

The logo for RMCG, consisting of the letters 'RMCG' in a bold, white, sans-serif font. The background of the entire page is a dark, moody landscape with a large body of water in the foreground and rolling hills in the distance under a cloudy sky. A vertical strip on the right side of the page shows a different scene: a bright, sunny day with a blue sky, white clouds, a green forested hillside, a golden-brown field, and a dam structure with water in the foreground.

RMCG

DECEMBER 2021

Development licence application for Lakeshore Caravan Park

Final Report

Lakeshore Caravan Park

Table of Contents

1 Land use	1
1.1 PLANNING AND OTHER APPROVALS	1
1.2 CHOICE OF LOCATION	1
2 Track record	3
3 Community and third-party engagement	4
4 General environmental duty and permissions	5
5 Risk management	8
5.1 SO FAR AS REASONABLY PRACTICABLE	8
5.2 STATE OF KNOWLEDGE	8
5.3 ENVIRONMENTAL VALUES & OBJECTIVES	8
5.4 RISK ASSESSMENT	10
5.5 CHOICE OF PROCESS AND TECHNOLOGY	10
6 Climate change and greenhouse emissions	7
6.1 GREENHOUSE GAS EMISSIONS	7
6.2 CLIMATE CHANGE ADAPTATION AND MITIGATION	8
7 Air emissions	11
8 Noise emissions	12
9 Water	14
10 Land and groundwater	17
11 Odour	2
12 Waste	4
13 Commissioning	5
14 Decommissioning	6
Attachments	1

1 Land use

1.1 PLANNING AND OTHER APPROVALS

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to land use is included in the application:

1. *Detail any engagement with other regulatory authorities, other than EPA, related to this activity.*
2. *Do you require any other planning permits or other approvals for this activity?*
3. *Do you currently hold a planning permit or any other approval for this activity?*
4. *Detail any planning permits or other approval held for this activity.*

A separate planning permit application has been lodged with the City of Greater Bendigo (December 2021), in parallel with this Development Licence application. The contact details of the planning authority with which this planning permit will be lodged is:

Greater Bendigo City Council

Phone: (+61 3) 5434 6000

Email: requests@bendigo.vic.com.au

Detailed assessments that have been completed as part of the Planning Application include:

- Schematic Landscape Plan
- Ecology and biodiversity assessment.

1.2 CHOICE OF LOCATION

Lakeshore Caravan Park is located at 655 Spillway Rd, Lake Eppalock VIC 3551. The Caravan Park has been in operation for approximately 50 years in this location and was originally developed under the direction of the (then) State Rivers and Water Supply Commission Victoria.

The land is owned by the Goulburn-Murray Rural Water Corporation (GMW) and operated by Adventures Victoria Pty Ltd under a lease agreement. Adventures Victoria Pty Ltd propose to rebuild the Caravan Park in its entirety.

The site is subject to two zone controls: Rural Conservation Zone (RCZ) and Public Conservation and Recreation Zone (PCRZ). The location of the site is shown in Figure 1-1.

The Park sits on the northern bank of Lake Eppalock and comprises five separate but contiguous parcels, with a combined area of approximately 97 ha. The site is well-suited to the development and use as a caravan park for the following reasons:

- Proximity to visitors from Melbourne and is centrally located within Victoria.
- Close to the recreational opportunities provided by Lake Eppalock and surrounding bushland.
- Historic use as a caravan park and well-known location.
- Previously cleared areas can be used for siting new facilities and accommodation.
- Bushland setting that is easily accessible to cars and caravans, with sealed roads to the gate.

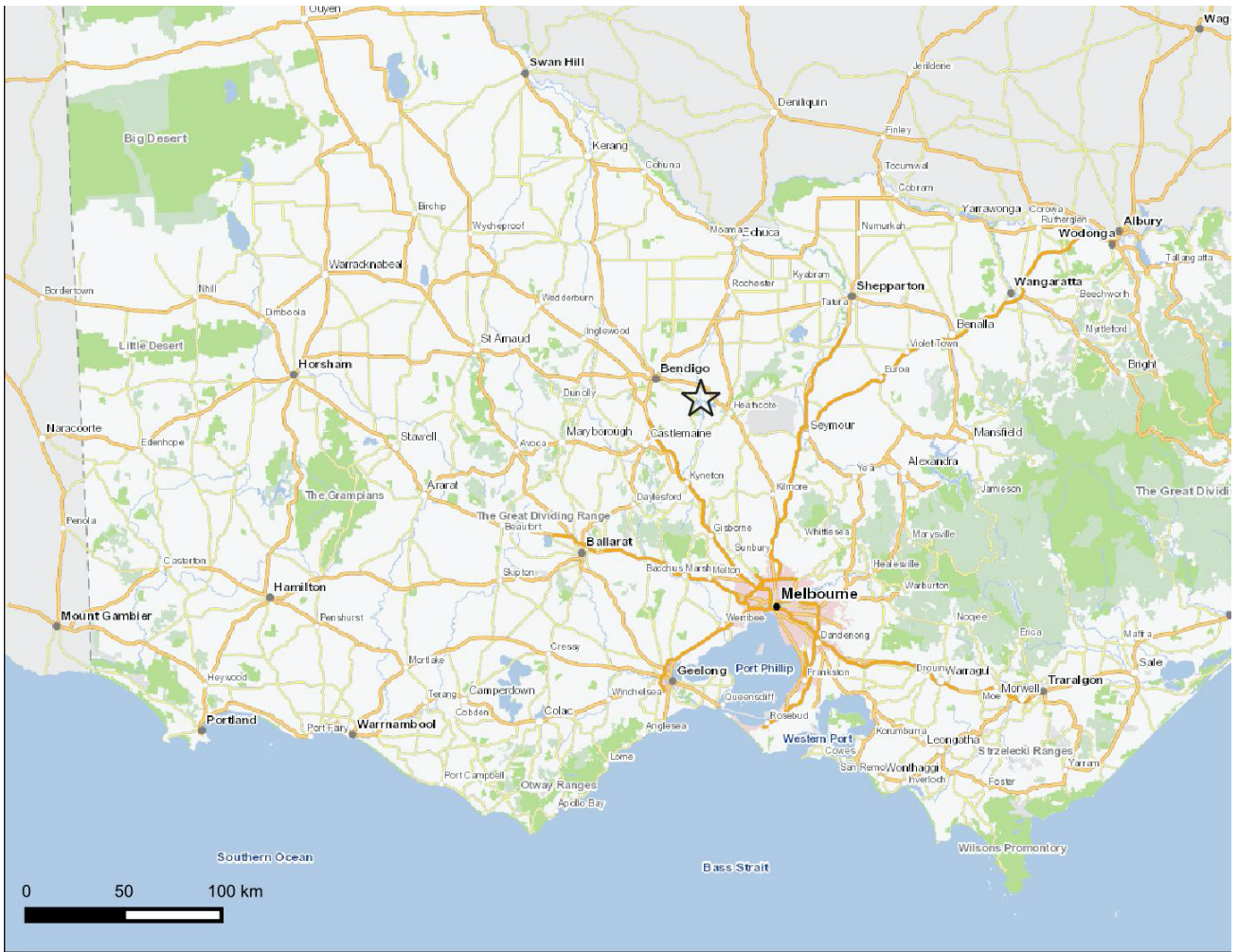


Figure 1-1: Location of the Lakeshore Caravan Park

2 Track record

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to track record is included in the application:

1. *Have you ever held a permission from EPA for this activity at the same location?* **No**
2. *List the permission numbers for all previously held permissions.* **Not applicable**
3. *Do you currently hold a permission or authorisation from EPA for this activity at the same location?* **No**
4. *List the permission numbers for all currently held permissions and authorisations.* **Not applicable**
5. *Do you currently hold an exemption for this activity at the same location?* **No**
6. *List the permission numbers for all currently held exemptions.* **Not applicable**
7. *Have you received any notices from EPA related to this location or activity?* **No**
8. *List the notice numbers for all notices issued by EPA.* **Not applicable**

3 Community and third-party engagement

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to community and third-party engagement is included in the application:

- 1. Have you engaged with the community and other third parties regarding this activity?*
- 2. Summarise any planned or completed consultation, as well as concerns raised and the approach to address them.*

The project team, on behalf of Adventures Victoria, has engaged with a range of stakeholders including government, the local community, neighbours and customers. The engagement approach has been developed based on IAP2 Public Participation Spectrum and this is documented in the Engagement Plan.

