

LAKE PROSERPINE

MASTER DEVELOPMENT PLAN



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Authors	Amanda Taylor, Alvin Kirby, Hayley Watts, Jonathan Leatheam
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Project Details

The Proserpine Sustainability and Future Growth Master Plan (Proserpine Master Plan) included five key projects for improvements across the town. A key project that emerged during public consultation was upgrades to Lake Proserpine.



1.1 PROJECT CONTEXT

Whitsunday Regional Council (Council) sought to develop a master plan to drive urban growth and economic development for the regional town of Proserpine. The process included an extensive public consultation program, undertaken over a three-month period from 1 December 2016 to 28 February 2017.

Engagement activities included public forums at the Proserpine Community Centre, public display stalls, face-to-face consultation meetings and an online ideas forum through Council’s online consultation hub, ‘Your Say Whitsunday’.

Community forums attracted approximately 45 participants, with a further 78 people visiting Council’s pop-up shop during the consultation period. A total of 114 submissions were received, including 101 written submissions to Council, 10 submissions via the Your Say Portal, 1 collated submission comprising all comments from the community pop-up, and 1 collated submission from each public community forum.

All ideas and submissions presented during the public consultation period were analysed and collated into key projects, with viable projects included in a list of recommendations in the final Proserpine Master Plan, which was adopted by Council on 8 November 2017.

The Proserpine Master Plan included five key projects for improvements across the town, with proposed planning and budget allocations for implementation.

A key project that emerged during public consultation was upgrades to Lake Proserpine, with 22 submissions suggesting various ideas for improvements to the lake. Ideas included; accommodation, upgrading facilities, increased recreational activities and commercial tourism products.

Place Design Group were engaged by Council to prepare a master plan for Lake Proserpine to help deliver key projects set out in the Proserpine Master Plan.



Figure 1: Extract page spread from the Proserpine Master Plan

1.2 LAKE PROSERPINE RECREATIONAL MASTER PLAN AND MASTER DEVELOPMENT PLAN

The Lake Proserpine Recreational Master Plan was prepared to advance the potential for Lake Proserpine to function as a tourism attractor within the Whitsundays region.

The Master plan establishes a framework to guide potential development of enhanced and new recreational activities. These activities may include new camping facilities, a new fishing jetty, boat pontoons or improved picnic facilities.

The project was divided into two key stages:

- » Stage 1: Inception and Baseline Analysis
- » Stage 2: Master Plan Development

Stage 1 incorporated various on-the-ground tasks such as an inception meeting, objectives workshop, desktop analysis and site visit to assist in the preparation of a preliminary Baseline Analysis Report.

The report brought together the findings and outcomes from a range of actions including:

- » Site audit and field investigations over a three-day period
- » Workshops with Council, SunWater and representatives
- » Meeting with representatives from M. Pigra Stakeholder Group and M. Pigra Operations Officer
- » Technical planning, design and ecological investigations and analysis
- » Analysis and identification of land use opportunities and configuration within the study area.

The Baseline Analysis Report informed the development of the Recreational Master Plan and is intended to continue as an important reference for implementation of the Master Plan projects overtime.

Informed by the outcomes of the previous stage and stakeholder input throughout this process, Stage 2 involved the evolution of design concepts and technical recommendations to develop the Lake Proserpine Recreational Master Plan.

The Master Plan brings together the design process and provides details of:

- » Site analysis
- » Master plan development themes
- » Final master plan
- » Master plan delivery.

Technical reports and advice supporting the Master Plan include:

- » Baseline Analysis Report (August 2018) prepared by Place Design Group and 28 South Environmental
- » Biosecurity Assessment Report (August 2018) prepared by 28 South Environmental
- » Lake Proserpine Master Plan Concept Design Estimate (August 2018) prepared by Rider Levett Bucknall
- » Lake Proserpine Master Plan Qualitative Economic Review (August 2018) prepared by Norling Consulting.

The Lake Proserpine Recreational Master Plan was completed in 2018.

Sunwater currently owns and manages Lake Proserpine. In order to deliver the primary focus areas for new and enhanced recreational activities, Sunwater is granting Council long term control of a number of Wet and Dry Concession Areas to deliver enhanced recreation and associated facilities. As per agreements between Sunwater and Council, for these Concession Areas to be granted, Council are to submit a "Master Development Plan" to Sunwater for approval.

This document, the Lake Proserpine Master Development Plan details the "Master Development Plan" for the purposes of this agreement and details both the Recreational Master Plan and the proposed works to be undertaken during Stage 1.

The Lake Proserpine Master Development Plan is supported by the Environmental Management Plan: Lake Proserpine Camping Reserve (August 2019) prepared by Scott Hardy - Whitsunday Regional Council; and the Lake Proserpine Landscape Maintenance Plan - Whitsunday Regional Council.

1.3 LOCATIONAL CONTEXT

Lake Proserpine (also referred to as Peter Faust Dam) is situated 26 kilometres inland of the regional town of Proserpine, North Queensland, Australia.

Lake Proserpine is located approximately 30 minutes from the Proserpine township, 40 minutes from the Whitsunday Coast Airport and 50 minutes from Airlie Beach.

Camp Kanga is located close by, set on 4.7 hectares of bushland, and provides accommodation for school and social groups.

Lake Proserpine is the headwater of the Proserpine River and forms part of the 2,501.6km² Proserpine River Sub Basin. The Proserpine River Main Channel catchment drains an area dominated by grazing, with extensive irrigated cane production on the lowland coastal plain.

Figure 2: The study area in context to its surrounds.



1.4 DAM CHARACTERISTICS

The dam structure that saw the establishment of Lake Proserpine was constructed between 1989 and 1990 and was filled shortly thereafter in the subsequent heavy rain events.

The dam has a maximum height of 51 metres above the original bed and a storage capacity of 491,400 megalitres. Lake Proserpine is owned and managed by SunWater.

All of SunWater's dams are designed principally for water supply purposes, with the exception of Peter Faust Dam, which was designed to provide both water supply and passive flood mitigation, primarily for cane fields downstream. The Full Supply Level (FSL) of the Dam results in an elevation of 85.6m (refer to Figure 2).

The pest plant/weed *Mimosa pigra* (M. Pigra) was identified in the flood margin of Lake Proserpine. As it can be detrimental to waterways, agricultural productivity and native fauna, M. Pigra has been under strict monitoring and control since 2001. Continual control of the weed is overseen by Biosecurity Queensland in conjunction with SunWater.

The risk of seed dispersal associated with increased recreational activities is considerable, as the weed can spread via water, contaminated soil, vehicles, boats, boat trailers, animals and through suckering. The Dam has been divided into five (5) operational sections to assist in management and monitoring of the weed (refer to Figure 3).

Full details of biosecurity matters relevant to the study area has been set out in the supporting Biosecurity Report prepared by 28 South Environmental.

Figure 3:
The study area in context to its surrounds.





1.5 STUDY AREA

Master planning considers land use and management activities across the lake and surrounds as a whole, however, the primary focus area for new and enhanced recreational activities under the long term control of Council will be predominately be focused on the areas shown within Figure 4, described as:

- » Wet Concession Area & Dry Concession Area 1, being the existing recreation area, including existing facilities such as public amenities, car parking and shelters
- » Dry Concession Area 2 where new recreational uses are being considered.

These Concession Areas have formalised through a "Reconfiguring a Lot" approval and the creation of a number of leases, defined as Lease A-E in Lot 16 on CP852395.



Figure 4:
Study area including Wet and Dry Concession Areas.

