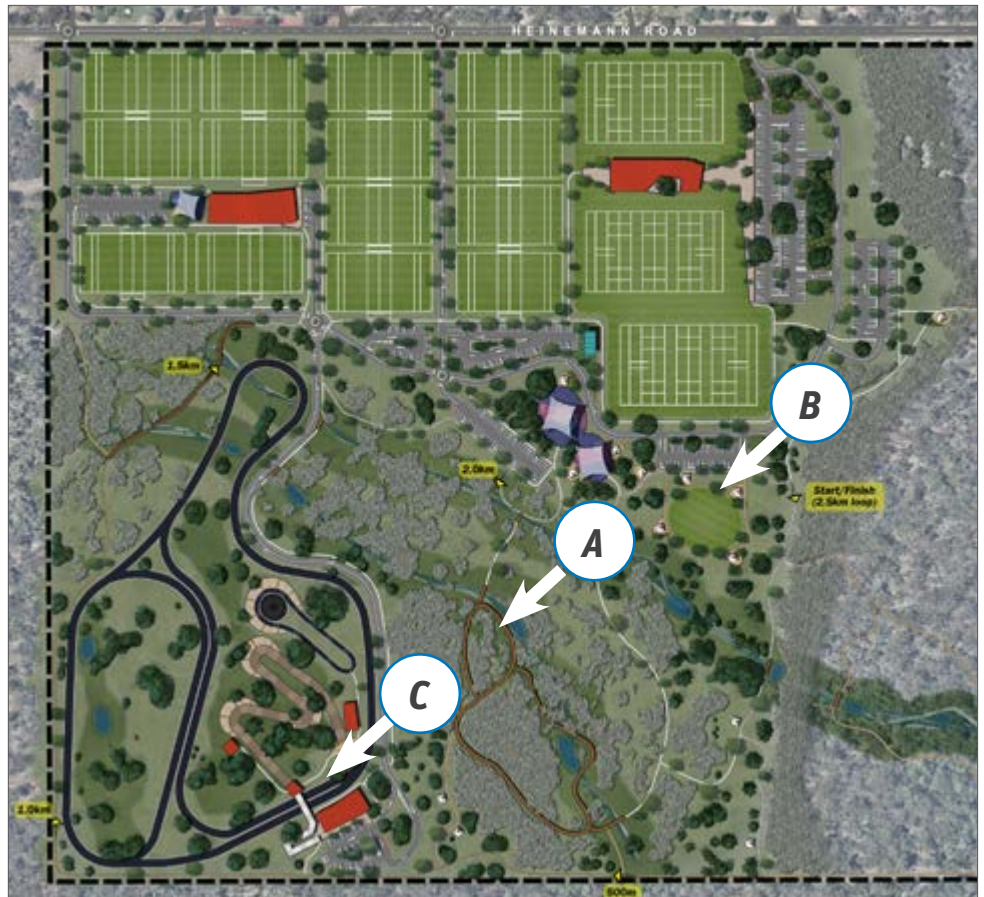


- 1 Primary Precinct entries (with signage)
- 2 Precinct exit point (left turn only)
- 3 Lit playing fields - built on benches with spectator batters (a - touch, b - rugby league)
- 4 Formal car park (52 spaces)
- 5 Small recreation node
- 6 Clubhouse incorporating amenities, changerooms, canteen, offices and viewing areas
- 7 Formal car park and service vehicle entry (10 spaces)
- 8 Clubhouse incorporating amenities, changerooms, canteen, offices and viewing areas
- 9 Formal car park (152 spaces)
- 10 Unsealed (overflow) car parking (grass areas suitable for float parking)
- 11 Formal car park (92 spaces)
- 12 Formal trail head (shelter and seating, interpretive and directional signage, water). Leading to a network of multi-use trails (mountain bikes, horses, pedestrians)
- 13 On-site sewerage treatment location (only if required)
- 14 Formal car park (50 spaces)
- 15 Regional-level play and activity node (including amenities, picnic areas, water play etc)
- 16 Formal car park (107 spaces)
- 17 Formal car park (70 spaces)
- 18 Unsealed (overflow) car parking
- 19 Raised boardwalk across wetland
- 20 Kickabout and field games area
- 21 Barbecue and picnic node
- 22 Start-finish 2.5km loop (includes sealed paths, boardwalks and unsealed track)
- 23 Unsealed tracks throughout the conservation area
- 24 Drainage line revegetation and rehabilitation
- 25 Sealed path network
- 26 Drainage line revegetation and rehabilitation
- 27 Raised board walk and viewing platforms throughout wetland and forest areas
- 28 Compacted unsealed track
- 29 Picnic node
- 30 Picnic node
- 31 Pump track
- 32 Sealed criterium track (outer loop 1.2km, secondary loop 1km, inner loop 0.6km)
- 33 BMX track (with sic surfacing and perimeter fencing)
- 34 Administration booth
- 35 Track marshal observation tower
- 36 Start ramp (with local- and state-level start options)
- 37 Overpass (and track commissaire observation area)
- 38 Clubhouse incorporating amenities, changerooms, canteen, offices and viewing areas
- 39 Formal car park (45 spaces)
- 40 Unsealed (overflow) car parking