Stakeholder engagement was initiated in December 2021, and the documentation of this engagement is provided in the Lakeshore Caravan Park Engagement Plan provided in the attachments.

4 General environmental duty and permissions

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to general environmental duty and permissions is included in the application:

1. *Provide a summary of measures used to comply with the general environmental duty.*

Adventures Victoria Pty Ltd is proposing to redevelop the existing Lakeshore Caravan Park site to offer high standard accommodation and recreation facilities. The Park will provide a range of accommodation options and recreation facilities for the enjoyment of its guests.

Similar accommodation options were previously offered at the site but the infrastructure had become dilapidated prior to Adventures Victoria commencing its lease of the Park. Since Adventures Victoria commenced operation of the Park, they have closed the previous facility and demolished most of the remaining structures. This was necessary, to reduce the likelihood of illegal access to the Park and for public safety reasons.

The proposed new development of the Park will include the installation of an entirely new caravan park, with the following infrastructure and amenities:

- Accommodation including on-site cabins, powered caravan sites and camping sites.
- Individual site ensuite bathrooms and shared camp kitchens, for caravans and camping guests.
- Restaurant, kiosk, outdoor pool, recreation park and playgrounds.
- On-site potable water treatment and reticulated supply.
- On-site wastewater treatment plant, reticulated sewerage system, recycled water storage lagoon and recycled water irrigation area.
- Internal access roads, car parking and walking tracks.

For the redevelopment of the site, considerable efforts have gone into investigating the infrastructure layout and facility design to protect the existing native vegetation and biodiversity, and enhance the amenity of the area. This aims to ensure sustainable management of the site, meet the general environmental duties and provide a space for guests to access and enjoy the natural values of the Park.

The nearest available reticulated water and sewer supply is approximately 10 km away in Axedale. It is not feasible to connect to these services due to both distance and insufficient capacity available for a development of this size to connect to these services. Therefore, the Park redevelopment will include the management of all water and wastewater needed to service the site.

An on-site water treatment plant will treat surface water from Lake Eppalock, as per an agreement with Goulburn Murray Water. Treated water will be supplied to the site via a reticulated network, supplying the cabins, bathrooms and kitchens. Sufficient water will also be maintained in a storage tank for fire-fighting purposes and will meet CFA and Council requirements.

A new sewerage system will be installed on the site to collect wastewater produced from all facilities. Wastewater will be pumped to a new wastewater treatment plant (WWTP), to be constructed on the site in an area previously used for wastewater disposal. All treated water (recycled water) will then be used for irrigation within the site via a sub-surface irrigation system. Irrigation will be according to plant demand, typically during

the warmer, drier period between October and April each year. Recycled water will be stored in a winter storage lagoon prior to irrigation.

The Park is expected to treat more than 5,000 L/day and this is the trigger for this Development Licence application.

The proposed WWTP and irrigation scheme has been designed to reduce the likelihood of harm to the environment and human health. The benefits of the new WWTP and irrigation scheme are:

- It will treat all wastewater produced at the site, including seasonal variations in wastewater production due to guest occupancy.
- Utilises the existing wastewater disposal footprint for wastewater treatment and storage.
- Recycled water will be beneficially reused onsite to irrigate recreation and green spaces for the benefit of guests.
- Recycled water irrigation will help rehabilitate an area of degraded land which is currently eroded and creates significant stormwater and sediment runoff during heavy rain.

Wastewater will be treated to Class B quality according to EPA Publication 1910.1, with additional nutrient reduction, and will be irrigated on areas of the land that:

- Contain no/minimal native vegetation.
- Are considered low quality habitat zones.
- Are considered an area of significant erosion that will benefit from rehabilitation.
- Is behind the ridgeline that fall towards Lake Eppalock and is therefore not in the lake catchment area and complies with the 300 m buffer zone to surface waters.

Management of the recycled water will be directed by an EPA-approved Health and Environmental Management Plan (HEMP). A copy of this draft document is provided in the attachments.

A site Environmental Management Plan (EMP) will also be developed, to include other aspects of the site's operations (such as waste management and noise).

In relation to s25(4) of the Act, APP will meet their general environmental duties, as shown in Table 4-1.

Table 4-1: Responses to s25(4) of the Act

S25(4) OF THE ACT	RESPONSE
<p>(a) use and maintain plant, equipment, processes and systems in a manner that minimises risks of harm to human health and the environment from pollution and waste</p>	<p>Use of recycled water at the site for sub-surface irrigation will be undertaken as per the Recycled Water HEMP. The HEMP includes WWTP monitoring to ensure recycled water meets the necessary quality requirements for the irrigation scheme.</p> <p>The WWTP will be maintained according to the operational and maintenance advice provided by the vendor.</p>
<p>(b) use and maintain systems for identification, assessment and control of risks of harm to human health and the environment from pollution and waste that may arise in connection with the activity, and for the evaluation of the effectiveness of controls</p>	<p>The Lakeshore Caravan Park will have an Environmental Management Plan (EMP) detailing the risk assessment for environmental and human health risks on the site.</p> <p>The irrigation of recycled water will be managed in accordance with the Recycled Water HEMP (a draft of this is included as an attachment to the DL application).</p>
<p>(c) use and maintain adequate systems to ensure that if a risk of harm to human health or the environment from pollution or waste were to eventuate, its harmful effects would be minimised</p>	<p>Lakeshore Caravan Park is committed to achieving compliance with all facets of Environment Protection Authority (EPA) regulations and the General Environmental Duty.</p> <p>The site EMP and Recycled Water HEMP will include details the following aspects of environmental management and human health protection:</p> <ul style="list-style-type: none"> ▪ Commitment to comply ▪ Land capability assessment (HEMP only) ▪ Risk assessment ▪ Risk-based monitoring plan ▪ Audit and review requirements ▪ Incident response plan ▪ External and internal notifications ▪ Documenting and reporting non-compliances ▪ Documentation control and review ▪ Staff training.
<p>(d) ensure that all substances are handled, stored, used or transported in a manner that minimises risks of harm to human health and the environment from pollution and waste</p>	<p>Sewerage will be produced on site and could impact on the environment and human health. Wastewater treatment and recycled water irrigation will occur on-site. Sludge produced from the WWTP will be trucked to a nearby Coliban Water municipal treatment plant. Specific procedures will be developed to provide instruction to staff that manage these streams.</p>
<p>(e) provide information, instruction, supervision and training to any person engaging in the activity to enable those persons to comply with the duty under subsection (1).</p>	<p>All employees will undergo an induction prior to starting work. As a part of the induction, the employee is given an overview of the environmental responsibilities that Lakeshore Caravan Park must comply with and what, as an employee, their general environmental duties are.</p> <p>External training will be undertaken when required expertise is not available on site. For example, WWTP vendors offer training sessions for staff during commissioning.</p> <p>Refresher training for staff operating the WWTP will be undertaken, to ensure competence in WWTP operation and management of the recycled water scheme. Refresher training will also assist staff to keep up to date with any changes that have occurred to the WWTP, recycled water scheme and/or regulatory requirements.</p>

5 Risk management

5.1 SO FAR AS REASONABLY PRACTICABLE

The 'So far as reasonably practicable' questions are dealt with in the Risk Assessment section.