02

Site and Land Use Analysis

Lake Proserpine is a highly scenic area with a growing reputation for fishing and recreational boating. The increase of drive tourism in the Proserpine / Airlie Beach region brings with it the opportunity to expand Lake Proserpine's tourist and recreational offering. This section provides an overview of the key site and land use characteristics identified through the baseline analysis and how they have informed the master plan development.



2.1 CURRENT LAND USES

In understanding the extent of uses and activities to be planned for Lake Proserpine, the baseline analysis needs to look at current use and demand within the area, and how this may influence the potential capacity for future activities.

Currently existing Local Law restricts a large number of uses, such as any accommodation or camping.

Lake Proserpine is a popular location for freshwater fishing and is particularly renowned for its ample supply of barramundi. Various other species such as freshwater crayfish and red claw also inhabit the lake. As the Lake is stocked by the Faust Dam Fish Stocking Association, a Stocked Impoundments Permit is required to fish at Lake Proserpine.

Guided fishing trips are offered all year round and fishing competitions are hosted regularly.

Other recreational activities include boating and water sports, such as water skiing and canoeing.

There are various permanent facilities to support activity at Lake Proserpine.

These include:

- » Administration office
- » Boat ramp & associated parking
- » Public amenities
- » Picnic areas and BBQs
- » Public car park
- » Public lookout
- » Shed
- » Water treatment plant
- » Workshop.

The boat ramp has capacity to launch crafts of up to 8 metres. Numerous signs provide specific instructions for boating and water sports uses on the lake.

As previously noted, camping is currently not permitted around Lake Proserpine. The nearest accommodation is offered close by at Camp Kanga which is approximately 1.5km from the main recreation area and boat ramp.

Figure 5: Existing land use diagram.

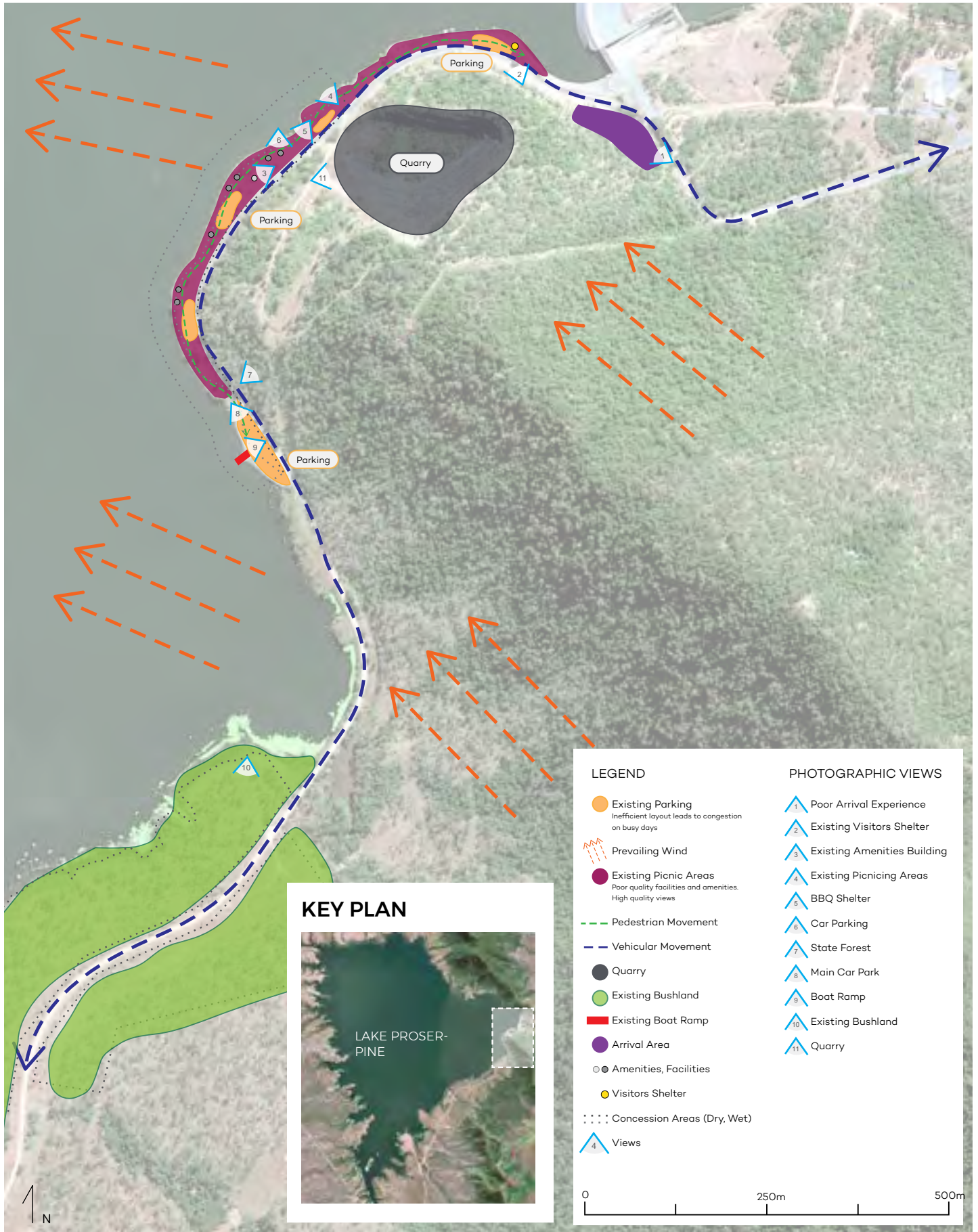


Figure 6: Reference images.



Poor Arrival Experience



Visitors Shelter



Amenities Building



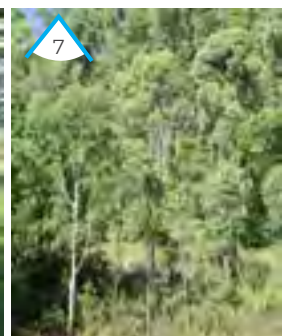
High Quality Views to Lake



Narrow Picnic Areas



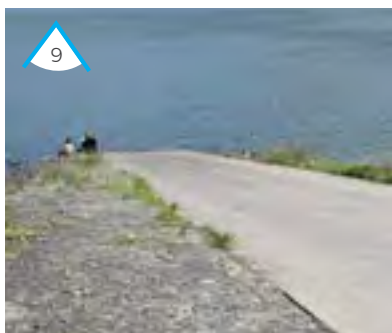
Outdated Picnic and BBQ Facilities



State Forest



Main Carpark - Insufficient use of line marking and organisation leads to congestion on busy days



Boat Ramp - Single access only, can lead to congestion on busy days



Existing Bushland Character (Concession Area)



Quarry - Potential for reuse

2.2 KEY OBSERVATIONS

PARKING

The main boat parking area is an unsealed surface located adjacent to Station Road with space for cars and boat trailers and which provides access to the boat ramp. Typically this area would be used by boat users to park their car and boat trailer after backing their boat down the boat ramp. At peak times on weekends this parking area can get very congested due to the amount of space required for maneuvering and parking boat trailers. The absence of line marking could also contribute to an efficient use of the space, noting that Council intends on repairing and relining the carparks within the recreation area and near the boat ramp by the end of 2019. Ultimately, however, there may be a requirement for additional parking space at peak times as the popularity and awareness of the lake increases.

There are four ancillary parking areas. Three are located adjacent to grass picnic areas distributed along the edge of the road at approximately 120-150m apart, and one is located adjacent to the visitor's shelter. Visually the car parks mar the highly scenic view of the Lake. Relocation and/or consolidation of these parking areas could be considered to suit the proposed land uses and improve the scenic quality allow the grass picnic areas.