The bike activity sub-precinct will be a popular node for formal sports, informal use and physical activity



Artist's impressions of the Precinct



VIEW A: Central boardwalk
With a series of boardwalks and viewing platforms amongst forest areas and permanent ponds, this area will prove popular for all ages.





VIEW B: Kickabout and field games area

This activity site adjoins the play node and will provide an area for more active play and games. It will be supported by picnic shelters and barbecues overlooking the grassed space.

VIEW C: Bike activity area

The north-west corner of the site will be a busy bmx and cycling node that includes a criterium circuit and BMX track both capable of hosting events. A pump track will also complement these facilities.



5.2 Master Plan elements

5.2.1 Sports field sub-precinct



Rectangular playing fields

Rectangular playing fields (lit to competition standard) will provide a wide range of opportunities for touch and rugby league. Additionally, options for field sharing will also be available.

Rectangular fields have been designed as they have a smaller footprint than ovals (reducing the amount of cut and fill required). Additionally, these fields will allow for benches to be established. These benches can cater for a number of fields, provide suitable batters for spectators and allow spaces for internal access roads.

Clubhouses

To cater for the proposed formal field sports, clubhouses have been proposed toward the northern and southern ends of the area.

The clubhouses should include changerooms, officials' rooms, first aid areas, canteen, amenities and viewing areas. The clubhouses have been proposed at two of the higher points of the entire Precinct. The development of two-storey buildings would provide attractive views across the Precinct.

Access, circulation and car parking

Given that this sub-precinct adjoins Heinemann Road, vehicular access will be directly via the two entry roads. Cars will then be able to park near to the clubhouse or field they are using given there are formal car parks at the northern, central and southern ends of the sub-precinct (a total of 533 sealed spaces). Additionally, at peak times, overflow car parking will be available on the grass adjoining the entry roads and in the areas to the west and south of the playing fields. Sealed paths will link car parks with the fields and clubhouses.

Three exit points will be available. (Given constraints associated with sightlines, left hand turn only will be available from the southernmost location).

Kerb and channel, bollards and shade trees will define internal roads and car parks across the Precinct, with WSUD drainage integrated into all car park designs.

Recreation node

A small recreation node incorporating simple toddler/lower primary play elements, seating and shade is included at the northern end of the sub-precinct. This area will prove popular for younger siblings not involved in formal training and competition.



5.2.2 Recreation sub-precinct



Regional-level play and activity node

As a key feature within the site, a large regional-level play and picnic node is proposed in a central location. This area would be the interface between the formal sporting fields to the east and the natural areas toward the western side of the facility.

This node is intended to attract users from across the whole LGA, but to also provide complementary recreation opportunities to users of the sport facilities within the Precinct.

Potential embellishments in this area include play elements attractive to children of all ages and abilities, natureplay opportunities and interactions with water (via zero-depth interactive water play elements).

Suitable amenities will also be provided at this location reflective of the regional-level nature of the facility.



Kickabout and field games area

The open grassed area directly south of the play and activity node will provide opportunities for kickabout and games such as tiggy, frisbee and touch.

