SCHEMATIC LANDSCAPE PLAN

LAKESHORE CARAVAN PARK REDEVELOPMENT

DECEMBER 2021

VERSION 1, DECEMBER 2021

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EXECUTIVE SUMMARY

E1 CONTEXT

CRC Constructions, as part of an agreement with the landowner Goulburn-Murray Water are applying for a planning permit to implement the developed layout for caravan and cabin sites, amenities, recreational and wastewater treatment areas.

Sentient Design has been appointed to develop a schematic landscape plan that will protect and enhance the existing vegetation, biodiversity and lake water quality while providing functional and attractive recreation and amenity. The built landscape will also be a critical component in the utilisation of recycled water for the site.

The Plan proposes an integrated response to layout, hydrology, soils, vegetation, stormwater and recreation opportunities. It defines functional areas and details principles to underly future detailed landscape design. In this way the Schematic Landscape Plan will support the development objectives while mitigating risks to the natural values of the site.

E2 EXISTING CONDITIONS

The Lakeshore Caravan Park is located on the shore of Lake Eppalock within the Campaspe River catchment. The lake was constructed in 1963 and is the major water storage for the region supplying drinking water to Bendigo and other urban centres. Environmental flows along the corridor are also critical to the health of aquatic and riparian communities.

The existing paved access roads within the caravan park lie roughly on a ridge line, will adjacent land falling to the south and west towards the lake, and to the north towards the Knowsley-Eppalock Road. Slopes range from less than 5% on the ridge line to approximately 15% on the slopes towards the lake.

Much of the central area has little vegetative cover and modified landform, with the natural well-draining shale sub soil observable at the surface. A large area to the north east of the site has previously functioned as a constructed dirt bike track and is heavily degraded.

Most of the overall site would be described as having an open tree cover characteristic of EVC 61: Box Ironbark Forest. Biosis has investigated and mapped the site according the vegetation communities that are present, which includes a number of additional EVCs. Both individual and clusters of indigenous trees have been mapped by Biosis, TPZs have been calculated. Areas of higher habitat value have also been identified to the east and west of the site.

The site would once have been a known place for First Nations people as a cultural landscape interconnected with themselves, their cultural traditions and spiritual ancestors.

The Lake Eppalock Management Plan states that there are no records of Aboriginal archaeological sites or objects relating to the Lake Eppalock area, but this should be confirmed directly with the Aboriginal Cultural Heritage Register.

The landscape character of the site is both strongly representative of it's geology and vegetation class, and also reminiscent of the iconic Australian caravan park experience.

The treed landscape contributes greatly to the amenity of these places, providing a link to the natural landscape, shaded amenity and shelter and enclosure from the surrounding cleared rural areas.

E3 PROPOSED CHANGES

The Vision Statement for the park redevelopment considers individual factors, issues and preferences, and synthesises them into a wholistic objective.

The Lakeshore Caravan Park environment: a unique landscape setting that is acknowledged, respected and enjoyed by visitors. The Park will be a place:

- **where indigenous vegetation is valued and enhanced**
- **where natural processes are utilised to cleanse water, improve soils and increase biodiversity**
- **where visitors can experience connection with the natural environment**
- **where the unique character of the place is celebrated and protected**

At this schematic planning stage, the project site has been defined as a series of precincts that relate to the primary purpose of the area. There are three broad types of precincts:

RESIDENTIAL PRECINCTS

These are characterised by intensive residential use with associated infrastructure such as access roads, drainage and amenity structures.

ACTIVITY PRECINCTS

These precincts include areas that are focussed around a specific function including the entry driveway, wastewater treatment, foreshore and recreation. The other two; the Amenity Buffer and the Intensive Amenity areas will attract heavy usage.

CONSERVATION PRECINCTS

These precinct are located at the periphery of the park, and are focussed on the conservation and enhancement of vegetation and natural ecosystem processes.

For each identified precinct, a schematic layout has been prepared identifying the following:

- existing vegetation and habitat areas
- existing Tree Protection Zones
- proposed built elements
- proposed vehicle movement
- proposed pedestrian movement
- proposed surface finishes
- proposed water sensitive drainage elements
- proposed new amenity planting / revegetation areas
- proposed landscape features

This plan provides structure and guidance for further detailed landscape design to achieve an outcome that protects and enhances the natural values of the site while accommodating intensive recreation use.

SECTION 1: INTRODUCTION

1.1 BACKGROUND

The Lakeshore Caravan Park was closed in 2019 for redevelopment and all short and long term tenancies ended.

CRC Construction was given a license by Goulburn-Murray Water to clean and redevelop the site for future commercial operation.

CRC Constructions are applying for a planning permit to implement the developed layout for caravan sites, cabin sites, amenities, recreational and wastewater treatment areas.

Sentient Design has been appointed to develop a schematic landscape plan that will protect and enhance the existing vegetation, biodiversity and lake water quality while providing functional and attractive amenity. The built landscape will also be a critical component in the utilisation of recycled water for the site.

1.2 PURPOSE

The purpose of this Schematic Landscape Plan is to document the existing natural values and planning context of the site, and to demonstrate a direct link from these to strategic objectives that will shape the further landscape design.

The Plan will develop an integrated response to layout, hydrology, soils, vegetation and recreation opportunities. It will define functional areas and will detail the principles to underly the future landscape design.

In this way the Schematic Landscape Plan will support the development objectives while mitigating risks to the natural values of the site.

1.3 METHOD

The physical aspects of the site were investigated and analysed from a landscape architecture perspective, This was conducted by both site inspection and desk review. Other investigations procured by CRC Constructions were also examined and relevant data incorporated into landscape plans. Government GIS were sourced for regional soil, topographical, hydrological and ecological data.

A review was also conducted of the planning context, identifying the zoning and overlay controls affecting the property.

Relevant documents of the City of Greater Bendigo, Victorian State Government Environment, Land, Water and Planning department and the Environment Protection Authority were also reviewed for potential guidance and constraints.

Each layer of information was then integrated together spatially to form an Existing Conditions Plan, and a Schematic Landscape Plan.

This Schematic Plan illustrates a responsive and sustainable approach to development of the land that remediates areas that are currently in degraded condition and supports the proposed functioning of the caravan park.

Image 1: The lake edge with its characteristic fringe of Eucalyptus camaldulensis trees

Image 2: Gully erosion in the former dirt bike track area

SECTION 2: VALUES & SIGNIFICANCE

2.1 EXISTING CONDITIONS

GENERAL ARRANGEMENT & CIRCULATION

The current condition of the Lakeshore Caravan Park reflects the former operational layout. Much built infrastructure has been removed, but the central asphalted access has been retained to be incorporated into the proposed new layout.

Areas previously used for cabin sites are proposed to be renewed for camping (to the north) and cabins (to the south). Additional areas for cabins and new amenity buildings are proposed to the east. High activity drivers including the pool and restaurant are to be located to the west.

Semi-mature and mature trees populate the central area providing some canopy shade and softening the modified ground form.

A large area to the north east of the site has previously functioned as a constructed dirt bike track. This area has a highly modified surface with evidence of erosion, compaction and movement of sediments. A large number of tires that previously bounded the track are present.

To the west of this area are four cascading detention basins on the side of the ridge falling away from the lake. Currently water is held only in the first pond.

An asphalt road links the park to the Knowsley- Eppalock Road. This road brings visitors directly into the central park entry point, where further asphalted roads direct traffic east or west.

LANDFORM

The paved access roads within the caravan park lie roughly on a ridgeline, falling to the south and west towards the lake, and to the north towards the Knowsley-Eppalock Road. A knoll to the south west provides attractive views from the south east around to the west.

Slopes are gentle on the ridge areas (approximately 0-10%) with steeper areas towards the water edge and along the northern gully (approximately 10-15%).

The four detention basins and the surrounding constructed dirt bike track have caused major alterations to the land surface, exposing subsoils and altering surface and sub surface hydrology.

In the former cabin sites the local ground was commonly modified to provide level plinths to individual sites. This modifies local drainage, and the ability for water to move across the site. Previously installed areas of concrete have left the ground compacted and devoid of microbial life.

SURFACE FINISHES

Much of the site has no vegetative cover, with the natural well-draining shale sub soil observable at the surface. Other areas have a light cover of grass (more-so in winter). The well-treed areas to the east and west of the site generally have a natural mulch layer protecting the soil.

In the north-falling gully dirt biking activities over unfinished subsoil has resulted in significant erosion with sediments accruing at the bottom of the gully and moving into the road reserve the Knowsley-Eppalock Road.

The strip of land between the existing water level and the full capacity level is mostly a gravelly dirt finish some areas with a light covering of colonising vegetative species.

Surfaces with a lack of vegetative or mulch cover are highly susceptible to erosion and compaction impacts. Both of these are evident in different areas within the site. Compaction particularly then negatively affects the ability for water to infiltrate during rainfall events, leading to concentrated high-velocity surface flows and further movement of sediments.

The eastern side of the site with largely immature tree cover shows evidence of usage that has created exposed tracks in the land surface finish. The natural absence of a significant shrub layer in this vegetation type can encourage pedestrians and bicycles to disperse movement, rather than concentrating movement onto surfaced paths.

EXISTING VEGETATION

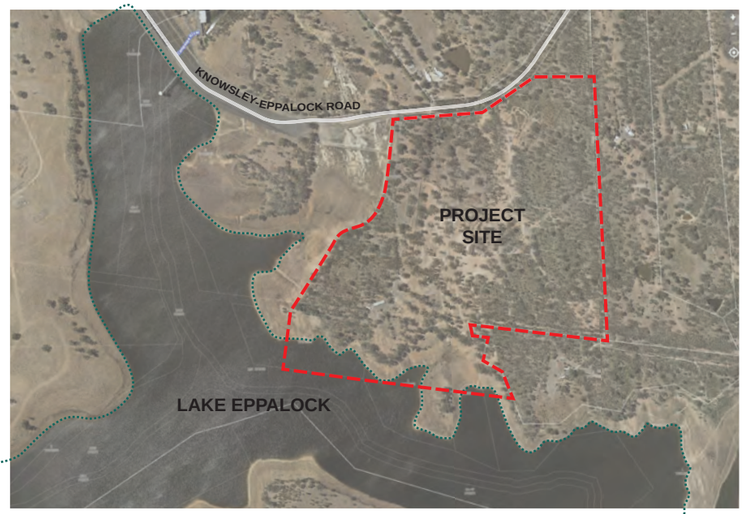
Most of the project site would be described as having an open tree cover.

The trees in the current caravan park site were mapped by Ryder Arboriculture & Environment in October 2018[1]. 398 trees were identified, assessed and recommendations for remediations given (if required). Tree Protections Zones (TPZs) were not specified, but could be calculated from the data provided.

The most numerous species present include *Eucalyptus microcarpa* Grey Box (indigenous), *E. cladocalyx* Sugar Gum (native non-indigenous), *E. camaldulensis* River Red Gum (indigenous). 72% of the trees present are of these three species.

Both individual and patches of indigenous trees have also been mapped by Biosis, TPZs have been calculated. Areas of higher habitat value have also been identified. Refer to the Biosis report for further details.

1 Ryder Arboriculture & Environment, Assessment of Trees at Lakeshore Caravan Park, Lake Eppalock Health & Condition Report, 1 October 2018



PROJECT SITE CONTEXT

Scale 1:10,000

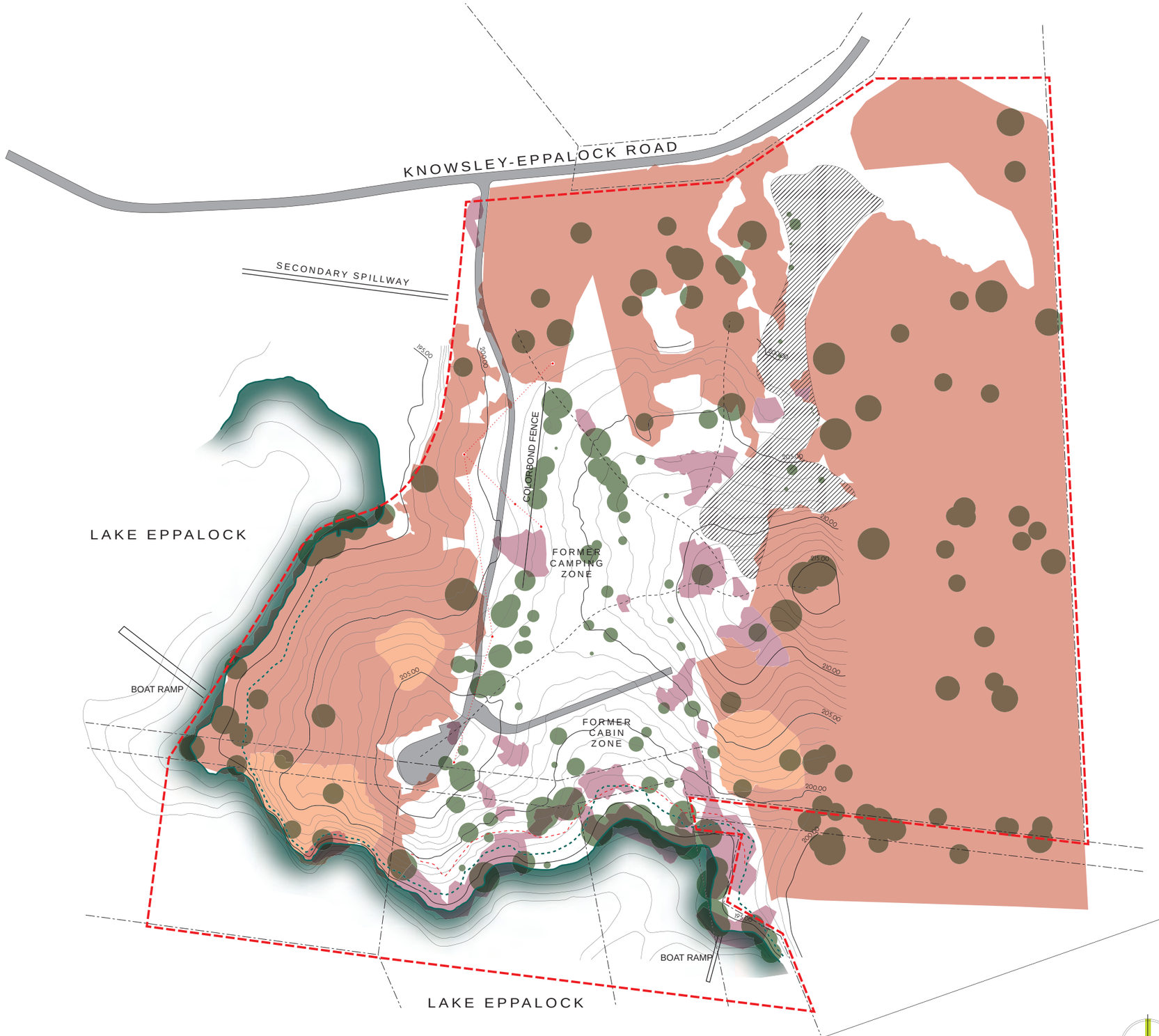
Aerial: CoGB Community Compass January 2021

Lake edge reflects water volume at that date

LEGEND

- Project Boundary
- Title Boundary
- Paved finish
- Lake edge - full capacity (194.00 AHD)
- Lake edge - potential temporary top of detention (196.00 AHD)
- Lake edge 30m horizontal setback from full capacity
- Contour major 5m interval
- Contour minor 1m interval
- Spur line
- Tree Protection Zones *
- Habitat zone - moderate quality*
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Overhead Power
- Area of significant erosion

* Refer to refer to Biosis plans for derivation



Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Existing Conditions

Date:
26 October 2021

0 100 200 300 400 500 600m
1 to 4000@A3

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In addition to the mapped trees, there are areas of strong recent regrowth, both of *Eucalyptus* species and locally common colonising plants such as *Cassinia arcuata*.