EXISTING PICNIC AREAS (INCL. FACILITIES)

Mown grass picnic areas extending for approximately 800m are located between the road and the top of the lake edge embankment. This area has a number of outdated facilities including an amenities building, seven picnic shelters and barbeque's. Council is currently undertaking facility improvements by the end of 2019; including refurbishment of the shelters and amenities block, new shelter lights, refurbished tables and replacements of the five single BBQ's with double BBQ's.

PEDESTRIAN MOVEMENT

There are no dedicated footpaths providing access from parking areas to picnic facilities so pedestrians would be required to either walk across the grass areas or along the edge of the road. This is unlikely to meet required accessibility guidelines in accordance with the Disability Discrimination Act 1992. Consideration could be a given to a footpath that provides wheelchair access along the length of the picnic area or at a very minimum access from parking areas to the amenities building and other picnic facilities.

VEHICULAR MOVEMENT

Crystalbrook Road provides vehicular access to public areas on the edge of the lake as well as to private land outside of the mapped area. It is sealed up to the general area of the boat ramp, shortly after this road surface is unsealed crushed gravel surface.

Consideration should be given to the road surface and potential upgrades that may be required due to increased traffic, including mitigating the risks of spreading M. Pigra seeds. Council intends to install signage demarcating the extent of Council's boundary

and to alert the public when they are entering private property. Biosecurity signs will also be placed lakeside to inform boaters of areas not to enter and moor their boats.

DISUSED QUARRY

The quarry is a strong visual feature of the area which is currently fenced off to prevent public access. Consideration could be given to re-purposing the quarry site for recreational uses once risks to the public have been suitably managed.

CONCESSION LEASE AREAS

The map shows a number of concession areas, one to the north (adjacent to the picnic areas) and two to the south either side of the road. The southern areas are partially vegetated with trees and have been identified as potential locations for camping sites. The lakeside concession area could potentially flood as the dam water level rises, whereas the area on the other side of the road would remain dry.

EXISTING BOAT RAMP

The existing boat ramp contains a single lane accompanied by a large unmarked parking area. The boat ramp can only be used by one boat trailer at a time, which can lead to long waits and congestion at peak times. The Queensland Recreational Boating Facilities Demand Forecasting Study was conducted in 2017, commissioned by TMR. The study did an assessment of WRC, and recommended priorities to increase capacity of boating facilities within the region.

The key priority that was proposed by the study was to expand the boat ramp at Lake Proserpine by 2 lanes and increase parking to 70 car-trailer units (CTU) spaces. It was also recommended in the study that feasibility of a floating walkway/pontoon should also be considered. This recommendation would result in the existing facility being expanded to 3 lanes.

ARRIVAL EXPERIENCE

Whilst the lake provides high quality views from public areas, the initial view for users coming along the road is of chain link fencing followed closely by the visitors shelter. This provides a poor arrival experience and detracts from the overall high scenic quality of the lake.

EXISTING VISITORS SHELTER

The existing visitors shelter is located in a prominent location for users arriving at the lake but the design of the structure is outdated.

STATE FOREST

Much of the land located on the hilly terrain east of the access road is designated as State Forest. Currently there are no public footpaths or trails through this section of the State Forest. New footpaths and walking trails may be considered in later stages of recreational improvements.

2.3 BASELINE ANALYSIS RECOMMENDATIONS

As previously noted, the Baseline Analysis Report has informed the development of the Master Plan and is intended to continue as an important reference for implementation of the Master Plan projects overtime.

The following summary of findings outlines the context of outcomes and recommendations from this process as they have informed the master plan

SUMMARY OF FINDINGS

- » The core study area consists of the Wet Concession Area and Dry Concession Area 1 and 2. The two areas within the Dry Concession areas (landslide) have a combined area of approximately 17 hectares, with the Wet Concession area equating to 4 hectares of land.
- » Invasive weed, *M. Pigra* has been under strict control since 2001, overseen by Biosecurity Queensland and SunWater.
- » The considerable biosecurity risks of seed dispersal associated with increased recreational activities must be controlled through innovative project design and mitigation measures set out in the project Biosecurity Report prepared by 28 South Environmental.
- » It is recommended that a 'traffic light' recreation hazard system is put in place based on the dam's water level, to cease recreational activity when the lake's capacity is too low, to reduce the risk of spreading *M. Pigra*.
- » Key recommendations in relation to EPBC matters have been outlined, with significant references to native flora and fauna including the Proserpine Rock Wallaby, Koala, and *M. Viridiflora* community.
- » Key recommendations to avoid the clearing of regulated vegetation, and ensure clear management measures are in place for Essential Habitat areas.
- » The proposed future recreational uses and activities are generally consistent with the zoning of the master planned area and surrounds.
- » Any future development will need to give consideration to relevant Planning Scheme overlays.
- » Consideration will need to be given to amending Local Law No. 4 to permit additional recreational activities at Lake Proserpine; whilst maintaining a restriction on all water-based activities within the core infestation area.
- » Projects for early mobilisation include commencing the process of amending Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2014, and confirming any Development Application requirements (i.e. prelodgement meeting with Council).

03

Master Plan Development

The vision for the Master plan is to develop a premier destination for locals and tourists that provides a diverse range of recreational opportunities on land and on water, encourages people to spend more time in the area to discover and appreciate its natural and man-made assets and builds upon its legacy as a popular place for fishing and boating.



3.1 DESIGN PRINCIPLES

Based on the vision for Lake Proserpine, the master plan has been developed using the following design principles.

1. Embrace and build upon the site's distinctive scenic qualities to create a range of unique visitor experiences.
2. Enhance and increase users' access to water using designated access points.
3. Diversify activities on land and water to appeal to a wider group of user types.
4. Sensitively integrate a range of short term accommodation opportunities, such as camping and cabins, into the landscape.
5. Increase pedestrian accessibility to day use areas and sites of interest.
6. Control pedestrian and vehicular movement and introduce wash down facilities to help mitigate the spread of M. Pigra.

We have put into place three key strategies, using these design principles, which we believe are essential for the successful delivery of the master plan. The three strategies are:

- » Experiential tourism
- » Access and movement
- » Public realm and wayfinding

3.2 EXPERIENTIAL TOURISM STRATEGY

One of the key objectives of the master plan is to expand and diversify the types of recreational uses and experiences for tourists, as well as local users. A range of land-based tourist activities have been considered, in addition to improving opportunities for boating and fishing.

The inclusion of short term accommodation is a significant change for Lake Proserpine as camping is currently not permitted. The ability to stay overnight will enable users to stay longer and even use Lake Proserpine as a base to explore the wider area. Various accommodation options are proposed to appeal to a range of users including a camping area, with campsites for tents, caravans and recreational vehicles (RVs), and a separate area for cabins. As an experience these will provide the users the ability to be immersed in nature, wake up to spectacular water views and know that they can have quick and easy access to a range of land and water based recreational activities.

CAMPING

The proposed camping area is located in the southern lease area, lakeside of the road. Given Lake Proserpine's highly scenic qualities the proposed camping area would be sensitively integrated into its bushland setting so that views of the area are not compromised by camp facilities or the appearance of tents, caravans and RVs.

An internal road has been proposed to provide access to the camping sites and facilities. The larger campsites would have direct access from this road and allow users to keep a car, caravan, RV and potentially a small vessel within the allocated space. Other smaller sites are intended to be pedestrian access only and users will be required to leave their car within communal parking areas and go by foot to site to pitch a tent.

Most of the camping area sits below the (100 year) flood line, therefore an important consideration is both the location and flood immunity of camp facilities and infrastructure. It is our understanding that the flood event would involve rising lake waters as opposed to flowing flood waters. Our approach is to locate the amenities and site manager's buildings above the flood line as these are critical infrastructure that would be adversely impacted in the event of a flood. Other facilities that lie below the flood line would need to be constructed in a way that provides flood immunity. For example, the outdoor kitchen would have steel posts and sit on a concrete slab so that the essential structure could be washed down and saved if it were to become inundated.

