



2025

**NANNUP NATIVE FOREST MTB PARK**

**CONCEPT**



## OUR COMMITMENT TO RECONCILIATION

*World Trail acknowledges and respects Aboriginal and Torres Strait Islander Peoples across Australia as the Traditional Custodians of our lands, waters, seas and skies.*

*We recognise their continued connection to country and acknowledge elders past, present and emerging for their valuable cultural contribution.*



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# CONTENTS

|   |           |
|---|-----------|
| <b>INTRODUCTION.....</b>                      | <b>1</b>  |
| <i>Background.....</i>                        | <i>1</i>  |
| <i>Project scope.....</i>                     | <i>2</i>  |
| <i>Project area .....</i>                     | <i>3</i>  |
| <i>Stakeholder consultation.....</i>          | <i>6</i>  |
| <b>SITE OBSERVATIONS.....</b>                 | <b>7</b>  |
| <i>Location and access.....</i>               | <i>7</i>  |
| <i>Landscape and soils .....</i>              | <i>8</i>  |
| <i>Existing use .....</i>                     | <i>10</i> |
| <i>Environmental and Heritage values.....</i> | <i>10</i> |
| <i>Opportune landscape features .....</i>     | <i>10</i> |
| <b>TRAIL SYSTEM .....</b>                     | <b>12</b> |
| <i>Design principles.....</i>                 | <i>12</i> |
| <i>Trail network summary .....</i>            | <i>13</i> |
| <i>Trail summary table.....</i>               | <i>14</i> |
| <i>Trail maps .....</i>                       | <i>17</i> |
| <i>Trail descriptions .....</i>               | <i>21</i> |
| <i>The trailhead.....</i>                     | <i>38</i> |
| <b>CONSTRUCTION .....</b>                     | <b>41</b> |
| <i>Construction considerations.....</i>       | <i>41</i> |
| <i>Construction cost estimate .....</i>       | <i>43</i> |
| <i>Commercial business opportunities.....</i> | <i>49</i> |
| <b>APPENDICES.....</b>                        | <b>51</b> |
| <i>Pytophthora Cinnamomi assessment .....</i> | <i>52</i> |
| <i>Trail difficulty rating system .....</i>   | <i>53</i> |
| <i>Trail styles.....</i>                      | <i>56</i> |





# 1

## INTRODUCTION

### BACKGROUND

Nannup is centrally located in the south-west of Western Australia, approximately 280km south of Perth and a convenient 50-minute drive from the surrounding towns of Busselton, Margaret River, Pemberton and Manjimup. Nestled on the Blackwood River, the area is a popular destination for nature-based activities, especially cycling, which has increased over the past five years to become a key economic driver for the region.

With the increase in cycling tourism product and visitation, Tourism WA has upgraded Nannup as a mountain bike destination with iconic status and national significance. The Shire of Nannup is actively working to continue growing Nannup's reputation as a cycling destination by working towards achieving accreditation as a Trail Town. The Trail Town project intends to transform Nannup into a recognised tourism destination for trails with a strong brand and diverse product offering that will continue to attract significant visitation to the area into the future. A requirement of this accreditation is achieving a minimum of 80km of mountain bike trails, so the Shire is working in partnership with the Department of Biodiversity, Conservation and Attractions (DBCA), Department of Primary Industries and Regional Development (DPIRD), Forest Products Commission (FPC), and the Nannup Mountain Bike Club (NMBC), to identify suitable public land and expand the trail offering.

To provide the necessary strategic direction for trail expansion, the Nannup Cycle Masterplan was developed in 2020. The vision from the strategy is:

*The Nannup region will be recognised as a premier destination for cycling, hosting*

*captivating experiences for road cyclists, gravel cyclists, mountain bikers and recreational cyclists.*

*Investment in cycle tourism trail infrastructure, supporting businesses and tourism product and improved visitor information and marketing will firmly establish Nannup as a Trail Town.*

A Business Case for the Nannup Trail Town initiative was completed in 2020–21, which identified the following four initial stages:

- Stage 1: Completion of Tank 7 & 8 Mountain Bike Park
- Stage 2: Freestyle Jump Park, Signage, Branding and Mapping for Gravel and Road Cycling Routes
- Stage 3: Native Forest Mountain Bike Park, Southern Traffic Bridge
- Stage 4: Principal Trailhead in Nannup

Stages 1 and 2 have been completed. This project progresses Stage 3, the Native Forest Mountain Bike Park, that will complement the 36km of trails at Tank 7 & 8.

As was recommended in the Nannup Cycle Masterplan, an area within the Millward Plantation around Tank 1 that included the adjacent (no longer operational) Pine Ridge Golf Course was nominated as the preferred project site for the Native Forest Mountain Bike Park. This site had initial in principle support, however this was later withdrawn so an alternative site two kilometres south of the township within the Kearney Block of the Native Forest was endorsed. Concept planning at this site was undertaken in late 2023, during which it was determined that the site did not





have the necessary attributes to deliver on the desired project outcomes. Further planning for mountain bike trails at this site was subsequently abandoned.

## PROJECT SCOPE

This project intends to deliver a well-developed concept plan for the Native Forest Mountain Bike Park, that will complement the existing mountain bike trail offerings at the Tank 7 Mountain Bike Park and Ngoolark MTB Jump Park.

Key requirements of the mountain bike park are that it must provide:

- 15–35km of predominantly single-track mountain bike trail.
- Trailhead at the old Pine Ridge (Milward) Golf Course.
- Linking/access trail between the Munda Biddi Trail and the old golf course trailhead along existing forestry tracks to function as the primary link with Nannup township.

The development objectives for the trails include:

- The trails are to offer a diverse range of experiences that encourage skill progression and accommodate users of varying ability levels.
- The trails will feature predominantly easy and intermediate trails which complement the more advanced downhill trails located at nearby Tank 7 and Ngoolark MTB Jump Park.

The concept plan is required to give appropriate consideration to the conditions and specifications of the project's agreed framework, the Australian Adaptive Mountain Biking Guidelines, and the trails development process framework from the DBCA Western Australian Mountain Bike Guidelines.

The current project site has since been approved that includes the old golf course of the originally preferred Tank 1 site and approximately 344ha of the Barrabup State Forest.

Constraints and considerations from the project's framework are:

- Trail development is to be concentrated in the old golf course.
- Trails within the Barrabup native forest – west of Old Cundinup Road – are only to be developed on old existing tracks that are not required for private or commercial vehicle use.
- Informal trails (motorbike or other) within the forest are not to be developed as mountain bike trails and will be rehabilitated to provide an overall 'net environmental benefit' for the project. Exceptions may be considered where small sections facilitate a critical access link to the trail network subject to further investigations.
- Consider controlling access to restrict unlawful activities like motorbike riding.
- Ensure trail development is considered in a way that maintains and protects the ecological values, especially areas identified as protectable from *Phytophthora dieback*.
- Ensure trail development is considerate of cultural heritage values.
- Trail development to consider current and future FPC commercial harvest activities and haulage routes.
- Mountain Bike Trail development within the Barrabup block is to be consistent with the trail requirements for a national park.
- Access to the lake (referred to hereafter as 'the lake') is to be maintained for firefighting purposes.





## PROJECT AREA

### Size and location

The project area perimeter is approximately 344ha that includes the Jarrahwood State Forest, Barrabup Block, and the old Pine Ridge (Milward) Golf Course. The old golf course has an area of approximately 17ha.

The proposed trailhead at the old golf course is approximately five kilometres north of Nannup township and can be accessed directly by vehicle along the Vasse Hwy and Milward Road (gravel). The southern end of the project area touches on the Vasse Highway and facilitates a direct connection with the Munda Biddi Trail that provides the 2.5km cycle connection into Nannup township.

This proximity to Nannup and the other mountain bike facilities provides a collective of mountain bike experiences that are within easy riding distance from town and one another:

- Native Forest MTB Park (this project) – 5km north of Nannup
- Ngoolark MTB Jump Park – 1.7km north of Nannup
- Tank 7 MTB. Park – 2km east of Nannup

Map 1 on the next page shows the location of each of these facilities in relation to Nannup, while Map 2 shows the project area.

### Tenure

The Jarrahwood State Forest, that includes the old golf course, is managed by the Department of Biodiversity, Conservation and Attractions (DBCA) for purposes of conservation and recreation. There is a future consideration to

increase the reservation status of the state forest to national park.

The adjacent land parcels to the east, that includes the Tank 1 area, are DBCA managed freehold lands under Forest Products Commission (FPC). The Tank 1 slope has recently been harvested and is likely to be replanted in the near future.

### Significant flora and fauna

The area contains significant areas of Phytophthora dieback. Areas within the Barrabup block where the occurrence of dieback is unknown have been mapped and are restricted from the project area. Other areas within the site that have been mapped for significant ecological values include remnant habitat areas of old growth forest and threatened flora (Refer to Map 2.)

### Phytophthora

Most of the project area has been assessed as 'infested' for *Phytophthora cinnamomi* (PC) apart from a small uninfested section along the old logging track between Old Cundinup Road and Milward Road (refer PC map in appendices). PC management controls may be required at each end of this uninfested area to protect it from PC infection.

Those areas recorded as uninterpretable for PC have been isolated from the project area as a precautionary control.

Further PC assessment of the southern trail link (Trail 2) and the lake area will be required to better inform management conditions for these areas.



# MAP 1 - SITE LOCATION



BARRABUP NATIVE FOREST MTB PARK

NGOOLARK MTB JUMP PARK

NANNUP








NANNUP PUMP TRACK

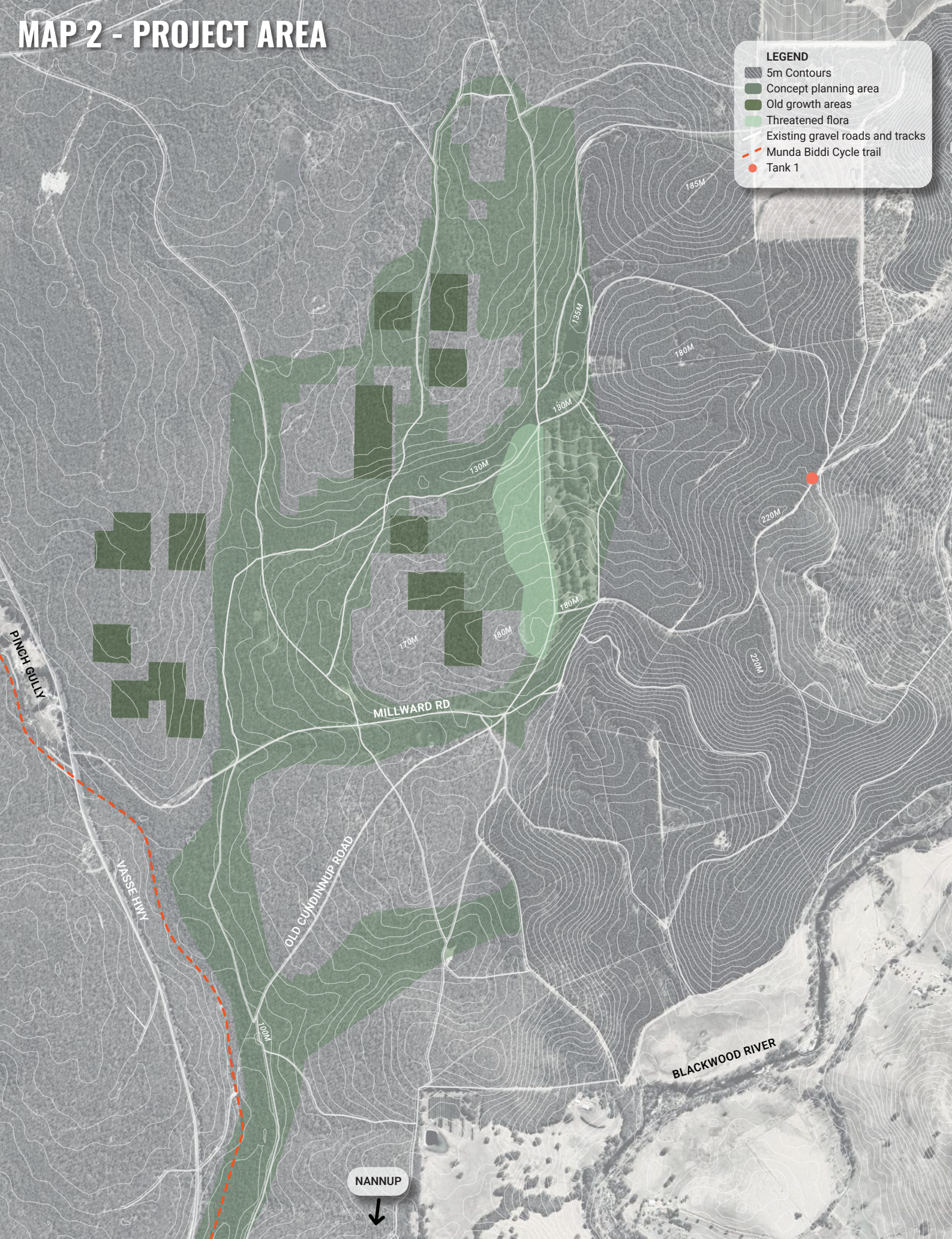
TANK 7 MTB TRAILS



# MAP 2 - PROJECT AREA

**LEGEND**

-  5m Contours
-  Concept planning area
-  Old growth areas
-  Threatened flora
-  Existing gravel roads and tracks
-  Munda Biddi Cycle trail
-  Tank 1



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CLIENT

PROJECT TITLE  
**BARRABUP TRAIL NETWORK**

PROJECT ADDRESS  
**NANNUP**

| DRAWN | CHECKED | DATE     |
|-------|---------|----------|
| EP    | WR      | 12.06.25 |


1km

PROJECT NUMBER

DRAWING NUMBER AND TITLE  
**MAP 2 - Project Area**

| STATUS  | REV |
|---------|-----|
| CONCEPT | A   |

DRAWING SCALE



WARNING:  
 BEWARE OF UNDERGROUND SERVICES.  
 THE LOCATION OF UNDERGROUND SERVICES ARE INDICATIVE  
 ONLY. THEIR EXACT POSITION SHOULD BE PROVEN ON SITE.