The areas of higher habitat value identified by Biosis are located to the east and west of the site.

Some herbaceous weed species are present mostly in areas formerly within the cabin and caravan site areas.

2.2 NATURAL VALUES

GEOLOGY

The 1 :250,000 Geological Survey of Victoria maps shows the property to be Lower Ordovician in age with marine sediments of sandstone, siltstone, shale and chert known as Lancefieldian; a subset of the Castlemaine Group deposits. [2]

HYDROLOGY

The Lakeshore Caravan Park is located within the Campaspe River catchment which is approximately 2% of population of the Murray-Darling basin.

Water flows along the river are highly regulated with some environmental flows maintained to support several threatened species communities, aquatic life and many terrestrial species[3]. The Sustainable Rivers Audit reported the overall ecosystem health of the Campaspe River as very poor.

Lake Eppalock was constructed in 1963 and is the major water storage for the region supplying drinking water to Bendigo and other urban centres. The dam also supported irrigation in the Campaspe Irrigation Area[4].

VEGETATION

The site is located within the Goldfields Bioregion, and is a “Landscape Type 1; a sedimentary landscape with 450-650mm mean annual rainfall”.

The modelled Ecological Vegetation Class (EVC) is 61: Box Ironbark Forest which is classified as depleted.

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2 Edwards, J & Slater, K (compilers) 2001, *Bendigo 1:250,000 geological map*, Geological Survey of Victoria

3 Source: Murray-Darling Basin Authority, Australian Government https://www.mdba.gov.au/water-management/catchments/campaspe accessed November 2021

4 Source: Murray-Darling Basin Authority, Australian Government https://www.mdba.gov.au/water-management/catchments/campaspe accessed November 2021

EVC 61 is characterised by the following features[5]:

- Open forest
- Variety in age of trees
- Tree hollows
- Fallen wood on ground
- Scattered medium shrub layer
- Open groundlayer with bare ground and litter
- Scattered native winter-spring shrubs and wildflowers

While the creation of the lake in 1963 created an artificial water edge, pre 1750 vegetation modelling suggests that EVC 61 extended to the original edge of the Campaspe River and Wild Duck Creek at this point. Biosis has investigated and mapped the site according the vegetation communities that area actually present, which includes a number of additional EVCs.

The existing trees, both indigenous and native, provide considerable benefits to the stability of the land surface and to the regulation of water movement. Tree roots stabilise the soil preventing erosion. This is evident at the water edge where tree roots have protected soils from wave disturbance.

The natural leaf litter found under trees provides protective cover for the soil by shading soil and reducing evaporation. Tree roots also combat soil compaction and work in symbiosis with soil ecology to sequester carbon and absorb water during rainfall events, allowing greater regulation of soil moisture.

Indigenous tree species provide additional contributions to local ecology as they are one component in an evolved community of flora, fauna and soil life. Perennial vegetation also has an important role to play in preventing dryland salinity.

The treatment of all indigenous and non indigenous native vegetation should be in accordance with the three step approach proposed by the Department of Environment, Land, Water and Planning[6]. Removal of vegetation should be avoided wherever possible and adverse effects to remaining vegetation should be minimised, Where approved removal of vegetation cannot be avoided, biodiversity should be compensated through offsets.

5 Source: VicVeg Online www.vicveg.net.au accessed November 2021

6 DELWP, Guidelines for the Removal, Destruction and Lopping of Native Vegetation, Decmber 2017

2.3 CULTURAL VALUES

ABORIGINAL CULTURAL HERITAGE

The site is located on land of the Dja Dja Wurrung and Taungurung peoples. The specific boundary between the jurisdiction of the two respective Registered Aboriginal Parties (RAPs) is not yet clarified[7]. While the physical landscape has been heavily modified by the creation of the water storage facility and European land clearing, the site would once have been a known place for the indigenous people as a cultural landscape interconnected with themselves, their cultural traditions and spiritual ancestors.

All aboriginal places and objects are significant, whether they have been found or not, and are protected by State and Commonwealth legislation Part of this site is located within an area of Aboriginal cultural heritage sensitivity.

The Lake Eppalock Management Plan states that there are no records of Aboriginal archaeological sites or objects relating to the Lake Eppalock area, but this should be confirmed directly with the Aboriginal Cultural Heritage Register[8].

7 Goulburn-Murray Water, Lake Eppalock Management Plan 2013
8 Goulburn-Murray Water, Lake Eppalock Management Plan 2013

Image 3: The Lakeshore Caravan Park in it's previous operational with Red Gum trees edging the lake, the grassed foreshore and the undulating edge of the lake itself; all iconic elements of a lakeside holiday park experience.

RECENT SETTLEMENT CULTURAL HERITAGE

Prior to the creation of the lake, much of the surrounding land was used for livestock grazing as a part of the Campaspe Plains pastoral run. In the local area there are sites of cultural significance including homestead ruins, gold mining infrastructure, stone fences and bridge ruins. No specific artefacts relating to recent settlement history have been identified by Biosis in their review of this site.

LANDSCAPE CHARACTER

The landscape character of the site is both strongly representative of it's geology and vegetation class, and also reminiscent of the iconic Australian caravan park experience.

The current physical presentation of the site reads as an area of post gold-rush indigenous regrowth. This is a characteristic landscape of the entire region that develops as a result of natural regeneration of land cleared for grazing or timber in a relatively low rainfall environment.

The foreshore area has many isolated semi-mature trees that reinforce the site's strong relationship to the water. Areas east and west of the former caravan park are rich in regrowth and have clusters of young and semi-mature trees. The former park itself has many planted non-local natives trees that provide scale and native character.

The colour and texture of the rocky subsoils and the absence of significant topsoil are strongly indicative of the goldfields bioregion and its low to moderate rainfall.

In its current condition, the footprint of its former function is discernible, with some buildings, roads, landform grading and other infrastructure still present. It is easy to imagine it in summer as a small township of residents enjoying the relaxed recreation-based lifestyle and safe family-oriented open spaces.

This experience is an iconic one for many Australian families over generations who de-camp from their usual homes each summer to relax and socialise. The typical caravan park is easy to navigate, safe for children to run independently and provides many opportunities for communal recreational spaces that support the 'private' individual sites.

The treed landscape contributes greatly to the amenity of these places, providing a link to the natural landscape, shaded amenity and shelter and enclosure from the surrounding cleared rural areas.

2.4 USE VALUES

WATER

Lake Eppalock was formed by the creation of a dam that captured the waters of the Coliban and Campaspe Rivers and the Wild Duck Creek.

The primary purpose for Lake Eppalock is to provide a continuous water supply for downstream communities. Storage levels of the water body, and decisions relating to the release of water are primarily driven by this imperative[9]. As well as raw water being provided as an input into local water treatment and supply systems, it is also used for irrigation, agricultural, commercial and recreation uses. The lake has also been managed as a mixed-species fishery

Environmental flows along the corridor are also critical to the health of aquatic and riparian communities.

Given the functional and downstream uses of the lake water, maintaining quality is critical. Within the context of the proposed redevelopment of the Lakeshore Caravan Park, major risks to water quality arising from the landscape would include sediments in storm water, and nutrient-rich recycled water.

9 Goulburn-Murray Water, Lake Eppalock Management Plan 2013

Image 4: Looking over the lake from the knoll to the south-west of the site

TOURISM

Lake Eppalock is major water sport destination for the Central Victorian region. The Lakeshore Caravan Park is one of four commercial accommodation facilities located around the lake. These facilities are a strategic means of controlling public use of and access to the Lake Foreshore and reducing illegal camping activity.

RECREATION

Use of the water for recreational purposes including boating, fishing and swimming is a key attraction for visitors to the environs. Use of the facilities is seasonal, focused on summer and the adjacent longer holiday periods. Management of the lake to achieve recreational objectives is secondary to its role as a water storage facility[10]. Water levels are not managed primarily to service the needs of water sports.

Lake Eppalock is also used for fishing and duck hunting activities.

2.5 SIGNIFICANCE OF THE LAKESHORE CARAVAN PARK

The significance of the Lakeshore Caravan Park at lake Eppalock is centred around four notions;

1. The lake's function as a water storage body that provides a reliable supply to downstream communities.

2. The Indigenous and Colonial history of use of the site,

3. The presence of indigenous vegetation communities, and

4. Its potential to provide social and recreational opportunities in a natural environment as a commercial caravan park.

The function of the lake as a water storage is of primary importance and the development of the site needs to include measures that mitigate risks to water quality including sedimentation and nutrient load.

Indigenous history of the site is undocumented but should be assumed as the Traditional Owners of the country on which the Caravan Park is located.

The more recent history of use of the site as a seasonal place of residence and recreation is significant in the life of many residents of Bendigo and is common to many in Australia. The natural vegetation that exists on the site can enhance the amenity of that experience and aid in providing visitors opportunities to observe and connect with nature.

SECTION 3: PLANNING CONTEXT

3.1 TRADITIONAL OWNERS

The Dja Dja Wurrung and the Taungurung peoples are recognised as Traditional Owners of Crown Land within this area of Victoria under the Traditional Owner Settlement Act 2010. The specific boundary between the jurisdiction of the two respective Registered Aboriginal Parties (RAPs) is not yet clarified.

These lands are jointly managed in perpetuity by the Traditional Owners and the State of Victoria.

Under the settlement agreement, the Dja Dja Wurrung and Taungurung people have traditional rights and will contribute to decisions on activities undertaken on all Crown land in the agreement area.

3.2 LAND STATUS & ZONING

LAND STATUS

The project site commonly known as the Lakeshore Caravan Park is located on a parcel of freehold land owned by Goulburn-Murray Water. The land directly abuts Lake Eppalock.

ZONING[1]

The site is located in the Rural Conservation Zone (RCZ) and also the Public Conservation and Resource Zone(PCRZ).

The purpose of the RCZ is:

"To implement the Municipal Planning Strategy and the Planning Policy Framework.

To conserve the values specified in a schedule to this zone.

To protect and enhance the natural environment and natural processes for their historic, archaeological and scientific interest, landscape, faunal habitat and cultural values.

To protect and enhance natural resources and the biodiversity of the area.

To encourage development and use of land which is consistent with sustainable land management and land capability practices, and which takes into account the conservation values and environmental sensitivity of the locality.

To provide for agricultural use consistent with the conservation of environmental and landscape values of the area.

To conserve and enhance the cultural significance and character of open rural and scenic non urban landscapes."

1 Source: State Government of Victoria DELWP, Accessed October 2021

The purpose of the PCRZ is:

"To implement the Municipal Planning Strategy and the Planning Policy Framework.

To protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values.

To provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes.

To provide for appropriate resource based uses."

PLANNING OVERLAYS

The site is affected by the Environmental Significance Overlay (ESO3) and the Bushfire Management Overlay (BMO)

The purpose of the ESO is:

"To implement the Municipal Planning Strategy and the Planning Policy Framework.

To identify areas where the development of land may be affected by environmental constraints.

To ensure that development is compatible with identified environmental values."

The objective for Schedule 3 is:

"To ensure the protection and maintenance of water quality and water yield within the Eppalock"

The purpose of the BMO is:

"To implement the Municipal Planning Strategy and the Planning Policy Framework.

To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.

To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.

To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level."

3.3 EXISTING RELEVANT STATE GOVERNMENT POLICIES & PLANS

DEPARTMENT OF ENVIRONMENT, LAND, WATER & PLANNING

Guidelines for the Removal, Destruction or Lopping of Native Vegetation, December 2017

This document is incorporated into the Victorian Planning Provisions. It lays out the appropriate method of determining how existing native vegetation will be managed as a part of the proposed development.

The guidelines propose the three step approach (avoid, minimise, offset) which should be utilised to achieve a no net loss to biodiversity.

ENVIRONMENTAL PROTECTION AGENCY

Victorian Guideline for Water Recycling March 2021

This document provides advice on the potential strategic use and associated constraints of recycled water on the site.

Publication 275 Construction Techniques for Sediment Pollution Control May 1991

Urban Stormwater Management Guide June 2021

MELBOURNE WATER

Water Sensitive Urban Design Guidelines South Eastern Councils 2013

This document provides advice including theory, strategic implementation and application techniques.

3.4 EXISTING LOCAL GOVERNMENT POLICIES & PLANS

The City of Greater Bendigo is the authority responsible for implementing the Planning Scheme. City produced plans and policies relevant to the proposed use are discussed below.

Water Sensitive Urban Design 2012

Climate Change & Environment Strategy 2021-26

Community Access & Inclusion Plan 2015-2018

3.5 OTHER RELEVANT DOCUMENTS

AUCKLAND COUNCIL, Water Sensitive Design for Stormwater March 2015

This document provides advice for the integration of WSD to site development, balancing land devlopment with ecosystem services to ensure the resilience of the natural environment.

The document includes discussion of theory, principles and applications suitable for landscapes of all scales.

SECTION 4: VISION & STRATEGIC GOALS

This section of the plan sets the way forward for the landscape planning, development and management of the Lakeshore Caravan Park Redevelopment.

A Vision Statement is proposed that sets a defined path for the future of the park. This is supported by a series of Strategic Objectives and Priorities that establish a framework for future decision making and detailed design.

4.1 VISION STATEMENT

The Vision Statement has been developed as a result of the investigation and consultation processes conducted. It considers individual factors, issues and preferences, and synthesises them into a wholistic objective for the Park.

The Lakeshore Caravan Park environment: a unique landscape setting that is acknowledged, respected and enjoyed by visitors. The Park will be a place:

- **where indigenous vegetation is valued and enhanced**
- **where natural processes are utilised to cleanse water, improve soils and increase biodiversity**
- **where visitors can experience connection with the natural environment**
- **where the unique character of the place is celebrated and protected**

4.2 PROPOSED ACTIONS

WATER QUALITY

Enhance the water quality of the lake by ensuring inflows are low in sediment and nutrients.

Rationale: A high quality water environment is a mandatory requirement for the water storage body, and is also critical for the health of people and animals in the lake environment

Priorities.

- Treat stormwater close to the source with a range of tools to reduce velocity and concentration of water including maximising of permeable surfacing
- Utilise natural filtration, biological and chemical processes to treat stormwater
- Utilise vegetation to reduce the nutrient load of recycled water, strictly controlling the distribution area
- Reduce production of sediments by installing appropriate surfaces to intensive use areas and surfacing exposed soils
- Identify suitable locations for revegetation

VEGETATION

Protect existing indigenous and native vegetation and enhance biodiversity through revegetation activities

Rationale: The existing trees and understory vegetation provide benefits to soil stability, water quality, biodiversity and amenity. Additional planting will provide benefits to ecosystem processes.