The camping sites themselves would be permeable mown grass areas, so although the majority would sit below the flood line, the relative costs of cleaning and bringing them back to a useable state after a flood event are low compared to the critical infrastructure.

CABINS

While initial accommodation options will include spaces for camping and RV/trailers, an allocation for cabin type accommodation has been allowed for on the opposite side of the road from the lakeside camping area. The design intent is that the cabins are sensitively designed and integrated into a bushland setting so that you hardly notice them from Station Road. An access road provides vehicular access to the cabins area. Car parking spaces for cabin users are provided parallel to the access road. A footpath provides pedestrian-only access to the cabins from the access road. The cabins are set in clearings amongst trees to give users a sense of privacy and retreat, without cars. Bushfire considerations and regulated vegetation will need to be considered at a detailed design/application stage.

SHORE BASED FISHING

One of the new opportunities identified for the project is the inclusion of a jetty or pontoon to appeal to a user type that wants to fish but not from a boat. Importantly it will also provide a place to fish safely from the shoreline, reducing the need for users to stand with their feet along the water's edge and risk coming in contact with *M. Pigra* seed and other biosecurity matters. The fishing pontoon has been strategically positioned towards the top end of the day use area to provide users with a sense of removal and quiet and, with a bit of luck, some good fishing.

VISITORS CENTRE

Located at the top end of the day use area, the visitors centre will provide the first place to stop and the first thing to do for users arriving at Lake Proserpine. The proposed upgrade of this structure is intended to transform it into a contemporary facility that provides visitor information, a viewing platform to the lake and dam wall, historical interpretation about the Peter Faust Dam. This would completely transform the facility from the outdated shelter that stands there today and provide users with comfortable surroundings from which to gain a better appreciation of the place's history and geographical context.

WATER ACTIVITIES

Undoubtedly water activities, such as boating and fishing, will always remain the primary attraction of Lake Proserpine. The challenge is how to maintain the interest in users to come and come again, and how to increase and diversify the opportunities so that it becomes the destination for a growing group of locals and tourists. In addition, the inclusion of a fishing pontoon to allow controlled shore-based fishing will appeal to a different user type without increasing the risk of the spread of *M. Pigra* and other biosecurity risks.



Figure 6: Reference Images



LEGEND








-  Viewing Tower
-  Visitor Centre
-  Walking Track
-  Boat Ramp
-  Day-use Activities
-  Campsite
-  Cabins

Figure 7: Experiential Tourism Strategy diagram

3.3 ACCESS AND MOVEMENT STRATEGY

Our ability to improve and yet control accessibility is critical to the master plan development. By improving the way pedestrians, terrestrial vehicles and water craft access and move around the space we can open up opportunities for recreational activities and potentially increase visitation numbers. At the same time, we need to control where pedestrians, livestock and vehicles go to mitigate the biosecurity risks.

STATION ROAD

A number of improvements have been proposed for Station Road, both in anticipation of increased visitor numbers and to mitigate the risk of spreading M. Pigra. Road resurfacing will be required to cater for increased traffic from boat users and other visitors expected once the camping areas and boat ramp works have been undertaken. Cattle grids have been included in critical locations to prevent stock from moving north of the camping area.

LAKESIDE FOOTPATH

The inclusion of a lakeside footpath will provide a pedestrian and wheelchair link from the visitor centre at the top end of the day use area all the way down to the boat ramp area, some 600m away. Currently this journey could only be done either by traversing mown grass areas or walking along the road.

WALKING / BIKE TRAILS

Access to trails through the State Forest for walking and potentially other activities such as mountain biking could provide further diversification and reasons for users to come to Lake Proserpine. Further development of this opportunity would need to be carried out in conjunction with the manager of the State Forest and be subject to detailed environmental assessments. Experientially the forest trails, which become elevated as they climb through the hillside, could provide users with unique elevated vantage points from which to view the lake.

WASHDOWN FACILITY

Vehicle wash down facilities have been included as an additional biosecurity measure to mitigate the risk of the spread of M. Pigra seed, and also help prevent biosecurity matter from entering Lake Proserpine. It will allow users to wash down vessels or cars that may have come in contact with sediment or biosecurity material on the lake edge. The wash down facilities have been located at the public boat ramp and entrance to the first stage of the camping ground.

CAR PARKING

Car parking, supplementary to the boat parking area, has been reorganised across the master plan area to complement the proposed uses and activities. Improvements to existing car parking areas would include resurfacing and line marking. Additional areas of parallel road side parking have been proposed, in preference to expanding car parking areas on the lakeside of Station Road, so that the lakeside public open space can be preserved. The current car park at the visitors centre significantly compromises the pedestrian experience of this space. Roadside parking has been proposed in this location as an alternative, to free up the space for potential expansion and redevelopment of the visitors centre building and creation of a public viewing platform and arrival space.

ROAD AND PAVING SURFACES

The use of sealed surfaces is preferable for roads, footpaths and car parking areas to minimise potential interaction of pedestrian, vehicle and vessels with dirt/mud, etc. and reduce the likelihood of these vectors spreading biosecurity material.

EXCLUSION ZONE

A pedestrian exclusion fence has been proposed south of the camping area extending from either side of Station Road and into the water. An interim fence is also proposed to be installed south of the Stage 1 camping area. Exclusion fencing, together with the restricted vehicular access signage, is intended to deter pedestrian access south of the camping area, and, by extending out to the water, prevent cattle movement along the lake edge.

BOAT RAMP AND PARKING

Improving accessibility to the water by widening the boat ramp and improving parking arrangements for boat users are critical factors to reduce waiting at peak times.

BOAT MOORING

The proposed reconfiguration of the boat ramp includes a jetty or pontoon to enable short term mooring of boats. A second jetty or pontoon for boat mooring near the camping area will allow campers to leave their boat in the water overnight rather than taking it in and out every time or every day.



LEGEND

- Carparking
- Boat Parking
- Viewing Tower
- Visitor Centre
- Wash Down facility
- Restricted Pedestrian Access
- Pedestrian Access
- Pedestrian Exclusion Fence
- Boat Ramp
- Main Vehicle Access
- Camping Area Vehicle Access
- Walking Track
- Site Fence

3.4 PUBLIC REALM AND WAYFINDING STRATEGY

The master plan provides significant public realm improvements, including upgrades to the existing lakeside day use open space area, new spaces in the campground and access to State Forest trails.

DAY USE AREA

The grass open space area that lies between the lake and Station Road is one of the first places users will see and experience when they arrive at Lake Proserpine. Proposed upgrades to this area are intended to improve pedestrian accessibility, increase opportunity for shore-based fishing, improve the public amenity and improve aesthetic qualities of the space. It is expected that the day use area will be required to respond to a variety of user types:

- » boat users who are likely to be concentrated around the boat ramp and parking areas
- » people fishing from the fishing pontoon
- » general tourists that may be visiting the area for the first time and want to use the visitors centre, generally explore the area and perhaps go for a walk.

Proposed improvements to the built structures

(amenities building, picnic shelters and barbeque facilities) will assist with the anticipated increase in visitor numbers, and is an important factor to deliver an enhanced experience for different types of users. Initial improvements will include a temporary amenities block and kiosk located at the "Camping and Cabins" designated camping area.

Future improvements may include the addition of a new amenities building near to the boat ramp to address the concentration of users in that area.