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PROJECT NOTES



## STAKEHOLDER CONSULTATION

Targeted stakeholder consultation was undertaken to ensure concept planning appropriately considered the broader tourism drivers, the site potential and constraints, and local user aspirations. In addition to ongoing discussions with the project steering committee, the following organisations were consulted with:

- South West Development Commission and Regional Development Australia South West – video call
- Karri Karrak Aboriginal Corporation – video call
- Nannup Mountain Bike Club – survey and in-person

### Nannup Mountain Bike Club (NMBC)

A survey was circulated to NMBC members by Shire of Nannup. The focus of the survey was to gain an appreciation of the type of trails and features local riders would like to see developed. The key ideas were:

- A blend of built and natural XC loops for training.
- Flow trails with a family focus.
- If good dirt construct features, if pea/gravel, go with technical
- Family friendly loop (2–3km) including some small features such as rollers and berms with A & B lines.
- Trails to provide a bit of everything.

- Trails designed to facilitate progression.
- Skills trail featuring wooden skinnies, see-saws, etc.
- Skills lines with increasing difficulty.
- Wall ride.

### South West Development Commission (SWDC) and Regional Development Australia South West (RDASW)

SWDC were encouraging that the site be developed to attract a broad segment of the visitor market as a way of increasing Nannup's appeal as a tourism destination. Ideas included:

- Providing camping/accommodation near the lake.
- Ensuring the product offering and future operation of the site provides opportunities for tourism operators.
- Incorporating supporting activities to increase the destination appeal to the family market.

### Karri Karrak

Karri Karrak expressed their support for the area's development and general improvement. The Cultural Heritage Survey undertaken at the next stage of project planning will inform the cultural heritage values, and Karri Karrak will maintain a continued involvement in the project.





# 2

## SITE OBSERVATIONS

### LOCATION AND ACCESS

The old Pine Ridge Golf Course (i.e. the trails) is located approximately five kilometres from Nannup township by either car or bike.

It is intended that vehicle access into the site from the Vasse Highway is along Milward Road, a well-maintained public dirt road that provides direct access to the proposed visitor car park/trailhead. Milward Road connects into Old Cundinup Road that runs in a northern direction along the western boundary of the old golf course. As well as operating as the primary access road, this road could serve as a convenient shuttle access to the top of the descending runs. The road has the added benefit of providing a distinct barrier between the golf course trails and the area of threatened flora within the native forest.

By bike, the trail network can be accessed from Nannup along the Munda Biddi Trail, offering cyclists with convenient separated cycle access from the centre of town to the project site. The Munda Biddi Trail appeared to be well-maintained providing an even gravel surface with good vegetation clearance.

#### *Munda Biddi Trail*



Where the Munda Biddi Trail intercepts with the southern end of the project site it is within close proximity to an old logging track that links directly with the trailhead. For the Munda Biddi Trail to connect with this track to provide an entirely off-road connection, a short 250 metre section of new trail would need to be constructed. As construction of new trail within the forest is not supported, a 300-metre section along Old Cundinup Road will be required to link the Munda Biddi Trail with the two old logging tracks. At the time of field work, Old Cundinup Road appeared to be quiet and in good condition, so with appropriate signage this short connection should provide cyclists with an acceptable experience.

#### *Start access trail along old logging track*



The old logging track off Old Cundinup Road (to function as the primary link trail) was in mostly good condition along its entire length and at a consistent gentle gradient. The start of the track was partially overgrown, perhaps influenced by the sandier soils in this location. Along the 3.5 kilometres there were several fallen trees and evidence of use by motorbikes.



### *Informal trail beneath powerline easement*



An alternative more southerly access trail appeared feasible along an old vehicle track leading off Old Cundinup Road near to the old logging track mentioned above. This vehicle track was not identified on the roads map but had areas of benching that suggest it was more than an informal vehicle track. To create an access trail to the trailhead will require linking this old vehicle track with sections of gravel road and development of new trail along the powerline easement.

## LANDSCAPE AND SOILS

### **Old golf course**

The old Pine Ridge Golf Course consisted of cleared fairways divided by sections of mature native vegetation including tall, introduced trees. The fairways were dry and compacted with very little remnant grass.

From the high point at the southern end of the site down to the low point at the northern end, the site dropped 50 metres in elevation from 180 to 130 metres. Over the 800 metres from top to bottom, this offered an average gradient of approximately eight per cent. Laterally the site slopes gently east and west from the central ridge that gave the impression of the area being larger than it was. The combination of top-to-bottom gradient, side slopes, open fairways and patches of mature vegetation provides a unique combination of landscape factors that can support a range of interesting and engaging descending trails in a concentrated area.

The soils across the site were variable in quality and appeared suitable for construction of cross-country trails, however for construction of sustainable and engaging 'flow' and 'airflow' trails imported material will be required to build the feature height and provide a more durable trail surface.

### *Open fairway at the old golf course*



### **Lakeside environs**

The lake provides the site with a significant natural attraction and opportunity for a more diverse recreational offering. Perfectly located just north of the old golf course – and close to the proposed main trailhead– the lake can be conveniently accessed and enjoyed by mountain bike riders along with general visitors to the area. The mix of native and introduced pine trees surrounding the lake provide a good cover of shade and opportunity





for a pleasant short 600 metre walk or ride around the lake perimeter.

A slight informal trail was evident around most of the lake, with a short section at the south-west corner running along Boundary Rd.

*Informal trail around lake*



The clearing and large deliberately placed tree trunk at the south-west corner of the lake suggested that this is the access point for pumping water and will need to be maintained for emergency fire-fighting vehicles.

*Water access point*



The more open area at the south-east edge of the lake presents itself as a suitable space for a general picnic/day-use area along with opportunity to provide for a small amount of camping or other overnight accommodation.

### **Barrabup Native Forest**

The forested area of the Barrabaup block – from the golf course back to Vasse Highway – is primarily covered by good quality native forest supporting mature trees and healthy understory.

The forest is intersected by public gravel roads, historical logging tracks and informal motorbike trails. The old logging tracks were of variable quality and suitability for re-purposing as mountain bike trails. Fortunately, the track designated to be the main access trail connecting the trailhead to the Munda Bididi Trail, was well-suited for an easy mountain bike trail, having a consistent gentle gradient and reasonable quality trail surface along its entire length.

*Typical section of the old logging track*



The other logging tracks throughout the forest were either too steep or did not present any potential for being developed into an enjoyable trail experience.



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## EXISTING USE

At the time of field work, there were two vehicles with motorbike trailers parked at the old golf course indicating that it is still an active destination for trail bike riding. There was some evidence of motorbike use within the native forest along the old logging tracks and powerline easement, but there didn't appear to be significant informal trail development suggesting that most of the

motorbike activity may happen within the pine plantations.

The southern end of the old golf course intersects with one of the promoted gravel bike routes along Killarney Road. Two gravel cyclists were observed riding this route.

---

## ENVIRONMENTAL AND HERITAGE VALUE

As expected, the old golf course is highly modified, with large, cleared areas that were previously the fairways. The remnant vegetation was primarily large and established eucalyptus with minimal understory.

The forested area had what appeared to be good quality vegetation, with a consistent cover of native vegetation and good

understory of shrubs and native grasses. While not flowering, the area immediately west of the old golf course is significant habitat for the threatened flora.

Cultural heritage values across the site are at this stage unknown. A cultural heritage assessment will be undertaken at the next stage of the project.

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## OPPORTUNE LANDSCAPE FEATURES

The following landscape features were observed to support particular recreational developments.

### **Available slope and clearings of the old golf course**

The consistent gradient of eight percent from top to bottom, and large cleared areas of the old fairways make this a perfect site for establishing a concentrated network of 'airflow' trails. Airflow is a type of trail that incorporates large, sculptured dirt features such as jumps, berms, and rollers, to create an exciting 'flow' ride experience. The old golf course is highly modified with minimal environmental values so has approval for the use of imported material that is necessary for building and sculpting the desired trail

features. The excellent vehicle access to and throughout the site enables convenient access for delivery of appropriate compactable fill and larger machines for construction.

*Cleared fairway of old golf course*





### Lakeside clearing

The cleared area near the south-east corner of the lake lends itself perfectly as a day-use picnic area and/or small camping area. It has good access from the gravel road allowing for convenient access by management vehicles.

*Cleared lakeside area*



### Small, cleared slope between trailhead and lake

The small, cleared area just north of the trailhead could accommodate some short skills trails with small berms, rollers and timber features. Easily accessed from the day-use area this area is perfect for small children and sufficiently compact to be easily observed by parents.

*Small, cleared area for skills trails*



# 3

## TRAIL SYSTEM

### DESIGN PRINCIPLES

#### General principles

As directed by the project brief, the following general principles and directions have been considered when designing the concept trail network. These principles are intended to ensure that the trail network provides an engaging experience and complements the more difficult trails at Tank 7:

- Provide a range of difficulties in a general ratio of: Easy 40%, Intermediate 50%, Difficult 10%.
- No Double Black trails to be constructed in the trail network.
- Trails allowing for different riding lengths and difficulty.
- A & B lines to provide optional technical features.
- Single use (MTB) and single direction.
- Trails to support events.
- Coaching considerations include progressive technical trail features, opportunities for line choice and pull-out

opportunities to allow sessioning lengths of trail.

- Steel and timber technical trail features will be considered on a case-by-case basis.
- Consideration for potential private shuttle and associated service.

#### Specific requirements

The following specific conditions apply to the trail network:

- The primary trailhead to be located at the old Pine Ridge Golf Course.
- Vehicle access to the trailhead is via Milward Road and Cundinup South Road.
- Provide a dual direction access trail to the trailhead from Nannup using the Munda Bidli Trail.
- Active Phytophthora prevention is to be included as required.





## TRAIL NETWORK SUMMARY

Recognising the trail development constraints within the Barrabup Forest, new trail development is ultimately limited to the old golf course. It is therefore essential that the trails are designed to deliver a genuinely compelling rider experience if the project is to achieve its desired outcomes. To generate this experience, it is recommended that a series of flow and airflow trails are developed down the slope of the golf course, and that these are complemented by skills and cross-country trails to deliver an exciting and diverse selection of trails that will appeal to families and riders of all skill levels and abilities.

The conceptual trail network comprises of 16 independent trails, delivering a total trail distance of 15.5 kilometres.

The key features of the trails are:

- Two **access trails** connecting the Munda Bididi Trail to the trailhead at the old golf course. The northern trail along an old logging road is intended as the main access trail. With a consistent gentle gradient along a relatively wide trail easement this trail is well suited to being developed as a shared-use, dual-directional trail suitable for all abilities.

The slightly more direct southerly route is a mixture of old vehicle track, gravel road and new mountain bike single track. With sections of steeper gradients and some added technical features this trail offers a more challenging single-direction cross-country ride of intermediate difficulty.

The two access trails can be combined to be ridden as a **7.5km adventure loop**.

- Two short easy shared-use adventure trail loops around the lake environs. Combined, these two trails offer a 1km nature loop for cyclists and walkers. The trail is

intended to be ridden in single anti-clockwise direction but could be walked in either direction.

- Six dedicated point-to-point gravity trails from the high point of the old golf course down to the trailhead, with a combined distance of 5km. It is proposed that these trails can be looped by either riding up from either of the climbing trails, or by shuttle service.
  - 1 Easy Flow trail
  - 2 Intermediate Airflow trails
  - 1 Difficult Airflow trail
  - 2 Intermediate Slalom trails
- One easy adventure climbing trail from the trailhead to the start of the gravity trails. There are multiple options along this trail to create shorter loops with the easy flow trail.
- An e-mountain bike (eMTB) climbing trail along a gravel logging track/road for fast, direct access to the descending trails.
- A short link trail to the trailhead off the climbing trail for a short 400m loop. This trail will also serve as a linking trail to the main trailhead / shuttle pick-up point for future potential trail development on the adjacent slopes.

The difficulty ratings of the trails are:

- Easy – 9km (58%)
- Intermediate – 5.8km (37%)
- Difficult – 0.7km (5%)

For the purpose of this report the trails are represented by simple numbers starting from Trail 1 to 16. As part of the next stages of planning each trail should be given a unique name and/or identity to help with marketing and promotion and increasing user engagement and connection.