Priorities:

- Avoid impacts to existing trees by locating infrastructure away from TPZs wherever possible
- Minimise disturbance to the root or canopy zones of existing trees through a range of range of strategies from location of infrastructure through to the detailed design of landscape elements
- Maintain surfacing in vegetation areas to allow for permeability and prevent erosion but still allow for natural regeneration
- Improve soil moisture through areas of recharge and increased permeability generally

- Incorporate new indigenous planting to landscape buffers, potential saline pans, screening and amenity planting areas, selecting species that will secure slopes, filter water and provide habitat
- Incorporate new nutrient tolerant species to recycled water dispersement areas

RECREATION

Provide non-water based recreational opportunities that encourage physical activity, develop a connection with nature and are appropriate to the environmental constraints.

Rationale: Land-based activities complement the Park's main attractions and engage people in constructive physical recreation activities.

Priorities:

- Develop a shared path trail for cycling and walking that highlights the environmental and topographical features of the site while linking important activity nodes
- Develop a natural play space for families to build a connection with the natural environment.
- Identify opportunities to utilise the robust grassed areas used for recycled water dispersement for recreational purposes
- Identify an environmental trail to encourage physical activity, activation of the site and to deliver environmental education with low operational inputs.

AMENITY

Develop a variety of comfortable external spaces that encourage social connectedness and safe spaces for the whole community

Rationale: Attractive and functional amenity spaces enhance visitor experience, support site character and positive social behaviour

Priorities:

- Design access paths and amenity space to be compliant to the Disability Discrimination Act (DDA) wherever possible
- Design access paths and amenity spaces in accordance with Universal Design principles to allow for participation of people of all abilities
- Consider Crime Prevention Through Environmental Design (CPTED) principles to develop spaces that feel safer to encourage greater participation

- Provide natural and constructed shade to amenity areas
- Design amenity spaces to allow for small and large group gathering
- Take advantage of the cooler local temperature of irrigated green infrastructure to site amenity and recreational spaces
- Organise paths and amenity spaces to be logical and understandable to encourage independent use by children
- Design amenity spaces to have a clear visual identity and materials palette that reinforces a clear visual character for the Park.

CULTURE & HISTORY

Communicate the Indigenous and more recent settlement history of the site.

Rationale: Learning about the history of the site is a way of increasing engagement and respect for the place. The land owner has a commitment to honour the Traditional Owners of the land and by extension identify their history in relation to the site.

Priorities:

- Incorporate indigenous planting throughout, and with some plant labels and information in a high amenity area.
- Install interpretive signage to communicate information about past use and cultural diversity of the site
- Install interpretive signage to communicate the history of the lake and it’s significance in the region

SECTION 5: SCHEMATIC LANDSCAPE PLAN

The individual priorities detailed above have been brought together in a series of schematic drawings that illustrate the potential development of the Lakeshore Caravan Park.

Given the scale,the project site has been defined as a series of precincts that relate to the primary purpose of the area. There are three broad types of precincts:

RESIDENTIAL PRECINCTS

These are characterised by intensive residential use with associated infrastructure such as access roads, drainage and amenity structures. Zone 1 is planned for caravan and camping use, while others are intended for cabins. These precincts are all within the defendable space envelope (yet to be defined), and vegetation is to be managed accordingly.

ACTIVITY PRECINCTS

These precincts include areas that are focussed around a specific function including the entry road, water treatment, foreshore and recreation. The other two; the Amenity Buffer and the Intensive Amenity areas will attract heavy usage. For precincts located within the defendable space envelope vegetation is to be managed accordingly to manage risk. Outside of the this envelope, the Recreation Park rejuvenates the degraded valley and utilises the supply of recycled water to provide a variety of functions.

CONSERVATION PRECINCTS

These precincts are located at the periphery of the Park, and are focussed on the conservation and enhancement of vegetation and natural ecosystem processes. These precincts have an important role in buffering the surrounding environment from the physical effects of the intense Park usage.

The TPZs shown on the plan reflect the indigenous trees and are sourced from the Biosis report. There are additional non-indigenous native trees, but these have not been shown for clarity. Losses will be determined based on development footprint, BMO requirements, and impacts upon the TPZ of trees in close proximity to development areas, based on the Guidelines for the Removal, Destruction or Lopping of Native Vegetation (the Guidelines)

PRECINCT BREAKDOWN

The project site has been defined as a series of precincts that relate to the primary purpose of the area.. There are three broad types of precincts:

RESIDENTIAL PRECINCTS

These are characterised by intensive residential use with associated infrastructure such as access roads, drainage, amenity structures. Zone 1 is planned for caravan and camping use, while others are intended for cabins. These precincts are all within the defendable space envelope, and vegetation is to be managed accordingly.

ACTIVITY PRECINCTS

These precincts include areas that are focussed around a specific function including the entry driveway, wastewater treatment, foreshore and recreation. The other two; the Amenity Buffer and the Intensive Amenity areas will attract strong usage. Both of these are located within the defendable space envelope and vegetation is to be managed accordingly.

CONSERVATION PRECINCTS

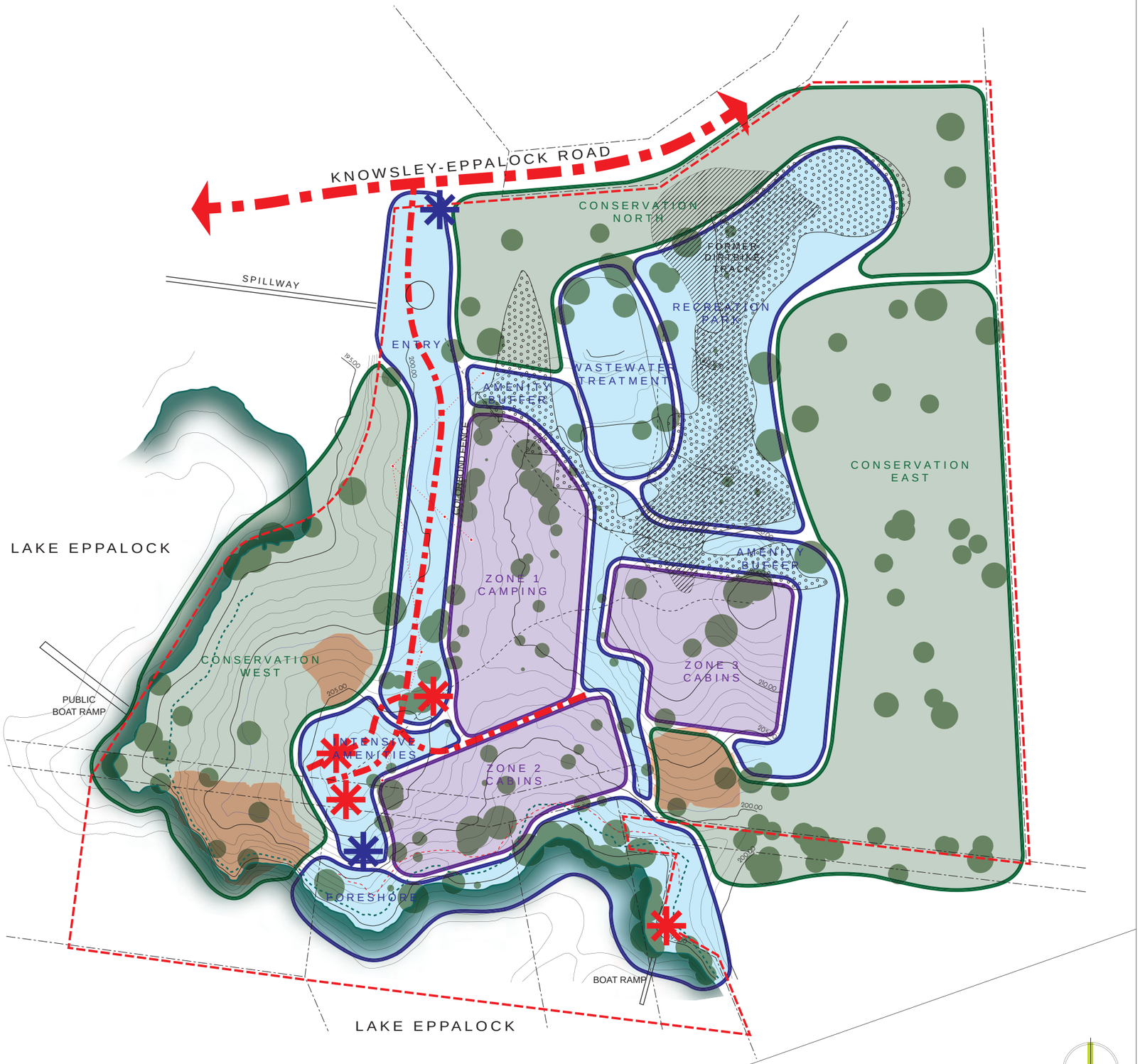
These precincts are located at the periphery of the Park, and are focussed on the conservation and enhancement of vegetation and natural ecosystem processes. These precincts have an important role in buffering the surrounding environment from the physical effects of the intense Park usage.

The TPZs shown on the plan reflect the indigenous trees and are sourced from the Biosis report. There are additional non-indigenous native trees, but these have not been shown for clarity. While the objective will be to retain the highest proportion of trees possible, losses will be determined based on development footprint, BMO requirements, and impacts upon the TPZ of trees in close proximity to development areas, based on the Guidelines for the Removal, Destruction or Lopping of Native Vegetation (the Guidelines).

LEGEND

- Project Boundary
- Title Boundary
- Lake edge - full capacity (194.00 AHD)
- Lake edge - potential temporary top of detention (196.00 AHD)
- Lake edge 30m horizontal setback from full capacity
- Contour major 5m interval
- Contour minor 1m interval
- Spur line
- Tree Protection Zones *
- Zone of Environmental sensitivity *
- Overhead Power
- Area of significant erosion
- Area for recycled water irrigation
- Residential Precinct
- Activity Precinct
- Conservation Precinct
- Major vehicular movement line
- Major activity node
- Landmark

* Refer to refer to Biosis plans for derivation



Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Proposed Precinct Breakdown

Date:
9 December 2021

0 20 50 75 100 125 150m

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ZONE 1 CAMPING

LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Planted swale
- Rain garden
- Grass
- Compacted gravel paving
- Low planting
- Environemtna Trail with Station

* Refer to refer to Biosis plans for derivation

DESCRIPTION & PURPOSE

This area was previously used for the siting of cabins. The site drains to the west, with slopes approximatey 3%.
This area is intended for camping and caravan sites arranged along gravel access roads.
The precinct also includes two camp kitchens , two amenities blocks and four BBQ huts.

VEGETATION

The precinct has a sparse canopy of both indigenous and non-indigneous native trees. These should be retained where possible by arranging site boundaries and infrastructure with deference to them.
Trees that are designated to be retained should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees.
These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Amenity planting of smaller indigenous species should be included in the detailed design of kitchen, amenities and BBQ structures. No additional planting is proposed within the camping sites.

SURFACING

Accessways should be crowned and constructed from compacted local gravel.
The camp site areas should be grassed with a drought tolerant perennial species. This will self-repair and will tolerate heavy use over summer. Concrete grid pavers such as Turfstone should be used to define parking areas for vehicles. These will withstand compaction pressure while allowing grass to grow through.
Intensively used areas around structures should be surfaced in exposed aggregate concrete or compacted gravel as necessary to avoid areas of erosion. All materials should have rounded aggregate and be comfortable under bare foot.

VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment.

STORM WATER MANAGEMENT

As all surfacing within this zone is proposed to be permeable, piped drainage should be kept to a minimum.
Access roads should be crowned. Adjacent grassed swales should gentle enough to navigate on foot and for a caravan.
Land to the west of this precinct should incorporate planted swales for temporary detention and removal of sediments prior to movement through bush areas. Pit inverts to piped drainage can be set at a nominated maximum level. to protect infrastructure.

PEDESTRIAN MOVEMENT

While it is expected that pedestrians will share the gravelled access roads with vehicles, a dedicated shared cycling and pedestrian path should be located north east of the precinct, connecting the precinct down to the foreshore area and with the kitchen and BBQ hut.

PRECEDENT IMAGES

1. Site should be arranged to support social engagement and take advantage of existing trees
2. Shared paths should be provided to link key areas
3. Van and vehicle parking should be defined on the ground with paved areas
4. Turf block pavers minimise compaction and allow grass to grow through

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Zone 1 Camping

Date:
9 December 2021

0 10 20 40 60 80m

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ZONE 2 CABINS

DESCRIPTION & PURPOSE

This area was previously used for the siting of cabins. The site drains aproximately southwards, with a gully directly south of the proposed kitchen building.
This area is intended for cabin sites arranged along asphalted access roads. Each cabin site is accompanied by two off-road car parks.

VEGETATION

The precinct has a sparse canopy of both indigenous and non-indigneous native trees. These should be retained where possible by arranging site boundaries and infrastructure with deference to them., although it is acknowledged that the dense cabin arrangement will provide more challenges. Some larger *E. camaldulensis* trees are located to the south on the lake edge.
Trees that are designated to be retained should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Small areas of drought tolerant ornamental planting are recommended for each cabin site.

STORM WATER MANAGEMENT

There is little opportunity for temporary detention and pre-treatment of water within this precinct due to it's profile and proximity to the lake edge. The focus should be on reducing sediment by allowing storm water to move over grass or other permeable surfaces where possible.
Access roads running east-west should be constructed with crossfall to the south. Gently graded swales should be installed on the southern side, allowing some recharge but no temperorary detention. Swales should be navigable on foot and able to be mown.

LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Grassed swale
- Grass
- Gravel/aggregate
- Asphalt paving
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

SURFACING

Accessways should be graded with crossfall and constructed from asphalt to control dust.
The cabins are likely to be installed on skids over piers. The ground surface underneath should be covered in lightly compacted graded recycled site aggregate to allow water infiltration without movement of fines. If needed, retaining walls should be simple masonry segmental construction.
Vehicle parking areas should be finished in compacted gravel. The balance of areas around the cabins should be grassed with a drought tolerant perennial species. This will self-repair and will tolerate heavy use over summer.
Where areas are too shaded or narrow for mowing, organic mulch should be used. Both of these finishes will allow infiltration and cleansing of water and catch sediments.

VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment.

PEDESTRIAN MOVEMENT

As the asphalt roads are not so comfortable for pedestrians, it is important that the area between the cabins and the asphalt is available for movement. Formal shared paths are located around most of perimeter of this precinct.

PRECEDENT IMAGES

1. & 2. Simple planting areas will soften the built form
3. Grass areas between the cabins and access roads will allow pedestrians safe movement areas
4. Cabins abutting the foreshore should be oriented to take advantage of the outlook and to be attractive from the foreshore with no fences

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Zone 2 Cabins

Date:
9 December 2021

0 10 20 40 60 80m

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ZONE 3 CABINS

DESCRIPTION & PURPOSE

This area is proposed to be generally cleared for the siting of cabins. The site drains aproximately southwesterly, with an are of high habitat value directly to the south.
This area is intended for cabin sites arranged along asphalted access roads. Each cabin site is accompanied by two off-road car parks.