Figure 9: Reference Images



LEGEND

-  Carparking
-  Boat Parking
-  Viewing Tower
-  Visitor Centre
-  Wash Down Facility
-  Restricted Pedestrian Access
-  Bank of Signs
-  Interpretive Signage
-  Pedestrian Information Signage
-  Directional Signage
-  Walking Track
-  Pedestrian Exclusion Fence
-  Public Boat Ramp
-  Pedestrian Access
-  Campsite Playground
-  Public Recreation Areas
-  State Forest

Figure10: Public Realm and Wayfinding Strategy diagram

WAYFINDING STRATEGY

A coordinated wayfinding strategy is important to:

- » provide essential safety and biosecurity information
- » direct users to key locations
- » provide cultural and environmental interpretation for the place.

The master plan includes a range of directional sign types for pedestrian and vehicular users, interpretive signage (e.g. at the visitors centre) and signs providing biosecurity advice and safety warnings.

WAYFINDING SIGNAGE

A range of vehicular directional signage, together with required traffic signs, will need to be developed in close cooperation with Council and DTMR. The proposed signage will safely direct drivers to key locations, such as:

1. Visitors Centre
2. Fishing Pontoon
3. Wash Down Facility
4. State Forest Trails
5. Boat Ramp
6. Camping Area
7. Cabins Area

INTERPRETATION

There are a number of opportunities to provide interpretive and educational signage across the master plan area. These include:

1. Visitors Centre exhibition upgrade focusing on the Peter Faust Dam engineering and construction history and providing local geographical context
2. State Forest environmental displays providing information about the landscape character, habitat types, flora and fauna

3. Lakeside environmental displays located on the footpath describing terrestrial and aquatic life and bushland habitat that can be found in the camping area.

BIOSECURITY SIGNAGE

A range of biosecurity signage will need to be coordinated with Biosecurity Queensland and Council. Specific biosecurity signage opportunities identified in the master plan are:

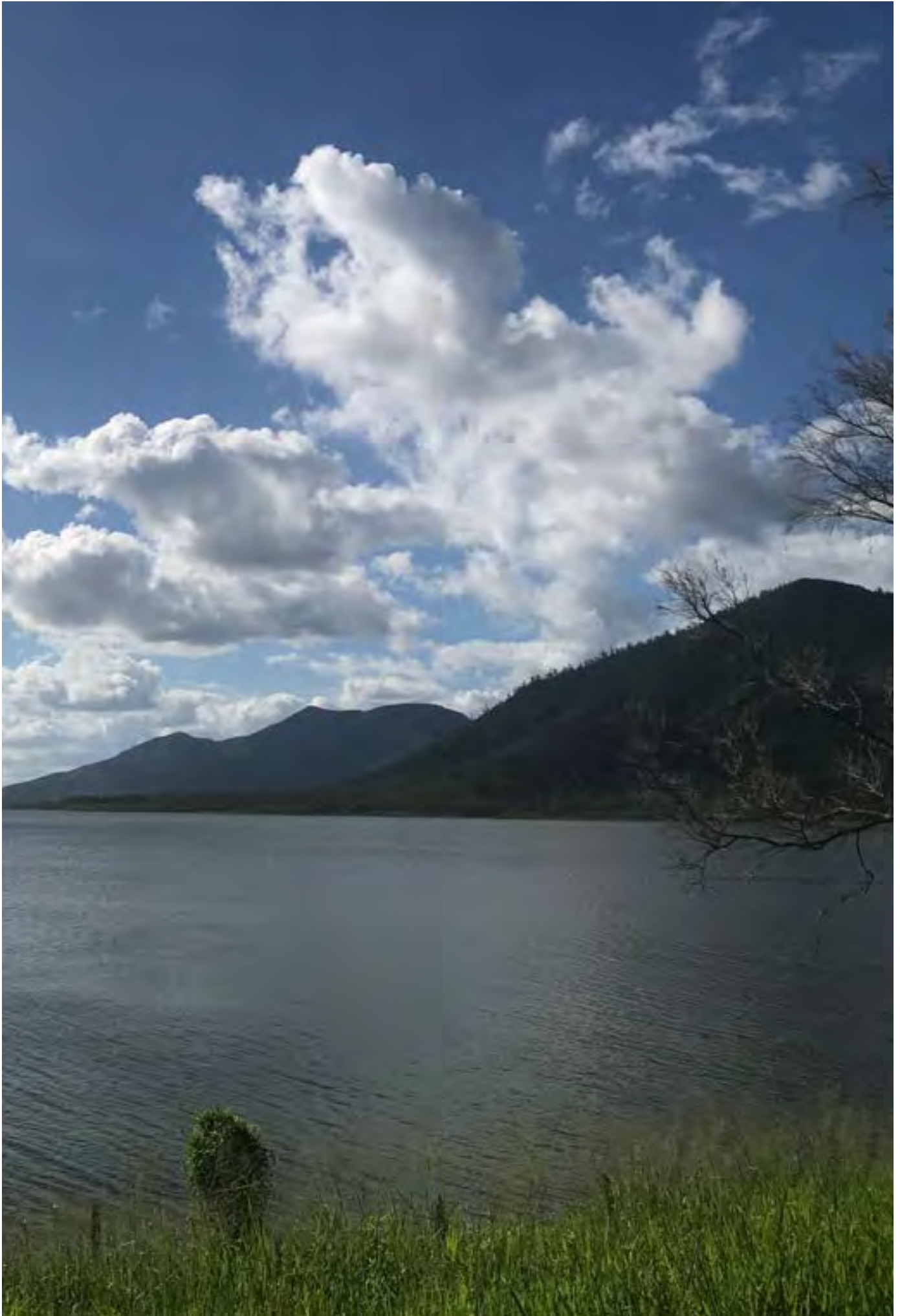
1. Restricted Pedestrian Access - instructing pedestrians not to go beyond the exclusion fence due to biosecurity risks
2. Restricted Vehicle Movement - advising the public not to drive beyond the exclusion fence line due to biosecurity risks
3. Restricted Vessel Movement - installing marker buoys and/or strategic placement of rocks or other structures to flag biosecurity risk areas and restrict public access. Signage at key wayfinding locations can highlight these areas
4. Boat Wash Down - signs instructing boat users to use the wash down facility prior to leaving the area to mitigate biosecurity risks.
5. Camping Wash Down - signs instructing campers to use the wash down facility prior to leaving the area to mitigate biosecurity risks.

DAM SIGNAGE

A raft of safety and hazard warning signage required for the dam will be coordinated by relevant authorities such as DTMR, Council and SunWater.



Figure 11: Reference Images



04

Final Master Plan

The final master plan responds to the design principles, draws together the three key strategies and demonstrates how these can combine to create the type of place which Council and key stakeholders aspire towards.



The master plan drawings are divided into three sections:

1. North – Lakeside Recreation Area
2. Middle – Lakeside Recreation Area and the Boat Ramp
3. South – Camping Area.

The northern section addresses the sole access to the area via Station Road and ways to improve the entry experience for visitors. A proposed upgrade to the Peter Faust Dam site fencing is proposed to make it more aesthetically pleasing, while still ensuring public safety, given the inherent risks associated with the SunWater facility and the steep topography. Improvements to the visitors centre, including a potential expansion, will also create a strong first impression. The main focus for this section is the amelioration of the day use open space area that runs along the lake edge. The proposed work to this area includes a new lakeside footpath to provide continuous pedestrian and wheelchair access, a new pontoon to enable users to carry out shore-based fishing, amenities building and picnic/BBQ shelter upgrades, and general park landscape improvements.

The middle section addresses the proposed expansion of the boat ramp and parking area which is required to increase capacity for boat users and ease congestion at busy times. Improvements to this area are critical in ensuring that Lake Proserpine remains a popular choice for people that want to engage in fishing and boating activities and provides the impetus to attract more tourists to the area.