## TRAIL SUMMARY TABLE

| Trail no.       | Section         | Existing trail condition | Concept Trail Type | Concept Difficulty Rating | Length (m)   | Average Gradient (%) | Construction method, materials, and features  | Concept Trail Description   |
|-----------------|-----------------|--------------------------|--------------------|---------------------------|--------------|----------------------|---|---|
| 1               | A               | Gravel road              | Road link          | Very Easy                 | 299          | 4.0%                 | Road safety and directional signs along Old Cundinup Road.  | Primary dual-directional access/return trail. This trail offers a gently descending (return) connection from the trailhead to the Munda Bididi Trail and into Nannup township. Except for 300m along Old Cundinup Road, the trail follows an old logging track to provide a mostly off-road experience. |
|                 | B               | Old logging track        | Shared-use         | Easy / (Grade 2 walking)  | 3,188        |                      | Existing track is in good condition. Minimal works only to clear fallen trees and manage any drainage issues. The final 250m section of this trail moves through significant Caladenia (native orchid) habitat, so signage and management of any informal trails through this section will be required. |   |
|                 | <i>subtotal</i> |                          |                    |                           | <b>3,487</b> |                      |   |   |
| 2               | A               | Gravel road              | Road link          | Intermediate              | 49           | 6.0%                 | Signage only.   | A more challenging cross-country trail to access the trailhead. When linked with one of the golf course trails and Trail 1 it facilitates a 7.5km cross-country loop.   |
|                 | B               | Old logging track        | Adventure          | Intermediate              | 53           |                      | Track clearing and minor surface improvement works.   |   |
|                 | C               | Informal motorbike track | Adventure          | Intermediate              | 233          |                      | 1.2m machine-built trail, natural surface.  | The trail is made up of a combination of old logging tracks, informal motorbike trail and sections of new trail beneath the powerline easement.   |
|                 | D               | Old logging track        | Adventure          | Easy                      | 695          |                      | Track clearing and minor surface improvement works.   |   |
|                 | E               | Gravel road              | Adventure          | Intermediate              | 944          |                      | Signage only  |   |
|                 | F               | New MTB trail            | Adventure          | Intermediate              | 795          |                      | 1.2m machine-built trail, natural surface. Inclusion of small berms and rollers/quark knuckles.   |   |
| <i>subtotal</i> |                 |                          |                    | <b>2,769</b>              |              |                      |   |   |
| 3               |                 | No trail                 | Shared-use         | Easy / (Grade 3 walking)  | 444          | 5.3%                 | 1.2m machine-built bench trail, natural surface.  | Lakeside shared-use trail short loop. An easy short walk or ride loop trail from the trailhead to the lake. Done in an anticlockwise direction the return trail   |





|          |                |            |                          |       |       |   |  |
|----------|----------------|------------|--------------------------|-------|-------|---|--|
|          |                |            |                          |       |       |   | offers a fun gently descending trail through the forest.   |
| <b>4</b> | Informal track | Shared-use | Easy / (Grade 3 walking) | 565   | 4.3%  | 1.2m machine-built bench trail, natural surface.  | Lakeside shared-use trail long loop. An enjoyable and scenic circuit trail around the perimeter of the lake. Can be combined with the short loop to make a 1km circuit.  |
| <b>5</b> | No trail       | Adventure  | Easy                     | 1,681 | 6.3%  | 1.2m machine-built bench trail, natural surface.  | Easy climbing trail to top of descending trails/shuttle drop-off point. Weaves across the slope through remnant vegetation and beneath the easy descending trail at multiple intersections to provide rider interest. The trail cross-over intersections provide options to create short loops, especially suited to younger riders. |
| <b>6</b> | Gravel road    | As is      | Intermediate             | 541   | 8.7%  | Signage only.   | An option for eMTB along the gravel road to provide the most direct access to the start of the descending trails. Accessed off Trail 5 where this trail touches the road.<br>This road is shared with vehicles.  |
| <b>7</b> | No trail       | Flow       | Easy                     | 1,028 | -6.0% | Variable width 1.2–2.5m machine-built trail with natural surface and imported material. Features include berms rollers/tabletops and three elevated crossovers. | Easy flow trail incorporating numerous tight bermed corners, some longer run out sections and three elevated crossovers.   |
| <b>8</b> | No trail       | Airflow    | Intermediate             | 840   | -6.4% | Variable width 1.5m–4m wide machine-built trail with imported material. Features include large berms, tabletops and two elevated crossovers.                    | Intermediate airflow trail that incorporates berms, tabletops and two over/under crossovers with Trail 9.  |
| <b>9</b> | No trail       | Airflow    | Intermediate             | 817   | -6.6% | Variable width 1.5m–4m wide machine-built trail with imported material. Features include large berms, tabletops and two elevated crossovers.                    | Intermediate airflow trail that incorporates berms, tabletops and two over/under crossovers with Trail 8.  |



|    |          |           |                      |     |       |  |  |
|----|----------|-----------|----------------------|-----|-------|--|--|
| 10 | No trail | Airflow   | Difficult            | 714 | -7.0% | Variable width 1.5m–4m wide machine-built trail with imported material. Features include large berms, tabletops.         | With a more direct run down the slope, this difficult trail provides opportunity for continued progression and something for more advanced riders. The trail offers a more technical trail through the trees and larger features in the open areas that can all still be safely rolled by lesser skilled riders. |
| 11 | No trail | Slalom    | Intermediate         | 761 | -7.7% | Variable width 1.5m–2.5m wide machine-built trail with some imported material. Features include tight berms and rollers. | Dual slalom trail 1. With a series of tight berms and rollers, the slalom trails provide a fast and fun course for friendly competition. Running adjacent to Old Cundinup Road, these trails provide spectator interest vehicles, especially those shuttling to the top of the runs.                             |
| 12 | No trail | Slalom    | Intermediate         | 788 | -7.7% | Variable width 1.5m–2.5m wide machine-built trail with imported material. Features include tight berms and rollers.      | Dual slalom trail 2. Description as above.   |
| 13 | No trail | Skills    | Easy                 | 484 | 5.8%  | 1.2m machine-built bench trail, natural surface. Some tight bermed corners and small rollers.                            | Departing the main car park/visitor node, this trail offers a short cross-country /skills loop and access to the two short skills trails. The climbing portion weaves through the native vegetation to the high point, and then descends through the old stand of pine trees.                                    |
| 14 | No trail | Skills    | Easy                 | 197 | -     | 1.2m machine-built bench trail, natural surface. Timber features include drops, benches and skinnies.                    | Skill trail 1. Short skills trail with berms, rollers, and timber skills features.   |
| 15 | No trail | Skills    | Easy<br>Intermediate | 172 | -     | 1.2m machine-built bench trail, natural surface. Timber features include drops, benches and skinnies.                    | Skill trail 2. Short skills trail with berms, rollers, and timber skills features  |
| 16 | No trail | Adventure | Easy                 | 222 | 5.0%  | 1.2m machine-built bench trail, natural surface.   | Descending trail that offers a short loop off the climbing trail, while also providing a future link to the trailhead for potential future trail development down the adjacent slopes.   |

**Total length 15,510**





## TRAIL MAPS

The following three trail maps provide different information to explain the concept trail network. The trails on the maps are intended to be referenced with the Trail Summary Table above.

### **Map 3 – Trail network by construction type**

This map provides an overview of the entire project area, with the trail alignments represented by the trail construction requirement, whether along an existing gravel road or track, or as a new trail build. As well as providing an indication of the construction requirements, this map is particularly valuable for demonstrating where existing and/or disturbed trail corridors are being utilised, which reduces environmental impact and construction cost.

Map 4 also identifies the opportunity for potential future expansion of trails down the slopes from Tank 1

### **Map 4 – Concept trail**

This map is intended to provide a clear representation of each trail, which is represented by a separate colour and number that corresponds to the Trail Summary Table. Directional arrows show the designated direction of travel.

### **Map 5 – Trail difficulty rating**















This map shows the trail by their intended difficulty rating, which clearly shows the design intent of providing mostly easy and intermediate trails.

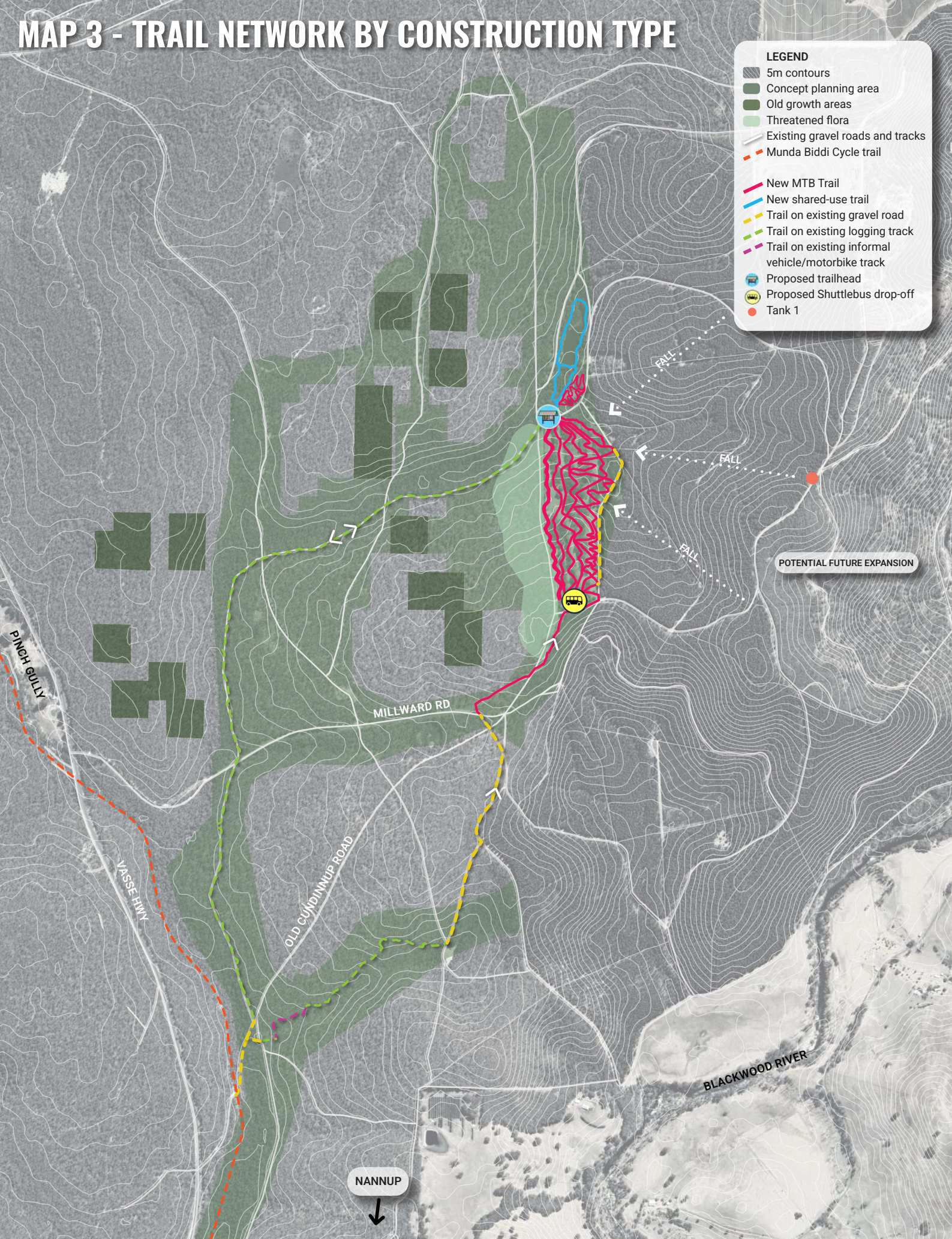




# MAP 3 - TRAIL NETWORK BY CONSTRUCTION TYPE

**LEGEND**

-  5m contours
-  Concept planning area
-  Old growth areas
-  Threatened flora
-  Existing gravel roads and tracks
-  Munda Biddi Cycle trail
-  New MTB Trail
-  New shared-use trail
-  Trail on existing gravel road
-  Trail on existing logging track
-  Trail on existing informal vehicle/motorbike track
-  Proposed trailhead
-  Proposed Shuttlebus drop-off
-  Tank 1





# MAP 4 - CONCEPT TRAILS



**LEGEND**

- Concept planning area
- Old growth areas
- Threatened Flora
- Existing gravel roads and tracks
- 5m Contours
- 🚐 Proposed trailhead
- 🚌 Proposed Shuttlebus drop-off
- 🪵 Picnic/Day use area
- Tank 1
- Trail 1
- Trail 2
- Trail 3
- Trail 4
- Trail 5
- Trail 6
- Trail 7
- Trail 8
- Trail 9
- Trail 10
- Trail 11
- Trail 12
- Trail 13
- Trail 14
- Trail 15
- Trail 16

SHARED USE TRAIL

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 E: info@world-trail.com  
 www.world-trail.com

CLIENT

PROJECT TITLE  
**BARRABUP TRAIL NETWORK**

PROJECT ADDRESS  
**NANNUP**

| DRAWN | CHECKED | DATE     |
|-------|---------|----------|
| EP    | WR      | 12.06.25 |

PROJECT NUMBER

DRAWING NUMBER AND TITLE  
**MAP 4 - Concept Trails**

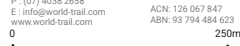
| STATUS  | REV |
|---------|-----|
| CONCEPT | A   |

DRAWING SCALE

PROJECT NOTES

**WARNING:**  
 BEWARE OF UNDERGROUND SERVICES.  
 THE LOCATION OF UNDERGROUND SERVICES ARE INDICATIVE ONLY. THEIR EXACT POSITION SHOULD BE PROVEN ON SITE.