5.2 STATE OF KNOWLEDGE

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to state of knowledge is included in the application:

1. *Outline your experience and competency in performing this activity.*

The project team working on behalf of the proponents include specialist consultants and developers. These include:

- Planning specialists – to inform the development of the site, areas permitted for development, liaise with the City of Greater Bendigo and prepare the planning application for the proposed development.
- Native vegetation and biodiversity specialists – to undertake a detailed biodiversity study of the entire site, inform the development of the site, determine native vegetation loss and liaise with DELWP on the plans for the proposed development.
- Wastewater and recycled water specialists – to analyse the wastewater production for the proposed development, determine the processing capacity and recycled water quality needs for the WWTP, determine how recycled water can be beneficially used on the site without impact to native vegetation areas, liaise with WWTP vendors to identify suitable infrastructure.
- Landscape architect – 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.

Staff involved with the design of the proposed development have extensive experience in developing and managing caravan parks with a wide variety of set ups, accommodation options and wastewater treatment facilities. This has included onsite septic tanks, small-scale treatment plants and connections to reticulated sewer. The proponent of the Lakeshore Caravan Park development previously redeveloped the Nagambie Lakes Leisure Park. They have applied their extensive experience and learnings from this development to the proposed Lakeshore development.

5.3 ENVIRONMENTAL VALUES & OBJECTIVES

The following table identifies the environmental values and objectives from the Environment Reference Standard, 2021, that are relevant to the design and operation of the Lakeshore Caravan Park. These values and objectives have been considered when assessing the risks to human health and the environment, for this development.

Table 5-1: Relevant ERS environmental values and objectives

ELEMENT	ENVIRONMENTAL VALUES	INDICATORS & OBJECTIVES
Ambient air	<p>Life, health and well-being of humans</p> <p>Life, health and well-being of other forms of life, including the protection of ecosystems and biodiversity</p> <p>Local amenity and aesthetic enjoyment</p> <p>The useful life and aesthetic appearance of buildings, structures, property and materials</p>	<p>Sulphur dioxide maximum concentration:</p> <ul style="list-style-type: none"> ▪ 0.2 ppm, 1 hour, 1 day/year ▪ 0.08 ppm, 1 day, 1 day/year ▪ 0.02 ppm, 1 year. <p>Odour:</p> <p>An air environment that is free from offensive odours from commercial, industrial, trade and domestic activities.</p>
Ambient sound	<p>Sleep during the night</p> <p>Domestic and recreational activities</p> <p>Normal conversation</p> <p>Human tranquillity and enjoyment outdoors in natural areas</p>	<p>For Category IV land use:</p> <ul style="list-style-type: none"> ▪ Outdoor sound pressure level 10pm – 6am is 35 dB(A) ▪ Outdoor sound pressure level 6am – 10pm is 40 dB(A). <p>For Category V land use, a sound quality that is conducive to human tranquillity and enjoyment having regard to the ambient natural soundscape.</p>
Land	<p>Land dependent ecosystems and species</p> <p>Human health</p> <p>Buildings and structures</p> <p>Aesthetics</p>	<p>Indicator inorganic and organic contaminants and their objectives, as specified in the National Environment Protection (Assessment of Site Contamination) Measure, 1999.</p> <p>Land that is not corrosive to or otherwise adversely affecting the integrity of structure or building materials.</p> <p>Land that is not offensive to the senses of human beings.</p>
Groundwater (segment E)	<p>Agricultural and irrigation (stock watering)</p> <p>Water-based recreation (primary contact recreation)</p> <p>Traditional Owner cultural values</p>	<p>Indicators and levels specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018.</p> <p>0 E. coli/100 mL.</p> <p>Chemical hazards and aesthetic effects for indicators in the Recreational Water Guidelines.</p>
Surface water	<p>Water dependent ecosystems and species</p> <p>Human consumption after appropriate treatment</p> <p>Agriculture and irrigation</p> <p>Human consumption of aquatic foods</p> <p>Aquaculture</p> <p>Industrial and commercial use</p> <p>Water-based recreation</p> <p>Traditional Owner cultural values</p>	<p>Indicators and their objectives, as set out in the ERS.</p> <p>Indicators and health-related guideline values specified in the Australian Drinking Water Guidelines.</p> <p>Indicators and levels specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018.</p> <p>Indicators and levels for metals, non-metals, natural toxicants and mercury specified in Schedule 19 of the Food Standards Code.</p> <p>Faecal coliforms (median of 5 samples) < 14 orgs/100 mL.</p>

5.4 RISK ASSESSMENT

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to risk is included in the application:

1. *Provide a summary of the risk assessment identifying risks to human health and the environment.*
2. *Provide a summary of how identified risks are eliminated or reduced as far as reasonably practicable.*
3. *Provide a summary of environmental management systems used to prevent or minimise impact on the environment.*
4. *Provide a summary of the activity's potential human health impacts.*
5. *Provide a summary of the systems and processes to prevent or minimise impacts to human health.*

The site has been degraded in the last 50 years, to a state where in certain parts of the site the visual amenity has been affected. Due to modernisation and increased competition in the tourism industry Lakeshore Caravan Park is due for a renovation to fulfill customer expectations and provide higher value for money for its guests. This will at the same time enhance the environmental outcomes of the site and the Park is expecting to reduce environmental and human health risk by:

- Rehabilitating currently degraded areas through revegetation and use of recycled water irrigation.
- Using recycled water for beneficial use.
- Irrigating with recycled water in areas where there is no risk of runoff to Lake Eppalock.
- Using a wastewater treatment process that is considered best practice for residential/commercial waste of this scale.
- The wastewater treatment will have flexibility to accommodate fluctuating flows according to the tourism season and thus reduce the energy and inputs required.
- Using sub-surface irrigation to prevent contact with Caravan Park guests
- Fencing of wastewater treatment and storage infrastructure to prevent guest access

Adventures Victoria are aware of the environmental and human health risks and, along with their own management practices, utilise expert advice to manage these risks. The onsite wastewater treatment plant and recycled water infrastructure (including associated landscaping) will be installed and operated by trained staff.

5.5 CHOICE OF PROCESS AND TECHNOLOGY

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to the choice of process and technology is included in the application:

1. *Provide a summary of the background environmental condition.*
2. *Is this construction or installation of plant or equipment required?*
3. *Describe the required plant or equipment to be constructed or installed.*
4. *Describe the processes or systems you will develop to perform the activity.*
5. *Is this a new activity or a modification to an existing activity?*

BACKGROUND ENVIRONMENTAL CONDITION

The existing site has not been updated significantly since its opening and many of the amenities offered were outdated. Since the closure of the site for redevelopment in 2019, much of the infrastructure has been removed with only the access roads preserved. Furthermore, the land has experienced degradation and erosion due to

previous site uses. The existing site thus requires significant investment to attract guests and be commercially viable.

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

Historically wastewater was disposed at the site by a series of four cascading retention lagoons. The remaining lagoons have been since abandoned and photo of one of the previous wastewater lagoons is provided in Figure 5-1.



Figure 5-1: An existing wastewater lagoon

A large area to the northeast 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 as seen in Figure 5-2 and Figure 5-3. Many tyres that previously bounded the track are still present. During rain events, this area has no interception of water and thus stormwater runs off the site and, in heavy rain, can wash sediment through to a neighbouring landholder's site. This has been the cause of several complaints and will be addressed in the proposed redevelopment.



Figure 5-2: Motorcycle track rest area



Figure 5-3: Motorcycle track

NEED FOR THE DEVELOPMENT

Lakeshore Caravan Park had been in operation for approximately 50 years. Lake Eppalock is a major water sport destination for the Central Victorian region and the Lakeshore Caravan Park is one of four commercial accommodation facilities located around the lake. These facilities are strategic means of controlling public use of and access to the Lake Foreshore and reducing illegal camping activity.

The Park is thus part of a larger strategy that allows for the protection of:

- The lakes function as a water storage that provides a reliable supply for downstream communities.
- The indigenous and cultural values of the site.
- The presence of high value native vegetation and native fauna habitat.
- The potential of the site to provide social and recreational opportunities in a natural environment.