Picnic facilities

A range of large and small picnic and barbecue nodes will be spread across this sub-precinct. Importantly, they will be established to provide for both larger gatherings (e.g. birthday parties) and smaller groups (e.g. families).

Access, circulation and car parking

Vehicles will be able to make their way quite close to this area via the internal roads. Car parking has been provided along the eastern edge of this sub-precinct with a smaller car park also located to the north-east of the play and activity node. In total, there are 227 sealed spaces adjoining the area with additional overflow parking available directly to the north.



Sealed paths will link car parks with the activity nodes. These paths then form a system of opportunities that continue into further areas within the Precinct. Additionally, a 2.5km loop involving sealed paths, boardwalks and compacted unsealed track will start and finish from this sub-precinct.



5.2.3 Bike activity sub-precinct



Criterium cycling track

The proposed criterium track will be the only one of its kind within Redlands Coast. The bitumen track includes three looped 'options' - the outer loop 1.2km, secondary loop 1km and the inner loop 0.6km. These loops allow for a range of training and racing opportunities. Additionally, the venue will prove attractive for sports such as duathlon. A facility of this nature will host regular events (up to state-standard).

The proposed overpass will be used by spectators, competitors and commissaires. It will also be used to display notices such as lap counters and any hazards on the track.

Options to light this track should be investigated.

BMX track

The proposed state-level BMX facility will be lit and include a start ramp with both local and state-level options and a quality track with Sic surfacing. The start ramp will be accessible via the overpass or from ground level. A track marshal observation tower will provide views across the track, and an administration booth will be provided at the finish line.

Given the quality of surfacing, and the potential damage that can be caused by inappropriate use, the track will be fenced (with a 900mm high fencing option).

Pump track

To complement the criterium and BMX opportunities, a pump track will be established within the sub-precinct. This bitumen track will prove attractive for all ages and abilities (and can also be used as a warm-up area for BMX events).

Clubhouse

A shared clubhouse has been proposed for the highest location within this area. A two-storey building would provide views across all of the bike and cycle facilities and incorporate amenities, changerooms, canteen, office space, storage and social areas.

Natural elements

Given the significance of some of the vegetation within this sub-precinct, the various tracks should be designed to retain specimens where practical. Where the criterium track crosses the drainage areas, culverts and pipes will be constructed so as not to unnecessarily impact flow paths.

Access, circulation and car parking

An internal road will lead from the east of the Precinct to the sub-precinct. A formal car park (with 45 spaces) and areas of overflow parking have been provided near to the clubhouse. It will be important that the overflow areas include large spaces for cars and trailers. (Overflow nose-in parking for vehicles will also be available off the access road). Both sealed and unsealed paths will link the sub-precinct with the wider activity areas within the Precinct.



5.2.4 Wetland and forest sub-precinct



Rehabilitated drainage areas

The central west side of the Precinct includes drainage corridors and significant vegetation. These areas will be rehabilitated through weed management and revegetation practices. Not only will this enhance the visual amenity, it will also further re-establish the habitats within this sub-precinct.

Boardwalks, viewing platforms, path network

A network of boardwalks, viewing platforms, sealed and unsealed paths are proposed across this sub-precinct. They will weave in and out of heavily forested areas and provide opportunities to walk 'within and above' the wetlands, vegetation and fauna. This network will link with all of the key activity areas across the Precinct.



5.2.5 Conservation sub-precinct

Conservation practices

The southern end of the Precinct has been identified as an area of high-value vegetation and key corridors. Council's natural areas teams are already managing this area reflective of the important conservation values (e.g. unnecessary tracks are being rationalised).

The development of the northern end of the Precinct will not alter the conservation-focus for the remainder of the site.

Track network

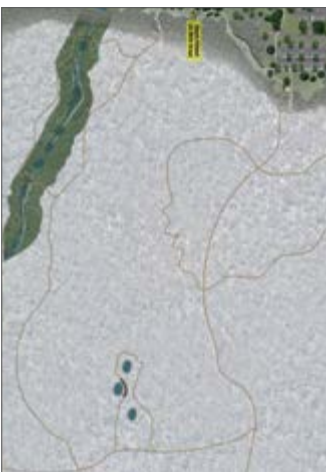
While conservation will remain the key focus for the southern end of the Precinct, opportunity exists for low impact track and trail development. A range of potential users have been identified.