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# MAP 5 - TRAIL DIFFICULTY RATING

**LEGEND**

-  5m Contours
-  Trailhead
-  Easy MTB trails
-  Intermediate MTB Trail
-  Difficult MTB Trail Concept
-  planning area
-  Old growth areas
-  Threatened Flora
-  Existing gravel/road tracks
-  Picnic / Day use area



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ACN: 126 067 847  
 ABN: 93 794 484 623

0 250m

CLIENT

PROJECT TITLE  
**BARRABUP TRAIL NETWORK**

PROJECT ADDRESS  
**NANNUP**


| DRAWN | CHECKED | DATE     |
|-------|---------|----------|
| EP    | WR      | 12.06.25 |

PROJECT NUMBER

DRAWING NUMBER AND TITLE  
**MAP 5 - Trail Difficulty Rating**

| STATUS  | REV |
|---------|-----|
| CONCEPT | A   |

DRAWING SCALE



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PROJECT NOTES



## TRAIL DESCRIPTIONS

This section provides individual descriptions for each trail including key information, a map clearly showing the trail alignment and an elevation profile.

The trail overview provides a specific summary of each trail, while the trail description is a

general description that explains the trail's intended style. A summary of the primary mountain bike trail styles is provided as Appendix 2.



## Barrabup Native Forest MTB Park – Concept Trails

## Trail 1

| TRAIL DIFFICULTY RATING | TRAIL STYLE          | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|----------------------|------------------|------------------------------|
| Easy                    | Shared-use / Touring | 3,487            | 97 / -69                     |

### TRAIL OVERVIEW:

Primary dual-directional access/return trail. This trail offers a gently ascending or descending connection between the trailhead and the Munda Biddi Trail, which connects directly with Nannup township. With the exception of 300m along Old Cundinup (gravel) Road, the trail follows an old logging track.

### TRAIL DETAILS:

|                    |                |
|--------------------|----------------|
| USE                | Shared Use     |
| DIRECTION          | Dual Direction |
| DESCENT/CLIMB      | Mix            |
| SHUTTLE ACCESSIBLE | N/A            |
| AVERAGE GRADIENT   | 4%             |

### TRAIL STYLE DESCRIPTION:

This trail has a generally flat and compact gravel surface, free of obstacles. At approximately two metres wide with good sight lines, this trail offers safe dual-direction travel and is suitable for touring cyclists.

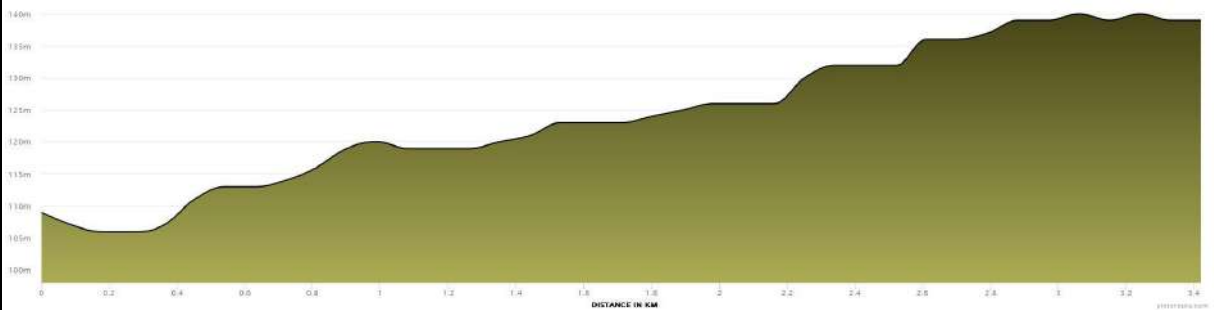
### TRAIL FEATURES:

No features or obstructions.

### TRAIL MAP:



### ELEVATION PROFILE:





## Barrabup Native Forest MTB Park – Concept Trails

## Trail 2

| TRAIL DIFFICULTY RATING | TRAIL STYLE      | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|------------------|------------------|------------------------------|
| <b>Intermediate</b>     | <b>Adventure</b> | <b>2,769</b>     | <b>134 / -52.7</b>           |

### TRAIL OVERVIEW:

A more challenging cross-country trail to access the trailhead. When linked with one of the golf course trails and Trail 1 it facilitates a 7.5km cross-country loop.

The trail is made up of a combination of old logging tracks, informal motorbike trail and sections of new trail beneath the powerline easement.

### TRAIL STYLE DESCRIPTION:

Traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

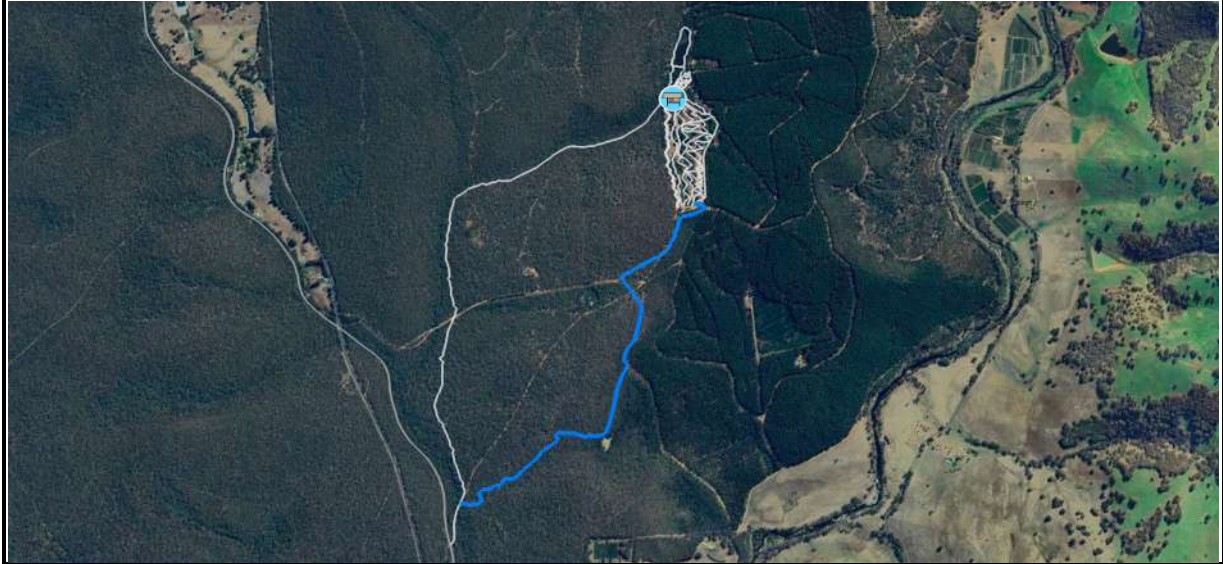
### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Mix              |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 6%               |

### TRAIL FEATURES:

Small berms  
Rollers  
Quark knuckles

### TRAIL MAP:



### ELEVATION PROFILE:



## Barrabup Native Forest MTB Park – Concept Trails

## Trail 3

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Adventure   | 444              | 13.1 / -13.1                 |

### TRAIL OVERVIEW:

Lakeside shared-use trail short loop. An easy short walk or ride loop trail from the trailhead to the lake. Done in an anti-clockwise direction the return trail offers a fun gently descending trail through the forest.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | Shared Use       |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Mix              |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 5.3%             |

### TRAIL STYLE DESCRIPTION:

Traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

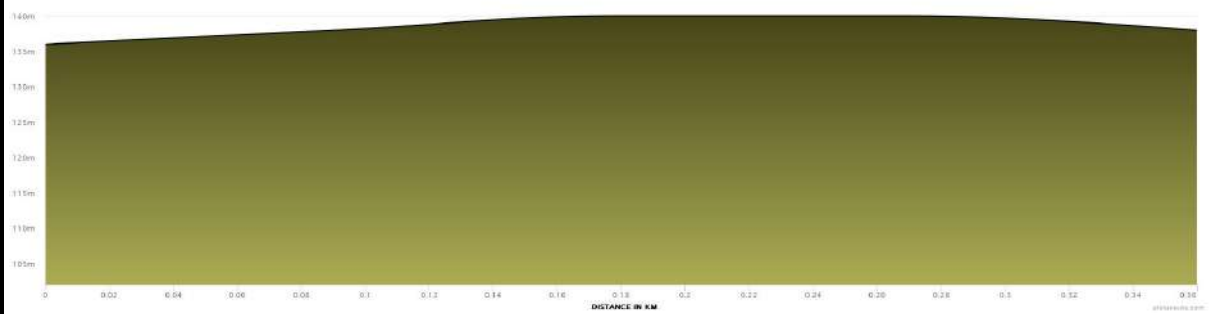
### TRAIL FEATURES:

Natural obstacles

### TRAIL MAP:



### ELEVATION PROFILE:





## Barrabup Native Forest MTB Park – Concept Trails

## Trail 4

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Adventure   | 565              | 16 / -19                     |

### TRAIL OVERVIEW:

Lakeside shared-use trail long loop. An enjoyable and scenic circuit trail around the perimeter of the lake. Can be combined with the short loop to make a 1km circuit.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | Shared Use       |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Mix              |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 4.3%             |

### TRAIL STYLE DESCRIPTION:

Traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

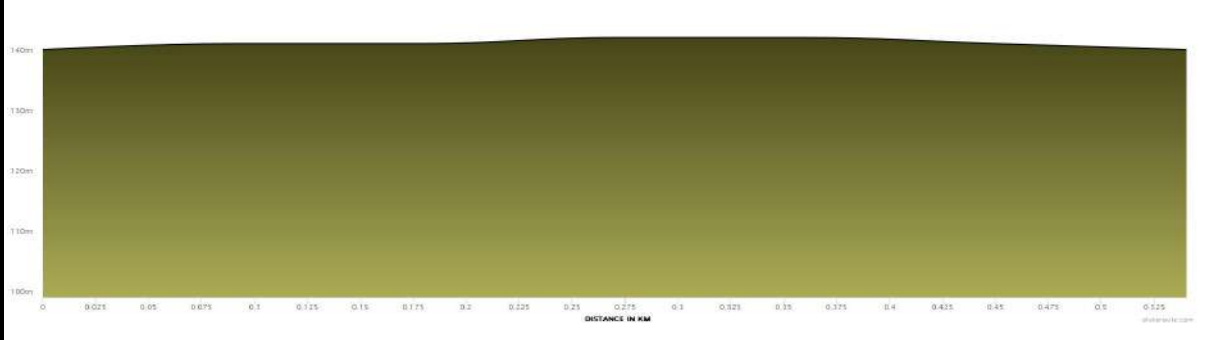
### TRAIL FEATURES:

Natural obstacles

### TRAIL MAP:



### ELEVATION PROFILE:



## Barrabup Native Forest MTB Park – Concept Trails

## Trail 5

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Adventure   | 1,681            | 75 / -26                     |

### TRAIL OVERVIEW:

Easy climbing trail to top of descending trails/shuttle drop-off point. Weaves across the slope through remnant vegetation and beneath the easy descending trail at multiple intersections to provide rider interest. The trail cross-over intersections provide options to create short loops, especially suited to younger riders.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Climb            |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 6.3%             |

### TRAIL STYLE DESCRIPTION:

Traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

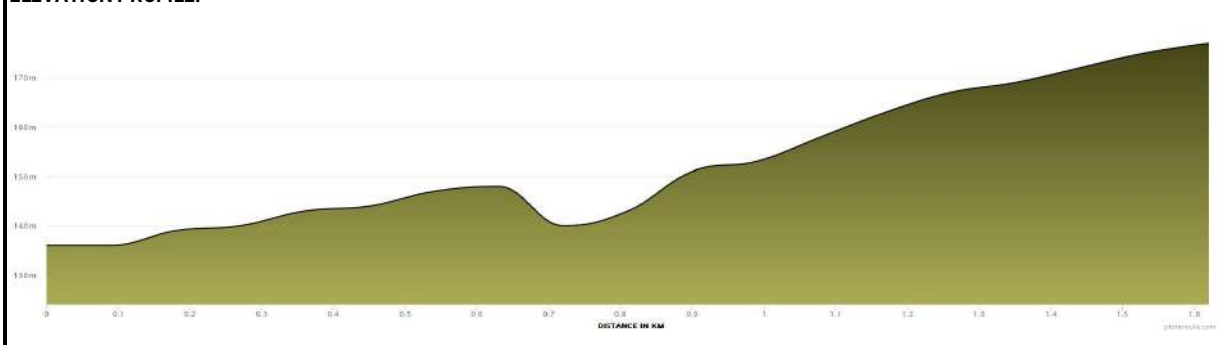
### TRAIL FEATURES:

Natural obstacles  
Switchbacks

### TRAIL MAP:



### ELEVATION PROFILE:





## Barrabup Native Forest MTB Park – Concept Trails

## Trail 6

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Intermediate            | Other       | 541              | 44 / -5                      |

### TRAIL OVERVIEW:

An option for eMTB along the gravel road to provide the most direct access to the start of the descending trails. Accessed off Trail 5 where this trail touches the road.