The Park will provide accommodation that is affordable and high quality allowing for guests to have an opportunity to connect to nature, perform activities outdoors and bond with friends and family. It is in the Park's best interest to undertake the redevelopment in a manner that protects the natural capital of the site.

DESCRIPTION OF THE PROPOSAL

Areas previously used for cabin and camping sites are proposed to be renewed for camping (to the north) and cabins (to the south). Additional areas for cabins are proposed to the east and new amenity buildings will be situated in the south-west. The Schematic Landscape Plan, prepared by Sentient Design and provided as an attachment, provides further detail of the proposed works regarding the accommodation areas and layout of the site. An overview map is provided in Figure 5-4.



Figure 5-4: Concept design layout

As part of the proposed development Lakeshore Caravan Park will purchase and install a new WWTP in the same location where the old wastewater lagoons were located. The Park has sought quotes from vendors for a package-type aerobic wastewater treatment system. Based on a water balance completed as part of the RMCG report *Wastewater management for Lakeshore Caravan Park redevelopment*, submitted as an attachment, the expected wastewater production volumes and BOD load have been estimated. A conservative approach has been taken, to ensure that the WWTP, winter storage lagoon and recycled water irrigation area are appropriately sized and sufficient space is available for these essential activities.

The new WWTP will be supplied by a specialist vendor. Performance details and budget estimates from four vendors have been sought however a vendor has not yet been selected. In particular, the selected WWTP will be required to meet the nutrient limits for the recycled water, as these dictate the area required for sustainable irrigation. Recycled water has been limited to areas without native vegetation and located well away from the lake edge, in areas sloping to the north (i.e. outside the lake catchment area).

The WWTP will be a high-rate, biological treatment system with full automation and process control. The WWTP will include screening, primary sedimentation and biological treatment for the reduction of

carbonaceous material and nitrogen. The aerobic treatment tanks which will provide the biological treatment is most likely going to comprise of a sequencing batch reactor (SBR). The SBR will have intermittent periods of aeration and settling. This will allow for:

- Nitrogen reduction through the conversion of ammonia to nitrates in the aerobic phase and nitrates to nitrogen gas in the anoxic phase.
- BOD and COD reduction in the aerobic phase through the consumption of organic matter by microbes.
- Sludge settling and removal during the anoxic phase.

Phosphorus will be reduced with alum or ferric dosing and removed in the sludge. WWTP units will be fully enclosed and may include the sub-surface installation of some (or all) treatment tanks. Odour control will be installed on all tanks, as this is a key requirement for guest amenity.

A conceptual process flow diagram of the expected WWTP is provided in Figure 5-5.

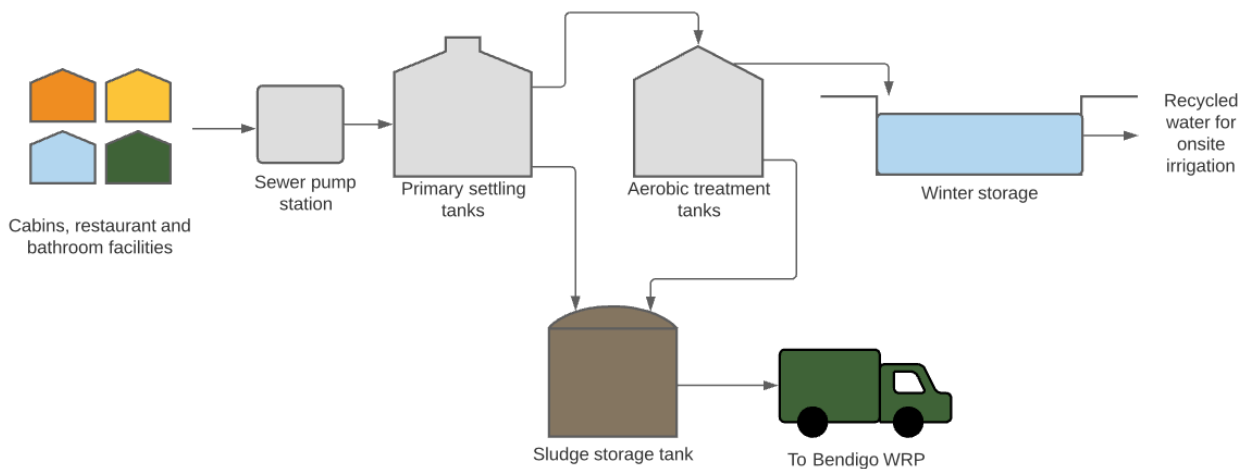


Figure 5-5: Conceptual process flow diagram for Lakeshore Caravan Park WWTP

Systems proposed by WWTP vendors can be found in the attached *Wastewater management for Lakeshore Caravan Park redevelopment* report.

Based on the expected monthly occupancy rates, the variation in actual wastewater production is provided in Table 5-2. This demonstrates how the occupancy rate varies the wastewater production and is used to size a WWTP that can treat wastewater over a range of volumes.

Table 5-2: Occupancy rates and volume of wastewater

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Occupancy rate	80%	70%	65%	65%	35%	35%	35%	50%	70%	70%	75%	80%
Daily wastewater production, kL/day	109	96	89	89	48	48	48	68	96	96	103	109
Total annual production, ML/year	30.93											

The treated wastewater will meet Class B quality requirements (according to EPA Publication 1910.2), as well as targets for phosphorus and nitrogen concentrations. The expected treated effluent quality is provided in Table 5-3.

Table 5-3: Treated water quality parameters

TREATED WATER QUALITY PARAMETERS	
< 20 mg/L BOD	< 100 orgs/100 mL E. coli
< 30 mg/L suspended solids	< 3 mg/L total phosphorus
pH between 6.5 and 8.5	< 10 mg/L total nitrogen

Based on the quantity and quality of water, the storage and area of land to be irrigated has been calculated. Modelling has been undertaken to determine an appropriate balance between irrigation area and wet weather storage. A minimum of 3.1 ha of irrigation will be provided to ensure sustainable management of nutrients. This will be developed in combination with 1.6 ML of storage to achieve containment in a 90th percentile wet year.

Setbacks in line with EPA Publication 891.4 from buildings and service infrastructure will also be observed, to ensure protection of human health and the surrounding environment. These include:

- 3 m to buildings or allotment boundary upslope
- 1.5 m to buildings or allotment boundary downslope
- 1.5 m to water supply pipelines
- 3 m to children’s playground or in-ground swimming pool.

Key design requirements for irrigation include:

- Drip systems shall be installed at 100 – 150 mm depth into 150 – 250 mm of topsoil.
- Use of subsurface drip line designed specifically for effluent irrigation.
- Adequate filtration incorporated into the system prior to drip irrigation.
- Pressure compensation/regulation will be required to ensure even distribution and low application rates across the variety of gradients and elevations.
- Use of soil moisture monitoring to control application times and rates.
- Cut-off drains to be provided upslope of irrigation areas to minimise stormwater run-on.
- Irrigation areas to be graded to prevent detention of stormwater

To achieve the topsoil depth outlined above it is expected that topsoil will need to be imported to the site. Site inspection indicates that the topsoils have been eroded from large portions of the site due to previous land disturbance.

The plants selected for the irrigation reuse area will be high water and nutrient use species. The irrigation areas will be grassed with turf species. Grass will be cut and removed from site to enhance nutrient uptake and removal. No fertiliser will be applied to the irrigation area (nutrients will be provided through the wastewater), unless future soil or plant tissue testing identifies a deficiency.

The winter storage design requirements include:

- Storage to be lined (e.g. with compacted clay) to achieve a permeability of less than 1×10^{-9} metres per second to minimise seepage and protect groundwater.
- Perimeter to be fenced to prevent access.
- Embankment design to prevent stormwater ingress.

ENVIRONMENT MANAGEMENT

A Health and Environment Management Plan (HEMP) for the recycled water scheme, has been drafted and included as an attachment. This will be updated once a development licence has been granted and the detailed design is complete. It includes a detailed risk assessment and environmental management and monitoring practices.