VEGETATION

The precinct has a canopy of mostly indigenous trees. While a large number will need to be removed, some should be retained where possible by arranging site boundaries and infrastructure with deference.
Trees that are designated to be retained should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Small areas of drought tolerant ornamental planting are recommended for each cabin site.

PEDESTRIAN MOVEMENT

As the asphalt roads are not so comfortable for pedestrians, it is important that the area between the cabins and the asphalt is available for movement. Formal shared paths are located around most of perimeter of this precinct.

LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Grassed swale
- Planted swales
- Rain garden
- Grass
- Gravel/aggregate
- Asphalt paving
- Organic mulch

* Refer to refer to Biosis plans for derivation

SURFACING

Accessways should be graded with crossfall and constructed from asphalt to control dust.
The cabins are likely to be installed on skids over piers. The ground surface underneath should be covered in lightly compacted graded aggregate to allow water infiltration without movement of fines. If needed, retaining walls should be simple masonry segmental construction.
Vehicle parking areas should be finished in compacted gravel. The balance of areas around the cabins should be grassed with a drought tolerant perennial species. This will self-repair and will tolerate heavy use over summer. Where areas are too shaded or narrow for mowing, organic mulch should be used.
Cabin surrounds adjacent to the high habitat value area should be mulched with local organic mulch instead of grass. Both of these finishes will allow infiltration and cleansing of water and catch sediments.

VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment.

STORM WATER MANAGEMENT

Access roads running east-west should be constructed with crossfall to the south (excepting the northern road).
Gently graded swales should be installed on the lower side, moving storm water to planted swales and rain gardens to the west and the south-east. Grassed swales should be navigable on foot and able to be mown. Pit inverts to piped drainage can be set at a nominated maximum level. to protect infrastructure where necessary.

PRECEDENT IMAGES

1. & 2. Simple planting areas will soften the built form
3. Grass areas between the cabins and access roads will allow pedestrians safe movement areas
4. Cabins abutting the higher habitat areas should be oriented to take advantage of the outlook and organic mulch used for surfacing instead of grass

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Zone 3 Cabins

Date:
9 December 2021

0 10 20 40 60 80m

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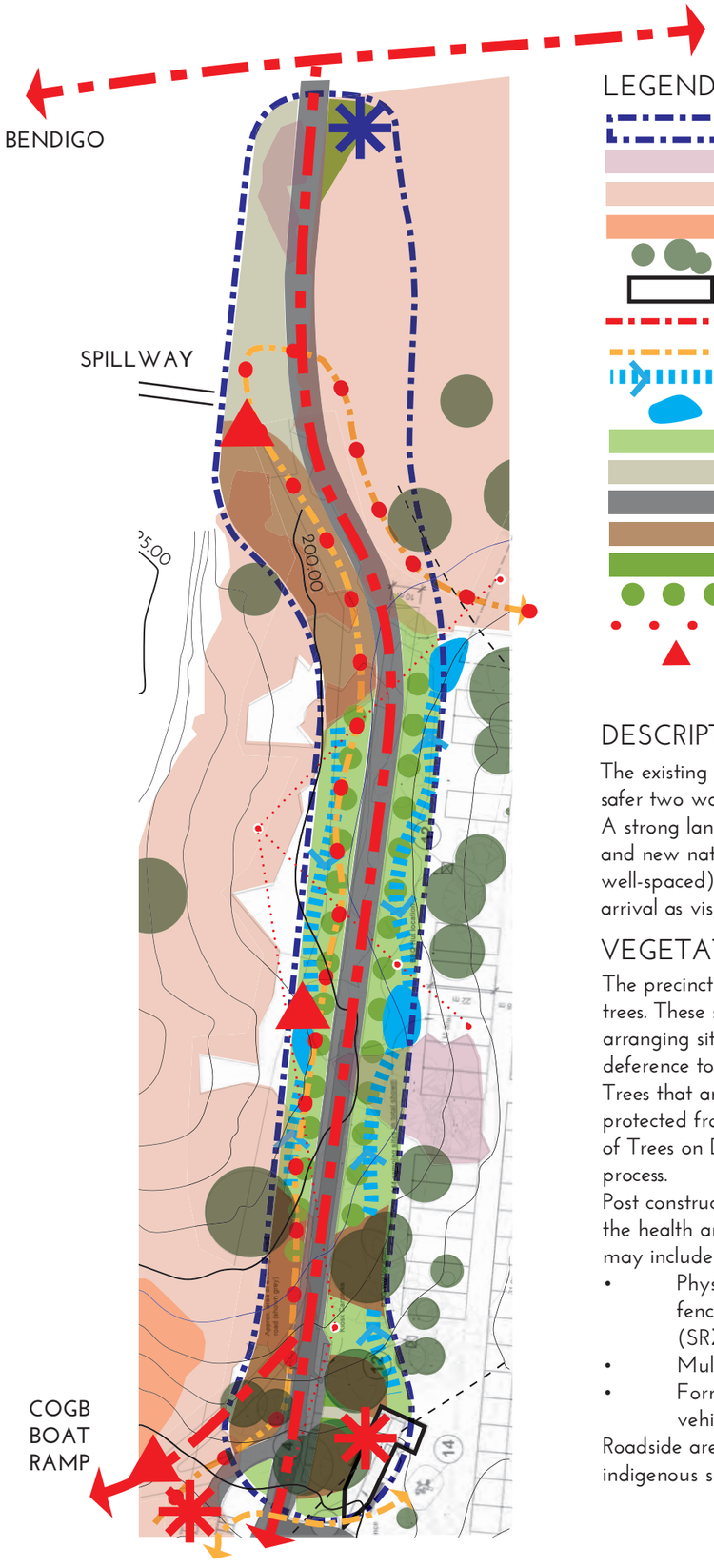
ENTRY



LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Planted swale
- Rain garden
- Grass
- Gravel/aggregate
- Asphalt paving
- Organic mulch
- Low planting
- New low-flammability tree planting
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

DESCRIPTION & PURPOSE

The existing sealed entry will be enhanced to create a safer two way route.
A strong landmark entry feature will identify the Park, and new native tree planting (low flammability and well-spaced) will improve amenity and create a sense of arrival as visitors move towards the park entry point.

VEGETATION

The precinct has a sparse canopy of largely indigenous trees. These should be retained where possible by arranging site boundaries and infrastructure with deference to them.
Trees that are designated to be retained should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Roadside ares should be actively re-vegetated with low indigenous species and well spaced low flammability trees.

SURFACING

The access road will be sealed asphalt with asphalted parking bays near the Park entry gate.
Areas adjacent to the northern end of the road should be finished in gravel where cars are likely to stop (near the spillway). Other areas should be maintained with natural leaf litter.
Areas adjacent to the southern end of the entry road should be graded to create planted swales. The balance of the road reserve should be grassed with a drought tolerant perennial species.
Where there are existing trees, the area inside the TPZ should be mulched and the surface levels left unmodified.

VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment.

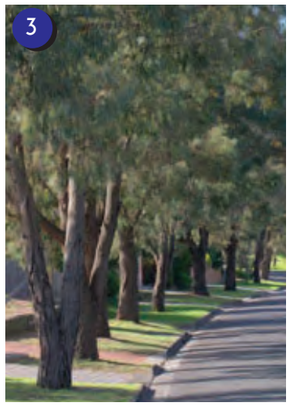
PEDESTRIAN MOVEMENT

Points where pedestrians are likely to cross the main entry road should be clearly marked with good visibility for both pedestrians and vehicles.

STORM WATER MANAGEMENT

The incorporation of planted swales will aid in the removal of sediments from the camping area to the east. It will also reduce concentrated flow from the road to natural vegetation areas to the west. These swales will convey storm water to rain gardens which provide further opportunities for infiltration and pre-treatment.

PRECEDENT IMAGES



1. Landmark form with sensitive materials to mark the park entry point
2. Celebrate the local indigenous vegetation
3. Use low flammability native trees to create a significant avenue entry (subject to fire safety)
4. Kiosk and Caretakers residence to provide a logical point of visitor entry

0 10 20 40 60 80m

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Entry

Date:
9 December 2021

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INTENSIVE AMENITIES

DESCRIPTION & PURPOSE

This central precinct includes major activity drivers including the kiosk, pool, car park and restaurant. It will be an important area for people using the accommodation as well as day visitors.

SURFACING

All areas within this precinct should be well surfaced to reduce the production of dust and sediment. Roads and car park should be finished in asphalt with concrete edging. Pedestrian paths should be finished in compacted gravel paving, and intensively used areas near buildingc can be finished in exposed aggrgeate concrete. Areas shown as grass should be planted with drought tolerant perennial species. Some areas downhill from the car parks should be graded to create planted swales.

VEGETATION

The precinct has a vary sparse canopy of indigenous and native trees. These should be retained where possible by arranging site boundaries and infrastructure with deference to them. They should be canopy raised to allow clear views between.
Trees that are designated to be retained should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Some well-spaced new low-flammability trees to be added for increased amenity.

LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Grassed swale
- Planted swale
- Rain garden
- Grass / Low planting
- Gravel/aggregate
- Asphalt paving
- Organic mulch
- New low-flammability tree planting
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment, including low planting for screening. As this is a high pedestrian use area, clear sightlines should be maintained as well as very low vehicle speeds.

PEDESTRIAN MOVEMENT

This should be a very safe and permable area for pedestrians moving between activity drivers. Open sightlines, should be maintained for satefy particularly around potential road crossing points.
While pedestrians are likely to walk directly across the grass, surfaced paths should be provided aligned to reflect natural desire lines and to provide DDA compliant access.

STORM WATER MANAGEMENT

Where possible stowm water discharged from sealed asphalt areas should move across graded grass to catch allow infiltration and catch sediments.
The grassed and planted swales convey water to rain gardens after rainfall events. Pit inverts to piped drainage can be set at a nominated maximum level to protect infrastructure.

PRECEDENT IMAGES

1. Grassed swale for pre-treatment of water prior to discharge into piped drainage system
2. Clearly identifiable pedestrian priority crossing points
3. Use low screening from indigenous plant species to reduce the visual impact of car park

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Intensive Amenities

Date:
9 December 2021

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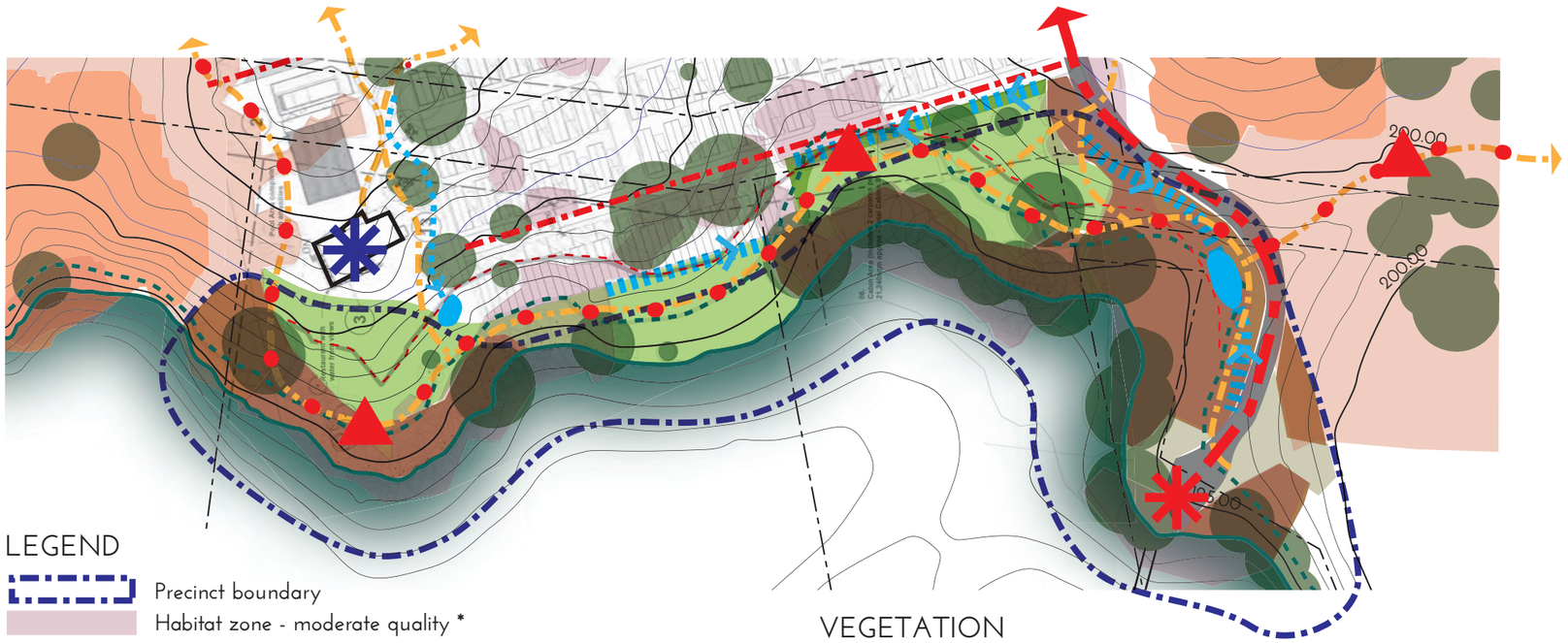
FORESHORE



LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Grassed swale / Planted swale
- Rain garden
- Grass / Gravel
- Asphalt paving / Organic mulch
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

DESCRIPTION & PURPOSE

The foreshore precinct includes all the land above the full water line. Stretching between the restaurant to the west and the boat ramp to the east, it is a major passive recreation and social space, while also providing an opportunity to cleanse storm water prior to discharge into the lake.

SURFACING

The slopes of the foreshore should be grassed with a drought tolerant perennial species. Where there are existing trees, the area inside the TPZ should be mulched and the surface levels left unmodified. Larger fallen dead wood can be used to retain and protect areas of mulch. These and other elements such as bollards should be used to discourage pedestrian incursion into these areas.

PEDESTRIAN MOVEMENT

A DDA compliant gravel paved path should be included on the higher side of the slope linking infrastructure to the west with the boat ramp and Zone 3 cabins.

VEGETATION

The precinct is characterised by clusters of *E. camaldulensis* River Red Gum trees along the lake edge. These should be retained by avoiding adjacent new infrastructure or landform modification..

Trees that are designated to be retained should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.

Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Some new low planting to strategically screen cabins is the only new planting proposed in this precinct.

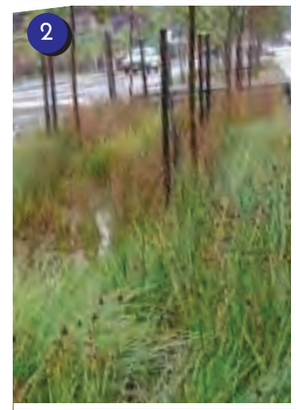
VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment.

STORM WATER MANAGEMENT

Planed swales should be use where possible to buffer in flows to the lake from the cabin precinct and adjacent roads. Rain garden should be included where they can be located as close as possible to the top of detentian.