This road is shared with vehicles.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | Shared Use       |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Climb            |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 8.7%             |

### TRAIL STYLE DESCRIPTION:

Designed to match the power and capability of modern e-MTB's, these trails prioritise speed and efficiency. Unlike traditional climbing trails that conserve rider energy with gentle gradients and winding routes, e-MTB climbs embrace directness. They provide a fast, purposeful connection between key trail hubs or descending trailheads.

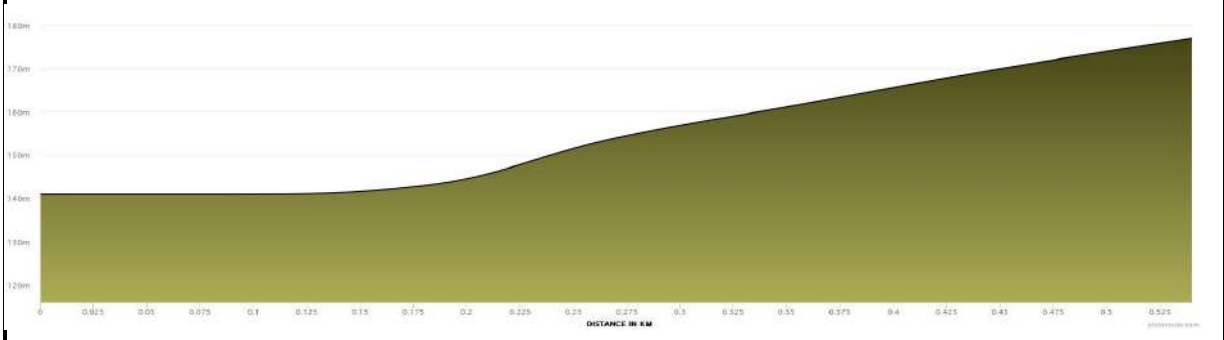
### TRAIL FEATURES:

None

### TRAIL MAP:



### ELEVATION PROFILE:



## Barrabup Native Forest MTB Park – Concept Trails

## Trail 7

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Flow        | 1,028            | 7 / -57                      |

### TRAIL OVERVIEW:

Easy flow trail incorporating numerous tight bermed corners, some longer run out sections and three elevated cross-overs.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | Yes              |
| AVERAGE GRADIENT   | -6.0%            |

### TRAIL STYLE DESCRIPTION:

A descending trail style, Flow Trails offer a constant undulation of groomed rollers, berms, and achievable obstacles. The tyre-hugging trajectory sends riders on a sculptured luge ride through the bush. They create a sensation of speed and rhythm, require minimal decision-making and maximise the ability to feel in control and have fun.

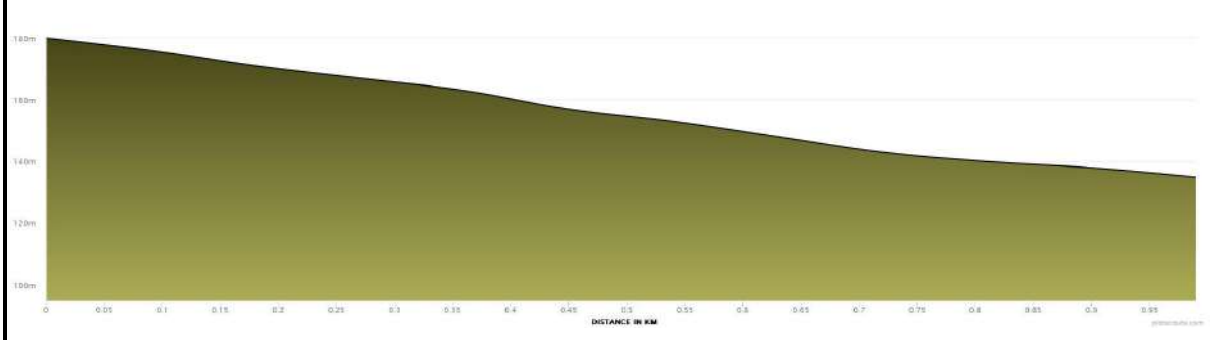
### TRAIL FEATURES:

- Berms
- Rollers
- Tabletops
- Four elevated crossovers

### TRAIL MAP:



### ELEVATION PROFILE:





## Barrabup Native Forest MTB Park – Concept Trails

## Trail 8

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Intermediate            | Airflow     | 840              | 4 / -53                      |

### TRAIL OVERVIEW:

Intermediate airflow trail that incorporates berms, tabletops and two over/under cross-overs with Trail 9.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | Yes              |
| AVERAGE GRADIENT   | -6.4%            |

### TRAIL STYLE DESCRIPTION:

Developed by World Trail, Air Flow Trails combine everything we love about Enduro and Gravity Trails – magnifying pure flow, creating exciting line choices, transfers and safe jumping options. Sculptured jumps, berms, rollers abound, but obstacles are usually rollable, putting the emphasis on rider safety, skill progression and undeniable fun.

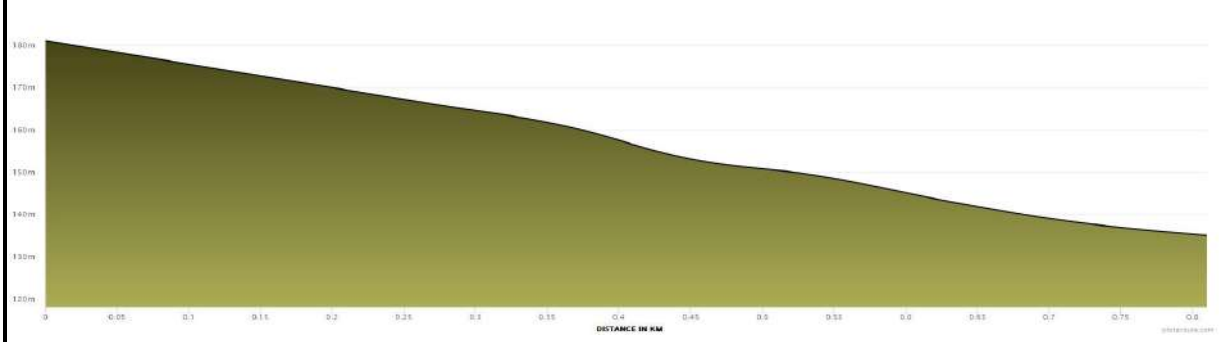
### TRAIL FEATURES:

- Large berms
- Tabletop jumps
- 1 x elevated crossover

### TRAIL MAP:



### ELEVATION PROFILE:



## Barrabup Native Forest MTB Park – Concept Trails

## Trail 9

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Intermediate            | Airflow     | 817              | 5 / -53                      |

### TRAIL OVERVIEW:

Intermediate airflow trail that incorporates berms, tabletops and two over/under cross-overs with Trail 8.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | Yes              |
| AVERAGE GRADIENT   | -6.6%            |

### TRAIL STYLE DESCRIPTION:

Developed by World Trail, Air Flow Trails combine everything we love about Enduro and Gravity Trails – magnifying pure flow, creating exciting line choices, transfers and safe jumping options. Sculptured jumps, berms, rollers abound, but obstacles are usually rollable, putting the emphasis on rider safety, skill progression and undeniable fun.

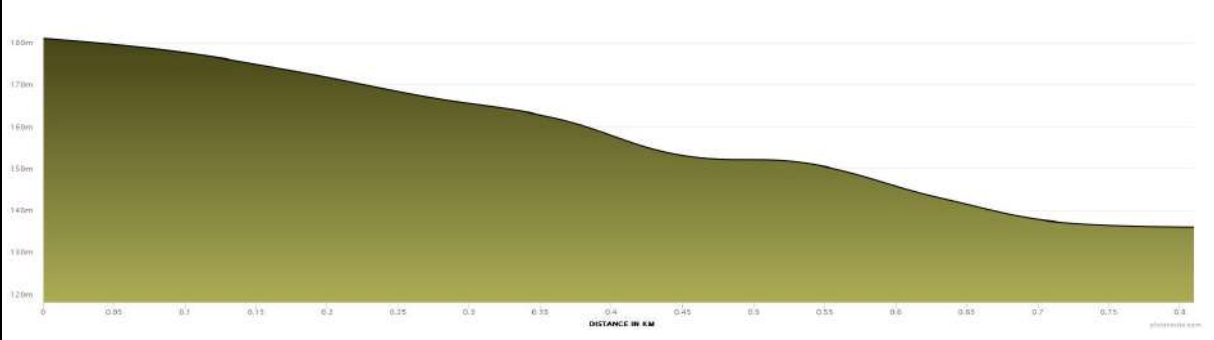
### TRAIL FEATURES:

- Large berms
- Tabletop jumps
- 1 x elevated trail cross-over

### TRAIL MAP:



### ELEVATION PROFILE:





## Barrabup Native Forest MTB Park – Concept Trails

## Trail 10

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Difficult               | Airflow     | 714              | 1 / -50                      |

### TRAIL OVERVIEW:

With a more direct run down the slope, this airflow trail offers the only difficult trail in the network to enable opportunity for continued progression and something for all rider abilities. The trail offers a more technical trail through the trees and larger features in the open areas that can all still be safely rolled by lesser skilled riders.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | Yes              |
| AVERAGE GRADIENT   | -7.0%            |

### TRAIL STYLE DESCRIPTION:

Developed by World Trail, Air Flow Trails combine everything we love about Enduro and Gravity Trails – magnifying pure flow, creating exciting line choices, transfers and safe jumping options. Sculptured jumps, berms, rollers abound, but obstacles are usually rollable, putting the emphasis on rider safety, skill progression and undeniable fun.

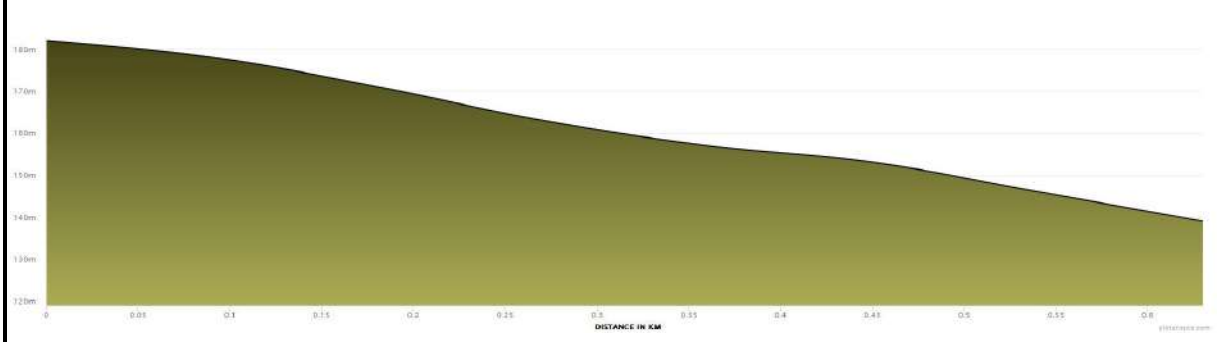
### TRAIL FEATURES:

Large berms  
Tabletops

### TRAIL MAP:



### ELEVATION PROFILE:



## Barrabup Native Forest MTB Park – Concept Trails

## Trail 11

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Intermediate            | Airflow     | 761              | 8 / -58                      |

### TRAIL OVERVIEW:

Dual slalom trail 1. With a series of tight berms and rollers, the slalom trails provide a fast and fun course for friendly competition. Running adjacent to Old Cundinup road, these trails provide spectator interest vehicles, especially those shuttling to the top of the runs.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | Yes              |
| AVERAGE GRADIENT   | -7.5%            |

### TRAIL STYLE DESCRIPTION:

A head-to-head racing trail, Dual Slalom combines speed, precision, and adrenaline. Riders race side-by-side down two nearly identical lanes, designed to test handling and timing. Dual slalom is built for competition, offering a high-energy, crowd-pleasing experience that blends gravity racing with BMX-style finesse.

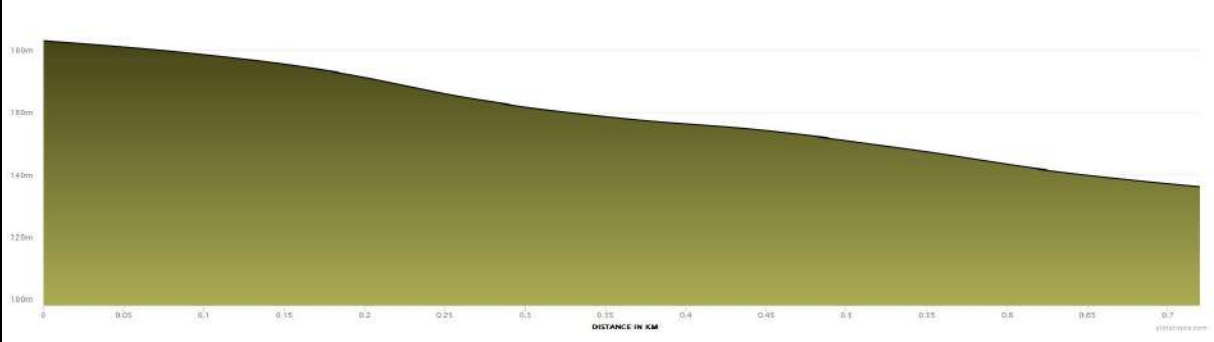
### TRAIL FEATURES:

Tight berms  
Rollers

### TRAIL MAP:



### ELEVATION PROFILE:





## Barrabup Native Forest MTB Park – Concept Trails

## Trail 12

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Intermediate            | Airflow     | 788              | 5 / -56                      |

### TRAIL OVERVIEW:

Dual slalom trail 2. With a series of tight berms and rollers, the slalom trails provide a fast and fun course for friendly competition. Running adjacent to Old Cundinup road, these trails provide spectator interest vehicles, especially those shuttling to the top of the runs.