An Environmental Management Plan (EMP), detailing the environmental risk and management activities required for the whole site, including management of stormwater, the wastewater treatment plant, odours, solid waste, etc. will also be developed following project approval.

6 Climate change and greenhouse emissions

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to climate change and greenhouse gas emissions is included in the application:

1. Provide a summary of greenhouse gas emissions generated from this activity.
2. Provide a summary of systems and processes to prevent or minimise greenhouse gas emissions.
3. Provide a summary of potential impacts from climate change on the activity and related adaptation methods.

6.1 GREENHOUSE GAS EMISSIONS

A greenhouse gas (GHG) emission assessment was developed using the *National Greenhouse Accounts Factors* (NGAF) for the proposed WWTP. The greenhouse gases included in the analysis are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O).

The assessment considered the following parameters outlined in Table 6-1, in equivalent CO₂ emissions.

Table 6-1: Direct and indirect GHG accounting

SCOPE	DESCRIPTION	EMISSIONS
Scope 1 (direct)	Direct emissions are produced from sources within the boundary of an organisation and as a result of that organisations activities. Including emissions generated from the transportation of materials, products, waste and people. These emissions are measured at the point of release.	Fuel consumption of trucks transporting sludge
Scope 2 (indirect)	Scope 2 emissions are state-based emissions factors from on-grid electricity generation calculated systematically from the physical characteristics of the electricity grid. Considered as an average of the total electricity generation. Indirect emissions are generated from the burning of fuels (coal, gas, etc) at power stations.	Energy consumption – purchased power from grid for wastewater treatment plant and irrigation pumps and for the cabins, restaurant and other powered sites.

Results of the annual GHG emissions assessment are shown in Table 6-2.

Table 6-2: Results of GHG assessment

SCOPE	DESCRIPTION	SOURCE	ENERGY CONSUMPTION	TOTAL ANNUAL GHG
Scope 1	Fuel consumption of trucks transporting sludge	National Greenhouse Accounts factors (2020) Petroleum product (transport) Table 4	38.6 GJ	4 tonnes of CO ₂ equivalent per annum
Scope 2	Energy consumption from WWTP	National Greenhouse Accounts factors (2020) Indirect emission factors for consumption of purchased electricity Table 5	57,000 kWh	56 tonnes CO ₂ equivalent per annum
	Energy consumption from cabins, restaurant and other powered sites	National Greenhouse Accounts factors (2020) Indirect emission factors for consumption of purchased electricity Table 5	434,591 kWh	426 tonnes CO ₂ equivalent per annum
Total	485 tonnes CO ₂ equivalent per year			

6.2 CLIMATE CHANGE ADAPTATION AND MITIGATION

Victoria has already experienced increasing temperatures and decreasing rainfall since the mid-20th century¹. Based on current literature published in the *Pilot Water Sector Adaptation Plan*, Victoria is expected to experience the following changes:

- Temperatures to increase 1.1 – 3.3°C year-round by 2070 with increased heatwaves and fewer frosts.
- Harsher fire weather and longer fire season.
- Less autumn, winter and spring rainfall north of the Great Dividing Range and less winter and spring rainfall south of the Great Dividing Range.
- Increased frequency and height of storm surge and high tides.
- Rising sea-level as well as warmer and more acidic oceans.

According to the CSIRO climate projections (2019) the Loddon Campaspe region will by 2030 see increases in daily maximum temperatures of 1.4 to 2.4°C (compared to 1986 - 2005) and the annual predicted rainfall will decrease, with the region's naturally variability in rainfall dominating over the next decade².

The Park's greatest exposure to climate change is the likelihood of weather pattern changes. This may lead to new vulnerabilities, as guests may turn to more 'weatherproof' destinations, book accommodation at shorter notice, cancel their stay or switch destinations if the weather is too hot, too cold or there is likelihood of rain.

¹ Pilot Water Sector Climate Adaptation Action Plan, accessed at: https://www.water.vic.gov.au/_data/assets/pdf_file/0019/410851/WSAAP-Web-version-FINAL_v2.pdf (July 2021)

² Loddon Campaspe Climate Projections 2019, accessed at: https://climatereadyplan.adaptloddonmallee.com.au/wp-content/uploads/2021/09/Loddon-Campaspe-Climate-Projections-2019_20200219-3.pdf (December 2021)

Risks are greater for rural accommodation since cities or towns offer alternative weather-independent activities.

However, caravan parks are a feature of Australian culture and a place that is accessible and affordable for people to access nature. This makes it the preferred regional stay for many tourists.

Recycled water use for onsite irrigation will aid with provision of recreational opportunities that are an alternative to lake-based recreation in dry conditions.

The wastewater treatment plant is not expected to be exposed directly by the potential impacts of climate change. The IPCC describes hazard, exposure and vulnerability as key factors which combine to create risk associated with climate change.

Table 6-3 outlines the potential impacts that climate change may have on the proposed caravan park.

Table 6-3: Climate change impacts on Lakeshore Caravan Park

CHANGES IN CLIMATE & EXTREME EVENTS	POTENTIAL IMPLICATIONS
Temperature increases	<ul style="list-style-type: none"> ▪ Increased risk of odour due to temperature dependent performance of biological systems and sludge management ▪ Risk of mechanical and electrical equipment overheating ▪ Increased irrigation demand
More heatwaves	<ul style="list-style-type: none"> ▪ Threats to the health and safety of operators or limiting of working hours ▪ Increased risk of power outages may affect treatment, effluent quality and generate more odours ▪ Affected performance of biological systems and sludge management due to heatwave conditions ▪ Increased irrigation demand
Lower average rainfall	<ul style="list-style-type: none"> ▪ Limited access to water for agriculture, parks, gardens and recreation areas is likely to increase the demand of recycled water for these activities
More droughts	<ul style="list-style-type: none"> ▪ Potential damage to infrastructure due to dry soil which shifts and cracks, or tree roots seeking water sources ▪ Fluctuations on the water level and water quality of Lake Eppalock
More intense rainfall	<ul style="list-style-type: none"> ▪ Storm damage ▪ Soil erosion potential on exposed surfaces
Sea level rise	<ul style="list-style-type: none"> ▪ None
More bushfire weather	<ul style="list-style-type: none"> ▪ Open tanks impacted by ash from fires; effluent may be impacted ▪ Damage to infrastructure and vegetation
More flash floods	<ul style="list-style-type: none"> ▪ Damage to infrastructure ▪ Soil erosion potential on exposed surfaces

The accommodation industry is, in comparison to many industries (e.g. transportation), already a low-carbon sector and caravan parks have a lower carbon footprint than other accommodation types. This provides an opportunity to fully decarbonize relatively easily. The industry has many opportunities for decarbonising and guests are ever more interested in their environmental impacts, which can provide a marketing advantage.

The site has in place the following adaptations and mitigations to climate change:

- Rehabilitation of eroded land through revegetation and irrigation with recycled water.
- Low energy-consuming equipment, where possible.

Although operations are not finalised, the site will consider the following in their operations:

- Passive energy systems like passive solar heating, passive cooling.
- Switch to renewable energy such as solar or purchase 'green power' from energy providers.
- Onsite management of food waste, such as composting.
- Sourcing of local food supplies for restaurant to reduce food miles.

7 Air emissions

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to air emissions is included in the application:

- 1. Provide a summary of the activity's emissions to air.*
- 2. Provide a summary of the systems and processes to prevent or minimise impacts from air emissions.*

The air emissions from the proposed redevelopment relate to odour and noise only. No particulates are expected to be generated. Please refer to the odour and noise response in the application for further details of these impacts.

8 Noise emissions

Development Licence Application Guidance (EPA, 2021) recommends that the following information relating to noise emissions is included in the application:

1. *Provide a summary of the activity's noise emissions.*
2. *Provide a summary of the systems and processes to prevent or minimise impacts from noise emissions.*

The following environmental values (ERS 2021) apply to the ambient sound environment in which the redevelopment is proposed

- Human tranquillity and enjoyment outdoors
- Sleep during the night
- Domestic and recreational activities.