PRECEDENT IMAGES



1. Grass to be the predominant finish to control erosion
2. Planted swale to collect and filter runoff
3. Existing vegetation to be mulched to protect root zone
4. Formalised shared path to concentrate through traffic

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Foreshore

Date:
9 December 2021

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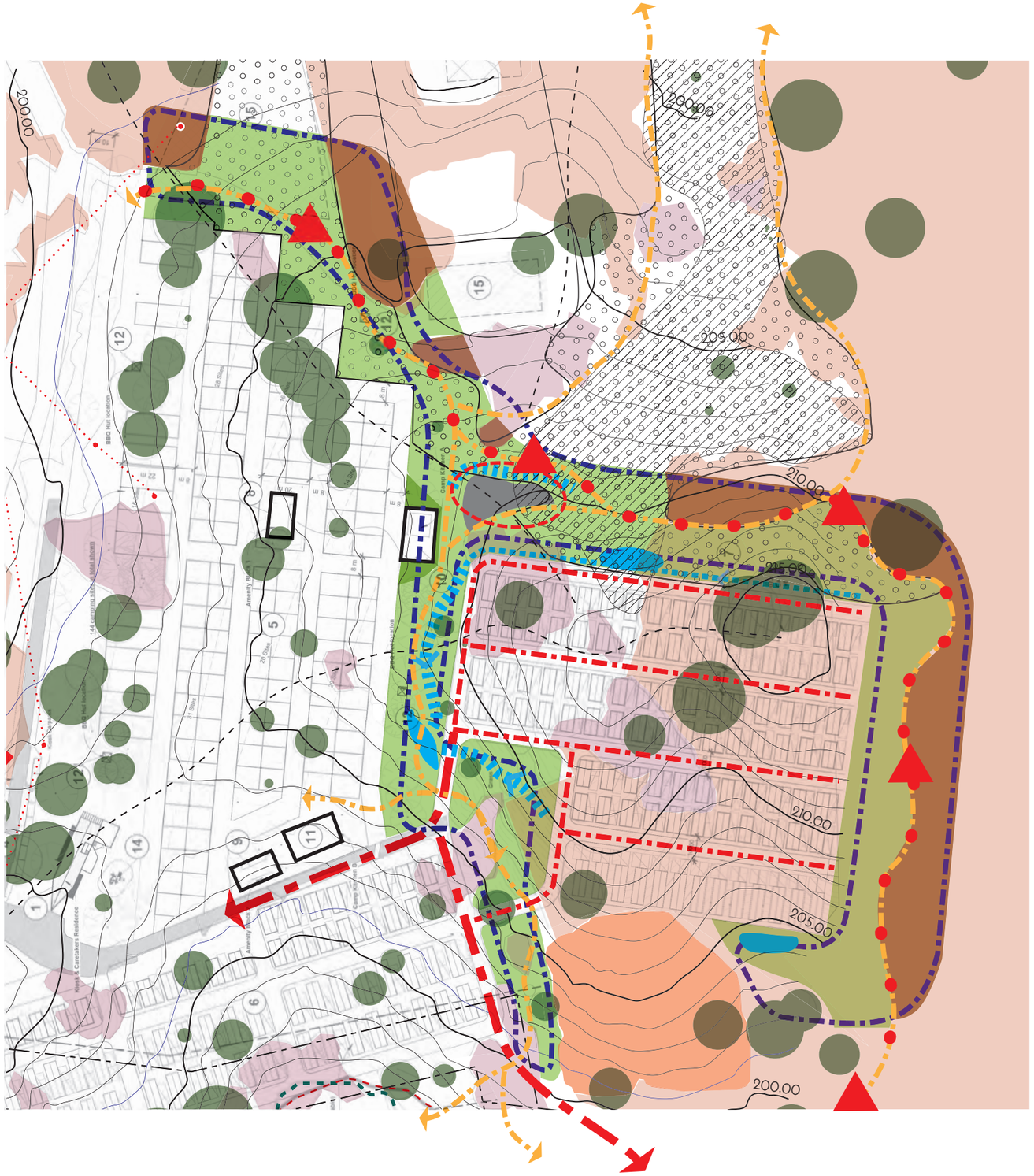
AMENITY BUFFER



LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Grassed swale
- Planted swale
- Rain garden
- Grass
- Gravel/aggregate
- Asphalt paving
- Organic mulch
- Low planting
- Specfic activity area
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

DESCRIPTION & PURPOSE

The amenity buffer is a largely cleared space defined by the edge of the defendable space. While not all existing vegetation is to be removed, it will be strategically thinned to separate canopies and reduce potential for flame movement at ground level as well.
Irrigated grass (some part of the recycled water field) will provide both a protective surface and offer opportunities for passive recreation. There is an opportunity to include some hard surface recreation activities in the central area.
The buffer areas also have an important storm water management function.

SURFACING

The slopes of the foreshore should be grassed with a drought tolerant perennial species. Paths should be used as physical boundaries between grass and native vegetation along with control of any emergent grass within conservation areas. If there is not a path, there should be a clearly maintainable boundary between the grass and adjacent bushland to avoid incursion.
Where there are existing trees or patches, the area should be mulched and the surface levels left unmodified.
Paths should be compacted gravel paving, 2m wide where possible to allow for bicycle use. Hard court activities should be on asphalt.

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Amenity Buffer 1

Date:
9 December 2021

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AMENITY BUFFER

VEGETATION

The precinct has some areas of higher habitat quality. Vegetation removal in these areas should be to achieve the objectives of the defendable space. Where vegetation is retained, the root and canopies should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at the Structural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Some new low planting to strategically screen buildings is the only new planting proposed in this precinct.

VEHICULAR MOVEMENT

Vehicle movement should be limited to the surfaced access roads shown. This should be enforced by the use of timber bollards, rocks and post and rail fencing where incursion is likely. These physical controls should be embedded into the landscaping treatment.
Occasional movement of vehicles through the buffer may be necessary as a part of maintenance .

PEDESTRIAN MOVEMENT

This precinct should be permeable for pedestrian movement between activity drivers and accommodation areas. Open sightlines, should be maintained for satefy particularly around potential road crossing points.
Paths should follow logical desire lines of movement.
Seating, BBQ huts, bike racks etc should be attached to paths rather than freestanding to increase accessibility.

STORM WATER MANAGEMENT

Much of the buffer precinct will receive direct storm water runoff from cabin areas. As such it has an important role in filtering sediments and nutrients prior to flowing into native vegetation areas.
Grassed and planted swales should be used to catch and direct direct runoff and towards rain gardens.
Grassed areas that are a part of the recycled water dispersement field should be graded to not allow any temporary detention of water.

PROPOSED RECREATION ACTIVITIES

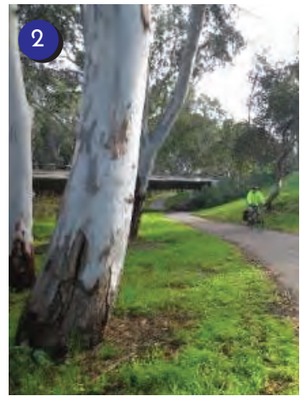
The open grassed presentation of this precinct can also be used to site some recreational infrastructure that will complement the water-activity focus of the Park and build the visitor experience.
A mix of activities that are attractive to different age groups will provide robust use of the precinct., increasing safety and engagement.

The following activities are proposed:
Half court
An asphalt area can be line marked and have rings installed that provide opportunities for basketball, netball and downball.

Outdoor Twister
One or more Twister games can be created by installing a hard surface with different colours. In this particular context, this should be constructed from rubber surfacing over a shock pad for safety.

Outdoor Chess
An asphalt area can be painted to represent a large chess board with chess pieces stored in the nearby camp kitchen building. *This activity would require some daily inputs to pack away chess pieces.*

PRECEDENT IMAGES



1. & 2. Simple presentation of mulch, existing trees and grass with central path
3. Seating linked to path
4. Vegetated swale to collect and filter surface water

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Amenity Buffer 2

Date:
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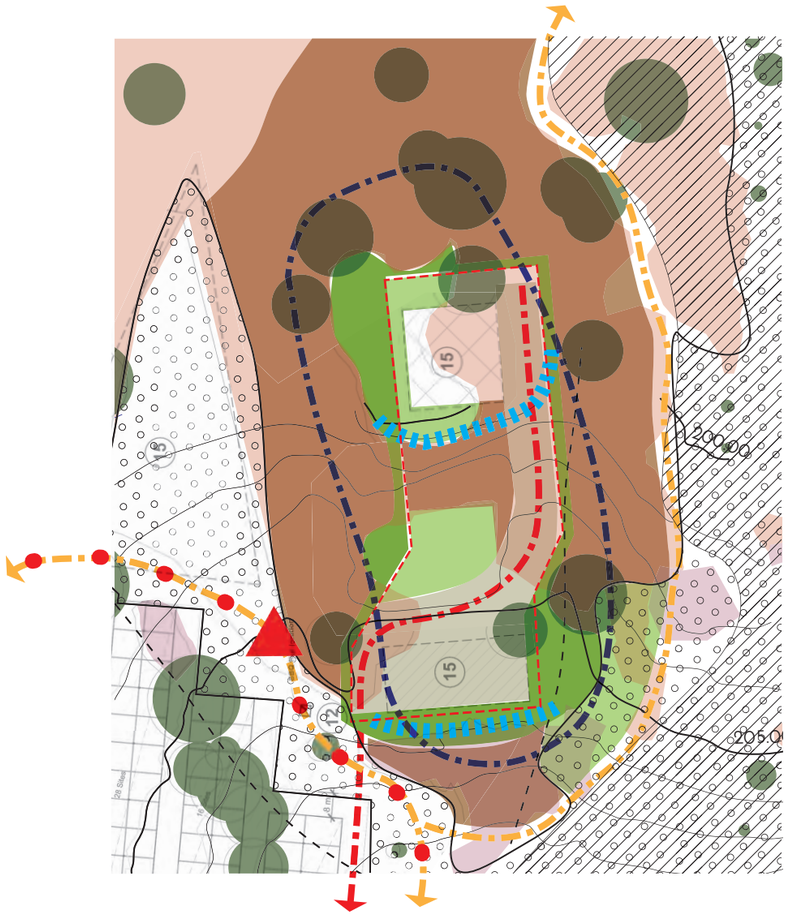
WASTEWATER TREATMENT



DESCRIPTION & PURPOSE

This precinct is primarily focussed on the treatment and storage of wastewater. It should be fenced to restrict unintended pedestrian access and screened to be as visually unobtrusive as posssible.
Refer to the RMCG report for details of the sub surface wastewater treatment facility and the required area of winter storage.

SURFACING

Surfaces within this precinct should be almost entirely permeable, excepting hard stands required as a part of the treatment facility.
Inside of the barrier fence gravel will provide a vehicle accessway.
Grass can be used to seal areas of exposed soil. Areas of native vegetation should be mulched.
Directly outside of the fence new and exting areas of vegetation should be mulched.

LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Tree Protection Zones *
- Proposed permanent structures
- Vehicle movement
- Pedestrian movement
- Fence to restrict access
- Grassed swale
- Planted swale
- Grass
- Gravel/aggregate
- Asphalt paving
- Organic mulch
- Low planting
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

VEGETATION

The precinct has areas of higher habitat quality on all sides. It is proposed that most trees should be retained within this precinct (subject to the detailed design of the wastewater treatment facility), and intact areas should not be disturbed.
Where vegetation is retained, the root and canopies should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at theStructural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Some new indigenous planting is proposed, primarily for screening purposes.

STORM WATER MANAGEMENT

This pecinct is largely permeable, and storm water can largely flow naturally and unimpeded across the surface. The exceptions to this are the wasterwater treamtnet facility and winter storage which should be protected from run-on stormwater.
During dispersement operations the soil will hold nutrient rich waters that should not be in direct human contact. Therefore no ponding of recycled water should be allowed until a point where all nutrients are calculated to have been removed.
Primary reference information on the planned dispersement and management of the field can be found in the RMCG report and the EPA publication 1910.2 "Victorian Guidelines for Water Recycling March 2021.

VEHICULAR MOVEMENT

There should a constructed route into the restricted area adjacent to both the wasteware treatment and winter storage facilities. allows for the regularly required maintenance.

PEDESTRIAN MOVEMENT

This precinct should be completely resricted from pedestrian access by use of a barrier fence.
The fence should be constructed form black PVC coated cyclone wire with screening planting to be visually unobtrusive.

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CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Water Treatment

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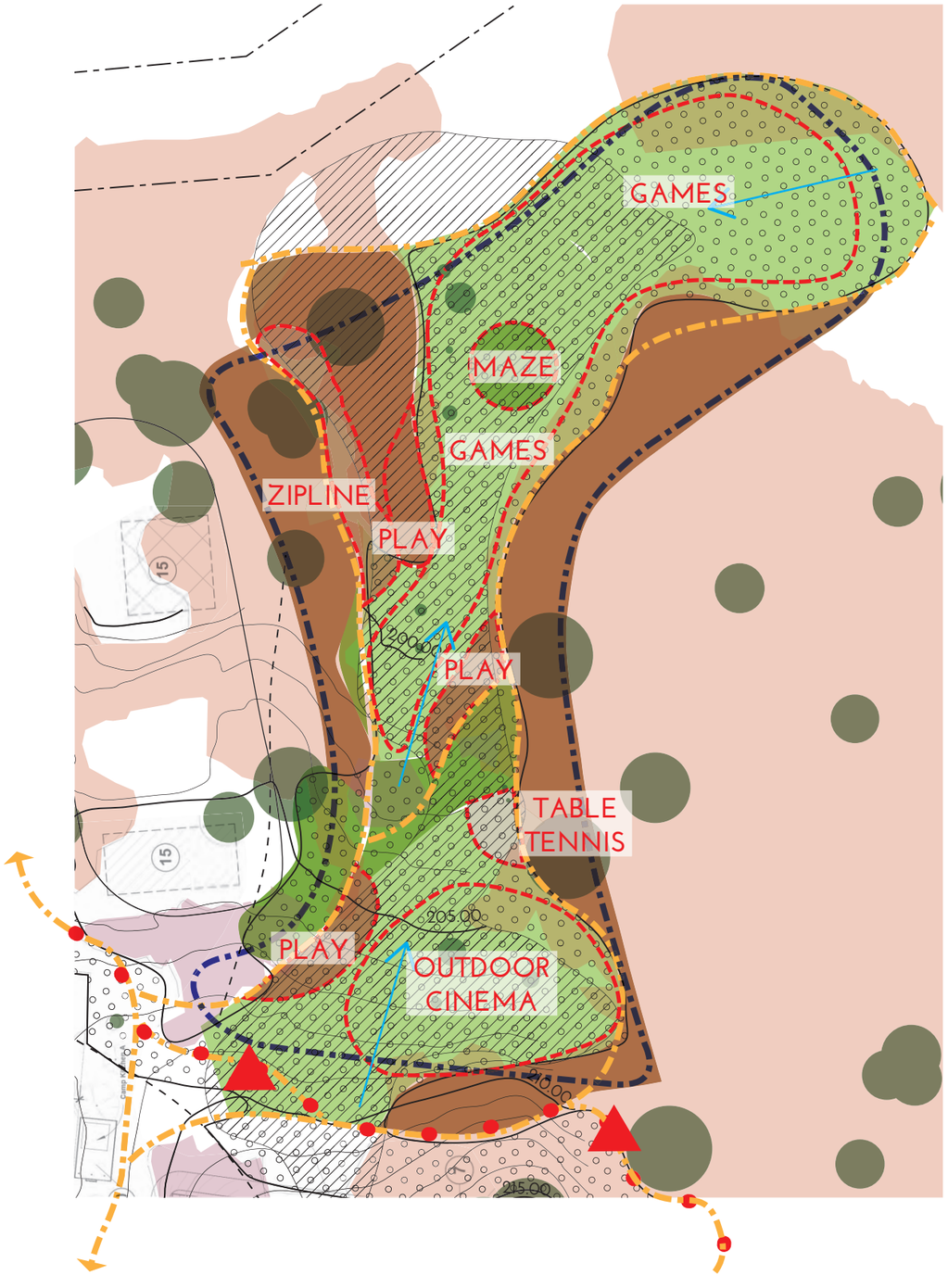
RECREATION PARK



LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Direction of slope
- Vehicle movement
- Pedestrian movement
- Grass - recycled water dispersement area
- Gravel/aggregate
- Organic mulch
- Low planting
- Specific activity area

* Refer to refer to Biosis plans for derivation

DESCRIPTION & PURPOSE

This precinct is presented as a recreation park, but it's primary purpose is to utilise the park's recycled water through sub surface irrigation of grass.
This landscape involves significant landform manipulation and is proposed to be built over the highly degraded areas that were formerly the dirt bike track.
The precinct is proposed to support a variety of active and passive recreational opportunities, some based on infrastructure and others delivered with programming.