### TRAIL DETAILS:

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | Yes              |
| AVERAGE GRADIENT   | -7.5%            |

### TRAIL STYLE DESCRIPTION:

A head-to-head racing trail, Dual Slalom combines speed, precision, and adrenaline. Riders race side-by-side down two nearly identical lanes, designed to test handling and timing. Dual slalom is built for competition, offering a high-energy, crowd-pleasing experience that blends gravity racing with BMX-style finesse.

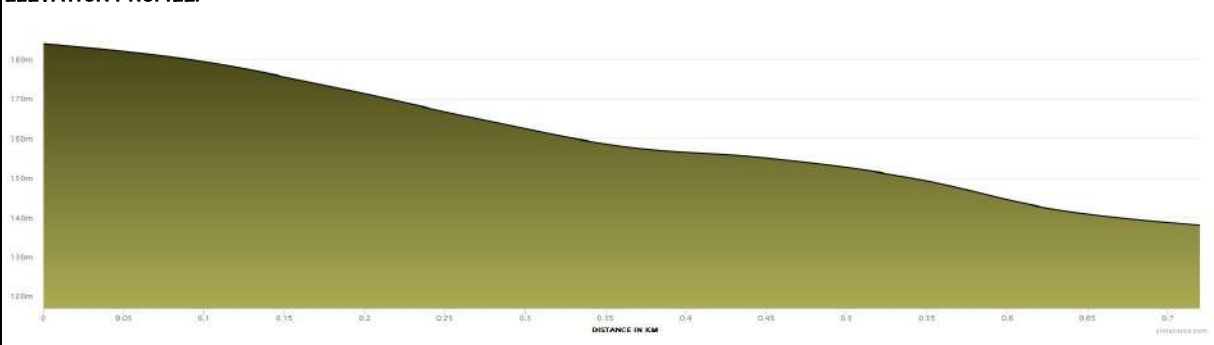
### TRAIL FEATURES:

Tight berms  
Rollers

### TRAIL MAP:



### ELEVATION PROFILE:



**Barrabup Native Forest MTB Park – Concept Trails**

**Trail 13**

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Adventure   | 484              | 16 / -16                     |

**TRAIL OVERVIEW:**

Departing the main car park/visitor node, this trail offers a short cross-country /skills loop and access to the two short skills trails. The climbing portion weaves through the native vegetation to the high point, and then descends through the old stand of pine trees.

**TRAIL DETAILS:**

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Mix              |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 5.8%             |

**TRAIL STYLE DESCRIPTION:**

Traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

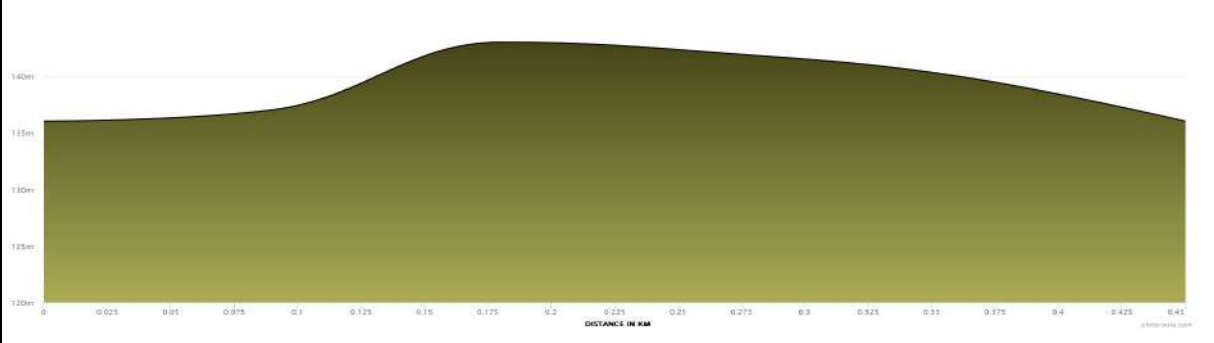
**TRAIL FEATURES:**

Tight bermed corners  
Small rollers

**TRAIL MAP:**



**ELEVATION PROFILE:**





**Barrabup Native Forest MTB Park – Concept Trails**

**Trail 14**

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Skills      | 197              | 4 / -14                      |

**TRAIL OVERVIEW:**

Skill trail 1. Short skills trail with berms, rollers and timber skills features.

**TRAIL DETAILS:**

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | -10.7%           |

**TRAIL STYLE DESCRIPTION:**

Skills trails are short, purpose-built segments designed to support rider progression and confidence. They incorporate features that target fundamental skills in a controlled environment for learning and refining technique. This makes them ideal for warming up, coaching sessions, or testing new bikes.

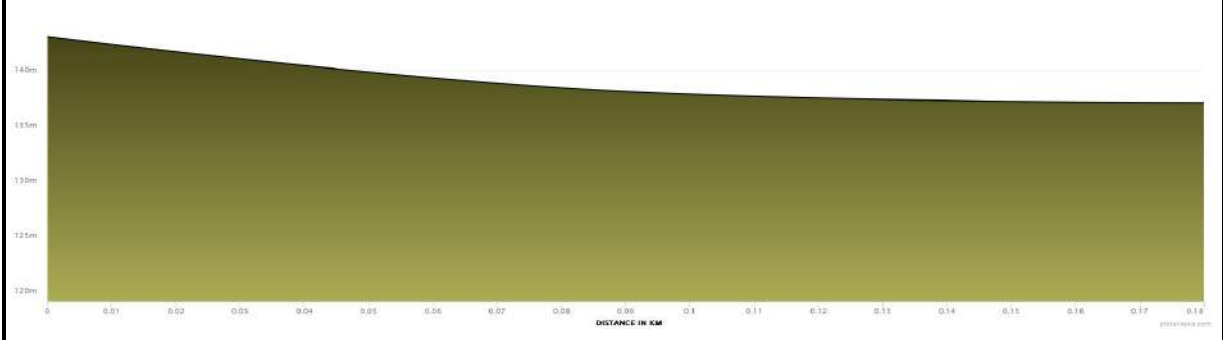
**TRAIL FEATURES:**

- Berms
- Rollers
- Timber balance features

**TRAIL MAP:**



**ELEVATION PROFILE:**



**Barrabup Native Forest MTB Park – Concept Trails**

**Trail 15**

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy Intermediate       | Skills      | 172              | 3 / -13                      |

**TRAIL OVERVIEW:**

Skill trail 2. Short skills trail with berms, rollers and timber skills features.

**TRAIL DETAILS:**

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | -10.7%           |

**TRAIL STYLE DESCRIPTION:**

Skills trails are short, purpose-built segments designed to support rider progression and confidence. They incorporate features that target fundamental skills in a controlled environment for learning and refining technique. This makes them ideal for warming up, coaching sessions, or testing new bikes.

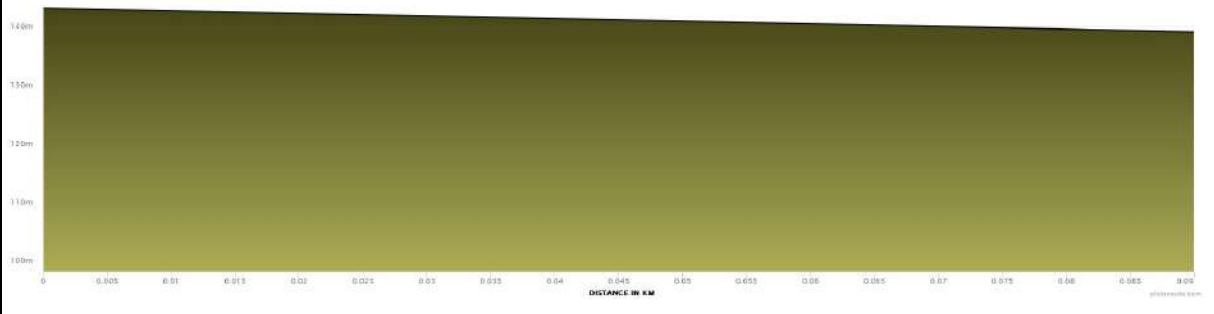
**TRAIL FEATURES:**

- Berms
- Rollers
- Timber balance features

**TRAIL MAP:**



**ELEVATION PROFILE:**





**Barrabup Native Forest MTB Park – Concept Trails**

**Trail 16**

| TRAIL DIFFICULTY RATING | TRAIL STYLE | TRAIL LENGTH (m) | METRES CLIMBED/DESCENDED (m) |
|-------------------------|-------------|------------------|------------------------------|
| Easy                    | Adventure   | 222              | 3 / -10                      |

**TRAIL OVERVIEW:**

Descending trail that offers a short loop off the climbing trail. Provides a future return link to the trailhead for the descending trails of the potential Tank 1/Millward plantation slope.

**TRAIL DETAILS:**

|                    |                  |
|--------------------|------------------|
| USE                | MTB Only         |
| DIRECTION          | Single Direction |
| DESCENT/CLIMB      | Descent          |
| SHUTTLE ACCESSIBLE | N/A              |
| AVERAGE GRADIENT   | 5.0%             |

**TRAIL STYLE DESCRIPTION:**

Traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

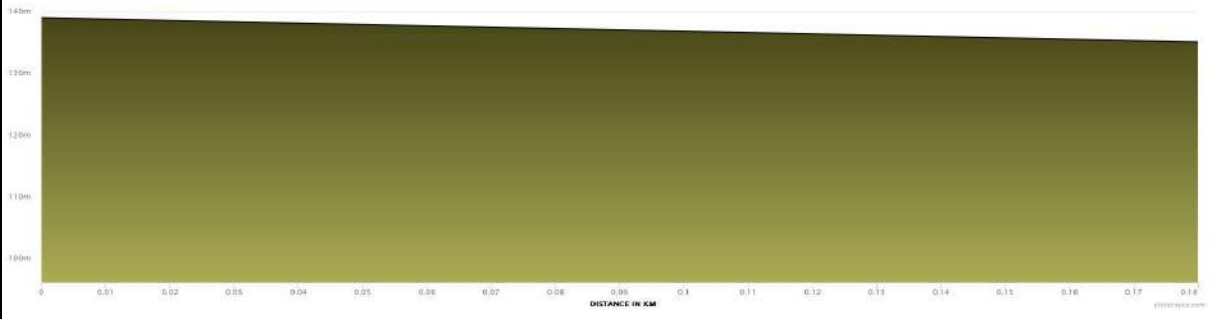
**TRAIL FEATURES:**

Natural obstacles

**TRAIL MAP:**



**ELEVATION PROFILE:**



## THE TRAILHEAD

The design of the trailhead aims to create a welcoming, functional, and culturally meaningful space that enhances the visitor experience and becomes a space where all visitors to the park – not just riders – will enjoy spending time at.

Arriving by bike or vehicle it is important that the trailhead provides an intuitive layout so visitors are able to quickly understand the space and navigate their way to the trails and site information.

The incorporation of natural materials and locally inspired elements will help to create connection with the surrounding landscape, local history, and cultural identity.

### Key Design Elements:

- Gravel car park for up to 20 vehicles with single entry and exit. Overflow parking to be along gravel road along eastern boundary.
- Designated shuttle pick-up area located near the toilet. Suggest shuttle route to

flow in a clockwise direction around site. The shuttle area can also serve as a general purpose area for event marquees, food trucks, etc.

- Visitor toilet – sealed tank design like those used on the Munda Biddi Trail and Bibbulmun Track.
- Picnic areas at the trailhead and lakeside for relaxation and socialising.
- Basic open shelter for shade.
- Use of large logs and rocks to create a centralised space that provides:
  - informal seating
  - a rest/waiting area at end of airflow trails
  - a spectator area looking up at trails
  - informal play opportunities for children
  - a location for trailhead information sign.
- Locally designed archway at the trailhead to establish a strong sense of cultural identity

*Example trailhead sign at Mount Stromlo, ACT*



*Example trailhead archway at Derby, TAS*





# TRAILHEAD DESIGN

## LEGEND

- Gravel Surface (pedestrian)
- Gravel Surface (vehicular)
- Turf (synthetic or WA species)
- Native revegetation
- Toilets
- Shelter
- Picnic Setting
- Bike Rack
- Signage
- Rock bollards/boulders
- A** Shuttle Pick-up loop
- B** Trail Entry Archway
- 1** Trail Number
- Tall native tree
- Small native tree
- Log or Gabion seats







# TRAILHEAD DESIGN



# 4

## CONSTRUCTION

### CONSTRUCTION CONSIDERATIONS

#### Access

The old golf course site has excellent access to and throughout the site that will facilitate easy site establishment and delivery of materials, etc. The minimal environmental constraints on the golf course will allow for use of larger machinery and delivery of materials close to where required. This is especially beneficial for constructing the airflow trails and proposed trail cross-overs, as this construction is more efficiently done with large machinery.