A proposed Wash Down Facility and associated signage is included in this section to catch users as they leave the Lake Proserpine area to help mitigate the spread of *M. Pigra* and other biosecurity risks. Proposed resurfacing of road and parking areas are also included.

The southern section addresses the proposed introduction of campgrounds to Lake Proserpine. The master plan proposes a general layout for a

large campground on the lakeside of Station Road. This includes various sized campsites to cater for a range of camp setups (ranging from tent only to caravan and vehicle setups), an internal access road, amenities buildings and other campground facilities sensitively integrated into a bushland environment. A separate pontoon has also been proposed adjacent to the campground to provide a place for campers to temporarily moor their boats. An area for cabin type accommodation has also been designed on the other side of Station Road. Proposed resurfacing of road areas is also included.

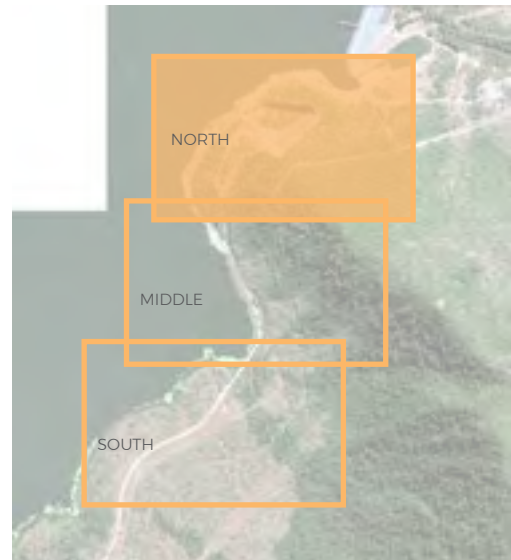
An exclusion fence, second Wash Down Facility and associated signage is proposed here to deter and restrict the movement of pedestrians and vehicles beyond this area to help mitigate the spread of *M. Pigra* and other biosecurity risks.

The master plan will be delivered across a number of stages as funding is secured.

NORTH - LAKESIDE RECREATIONAL AREA

The north section of the master plan area includes the Day Use open space area, the fishing pontoon, the Visitors Centre and the Wash Down Facility.





LEGEND

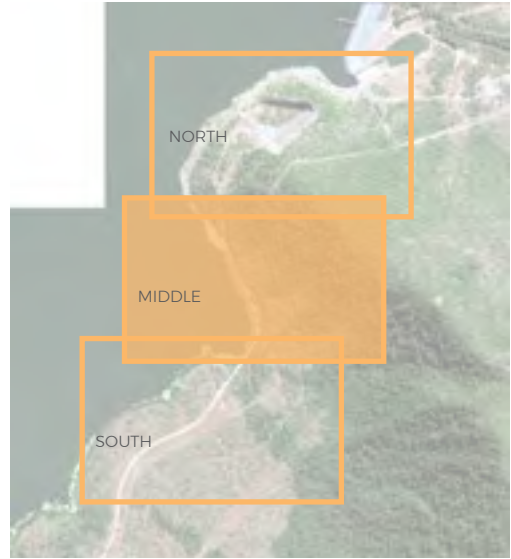
- 01 Lakeside footpath (1.2m wide)
- 02 Upgraded and extended visitors centre
- 03 Visitor centre arrival space
- 04 Roadside parking areas
- 05 Upgraded site fence (more aesthetically pleasing)
- 06 Upgraded amenities building
- 07 Viewing platform
- 08 Fishing pontoon
- 09 Upgraded picnic / BBQ shelters
- 10 Existing car parking areas (resurfaced and linemarked)
- 11 Walking track

MIDDLE - LAKESIDE RECREATIONAL AREA & BOAT RAMP

The middle section of the master plan area includes part of the Day Use open space area, the new amenities building, boat ramp and parking area.



Figure 13: Master Plan Middle



LEGEND

- 01 New amenities building
- 02 Lakeside footpath (1.2m wide)
- 03 Existing boat parking area - resurfaced and linemarked
- 04 Boat ramp
- 05 Boat jetty / pontoon (for short term boat mooring)
- 06 Extended boat parking area
- 07 Additional boat parking area (subject to detailed engineering design)
- 08 Upgraded picnic / BBQ shelters
- 09 Wash down facility

SOUTH - CAMPING

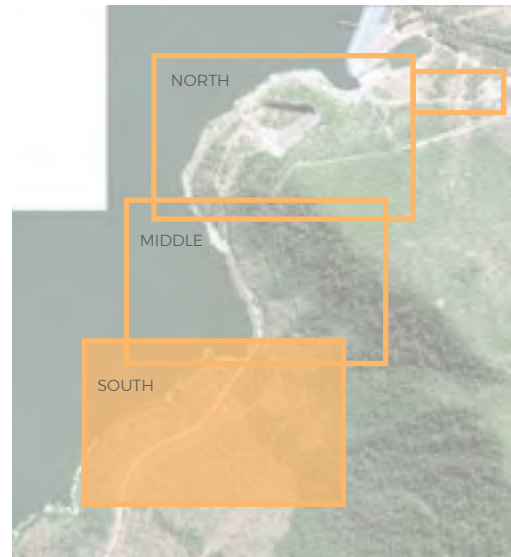
The south section of the master plan area includes the campgrounds, cabins area, the campground jetty / pontoon, vehicular turn around area and the pedestrian exclusion fence.

Figure 14: Master Plan South






Camping sites:	
Unpowered Tent sites (no cars)	= 64
Unpowered caravan, RVs & tent sites	= 94
Powered caravan, RVs & tent sites	= 30



LEGEND

- 01 Extension to existing pontoon
- 02 Existing camping driveway
- 03 Unstructured non-powered camping
- 04 Communal open space with BBQ's
- 05 Proposed new driveway
- 06 Proposed additional wash down bay
- 07 Proposed powered camping sites
- 08 Proposed cabins
-  Melaleuca viridiflora community



LEGEND

- 01 Lakeside footpath (1.2m wide)
- 02 Amenities building (incl. showers)
- 03 Upgraded amenities building behind
- 04 Upgraded picnic / BBQ shelters
- 05 Parkland footpath (1.2m wide)
- 06 Double boat ramp either side of jetty
- 07 Boat jetty / pontoon (for short term boat mooring)
- 08 Boat parking area
- 09 Roadside buffer planting
- 10 Caravans, RVs & tent sites (cars + boats)
- 11 Lakeside planting
- 12 Campground access road
- 13 Station Road