SURFACING

The dominant surface in this precinct is grass that will effectively uptake nutrients. It should have an excellent summer growth rate to produce the maximum amount of biomass to be harvested (cut and removed). The grass should also be tough enough to cope with significant foot traffic and preferably it should have self-heal capability.
Areas of existing vegetation can be lightly mulched with larger branches used to retain mulch where necessary.
Play areas are to utilise organic impact attentuation mulch in fall zone areas with required setbacks to the dispersement field.

PEDESTRIAN MOVEMENT

This precinct should permeable for pedestrian movement between activity drivers and accommodation areas.
Paths are to delineate the edge of the proposed dispersement area to aid in the prevention of this water extending across into the root zones of existing native vegetation.

VEGETATION

The precinct is largely degraded but has some areas of higher habitat quality to either side of the gully. Lost and retained trees in the recreation area will be based on the Guidelines assessment and the AS 4970-2009 Protection of trees on development sites, and final vegetation impacts will be outlined in the Biosis report
Where vegetation is retained, the root and canopies should be protected from development to AS 4970-2009 Protection of Trees on Development Sites during the construction process.
Post construction, measures should be taken to enhance the health and safety of existing trees. These measures may include the following:

- Physical protection measures such as post & rail fences installed at theStructural Root Zone (SRZ) perimeter.
- Mulching of the root zone
- Formative pruning of the canopy to avoid vehicle damage to low branches.

Some new low planting is proposed within the currently degraded area. This vegetation should be indigenous species selected for the ability to uptake nutrients to harvest.

STORM WATER MANAGEMENT

This pecinct is completely permeable, and storm water can flow naturally and unimpeded across the surface.
During dispersement operations the soil will hold nutrient rich waters that should not be in direct human contact. Therefore no ponding should be allowed until a point where all nutrients are calculated to have been removed.
Primary reference information on the planned dispersement and management of the field can be found in the RMCG report and the EPA publication 1910.2 "Victorian Guidelines for Water Recycling March 2021.

VEHICULAR MOVEMENT

Public vehicles are not intended to be allowed within this precinct, but there should a constructed route through the space that allows for maintenance and emergency service vehicles on occasion.

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Recreation Park

Date:
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RECREATION PARK

PROPOSED RECREATION ACTIVITIES

To add value to the his mostly-grassed dispersement field, it is proposed to be designed to support a number of recreation activities. These can be used to complement the water-activity focus of the Park, providing outdoor activtiies to do when not on the water.
A mix of activities that are attractive to different age groups will provide robust use of the precinct., so additional activities have been included although they require surfacing other than grass.

Outdoor Cinema
Taking advantage of the natural amphitheatre shape of the top of the gully and the gentle slope, the removeable screen can be installed quickly into permanent ground sockets. *This activity would require management inputs to source films and set up the screen.*


Table Tennis
A cluster of outdoor tables can be installed on gravel paving. *This activity would be supported by renting bats at the kiosk.*


Maze
A large number of sunflower seeds can be planted in winter to grow into a tall maze (uptaking nutrients) that is then harvested in autumn.

Natural Play Trail
Play elements created from natural logs and rope are to be installed as a linear trail and low ropes course. These elements are suitable for younger children and require impact attenuating mulch underneath.
The layout, detailed design and construction should be compliant to AS 4685 suite and audited regularly for safety. Play elements should be laid out with appropropriate setbacks from the dispersement field.






Zipline
Always a winner with kids, this aerial element is proposed to be installed in a degraded strip of land at the bottom on the gully. All sections of the cable and platform require impact attenuating surfacing.

Family Games Lawn
The irrigated grass surface can be graded with strategic undulations (created by utilising the existing tires as fill under the surface) to create a surface for games that may include croquet, quoits or mini-golf. Games areas can be defined within areas of longer grass, and rearranged regularly to prevent wear and tear.
Supporting equipment could be available at the kiosk.




Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

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Precincts: Recreation Park

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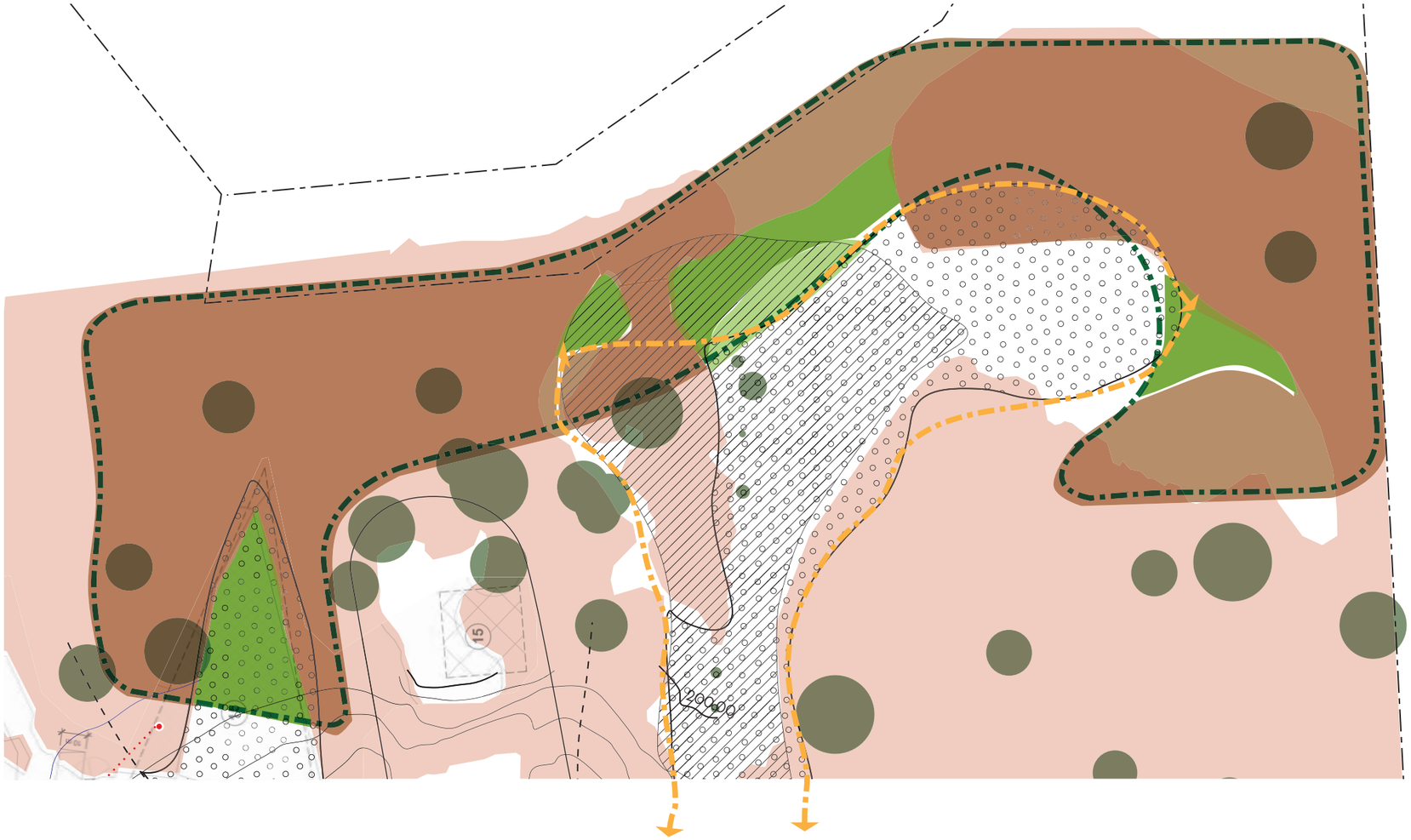
CONSERVATION PRECINCTS

NORTH



LEGEND

- Precinct boundary
- Habitat zone - moderate quality *
- Habitat zone - high quality *
- Zone of Envronmental sensitivity *
- Tree Protection Zones *
- Pedestrian movement
- Grassed swale
- Fence to discourage access
- Grass - recycled water dispersement area
- Natural leaf litter
- Low planting indigenous
- Environmental Trail
- Environmental Trail Station

* Refer to refer to Biosis plans for derivation

0 10 20 40 60 80m

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Conservation North

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EAST

WEST

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Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

Drawing Title & Version:
Precincts: Conservation North

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CONSERVATION PRECINCTS

DESCRIPTION & PURPOSE

These precincts are primarily conservation spaces where natural processes, soils and indigenous vegetation are protected and enhanced.
Critical to this conservation goal is that casual foot traffic is reduced by use of low fencing (for areas of particular environmental snesitivity) and natural barriers such as logs. Signage to communicate the environmental values of the bushland vegetation and the desired pedestrian behaviour would also assist.

VEGETATION

Much of these precincts have been classified by Biosis as being of high habitat value with some areas of environmental sensitivity. Lost and retained trees in the conservations areas, will be based on the Guidelines assessment and the AS 4970-2009 Protection of trees on development sites, and final vegetation impacts will be outlined in the Biosis report
Management of the natural leaf litter surface would improve the health of existing trees.
Some new low planting of indigenous species is proposed within currently degraded areas. All selected species should be characteristic of the observed EVC.
Woody, herbaceous and grassy weeds should be managed on a quarterly basis using minimally destructive control methods.

SURFACING

Areas of existing vegetation can be lightly mulched with larger branches used to retain mulch where necessary. Areas designated as being of environmental sensitivity should not have the surface amended.
Areas of revegetation should be surfaced with either organic local mulch to control weeds or biodegradable jute matting to prevent erosion.

STORM WATER MANAGEMENT

These precincts are completely permeable, and storm water can flow naturally and unimpeded across the surface. Paths should be constructed to provide minimal amendment to these flow patterns.

VEHICULAR MOVEMENT

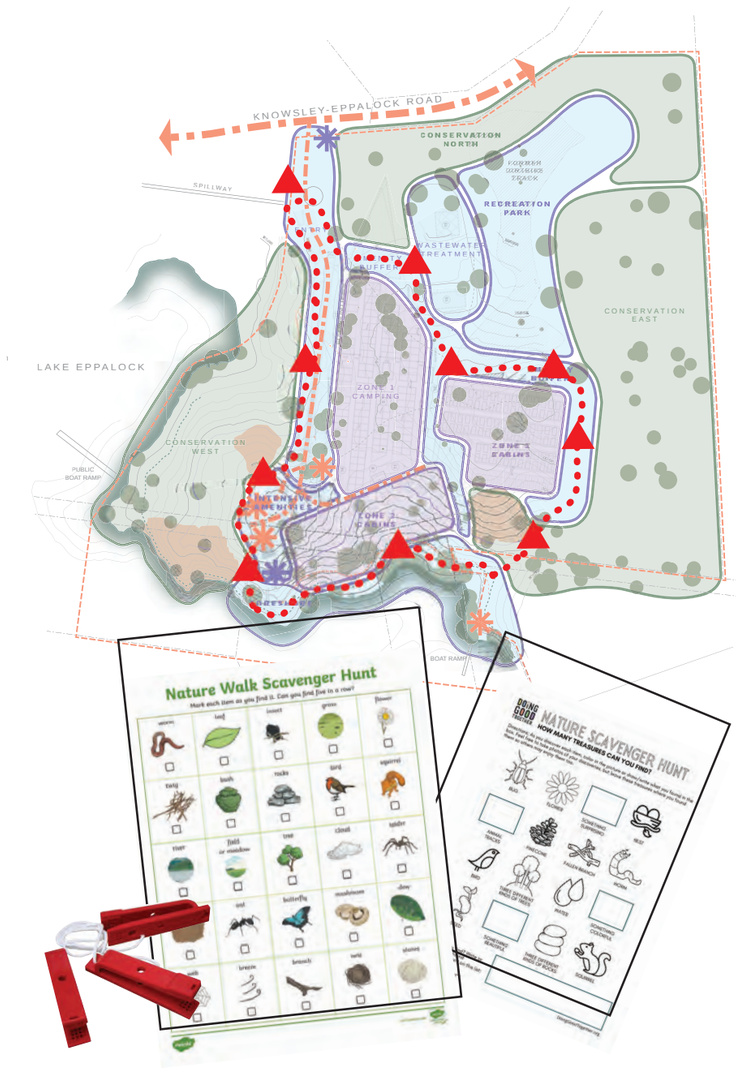
Public vehicles are not intended to be allowed within these precincts.

PEDESTRIAN MOVEMENT

Pedestrian movement should be discorage but not preventd (see above).

ENVIRONMENTAL TRAIL

The Environmental Trail is proposed as a shared and accessible circular path running around the central caravan park area. Much of the trail interfaces with bushland areas, and as such can be used to present environmental interpretation and a 'treasure hunt' game for children as well as encouraging exercise.
Nodes along the Trail each include a seat, interpretation information and a punch to mark Trail cards



Examples of Trail cards that encourage children to observe the environment around them. Check boxes can be added that are to be punched at each station. When complete the cards could be redeemed for an ice cream at the Kiosk.

PRECEDENT IMAGES

1. & 2. Interpretive signage boards
3. Box-ironbark forest
4. Simple timber DDA compliant seat
5. Revegetation area

Client:
CRC Constructions

Project:
Lakeshore Caravan Park Redevelopment

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Precincts: Conservation North

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5.1 VEGETATION MANAGEMENT

The existing vegetation on the site makes a significant contribution to biodiversity, amenity and character. Losses will be determined by Biosis based on development footprint, BMO requirements, and impacts upon the TPZ of trees in close proximity to development areas, based on the Guidelines for the Removal, Destruction or Lopping of Native Vegetation (the Guidelines).

Vegetation loss assessments will initially consider all vegetation in the park footprint (cabins, camping area, rec area etc) as lost, as well as existing TPZ breaches where gravel piles encroaches tree TPZs. In the BMO def space area, all understorey will be considered lost, and partial loss of trees will occur as per reducing cover of the trees back to just trees with canopies >5m apart, as per the BMO requirement and the site BMP. Understory will be considered lost for sections of the Environmental Trail not aligned with existing paths, as well as the Trail Stations.