The two access trails are along existing old logging tracks and a cleared easement beneath the powerlines, again enabling simple access by vehicle and construction by small machines.

#### Airflow trail construction

Construction of the airflow trails will require large quantities of imported material for construction of the features and to stabilise the trail pavement where needed. Ideally this

material can be sourced locally to reduce haulage costs.

#### Trail cross-overs

Up to six elevated trail cross-overs are proposed to increase rider engagement and enable a more flexible trail layout that makes better use of the available terrain and gradient. These over/under elevated crossings will need to be at least 2.5m high to achieve the standard minimum vertical clearance for bicycle tunnels and bridges.

There are different construction options for these cross-overs including:

- Section of 2.5m diameter concrete pipe
- Timber and rock retaining walls connected by a small bridge
- Cross-section of a steel container.

The preferred crossing may depend on availability and cost, and the alignments can be modified during detailed design to reduce the number of cross-overs to reduce cost if necessary.



*Elevated trail cross-over, Stromlo Forest Park, ACT*



*Airflow trail, Finch Hatton QLD*



### **Ecological values management**

Vegetation removal for the proposed trail network will be minor as nearly all the proposed trails are either along existing logging tracks or on the cleared fairways of the old golf course. The only trails that will require clearing for new trail construction are the two lakeside circuit trails, Trails 3 & 4, and a small portion (233m) of Trail 2 that is along an informal motorbike track.

Most of the Barrabup block has been assessed as being infested by *Phytophthora cinnamomi* (PC) except for a 440 metre section south of Milward Road along the old logging track of Track 1. Further advice is required as to how this section of trail should be managed, with the option of installing a bike tyre wash station at either end of this section.

At the end of Trail 1 where the trail passes through the area of threatened flora, it is advised that any informal tracks leading off the old logging track trail alignment be blocked using logs and sections of the tree trunks that will need to be cleared along the trail. Information signs should also be considered to inform trail users and visitors of this high value habitat.

### **Staging**

Due to the relatively small and concentrated offering of trails it is recommended that they all be delivered in a single stage. As well as the construction efficiencies, this will ensure that the trail network provides riders with a satisfying experience and helps to grow Nannup's reputation as a preferred ride destination.





## CONSTRUCTION COST ESTIMATE

This section presents a cost estimation for the construction of the trail network based on its conceptual design. It should be noted that all costs provided are indicative only and are based on recent similar projects or a general allocation; no formal quotes have been obtained.

It does not fully represent the full scope of services that may be required for construction and operational readiness. Importantly, it should be acknowledged that:

1. The quantities and cost estimates may not represent the entire construction scope.
2. The following items are excluded from the cost estimate:
  - a. Detailed design (5–10% of total construction budget is a generally accepted estimation for cost of detailed design)
  - b. Engineering solutions, certification, or advice
  - c. Community and stakeholder consultation
  - d. Approvals and permits
  - e. Land survey and soil assessment
  - f. Ecological and cultural heritage assessments
  - g. Establishment period and maintenance

The cost estimation tables are separated into logical construction groupings:

1. The trails
2. Signage and wayfinding
3. The primary trailhead/visitor node

A fourth table applies a series of percentage-based cost line items for contract delivery, management, and contingency expenses to provide the total delivery cost for the project.

### Schedule of Rates for trail construction

The following rates have been applied to calculate an estimated cost for construction. All rates may vary, especially the rate for clean compactable fill depends on availability of a suitable material.

| Item Type                  | Item Sub-Type  | Rate (\$/m) |
|----------------------------|--|-------------|
| Adventure trail – existing | Minor works – clearing and minor surface works   | \$25/m      |
| Adventure trail – existing | Moderate works – clearing and surface reshaping  | \$55/m      |
| Adventure trail - new      | Machine construction   | \$65/m      |
| Flow trail                 | Machine construction with imported material  | \$80/m      |
| Airflow trail              | Machine construction with imported material  | \$100/m     |
| Slalom trail               | Machine construction with imported material  | \$80/m      |
| Bridges                    | Short Bridge (<8m) – no handrail   | \$3,800/m   |
| Culvert crossing           | Short concrete culvert (approx..1m)  | \$2,000     |
| Trail crossover structure  | Concrete pipe or culvert (2.5 x 2.5m)  | \$8,000     |
|                            | Timber or rock retaining with short bridge   | \$12,000    |
| Imported clean fill        | Clean compactible fill for construction of airflow trail features and trail surface stabilisation. | \$30/tonne  |



## Trail construction costs

The trail cost estimate has considered the local conditions observed during ground-truthing for each trail and the construction requirements for the prescribed trail style, such as features and the requirement for imported material.

| Trail no. | Section | Existing condition       | Intended trail style | Works required      | Construction method, materials, and features  | Trail construction |                   |                 | Other construction treatments |      |                           | Total Cost (\$) |
|-----------|---------|--------------------------|----------------------|---------------------|---|--------------------|-------------------|-----------------|-------------------------------|------|---------------------------|-----------------|
|           |         |                          |                      |                     |   | Trail Length (m)   | Trail Rate/m (\$) | Trail cost (\$) | Treatment                     | Qty. | Cost trail treatment (\$) |                 |
| 1         | A       | Gravel road              | Adventure            | No works required   | Road safety and directional signs along Old Cundinup Road.  | 299                | 0                 | -               | Road crossing sign            | 2    | 2,000                     | 2,000           |
|           | B       | Old logging track        | Adventure            | Minor works         | Existing track is in good condition. Minimal works only to clear fallen trees and manage any drainage issues. The final 250m section of this trail moves through significant Caladenia (native orchid) habitat, so signage and management of any informal trails through this section will be required. | 3,188              | 25                | 79,707          | Road crossing sign            | 2    | 2,000                     | 81,707          |
|           |         |                          |                      |                     | <b>Subtotal Trail 1</b>   | <b>3,487</b>       |                   | <b>79,707</b>   |                               |      | <b>4,000</b>              | <b>83,707</b>   |
| 2         | A       | Gravel road              | Adventure            | No works required   | Signage only.   | 49                 | 0                 | -               | -                             | -    | -                         | -               |
|           | B       | Old logging track        | Adventure            | Minor works         | Track clearing and minor surface improvement works.   | 53                 | 25                | 1,322           | Road crossing sign            | 2    | 2,000                     | 3,332           |
|           | C       | Informal motorbike track | Adventure            | Moderate works      | 1.2m machine-built trail, natural surface.  | 233                | 55                | 12,817          | -                             | -    | -                         | 12,817          |
|           | D       | Old logging track        | Adventure            | Minor works         | Track clearing and minor surface improvement works.   | 695                | 25                | 17,371          | Road crossing sign            | 2    | 2,000                     | 19,371          |
|           | E       | Gravel road              | Adventure            | No works required   | Signage only  | 944                | 0                 | -               | Road crossing sign            | 2    | 2,000                     | 2,000           |
|           | F       | No trail                 | Adventure            | New adventure trail | 1.2m machine-built trail, natural surface. Inclusion of small berms and rollers/quark knuckles.   | 795                | 65                | 51,662          | Road crossing sign            | 4    | 4,000                     | 55,662          |





| Trail no. | Section | Existing condition | Intended trail style | Works required      | Construction method, materials, and features  | Trail construction |                   |                 | Other construction treatments |      |                           | Total Cost (\$) |
|-----------|---------|--------------------|----------------------|---------------------|---|--------------------|-------------------|-----------------|-------------------------------|------|---------------------------|-----------------|
|           |         |                    |                      |                     |   | Trail Length (m)   | Trail Rate/m (\$) | Trail cost (\$) | Treatment                     | Qty. | Cost trail treatment (\$) |                 |
|           |         |                    |                      |                     | <b>Subtotal Trail 2</b>   | <b>2,769</b>       |                   |                 |                               |      | <b>10,000</b>             | <b>93,183</b>   |
| 3         |         | No trail           | Adventure            | New adventure trail | 1.2m machine-built bench trail, natural surface.  | 444                | 65                | 28,888          | -                             | -    | -                         | <b>28,888</b>   |
| 4         |         | No trail           | Adventure            | New adventure trail | 1.2m machine-built bench trail, natural surface.  | 565                | 65                | 36,703          | Low level bridge (5m)         | 1    | 19,000                    | <b>55,703</b>   |
| 5         |         | No trail           | Adventure            | New adventure trail | 1.2m machine-built bench trail, natural surface.  | 1,681              | 65                | 109,240         | Low level bridge (5m)         | 1    | 19,000                    | <b>128,240</b>  |
| 6         |         | Gravel road        | Other                | No works required   | Signage only.   | 541                | -                 | -               | -                             | -    | -                         | -               |
| 7         |         | No trail           | Flow                 | New flow trail      | Variable width 1.2–2.5m machine-built trail with natural surface and imported material. Features include berms rollers/tabletops and three elevated crossovers. | 1,028              | 80                | 82,243          | Culverts (1m)                 | 2    | 4000                      | <b>86,243</b>   |
|           |         |                    |                      |                     |   |                    |                   |                 | Elevated trail crossover      | 3    | 24000                     | <b>24,000</b>   |
| 8         |         | No trail           | Airflow              | New airflow trail   | Variable width 1.5m–4m wide machine-built trail with imported material. Features include large berms, tabletops and one elevated crossover.                     | 840                | 100               | 75,638          | Elevated trail crossover      | 1    | 8000                      | <b>92,043</b>   |
| 9         |         | No trail           | Airflow              | New airflow trail   | Variable width 1.5m–4m wide machine-built trail with imported material. Features include large berms, tabletops and one elevated crossover.                     | 817                | 100               | 73,545          | Elevated trail crossover      | 1    | 8000                      | <b>89,717</b>   |
| 10        |         | No trail           | Airflow              | New airflow trail   | Variable width 1.5m–4m wide machine-built trail with imported material. Features include large berms, tabletops.  | 714                | 100               | 64,217          | -                             | -    | -                         | <b>71,352</b>   |
| 11        |         | No trail           | Dual slalom          | New slalom trail    | Variable width 1.5m–2.5m wide machine-built trail with some imported material. Features include tight berms and rollers.  | 761                | 80                | 60,915          | -                             | -    | -                         | <b>60,915</b>   |



| Trail no. | Section | Existing condition | Intended trail style | Works required      | Construction method, materials, and features  | Trail construction |                   |                 | Other construction treatments |       |                           | Total Cost (\$)  |
|-----------|---------|--------------------|----------------------|---------------------|---|--------------------|-------------------|-----------------|-------------------------------|-------|---------------------------|------------------|
|           |         |                    |                      |                     |   | Trail Length (m)   | Trail Rate/m (\$) | Trail cost (\$) | Treatment                     | Qty.  | Cost trail treatment (\$) |                  |
| 12        |         | No trail           | Dual slalom          | New slalom trail    | Variable width 1.5m–2.5m wide machine-built trail with imported material. Features include tight berms and rollers.   | 788                | 80                | 63,055          | -                             | -     | -                         | <b>63,055</b>    |
| 13        |         | No trail           | Skills               | New adventure trail | 1.2m machine-built bench trail, natural surface. Some tight bermed corners and small rollers.                         | 484                | 65                | 31,459          | Low level bridge (4m)         | 1     | 15,200                    | <b>46,659</b>    |
| 14        |         | No trail           | Skills               | New skills trail    | 1.2m machine-built bench trail, natural surface. Timber features include drops, benches and skinnies.                 | 197                | 65                | 12,794          | Timber skills feature         | 3     | 12,000                    | <b>24,794</b>    |
| 15        |         | No trail           | Skills               | New skills trail    | 1.2m machine-built bench trail, natural surface. Timber features include drops, benches and skinnies.                 | 172                | 65                | 11,149          | Timber skills feature         | 3     | 12,000                    | <b>23,149</b>    |
| 16        |         | No trail           | Adventure            | New adventure trail | 1.2m machine-built bench trail, natural surface.  | 222                | 65                | 14,400          | -                             | -     | -                         | <b>14,400</b>    |
|           |         |                    |                      |                     | <b>Subtotal</b>   |                    |                   | <b>827,135</b>  |                               |       | <b>135,200</b>            | <b>986,046</b>   |
|           |         |                    |                      |                     | Allowance for imported materials for trail surfacing and features on the <b>flow</b> and <b>airflow</b> trails only*. | -                  |                   |                 | Imported fill                 | 2,259 | <i>\$30/tonne</i>         | <b>67,770</b>    |
|           |         |                    |                      |                     | <b>Total trail construction</b>   |                    |                   |                 |                               |       |                           | <b>1,053,816</b> |

\*Quantity of imported material for the flow and airflow trails has been calculated applying the following:

- Trail surfacing volume based on a trail width of 1.5m and fill depth of 100mm.
- Assumes a feature every 50m.
- Feature volumes: 4m<sup>3</sup> easy, 8m<sup>3</sup> intermediate, 10m<sup>3</sup> difficult.