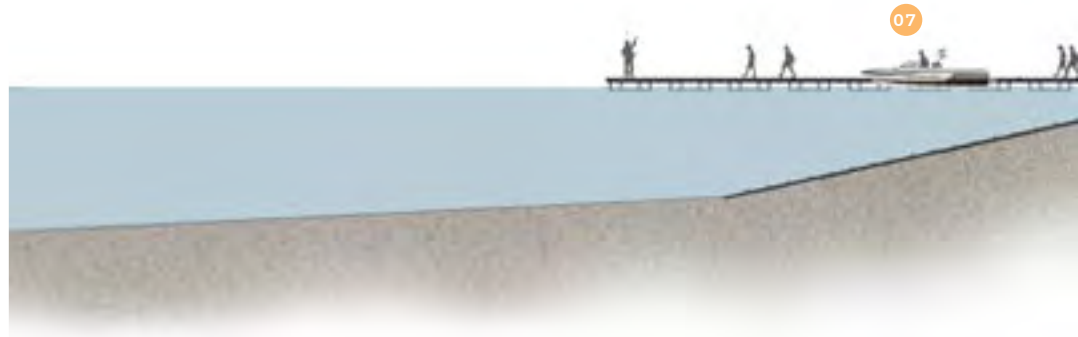


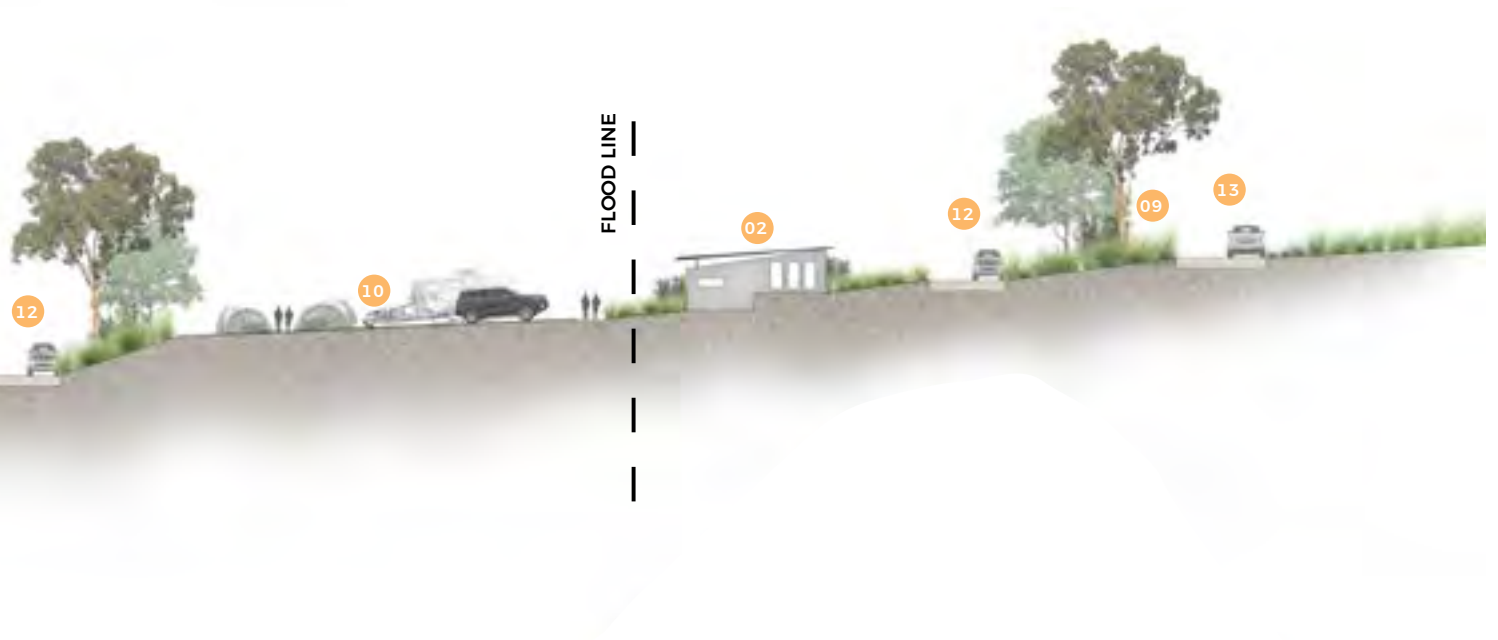
Figure 16: Section B



Figure 17: Section C



Figure 15: Section A



05

Master Plan Delivery



5.1 PROPOSED LAND USE AND INFRASTRUCTURE REQUIREMENTS

In delivering the master plan certain land use and infrastructure matters require particular consideration. Specifically these include:

- » Council securing land tenure over the identified wet concession area and dry concession (refer figure 19). This was completed in June 2019.
- » Engagement with the State Government regarding introduction of recreational land use within adjoining areas of State Forest
- » Refinement of recommended infrastructure upgrades incorporated in the master plan. Initial details of this has been set out in the staging summary and supporting Concept design estimate
- » Amend Council Local Laws to ensure that master plan activities are not restricted by the current Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2014. This process is currently underway within Council.
- » Obtaining the relevant statutory approvals associated with master plan uses and works

5.2 ENVIRONMENTAL MANAGEMENT STRATEGY

The 'avoid, minimise and mitigate' principle is a common tenet in conservation planning and is a standard against which development planning is assessed by all levels of government. It has been an important process of consideration and review of constraints, management measures, obligations and opportunities applicable to the master plan to capture the areas environmental values and how they will be incorporated or managed into the design.

The design process for the master plan has been iterative and continually informed by both increasing knowledge of environmental and biosecurity matters as the project's life has progressed.

Strategically, the master plan has considered the on-ground environmental values of the area and where possible responded to their extent and position through defining specific design principles and strategies. The master plan and any future detailed design and approvals will be guided by the supporting Baseline Analysis and Biosecurity Report which have been prepared to inform decision making and design principles.

As the Environmental Management Strategy for the master plan occurs in two separate yet concurrent frameworks, a summary of their incorporation into the master plan is provided separately in the following sections.

5.3 CONCESSION AREAS

To facilitate the master plan, a number of Concession Areas on Sunwater's land have been defined for Council to manage on Sunwater's behalf. These Concession Areas are defined as Lease A-E in Lot 16 on CP852395. This Master Development Plan is a detailed plan outlining current and future installations and activities to be developed within the Concession Areas.

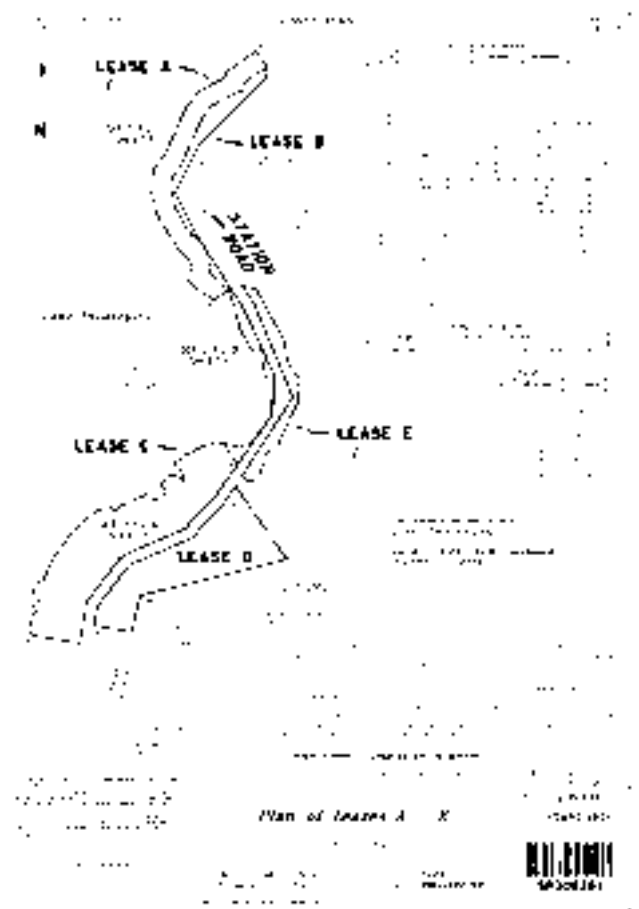


Figure 19: Concession and Lease Areas

5.4 ENVIRONMENTAL PLANNING AND ECOLOGY MATTERS

The supporting Baseline Analysis Reporting has identified that the master plan has the potential to impact matters of environmental significance spanning commonwealth, state and local governments.