INSIDE DEFENDABLE SPACE AREA (yet to be defined)

Within the areas proposed for camping and cabins, it will be necessary to remove some vegetation to allow for permanent infrastructure.

The layout of roads and proposed structures including the swimming pool and restaurant are also likely to require removal of some vegetation.

Trees to be retained should be prioritised with reference to whether they are an indigenous species and their health, size and structure as nominated in the Arborist report.

OUTSIDE DEFENDABLE SPACE AREA

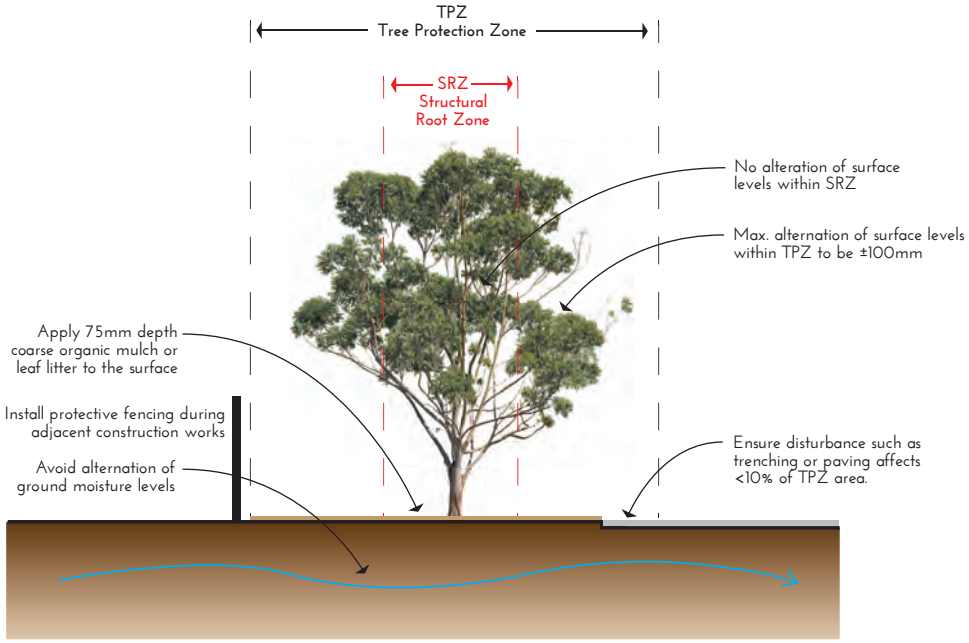
Outside of the Defendable Space area a very high proportion of vegetation is to be retained..

TREE PROTECTION MEASURES

The following measures should be documented to protect existing trees during the design process:

- Align infrastructure including paths to keep them outside TPZ where possible
- Avoid altering surface levels by more than 100mm within the TPZ
- No altering of surface levels within the SRZ
- For trees within the defendable space, apply 75mm mulch to protect root zones from compaction. Use coarse organic mulch unless fire risk dictates the use of a pebble mulch.

- For trees in the Conservation precincts use natural leaf litter to cover bare soil and protect against evaporation. Maintain levels of litter to support natural regeneration processes.
- Areas identified as being environmentally sensitive that are adjacent to cabin areas should be identified and protected with low fencing and signage.



NOTES

- Refer to AS 4970:2009 Protection of Trees on Development Sites
- Surface mulching material may be substituted with inorganic materials within the Defendable Space if necessary
- Trees should be regularly inspected to assess health and structure

Diagram 1: Principles for treatment of existing trees

REVEGETATION

Revegetation will contribute to soil stability and help to prevent further erosion. It will also increase the floral and faunal biodiversity of this Box Ironbark Forest site.

The following measures should be documented to enhance revegetation efforts during the design process:

- Specifying the removal of woody, herbaceous and grassy weeds from revegetation areas
- Specifying the covering of soil with leaf litter and/or jute matting for stabilisation
- Selection of EVC species suitable for revegetation (use suitable species for use in the recycled water dispersement field)
- Specifying of wildlife friendly temporary fencing to revegetation areas

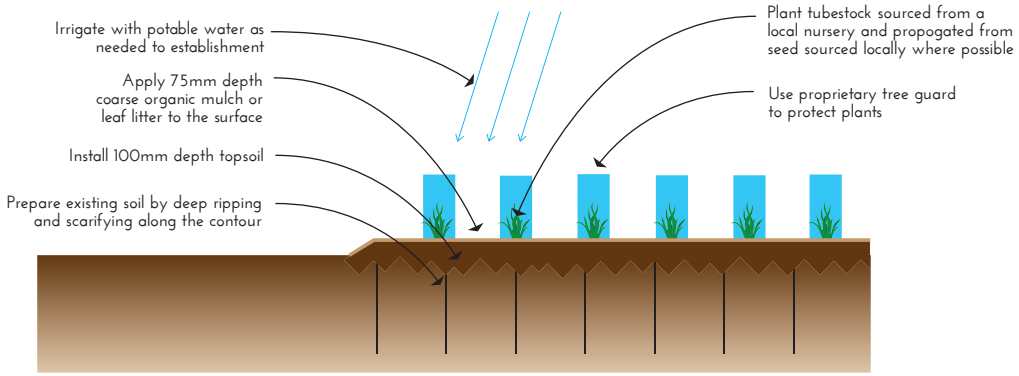


Diagram 2: Principles for revegetation

GRASSING

Grass within the residential and central amenity areas is proposed to be a drought tolerant robust perennial species. Providing irrigation will improve the appearance of the grass and also aid in withstanding wear.

Grass installed in the dispersement field should be a perennial summer active species that is documented to uptake nutrients efficiently. This should be specified by a qualified and experienced professional. A considerable depth of topsoil will need to be imported onto the degraded subsoils to ensure the field functions effectively. Specification for the dispersement field can be found in the RMCG report.

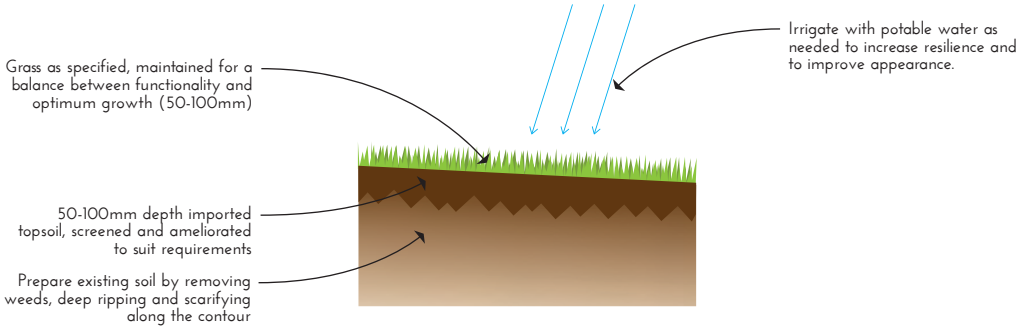
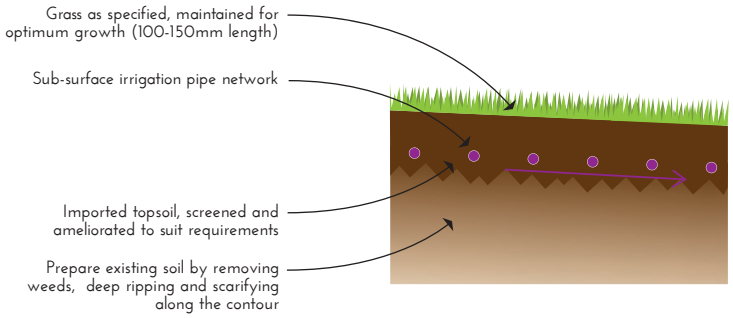


Diagram 3: Typical grassing to amenity areas



NOTES

- Refer to RMCG "Wasetewater Management for Lakeshore Caravan Park Redevelopment" for specification of waste water dispersal

Diagram 4: Typical grassing to dispersement areas

AMENITY PLANTING

There is a need for some planting to the more intensive areas of the Park to screen unattractive views, define areas and to provide amenity. The planting should be predominantly low flammability species and should support CPTED objectives It should be predominantly indigenous species sourced from locally collected seed, unless there is a specific reason for use of other native cultivars.

5.2 SURFACING

Correct surfacing is critical in maximising infiltration of stormwater to the ground at the first point of contact, and also to controlling movement of sediments across the site.

The use of concrete and asphalt surfacing should be minimised within the caravan park, and used only where concentrated use requires it.

Compacted local gravel should be used for some roadways and pedestrian paths, and unconsolidated gravel surfaces used under cabins.

Bare soil should be either grassed or covered in a thin layer of local organic mulch. Garden beds should be mulched to prevent evaporation.

CONCRETE

Where specified, consideration should be given to adding an integral pigment to concrete to darken the colour (by a moderate amount) and reduce reflective glare.

ASPHALT

Asphalt should be used for the majority of roadways to reduce dust in the intensive use areas. The asphalt should be edged with flush concrete kerb to prevent the surface from breaking down.

COMPACTED GRAVEL

A local gravel should be sourced for use in the roadways of Zone 1, and also for pedestrian paths. Consideration should be given to adding a stabilising agent to extend the surface life and reduce free sediments.

Roadways should be finished in a 20mm to dust mix and consolidated with moisture to 97% dry density. Pedestrian footpaths should be finished in 14mm to dust similarly compacted. All surfaces should be graded or crowned to shed water to adjacent permeable surfaces.

RECYCLED CRUSHED ROCK

The existing stockpile of recycled aggregate can be used without compaction to the under-cabin areas to prevent weed growth but allow natural water infiltration.