Caravan parks in rural areas are considered as noise-sensitive areas since these areas are considered locations often valued for their natural soundscape.

NOISE EMISSIONS

A noise assessment is yet to be developed. The noise assessment will be completed once a WWTP has been selected. Noise limits will be in line with the Noise Protocol (EPA Publication 1826, 2021).

NIRV and Noise Protocol noise limits for industry at noise sensitive receptors are determined based on the zoning of the generating zone, the zoning of the receiving zone, the background noise level and time of the day. The highest noise source is expected to be from the guests and the WWTP, and controls will be in place.

Quiet times for the Park will be 10pm to 8am every day.

It is noted that it is in the Park's best interest to keep noise to a minimum as guests will want to enjoy the rural soundscape.

CONTROLS TO MINIMISE NOISE

Under the EP Act 2017, the General Environmental Duty (GED) requires that 'any person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable'. The activities associated with the proposed development which may give rise to risk a of harm (a hazard) from noise are summarised in Table 8-1.

Each of these activities/hazards have been assessed following the approach set out in EPA Publication 1695.1 *Assessing and controlling risk: A guide for business*. Controls have been proposed to minimize risk of harm with consideration of what is reasonably practicable.

Table 8-1: Noise risk controls

ACTIVITY/ HAZARD	POTENTIAL HARM	CONTROLS TO MINIMISE RISK	RESIDUAL RISK
Blowers for the aeration system (WWTP)	May present a low tone humming noise of approximately 50 dBA	<ul style="list-style-type: none"> ▪ “Buy quiet” equipment purchasing policy ▪ Mechanical equipment to be housed in acoustic enclosures 	Low
Guests	Guest activities and restaurants are a source of noise. Normal speaking usually occurs at 60 dBA but in crowded spaces can reach 80 dBA.	<ul style="list-style-type: none"> ▪ Quiet time between 10pm and 8am 	Low
Trucks	Trucks collecting sludge will access the site every two weeks. Normal truck acceleration ranges from 69 dBA to 85 dBA.	<ul style="list-style-type: none"> ▪ The truck loading area will be designed so there is minimal manoeuvring required ▪ Trucks will be loaded during the daytime only 	Low

9 Water

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to surface water is included in the application:

1. Provide a summary of the activity's emissions to surface waters.
2. Provide a summary of the systems and processes to prevent or minimise impacts to surface waters.

The following section provides a summary of the activity's emissions to surface waters and a summary of the systems and processes to prevent or minimise impacts to surface water.

IMPACTS TO SURFACE WATER

The development is not expected to have recycled water emissions to surface water as the irrigation areas are outside of the catchment area of Lake Eppalock. Areas to the north of the ridgeline shown in Figure 9-1 will be used for recycled water irrigation.



Figure 9-1: Ridge line and catchment of Lake Eppalock

STORMWATER MANAGEMENT

Stormwater management for the site has been developed as part of the Schematic Landscape Plan. This states:

The overarching 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.

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.

Examples of these control measures is provided in the Schematic Landscape Plan. The stormwater management for the whole site will be developed as part of the detailed design.

CONTROLS TO MINIMISE IMPACTS TO SURFACE WATER

Under the EP Act 2017, the General Environmental Duty (GED) requires that 'any person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable'. The activities associated with the proposed development which may give rise to risk a of harm (a hazard) to surface water are summarised in Table 9-1.

Each of these activities/hazards have been assessed following the approach set out in EPA Publication 1695.1 *Assessing and controlling risk: A guide for business*. Controls have been proposed to minimize risk of harm with consideration of what is reasonably practicable.

Table 9-1: Surface water risk controls

ACTIVITY/ HAZARD	POTENTIAL HARM	CONTROLS TO MINIMISE RISK	RESIDUAL RISK
Discharge/overflow of stormwater to lake	Adverse impacts on lake water quality	<ul style="list-style-type: none"> ▪ Vegetation will slow down the runoff water and provide some natural treatment ▪ Minimised asphalts and other non-permeable materials ▪ No recycled water irrigation within the lake catchment area 	Low
Litter from site to surface waters	Adverse impacts on water quality and visual amenity	<ul style="list-style-type: none"> ▪ Bins will have lids to prevent litter from being blown away ▪ Guests will be discouraged to litter the site using signs ▪ Litter will be collected by the Park's staff daily 	Low
Storage lagoons – overflows/spills to surface water	Adverse impacts on surface water quality	<ul style="list-style-type: none"> ▪ Lagoons are placed outside of the Lake Eppalock catchment ▪ Water balance modelling undertaken to ensure storages are appropriately sized ▪ Levels will be monitored to prevent overflow 	Low
Recycled water irrigation impacts surface waters	<p>Nutrients impact on surface water quality</p> <p>Irrigation runoff increases surface water quantity</p>	<ul style="list-style-type: none"> ▪ No recycled water irrigation within the lake catchment area ▪ Subsurface drip irrigation will be used and this can be controlled to prevent irrigation runoff by applying water so that the soil is not filled to saturation point ▪ A nutrient balance will be maintained for the recycled water irrigation area to prevent risk of harm to rainfall runoff. Further details are provided in the attached HEMP 	Low
Erosion	Sediment transport to Lake Eppalock due to eroded land	<ul style="list-style-type: none"> ▪ Use of permeable surfaces for maximum infiltration of stormwater ▪ 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 	Low

Overall, with the implementation of controls set out in Table 9-1, the risks of harm to surface waters from the proposed development are low.

10 Land and groundwater

Development Licence Application Guidance (EPA, 2021) recommends that the following information relating to land and groundwater is included in the application:

1. Provide a summary of the activity's emissions to land and groundwater.
2. Provide a summary of the systems and processes to prevent or minimise impacts to land and groundwater.

NATIVE VEGETATION

Most of the site would be described as having an open tree cover characteristic of ecological vegetation class (EVC) 61: Box Ironbark Forest. Biosis has investigated and mapped the site according to 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 and tree protection zones have been calculated. Areas of higher habitat value have also been identified to the east, west and north of the areas formerly developed for cabins and camping.

As seen in Figure 10-1, Biosis classified vegetation areas into: Zone of Environmental Sensitivity (orange), Habitat Zone – high quality (red), Habitat Zone – moderate quality (pink), tree protection zones (green) and area of significant erosion (black and white lines).