Horse riders and mountain bikers will be seeking slightly wider cleared tracks that link with the wider riding network. Council's multi-use trails (that play an important role in fire management) are appropriate for these uses.

Bushwalkers, bird watchers and nature appreciation enthusiasts prefer smaller tracks where they can enjoy a 'quieter' experience without unexpected disturbance from horse riders and mountain bikers. Council is encouraged to work with these users to identify the areas within the conservation sub-precinct where the vegetation and topography will be attractive for track development.

Trailhead

A trailhead is proposed at the interface between the sports field and conservation sub-precincts. This facility would include a shelter, seating, interpretive and directional signage and access to water. Additionally, grassed areas for overflow car parking (and horse float parking) adjoin this trailhead.



5.3 Staged implementation

5.3.1 Staging

It is important to note that realising this Master Plan will require resource commitment from both Council and the user groups. Additionally, State and Federal Government grants will be sought to assist fund the infrastructure items.

Adopting the Master Plan does not commit Council to fully fund each project. The expected cost of the development of the Master Plan is likely to be beyond the Council's and the community's ability to realise in the short-term. Thus, this section provides a staged approach to implementation. The information provided is designed as a flexible guide—changes in user group priorities or earlier opportunities for funding may alter staging.

There is potential for sports field development to be brought forward as a short-term priority or held back for longer-term capital works depending on the preferences of Council and the user groups.

Initial

- Bulk earthworks, services and access infrastructure

Stage 1

- Sports field sub-precinct
- Bike activity sub-precinct

Stage 2

- Recreation sub-precinct
- Wetland and forest sub-precinct

Stage 3

- Conservation sub-precinct.

5.3.2 Cost estimation

Project costs (and ultimate project staging) will be dependent on many factors such as relevant approvals, cost estimate refinement, development stages, procurement scheduling and cashflow management.

Projects of a similar nature undertaken in Queensland in recent times include the Highfields Sport and Recreation Precinct, Fraser Coast Sports and Recreation Precinct, Springfield Central Sports Complex and a number of projects led by Moreton Bay Regional Council. Comparing scope and scale (and noting the influencing factors highlighted above), the Redlands Coast Regional Sport and Recreation Precinct project is likely to cost in the range of \$40m-\$60m.

5.4 Management considerations

5.4.1 Current arrangements

Council's current model for sports facility management is for the user groups (clubs) to be offered leases over building footprints and permits to occupy for playing fields and courts. Clubs are then responsible for much of the day-to-day control of the facility - including facility maintenance. To assist clubs meet these costs, Council pays them the equivalent of what it would cost Council to mow the fields 30 times each year. Under this arrangement, Council retains responsibility for irrigation practices and major renovation requirements.

5.4.2 Future considerations

While the current arrangement allows Council to minimise resources required for sports facility operations, Council officers indicate that it impacts the quality of the playing facilities and potentially hinders longer-term sustainability. As highlighted in Section 4.2, there is a growing trend towards councils taking on more responsibility for the overall management (and maintenance) of sports facilities. Under this approach, tenants pay higher user fees reflective of the increased resourcing provided by Council. However, it allows these volunteers to then focus more on their core function of providing the relevant sport/activity, rather than face the burden of maintenance and asset management.

At the Precinct, Council will have full maintenance and management responsibility for the recreation, conservation and wetland and forest sub-precincts. As a result, expanding these roles to include the sports facilities simply provides a consistent approach for the entire Precinct.

With the Precinct set to be home to a number of sporting groups, it is recommended that Council lead the establishment of an over-arching 'scheduling and directions group' for the Precinct. In addition to representatives from each of the formal sporting groups, representatives from active recreation groups (parkrun, mountain biking, bird watching etc) using the Precinct could also be included in the over-arching group. This group could meet regularly (3-4 times each year) to minimise potential impacts from activity and event clashes and to continue to discuss ongoing development initiatives.