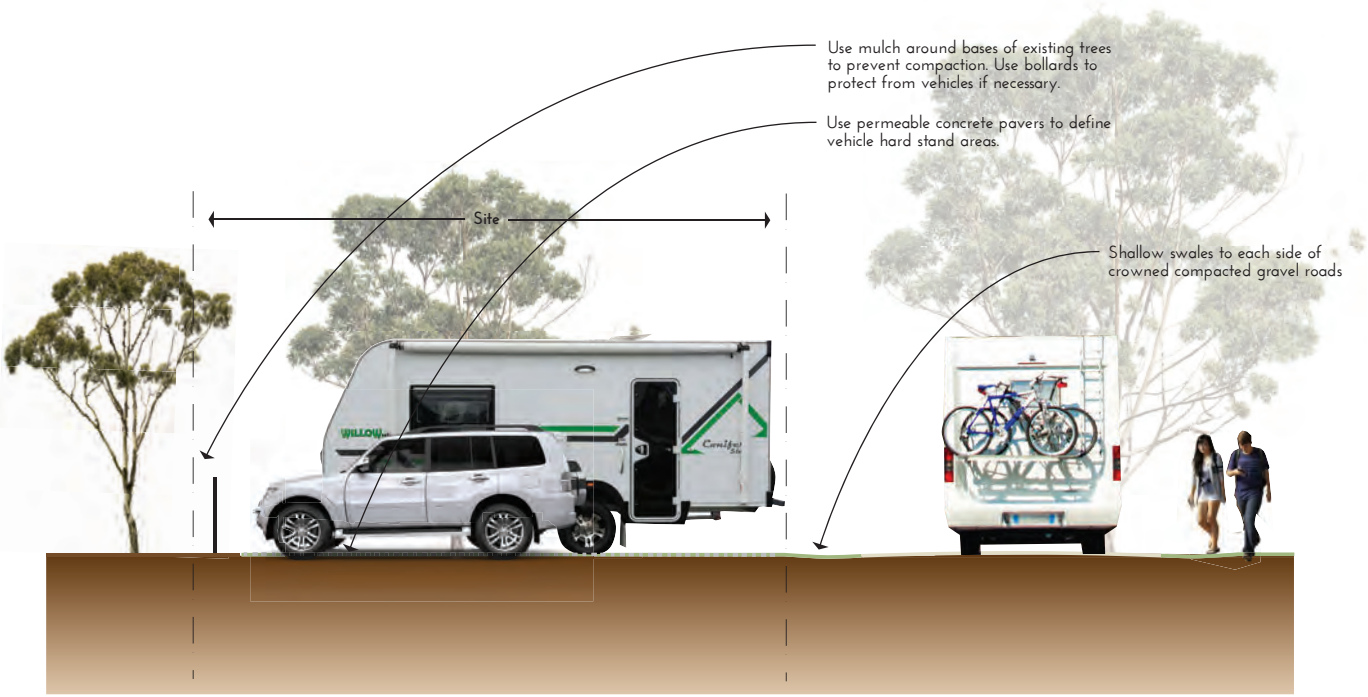


Diagram 5: Typical cross-section through caravan site

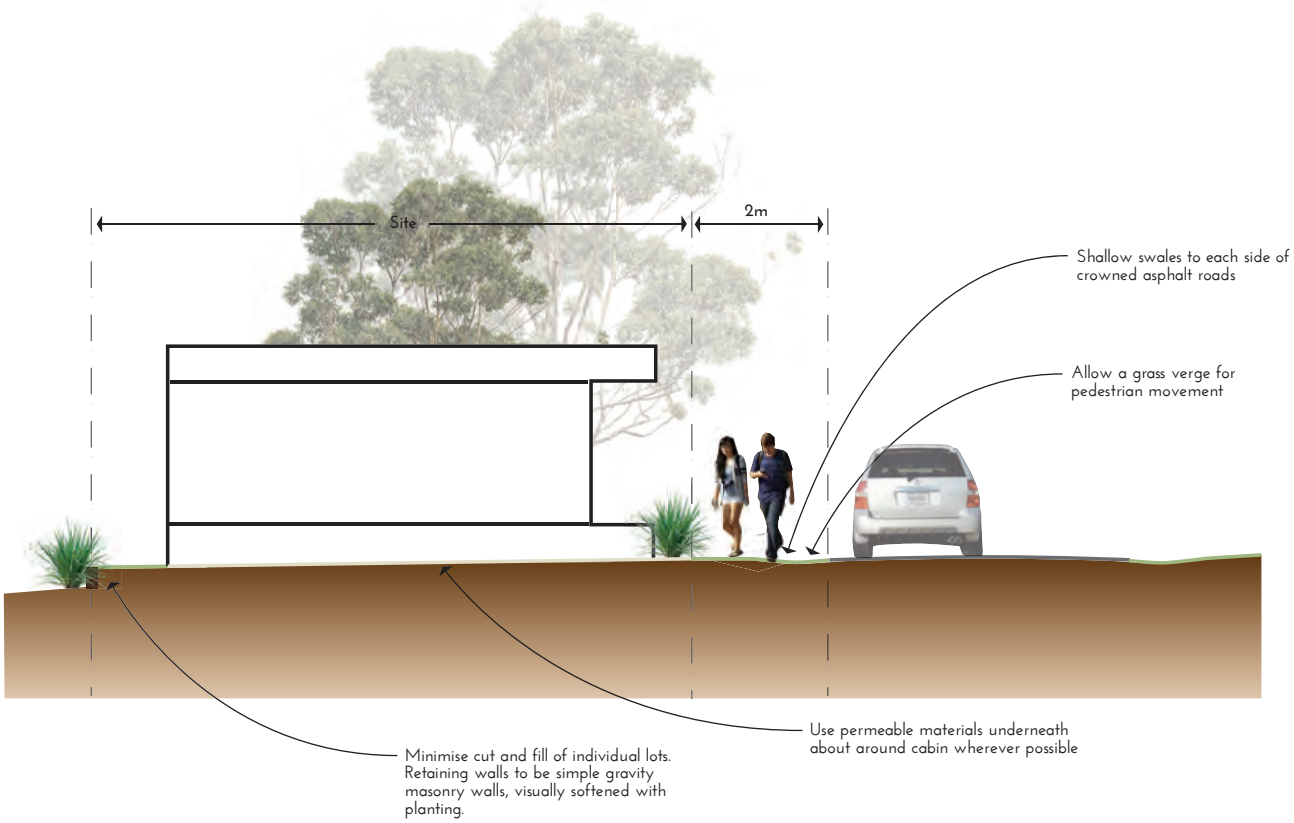


Diagram 6: Typical cross-section through cabin site

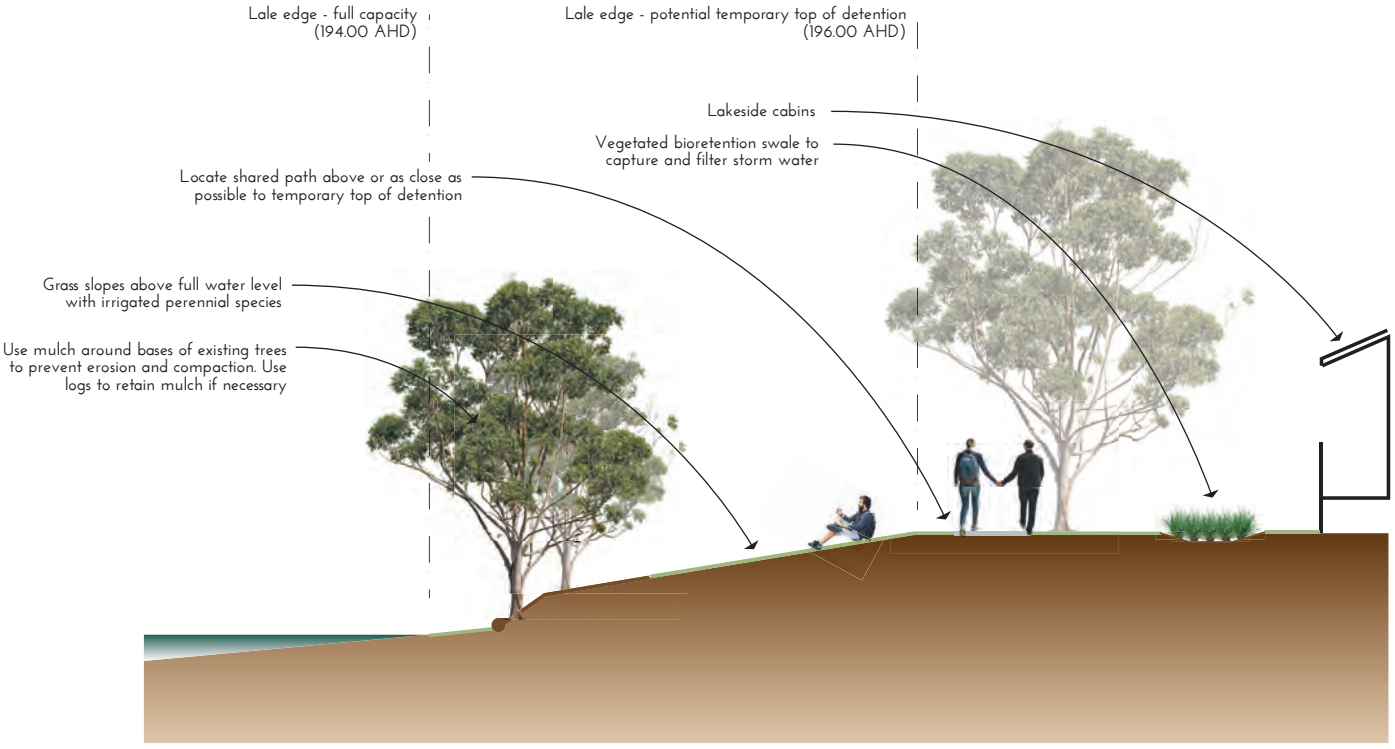


Diagram 7: Typical cross-section through foreshore area

GRASS

Grass provides an attractive and comfortable amenity surface. When irrigated, it also contributes greatly to cooling the micro-climate of the camp, making it more pleasant in the heat of summer.

Within the camping area, perforated concrete turf pavers can be used that provide a supportive surface for vehicle hard stands but allow for the infiltration of moisture and grass to grow.

MULCH

Organic mulch should be sourced from site trees that are required to be removed where practical. Within the central park area a thicker layer should be maintained around existing vegetation and garden beds to provide protection to soils and an attractive finish.

In native vegetation areas to the edge of the site a thinner layer of natural mulch/leaf litter should be used in a manner that supports natural regeneration of the existing flora.

In areas where the use of organic mulch is considered a fire risk, a locally sourced pebble mulch may be used instead.

5.3 STORM WATER MANAGEMENT

The over arching objective for storm water management on the site is to minimise volume and slow water flow across the site and to use natural processes to cleanse it prior to reaching the lake.

FIRST POINT OF IMPACT

The use of permeable surfaces allows maximum infiltration of water at the first point of contact, reducing the volume of subsequent water moving across the site.

SECOND POINT OF IMPACT

Where water is shed from impervious surfaces such as asphalt roads, it should be directed to landscape areas to achieve a preliminary level of treatment and infiltration to the soil.

The slow movement of storm water across landscaped areas allows sediments to drop out of the water.

THIRD POINT OF IMPACT

Devices such as grassed swales, planted swales, and rain gardens utilise natural microbial activity within the soil/vegetation interfaces to allow further treatment of water and infiltration to the soil. Grassed and planted swales are designed to convey water. Rain gardens allow for temporary detention of water, further reducing the impact of the peak flow of rain events.

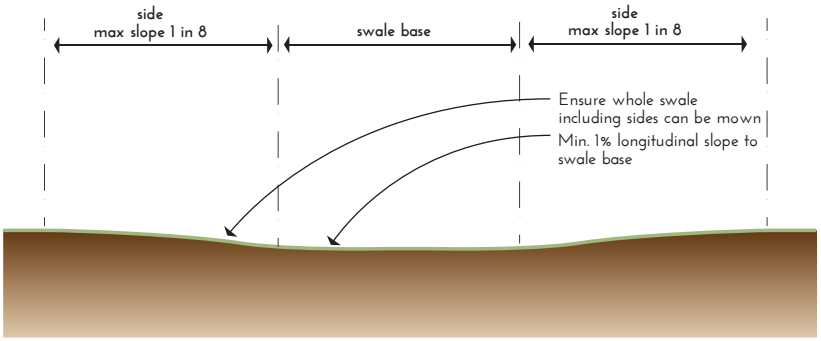


Diagram 8: Typical grassed swale

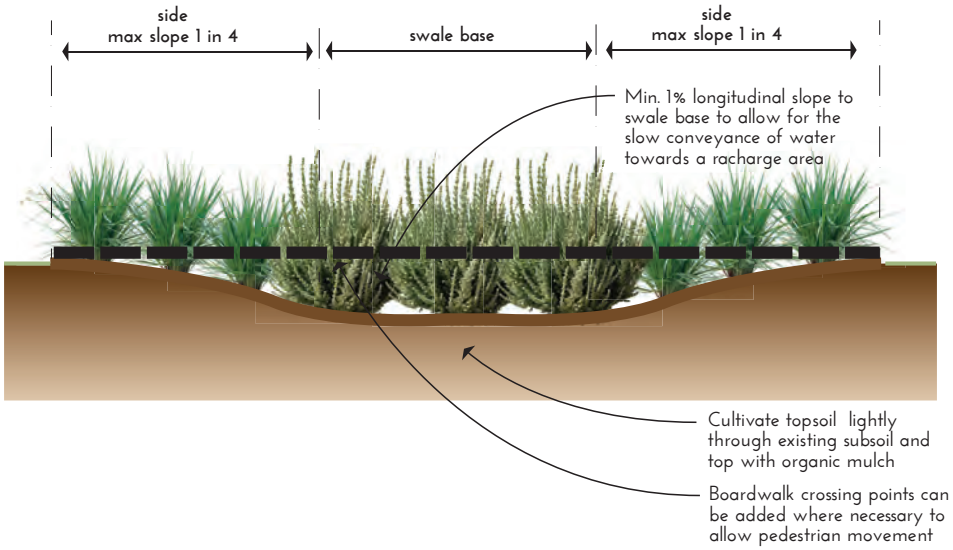


Diagram 9: Typical planted swale with conveyance

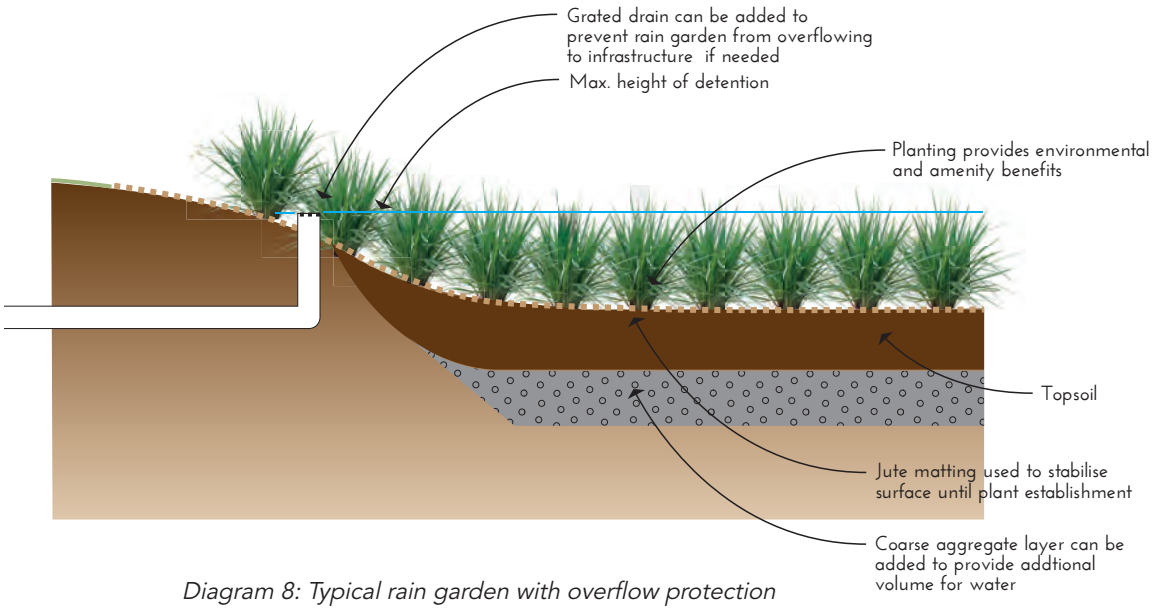


Diagram 8: Typical rain garden with overflow protection

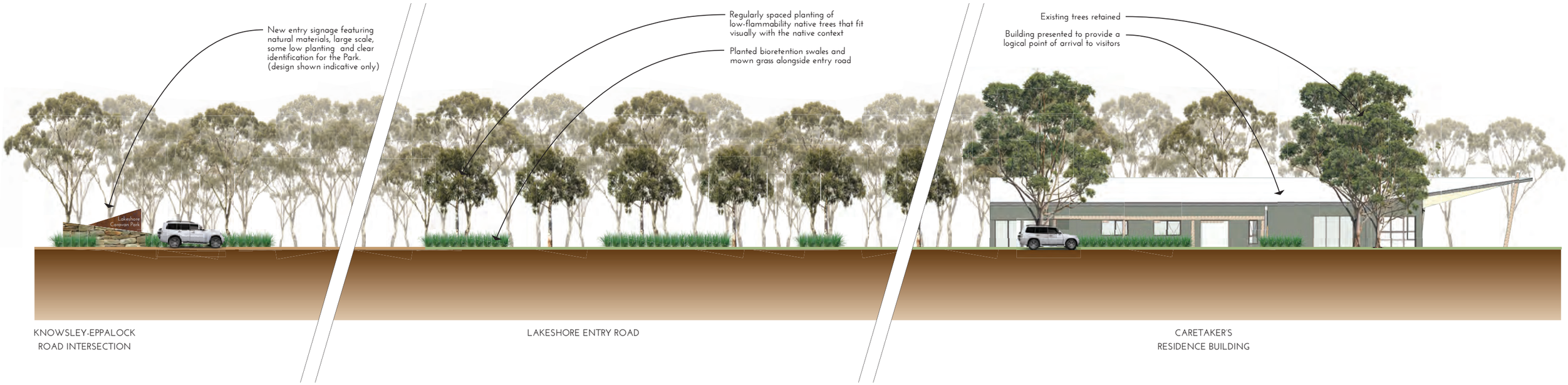


Diagram 8: Entry sequence progression

In some situations it will be necessary to divert storm water to piped drainage. Careful detailing of the concentrated outflow is necessary to mitigate erosion impacts.

5.4 VEHICLE ENTRY SEQUENCE

In the redevelopment of the park there is an opportunity to improve the entry sequence for visitors. This will allow them to easily identify the park, build anticipation as they progress down the entry road, and to be able to confidently navigate the check-in process when they reach the arrival point.

ENTRY POINT

The entry point off the Knowsley-Eppalock Road needs to be identified clearly with a large built sign with simple text or logo. The sign should be constructed from natural materials that complement the surrounding environment.

ENTRY ROAD

The entry road should be designed to encourage lower vehicle speeds, The introduction of designed elements (regular tree planting, massed indigenous low planting) allows a transition to the built environment of the park itself, providing visual differentiation form the native vegetation behind.

The road reserve allows for the incorporation of storm water elements that allow pre-treatment of the water shed from the road surface prior to discharge towards the lake.

ARRIVAL POINT

The formal arrival or ‘check-in point’ should be intuitively obvious to drivers, with ample room for casual parking of longer vehicles. Any retained existing vegetation should be mulched and protected from vehicle incursion.

Low planting should be included in this area to signify the entry and to provide additional amenity.

5.5 FURTHER AREAS OF INVESTIGATION

This schematic plan is a preliminary document to determine the direction and basis for the development of a landscape master plan for the project site. It is anticipated that a master plan would be informed and respond to comments and conditions received as a result of the planning permit process.

In addition there are areas that required further investigation and design to inform a master plan. This includes:

FEATURE & LEVEL SURVEY

An additional extent of survey data is necessary to determine the optimal layout of paths, landscape elements, WSD elements and the dispersement field.

CIVIL DESIGN

A detailed design of all civil elements include pavement level and grading.

GRASS SELECTION

The selection of perennial grass species to be used in the broader park areas and within the recycled water dispersement field should be undertaken by an appropriately qualified and experienced consultant given the sensitivity of the adjacent bushland.

INTERPRETATION

Interpretation themes should be defined for the site and written and graphic material developed for use along the Environmental Trail.