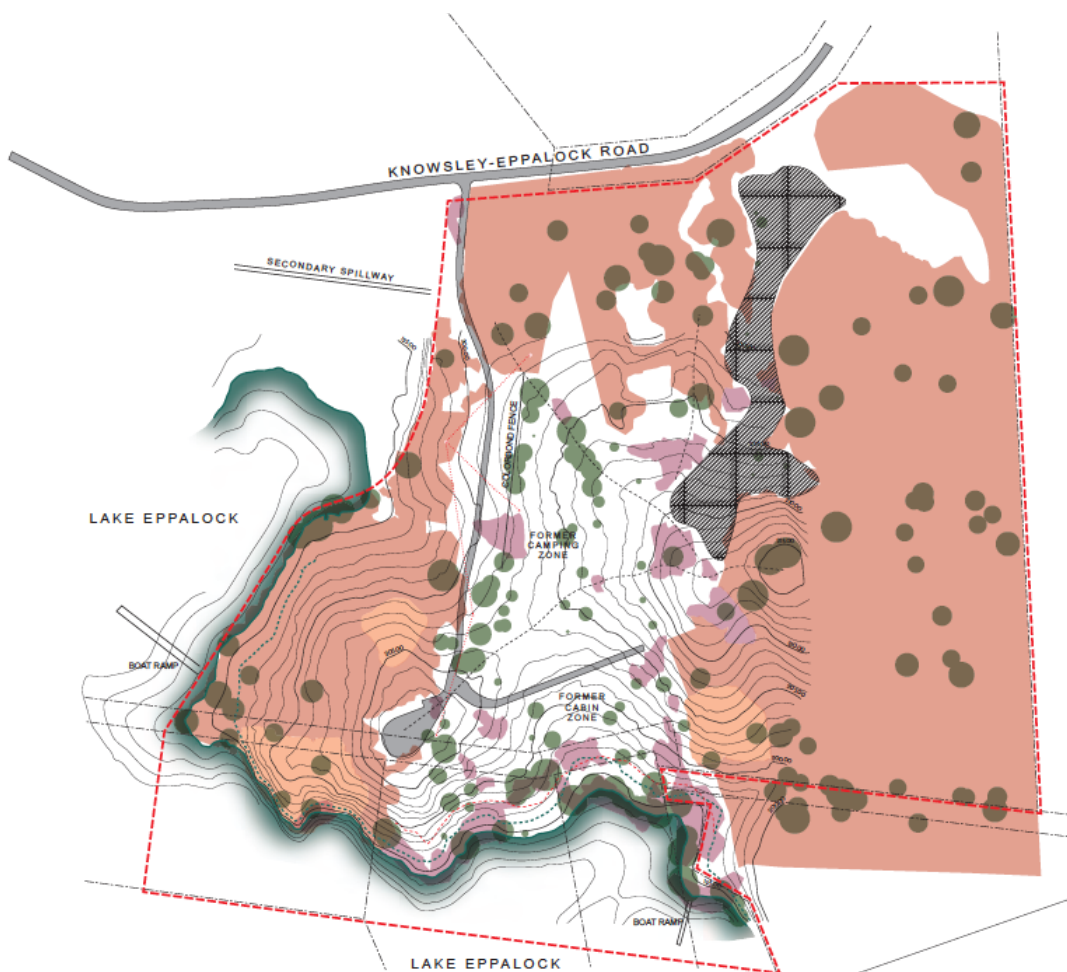


Figure 10-1: Vegetation mapping

No threatened flora or fauna species have been recorded at the site.

In order to protect native vegetation, the following measures will be in place:

- Removal of vegetation will be avoided wherever possible and adverse effects to remaining vegetation will be minimised. Where approved removal of vegetation cannot be avoided, biodiversity will be compensated through offsets.
- Recycled water will only be applied via sub-surface irrigation to grassed areas within the proposed recreation park and amenity buffer. A nutrient balance will be maintained to prevent nutrient migration to native vegetation areas.
- Walkways will keep guests from walking in native vegetated areas and thus reduce compaction and damage.

RECYCLED WATER IRRIGATION

The *Wastewater management for Lakeshore Caravan Park redevelopment* report prepared by RMCG considered three options for managing recycled water. These are provided in Table 10-1.

Table 10-1: Options for recycled water use

OPTIONS CONSIDERED	ADVANTAGES AND DISADVANTAGES	SUITABILITY
Evaporation basins	<ul style="list-style-type: none"> ▪ Will not be effective in this climate since there won't be sufficient evaporation in wet years 	Not suited
On-site subsurface water irrigation	<ul style="list-style-type: none"> ▪ Improve amenity of recreation areas and greening the site to reduce heat impacts and bushfire risk ▪ Subsurface irrigation will minimise the potential for human contact, ensures visual amenity is not impacted and enables flexible garden designs ▪ May take advantage of existing infrastructure (rehabilitation of former wastewater disposal basins for storage) ▪ Will enable rehabilitation of degraded former motorbike track area ▪ The system can be automated to minimise management input 	Suitable
Off-site recycled water irrigation	<ul style="list-style-type: none"> ▪ There is no irrigation in the nearby area ▪ Cost of piping the water offsite is expected to be higher 	Not suited

On-site recycled water irrigation will provide the site with the water to rehabilitate degraded land. The area of land for irrigation is shown in the attached site drawings.

Sub-surface irrigation of recycled water can achieve positive environmental and human health outcomes due to the following:

- Minimises human contact with treated wastewater.
- Does not require a four-hour withholding period prior to public access, as needed for above-ground irrigation systems.
- Minimises the likelihood of runoff.

The draft HEMP provided as an attachment of this application provides further detail of recycled water management. An assessment of the residual risk (after control measures are in place) of recycled water irrigation is provided in Table 10-2.

Table 10-2: Risk analysis of recycled water irrigation extracted from HEMP

ELEMENT	HAZARD	CONTROL MEASURES	RESIDUAL RISK ASSESSMENT		
			LIKELIHOOD	CONSEQUENCE	RISK LEVEL
Recycled water quality	Quality exceeds limits outlined in Error! Reference source not found.	<ul style="list-style-type: none"> Monthly recycled water quality testing. Cease supply of recycled water if parameters above limits. 	Unlikely	Minor	Low
	Nutrients (phosphorus and nitrogen) applied in excess of crop demand, leading to migration to native vegetation areas, surface water or groundwater	<ul style="list-style-type: none"> Cut irrigated grass and remove clippings regularly to enhance nutrient uptake. Undertake soil testing. No fertiliser use unless soil testing shows it is needed. 	Unlikely	Minor	Low
	Odours from recycled water	<ul style="list-style-type: none"> Treatment system will be enclosed or other appropriate odour attenuation measures applied. Treatment will reduce potential for odour from recycled water dam. Irrigation will be applied sub-surface. Respond to any complaints as needed. 	Unlikely	Minor	Low
	Blue green algae in storages	<ul style="list-style-type: none"> Regular monitoring of storage during summer. Implement BGA response plan. 	Unlikely	Minor	Low
Turf health	Excess salt application	<ul style="list-style-type: none"> Monthly recycled water salinity testing. Undertake soil testing. 	Unlikely	Minor	Low
Soil health	Waterlogging	<ul style="list-style-type: none"> Irrigation according to turf needs. Irrigate smaller volumes, more frequently. 	Unlikely	Minor	Low
	Salinity/sodicity	<ul style="list-style-type: none"> Monthly recycled water salinity testing. Undertake soil testing. Use soil amendments if required to reduce sodicity 	Unlikely	Minor	Low
	Alkalinity/acidity	<ul style="list-style-type: none"> Annual soil testing Use soil amendments if required to adjust soil pH 	Unlikely	Minor	Low
Groundwater quality	Recycled water contaminates groundwater	<ul style="list-style-type: none"> Irrigation according to turf needs. Clay subsoils and depth to watertable minimise likelihood of accessions to groundwater Recycled water dam is clay lined. 	Unlikely	Insignificant	Low
Surface water quality	Recycled water contaminates surface waters	<ul style="list-style-type: none"> Recycled water irrigation will not occur within the catchment area of Lake Eppalock. Irrigation according to turf needs. Sub-surface drip irrigation allows for precise irrigation application to prevent runoff. Storage levels managed to prevent overflow. Stormwater managed as per Error! Reference source not found. 	Unlikely	Minor	Low
Human health	Staff contact with recycled water causes illness	<ul style="list-style-type: none"> Automated irrigation system so can be operated remotely. Staff trained on risks of using recycled water and appropriate management practices. 	Unlikely	Minor	Low
	Public contact with recycled water causes illness	<ul style="list-style-type: none"> Irrigation occurs at night and below ground surface. Fencing in place on boundaries and around storage dam. Warning signs in place. 	Unlikely	Minor	Low
	Cross-connection with potable water	<ul style="list-style-type: none"> There is no connection to potable network. Use trained staff and contractors for work on recycled water system. Check for cross connections. 	Unlikely	Minor	Low

CONTROLS TO MINIMISE IMPACTS TO LAND AND GROUNDWATER

Under the EP Act 2017, the General Environmental Duty requires that ‘any person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable’. The activities associated with the proposed development which may give rise to risk a of harm (a hazard) to land (including groundwater) are summarised in Table 10-3.

Each of these activities/hazards have been assessed following the approach set out in EPA Publication 1695.1 *Assessing and controlling risk: A guide for business*. Controls have been proposed to minimize risk of harm with consideration of what is reasonably practicable.