To ensure that the master plan has considered these matters, desktop and ground-truthing surveys were undertaken to identify these matters and inform design concepts. Through this process, it is considered that future works within the master plan has, in part, already considered the environmental values inherent to the area. Future detailed design will require more specific ecological and environmental planning assessments to manage environmental impacts and will need to take into consideration other secondary matters such as natural hazards. The following should be incorporated or considered to further the information outlined in the supporting baseline analysis reporting:

- » Undertake further, more detailed ecological and bushfire assessments specific to refined designs
- » Avoid, minimise and mitigate any impacts to mapped areas of Environmental Significance through design and detailed site survey
- » The requirement to offset any impacts to matters of environmental significance within the master plan
- » The ability to acquit any required offset within the master plan area
- » The ability for development to incorporate bushfire management measures to avoid the need to clear regulated vegetation for essential management purposes
- » The ability for development to define beneficial environmental outcome opportunities which are presented during the assessment process (e.g. weeding, introduction of beneficial flora species or microhabitats, translocation of habitat features from impact areas to adjoining habitat areas; and the ability to increase and consolidate environmental corridors within the area through re-vegetation or landscaping works).

BIOSECURITY MATTERS

The supporting Biosecurity Report has identified that the Master plan area occurs within the only known occurrence of M. Pigra in Queensland and that other matters of biosecurity may also occur. This supporting document outlines management actions which can be adopted during project design and operational phases to comply with the General Biodiversity Obligations identified in the Biosecurity Act 2014. A detailed management strategy is provided in Section 3 of the supporting biosecurity report and should be considered during the design, implementation and operational phases of the master plan.

A summation of the management measures which can be incorporated into the design, implementation and operational phases for specific and/or all of the proposed recreational uses within the master plan is provided below:

- » Water flows and water level fluctuations within Lake Proserpine
 - Amendment of Local Laws to restrict visitor access to core M. Pigra infestation areas
 - No change in storm water flow over surface
- » Water-based recreational activities
 - Continued enforcement of Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2014
 - Zoning of recreational activities based on risk of transporting invasive species seeds
 - Installation of marker buoys to signify core M. pigra infestation areas and restriction zones
 - Installation of floating pontoons
 - Maintenance of installed M. pigra educational signage
 - Investment in additional biosecurity interpretive/ educational signage in project area
 - Investment in weed seed wash down facilities
 - Strategic placement of rocks and other artificial/ natural structures to reduce area used by boats
- » Camping
 - Implementation of a 'traffic light' system based on lake level
 - Installation of exclusion fencing to restrict public access to M. pigra and other invasive species high risk areas

- Restriction of camping to the designated camp grounds
- Management of camping surfaces
- Restricting vehicle access to engineered roads
- Utilisation of electronic camping permit system
- Prohibiting domestic animals
- » Livestock grazing
 - Restrict access of livestock from recreational areas
- » Wildlife
 - Reduce wildlife feeding sources
 - Installation of educational signage
 - Investment in secure waste facilities
 - Continued investment in feral pig control programs
- » Day use
 - Supply of adequate car parks
 - Dispersal of recreational activities
 - Restriction of access along Station Road

ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan: Lake Proserpine Camping Reserve (EMP) has been prepared by Council to support the Lake Proserpine Master Development Plan and to satisfy the conditions of the new Lake Proserpine lease conditions with Sunwater.

The Lake Proserpine Camping and Caravan Facility will be located on the southern banks of Lake Proserpine. The EMP will be used to describe the existing environmental conditions in the reserve and guide future use. It is expected that other future recreation facilities within the concession areas will have a separate dedicated environmental management Plan prepared.

5.5 STAGING

Implementation of the master plan will require a broad range of detailed design studies and capital works projects. Funding will also be required from a range of sources which could include the Federal government, the State government, Council and the private sector. Council currently has a sum of money to undertake an initial phase of works in the short term. Due to the diversity of project types, it's possible that certain projects will be matched to specific funding sources. For example, the boat ramp is likely to seek funding from DTMR. Establishment of the campground may be partially or largely funded by a private operator. To help address these issues we have separated the staging into a number of project typologies:

1. Recreation Area
2. Roads
3. Boat Ramp and Parking
4. Campground.

It is our expectation that most of the project typologies will need to be implemented over multiple work stages as the sums of money involved are likely to be considerable. In the staging strategy we have identified particular items of work to be delivered under each project typology and stage. The proposed staging strategy shown below (refer also to the illustrated plans) is provided for Council's consideration to inform the initial work phase, and how to prioritise subsequent work phases as funding becomes available.

STAGE 2

The plan at right provides the indicative overall extent for the Stage 2 works, with further details of Stage 2 projects provided on the following page.

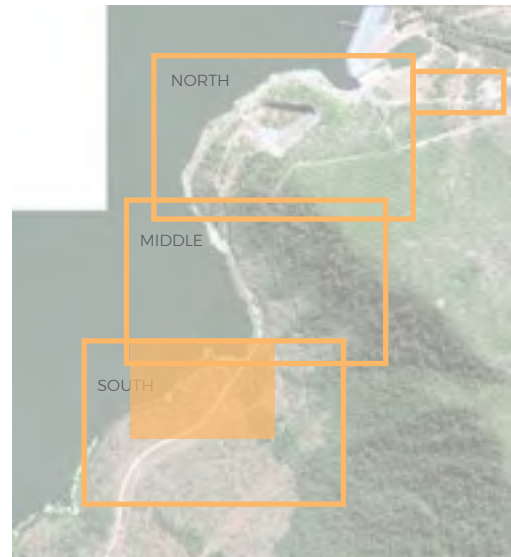
Area/Stage	Stage 2
Campground	<ul style="list-style-type: none"> » New access roads » 2 x Updated communal open areas with skillion roof shelters, communal dining tables, 2 x BBQ's each (4 total) and formalised fire pits » Play ground » Space for food truck parking » Car parking along new access road for tent site users » Path network » Recreational water sports concession area » Extension to existing pontoon » Additional wash down area » Additional unstructured, un-powered campsite preparation » 2 x Amenities buildings » 1 x Managers quarters building » 10 Cabins » 30 powered sites

Figure 20: Overall Stage 2 Plan



Figure 21: Detail Stage 2 Plan





LEGEND

- 01 Extension to existing pontoon
- 02 Footpaths (1.5m wide)
- 03 Unpowered tent sites (no cars)
- 04 Formalised fire pits
- 05 Unpowered Caravan & RV sites (cars + boats)
- 06 Existing access road
- 07 Proposed access road
- 08 Provision for lakeside footpath
- 09 Parking (tent sites)
- 10 Playground
- 11 Communal open space
- 12 Recreational water sports concessions
- 13 10 cabins, each with boat and car parking
- 14 30 powered camping sites with space for RV, car and boat parking
- 15 Camp kitchen, each with communal dining table and 2 x BBQ's
- 16 2 additional amenities buildings
- 17 Proposed manager's quarters
- 18 Site entrance
- 19 Vehicle turnaround area
- 20 Space for 3 food trucks
- 21 Proposed additional wash down bay
-  Melaleuca viridiflora community

5.6 STAGE 2 COSTS

An initial costing exercise for the Master Plan was undertaken and broken down for each of the recreational areas and stages.

The following table provides a summary of Stage 2 estimated costs.

Recreation area/stage	Total cost estimate
Lakeside - Camping	
Civil Works (prepare sites, water services upgrade, roads, footpaths, car parks)	\$374,345
Building Works (BBQ areas, fire pit, signage)	\$109,000
Landside - Camping	
Civil Works (prepare sites, water & electrical services upgrade, roads, footpaths, car parks)	\$245,946
Building Works (Cabins, camp sites, kiosk fit-out, Managers quarters, signage)	\$1,458,000
General Project Costs	
Preliminaries & Margin	\$313,895
Estimated Stage 2 Cost	\$2,501,186



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