Table 10-3: Land and groundwater risk controls

ACTIVITY/ HAZARD	POTENTIAL HARM	PROPOSED CONTROLS	RESIDUAL RISK
Liquid retaining structures	Spills of chemical and wastewater resulting in contamination of land and groundwater	<ul style="list-style-type: none"> ▪ Liquid retaining structures and areas where chemicals are handled will be bunded and have concrete floor ▪ Storage and handling of liquids to be undertaken as per EPA publication 1698 <i>Liquid Storage Handling guidelines</i> 	Low
Recycled water irrigation	Run-off of recycled water resulting in contamination of land, water and groundwater	<ul style="list-style-type: none"> ▪ Subsurface irrigation according to plant demand ▪ Monthly water quality testing and three-yearly soil testing ▪ Smaller volumes of irrigation more frequently to prevent waterlogging ▪ For more information refer to attached HEMP 	Low
Disturbance of contaminated land during construction	<ul style="list-style-type: none"> ▪ Exposure to contamination - human health and environment ▪ Contamination of stormwater runoff 	<ul style="list-style-type: none"> ▪ Land has been historically used for tourist accommodation purposes and there is no observed evidence of activities that are indicative of legacy contamination ▪ Unexpected contamination that is encountered during construction is to be managed in accordance with EPA Victoria Publication 1834 <i>Civil construction, building and demolition guide</i> 	Low

11 Odour

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to odour is included in the application:

1. Provide a summary of the activity's emissions of odour.
2. Provide a summary of the systems and processes to prevent or minimise impacts from odour emissions.

The following environmental values (ERS 2021) apply to the ambient air environment in which the new WWTP development is proposed.

- Local amenity and aesthetic enjoyment.

The main potential source of odour (prior to controls) at the site are:

- Wastewater treatment plant inlet
- Trucks removing sludge
- Upset conditions (e.g. loss of aeration, overloading).

It is the best interest of the Park that odour is minimised since the amenity of the guests depends on this.

CONTROLS TO MINIMISE IMPACTS FROM ODOUR EMISSIONS

Under the EP Act 2017, the General Environmental Duty (GED) requires that 'any person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable'. The activities associated with the proposed development which may give rise to risk a of harm (a hazard) to surface water are summarised in Table 11-1.

Each of these activities/hazards have been assessed following the approach set out in EPA Publication 1695.1 *Assessing and controlling risk: A guide for business*. Controls have been proposed to minimize risk of harm with consideration of what is reasonably practicable.

Table 11-1: Odour risk controls

PROCESS UNIT	POTENTIAL HARM	CONTROLS TO MINIMISE RISK	RESIDUAL RISK
Primary settling tank	Compromise guest and neighbour amenity	<ul style="list-style-type: none"> ▪ Fully enclosed 	Low
Aeration system		<ul style="list-style-type: none"> ▪ Fully enclosed ▪ Maintaining positive dissolved oxygen (DO) levels through mechanical aeration ▪ Continuously monitoring DO levels ▪ Anoxic periods will still have chemical oxygen available and not be aerobic 	Low
Sludge storage tank		<ul style="list-style-type: none"> ▪ Fully enclosed ▪ Vented to biofilter odour control unit ▪ Storage time will be minimised ▪ The tank will be mechanically aerated for mixing and oxygenation ▪ Regular cleaning of the tank 	Low
Winter storage		<ul style="list-style-type: none"> ▪ The treated wastewater is not odorous 	Low

Further detail will be available when the WWTP vendor is selected, and the design finalised. All vendors have supplied reference sites for their systems and therefore the designs have been tested in other locations, reducing the uncertainty in environmental outcomes and process performance.

Overall, the results of this assessment indicate that the predicted odour levels are unlikely to be considered offensive during normal operating conditions and would be expected to comply with ERS odour objectives, provided the plant is appropriately operated and maintained.

12 Waste

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to waste is included in the application:

1. Summary of how waste is managed in line with the waste management hierarchy.
2. Detail the systems and processes used to minimise risks of harm to human health and the environment from the handling, storage, use and transportation of the waste substance.
3. Does your activity include management or control of industrial waste, priority waste and/or reportable priority waste?
4. Detail the type, quantity and treatment of waste.
5. Is this proposed activity included in a relevant schedule of Regional Waste and Resource Recovery Implementation Plan?

Waste from the proposed development is expected to be minimal and will be mainly solid waste produced by the restaurant, cabin and offices as well as sludge from the WWTP. Expected waste types and handling are provided in Table 12-1. The waste codes are referenced from Schedule 5 of the EP Regulations 2021.

Table 12-1: Waste generation and handling

WASTE	WASTE CODE	VOLUME	HANDLING
Residential solid waste from cabins and camping sites	NA	1.5 kg per guest	Solid waste will be recycled where possible and disposed to landfill otherwise
Food waste from restaurant	K210	24.6 t/year*	Food waste and other organic waste from the site will either be composted onsite or sent to an offsite composting facility. This will be determined during detailed design. Consideration will be given to nutrient management on the site, as the site will have limited use for nutrient-containing compost. Green waste will be removed from the site and sent to an offsite composting facility to ensure nutrient management in recycled water irrigation areas.
Food waste from accommodation	K210	1.83 t/year*	
Green waste i.e. grass clippings and prunings	K300	Not yet determined	
WWTP sludge	K400 - H	Dependent on WWTP technology selection	Sludge will be removed in licenced tankers to the Bendigo WRP. As a reportable priority waste, transportation and transactions of this waste will need to be recorded using EPA's Waste Tracker system

*Sourced from the National Food Waste Baseline Final Assessment Report, ARCADIS, 2016

The proposed development is not included in a Regional Waste and Resource Recovery Implementation Plan.

13 Commissioning

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to commissioning is included in the application:

- 1. Do you require a proof of performance (commissioning) testing plan in relation to this activity?*
- 2. Summarise the proof of performance testing plan for this activity.*

A detailed Commissioning Plan for the onsite WWTP will be developed prior to commissioning.

14 Decommissioning

Development Licence Application Guidance (EPA 2021) recommends that the following information relating to decommissioning is included in the application:

1. Provide a summary of post-closure plans, including aftercare management, decommissioning and rehabilitation.

When decommissioning of the site is eventually required, tasks that are expected to be completed include:

- Mechanical and electrical equipment decommissioning – mechanical equipment will be removed and recycled where possible.
- Concrete, brick and building material – tanks, paths, buildings and structural elements will be broken up and removed for off-site recycling.

The required documentation and Council permission will be sought when required.

Attachments

DOCUMENT TITLE	CONFIDENTIAL?	PROVIDED
F1017 Fit and Proper Person Form	Yes	Yes
F1018 Prohibited Person Form(s)	Yes	Yes
Credit check	Yes	Yes
Stakeholder engagement plan	Yes	Yes
Stakeholder engagement register	Yes	Yes
Information flyer	No	Yes
Community engagement session slides	No	Yes
Recycled water HEMP	Yes	Yes
Schematic Landscape Plan	No	Yes
Wastewater management for Lakeshore Caravan Park redevelopment report	Yes	Yes
Lakeshore Caravan Park Planning Drawings	No	Yes

This report has been prepared by:

RM Consulting Group Pty Ltd trading as RMCG

135 Mollison Street, Bendigo Victoria 3550

(03) 5441 4821 — rmcg.com.au — ABN 73 613 135 247

Offices in Victoria, Tasmania, ACT and NSW

Key RMCG contact

Hilary Hall

0422 608 303 — hilaryh@rmcg.com.au



Document review and authorisation

Project Number: #1354

Doc Version	Final/Draft	Date	Author	Project Director review	BST QA review	Release approved by	Issued to
1.0	Draft	16/12/2021	N. Frazer H. Hall	A. Kelliher	--	A. Kelliher	C. McNeill CMC Constructions
1.1	Final	22/12/2021	N. Frazer H. Hall	A. Kelliher	--	A. Kelliher	C. McNeill CMC Constructions