## Signage costs

| Item                     | Description   | Quantity | Rate  | Cost          |
|--------------------------|---|----------|-------|---------------|
| Primary trailhead sign   | Primary trailhead sign at golf course trailhead/visitor node  | 1        | 5,000 | 5,000         |
| Secondary trailhead sign | Secondary trailhead signs located at:<br>1. shuttle drop-off (top of golf course)<br>2. intersection with Munda Biddi<br>3. top of easy skills trails | 3        | 2,000 | 6,000         |
| Wayfinding signs         | Allowance for directional signs at all intersections of adventure trails.   | 25       | 1,000 | 25,000        |
|                          | <b>Total signage costs</b>  |          |       | <b>36,000</b> |

## Trailhead costs

| Item                            | Description  | Quantity | Rate   | Cost           |
|---------------------------------|--|----------|--------|----------------|
| Carparking                      | Construction of gravel carpark with 90-degree parking bays to accommodate approximately 20 vehicles. | 1        | 50,000 | 50,000         |
| Shelter                         | Supply and install of basic open shelter   | 1        | 16,000 | 16,000         |
| Picnic settings                 | Supply and install of picnic setting   | 3        | 6,000  | 18,000         |
| Trail archway                   | Provisional amount for feature archway with local branding at entry to trails at Golf Course         | 1        | 10,000 | 10,000         |
| Toilet                          | Single cubicle composting or equivalent.   | 1        | 50,000 | 50,000         |
| Seating logs and large boulders | Provisional amount   | -        | -      | 15,000         |
|                                 | <b>Total trailhead construction costs</b>  |          |        | <b>149,000</b> |



## Contract Management, Delivery and Contingency Costs

The costs for contract management, deliver and contingency are calculated as a percentage of the construction cost.

Notes:

- Contractor expenses allows mobilisation/demobilisation (transport of site office, machinery, temporary fencing etc.), project management documentation (construction management plans and quality plans etc.), and construction team accommodation and incidentals.
- Contract management is an allowance for project management services to deliver the construction contract.
- Contingency is an allowance to cover for unknown construction costs including construction increases influenced by changes to the concept plan during the detailed design phase.

| Construction item | Cost (\$)        | Contractor expenses (10%) | Contract management (7%) | Contingency (15%) | Subtotal       | Total cost (\$)  |
|-------------------|------------------|---------------------------|--------------------------|-------------------|----------------|------------------|
| <b>Trails</b>     | 1,053,816        | 105,382                   | 73,767                   | 158,072           | 337,221        | <b>1,391,037</b> |
| <b>Trailhead</b>  | 149,000          | 14,900                    | 10,430                   | 22,350            | 47,680         | <b>196,680</b>   |
| <b>Signs</b>      | 36,000           | 3,600                     | 2,520                    | 5,400             | 11,520         | <b>47,520</b>    |
|                   | <b>1,291,685</b> | <b>121,510</b>            | <b>85,057</b>            | <b>182,266</b>    | <b>388,834</b> | <b>1,635,237</b> |





## COMMERCIAL BUSINESS OPPORTUNITIES

Development of the Barrabup mountain bike trail network will enhance Nannup's appeal and reputation as a preferred trail and ride destination, generating an increase in local tourism that will deliver economic benefits to the local community.

As visitation increases, there will be greater demand for essential visitor services such as food and beverage and accommodation. This demand will support existing businesses while also stimulating opportunities for new and niche ventures.

The trail network itself provides opportunities for specialised enterprises such as bike rental, guided mountain bike tours, skills workshops, shuttle services and mountain bike events.

The more specific business opportunities that will be supported by the bike park are expanded on below.

### **Food and Beverage**

Pop up food vans at the trailhead have proven successful during peak times and events at other mountain bike destinations. These pop-up services not only support and promote local businesses but can greatly enhance the visitor experience leading to repeat visitation and positive referrals.

### **Accommodation**

The lakeside environment near the trailhead lends itself to camping and possible pop-up accommodation such as glamping containers that can be simply set-up on site for any length of time.

### **Shuttle Operators**

While only 800m from the main trailhead to the top of the descending flow trails, there is still opportunity for a cycling company to provide a transport from town to the trailhead and a continuous shuttle service from the trailhead to the top of the runs.

### **Mountain Bike Tours and Skills Workshops**

The trails network allows for a range of customised guided tours departing from town. Possible tours include introductory cross-country tours along the Munda Bididi Trail and around the access trails (cross country loop). This could also be tailored as a nature tour of the Barrabup Forest, especially during orchid season.

From the trailhead, the selection of trails from easy to difficult and range of skills features within the compact setting are perfect for skills development workshops and courses, especially for beginner and intermediate riders.

### **Events**

While the trailhead area has sufficient space for accommodating an event village, the concentrated nature of the trails on the old golf course and focus on easy and intermediate difficulty trails may not suit larger regional and national events. There is however potential for smaller MTB events as well as trail running events around the cross-country loop of the two access trails.

The potential future trail development within the Millward block from Tank 1 will greatly increase the length and range of trails, which will enhance the site's potential for hosting events.

### **Bike Rental and Repair Shops**

The increased bike tourism will improve the viability for a Nannup based bike rental and maintenance business to provide convenient and essential services and equipment.

### **Retail Shops**

As bike tourism increases in town, there will be greater demand and opportunity for retail outlets in town to offer specific products for cyclists such as bars and gels, apparel, accessories, and trail network-branded merchandise.



*Food van at Mystic Bike Park, Bright Victoria*





# APPENDICES





# PYTOPHTHORA CINNAMOMI ASSESSMENT



|   |  |  |  |
|---|--|--|--|
| <b>Legend</b><br><ul style="list-style-type: none"> <li>Barrabup Assessment Area</li> <li>Drainage Lines and Streams</li> <li>Local Road</li> <li>Miscellaneous Road</li> <li>State Road</li> </ul> |  | <b>Sample Location and Result</b><br><ul style="list-style-type: none"> <li>▲ <i>P. cinnamomi</i></li> <li>▲ Negative</li> </ul> | <b>Indicative Phytophthora Dieback Occurrence of Shire of Nannup's proposed Mountain Bika Park Barrabup State Forest</b><br><br><br>Datum: GDA 1994<br>Projection: MGA Zone 50<br>Scale: 1:15,000 at A3<br>Date: 07/11/2024<br>Interpreter: JG<br>Project #: T24015<br>Expiry: 07/11/2025<br>Prepared: NL, JB<br>Review: JG<br>Revision: |
| <b>Occurrence Categories</b><br><ul style="list-style-type: none"> <li>Infested</li> <li>Uninfested</li> <li>Temporarily Uninterpretable</li> <li>Excluded</li> </ul>                               |  | <br>Project Location   |  |





# TRAIL DIFFICULTY RATING SYSTEM

## Trail Difficulty Rating Systems

Updated October 2010



## Trail Difficulty Rating Systems

### General Difficulty Rating Requirements

As highlighted in the Sustainability Chapter, mountain bike riders seek a range of experiences, difficulty levels and challenges to satisfy their own specific riding expectations.

To cater for this variety of expectations, trail features and trail difficulty can be increased or decreased to meet the desired rider experience. As a result, not all trails will be suited to the experience and skills of all riders.

A trail difficulty rating system allows trails to be graded according to their relative technical difficulty.

Trail are classified based on the physical attributes presented and the technical challenge of the trail, not the ascent and fitness that may be required by the user.

The classification of a trail must reflect the most difficult section of the trail for visitor risk management purposes. It is important to provide information to:

- Help riders make informed decisions
- Encourage riders to use trails that match their skill level
- Manage risk and minimise injuries
- Aid in the planning and design of trails.

Trail classification allow trail designers, builders and land managers to develop trails appropriate for the anticipated users, based on objective criteria.

Strategies that can be used to minimise and transfer risk regarding mountain bike trails include:

- Communicating the risk through classifications and signage; this reduces the probability of a rider attempting a trail above their ability.
- Installing a trail filter at the beginning of a trail to let the rider know what type of features to expect and give the option to turn back if they decide the trail will be too difficult for them.
- Construct a skills path near the trail head that incorporates features similar to those encountered in the trail network but located in a controlled environment (high reward and low risk for the rider).
- Providing similar features within a trail network from green to black to give riders the opportunity to practice to aid with skill progression.

The International Trail Marking System is used universally on all fields, and has been adopted by the International Mountain Bicycling Association (IMBA) for classifying the difficulty of mountain bike trails.

These guidelines have adopted the IMBA system with the following additions and interpretations:

- The addition of two new trail difficulty classifications - one new classification between green and blue and one new distinction between blue and black
- Making the following difficulty assessment criteria 'grading criteria only':
  - > Trail width
  - > Trail surface
  - > Trail gradient
  - > Quality of signs
- Making the following difficulty assessment criteria 'risk assessable criteria':
  - > Trail exposure
  - > Natural and technical trail features.

### Optional Lines or Alternate Trail Features

Trails sometimes have optional lines or alternate trail features along the length of the trail that exceed the difficulty rating for the rest of the trail.

For example a blue rated trail may have a number of rock drops or jump features that exceed the blue rating for the trail, however there are clear lines to bypass the difficult features and riders need to make a deliberate decision to ride the difficult features.

In these instances, the trail can maintain the lower difficulty classification, provided clear lines are available to bypass the difficult features and appropriate warning signage is installed to highlight the more difficult line.

### Symbols and Descriptions

The Trail Difficulty Rating System (TDRS) outlined below provides seven levels of difficulty for mountain bike trails. The TDRS enables visitors to understand the nature of the trail before beginning their ride and allows them to plan their ride for enjoyment, appropriate level of challenge and safety.

Trail ratings can be communicated in several ways. Pre-visit information may include a more detailed description of the ratings, while a shorter description is required for trailhead signage and maps. Rating colours should be used on all on-trail directional signage.

Mountain bike TDRS short trail descriptors should be used at trail signage, on brochures and maps or similar applications.

The use of the bike in the centre of each symbol is optional and will likely depend if the trail network consists of multi-use & shared use trails or single use.

Table 10 Mountain Bike TDRS short descriptions


| Difficulty Symbol | Short Description  |
|-------------------|--|
|                   | <b>Very easy</b><br>Wide trail with a gentle gradient smooth surface and no obstacles<br>Suitable for beginner cyclists with basic bike skills, and most bikes   |
|                   | <b>Easy</b><br>Wide trail with a gentle gradient smooth surface<br>Some obstacles such as roots, logs and rocks<br>Suitable for beginner cyclists with basic mountain bike skills, and off road bikes  |
|                   | <b>Easy with Intermediate Sections</b><br>Likely to be single track with a moderate gradient, variable surface and some obstacles<br>Some obstacles such as roots, logs and rocks<br>Suitable for mountain bikers with mountain bikes  |
|                   | <b>Intermediate</b><br>Single track with moderate gradients, variable surface and obstacles<br>May include steep sections<br>Suitable for skilled mountain bikers with mountain bikes  |
|                   | <b>Intermediate with Difficult Sections</b><br>Suitable for competent mountain bikers, used to physically demanding routes<br>Expect large and unmovable obstacles and features<br>Challenging and variable with some steep climbs or descents and loose surfaces  |
|                   | <b>Difficult</b><br>Suitable for experienced mountain bikers, used to physically demanding routes<br>Navigation and personal survival skills are highly desirable<br>Expect large, dangerous and unmovable obstacles and features<br>Challenging and variable with long steep climbs or descents and loose surfaces<br>Some sections will be easier to walk  |
|                   | <b>Extreme</b><br>Suitable for highly experienced mountain bikers, used to physically demanding routes<br>Navigation and personal survival skills are highly desirable<br>Severe constructed to also and/or natural features, all sections are challenging<br>Includes extreme levels of exposure and/or risk<br>Expect large and unmovable obstacles and features<br>Some sections will be easier to walk |




## Trail Classification Matrix

The Trail Classification Matrix incorporates the Trail Difficulty Rating System and provides detailed information to use when planning, designing, constructing and maintaining mountain bike trails to ensure a consistent classification standard is applied.


### Very easy mountain bike trail / Fire trail

|                          |  | <b>Technical Description</b><br><i>(for land Manager use)</i>   | <b>Trail Description</b><br><i>(for public information)</i>  | <b>Generic Description</b><br><i>(for public information)</i>         | <b>Short Classification Key</b>                          |
|--------------------------|---|---|--|---|--|
|                          |   | Grade of trail<br>Very easy   |  |   |  |
|                          |   | Description<br>Likely to be a fire road, rail trail or wide single track with a gentle gradient, smooth surface and free of obstacles | Likely to be a fire road, rail trail or wide single track with a gentle gradient, smooth surface and free of obstacles | Wide trail with a gentle gradient smooth surface and no obstacles     | Wide trail, gentle gradient smooth surface, no obstacles |
| Guiding Criteria         |   | Trail Width<br>2100 mm plus or minus 900 mm   | Two riders can ride side by side   | Suitable for beginner cyclists with basic bike skills, and most bikes | For beginner cyclists with basic bike skills             |
|                          |   | Trail Surface<br>Hardened or smooth   | Hardened with no challenging features on the trail   |   |  |
|                          |   | Trail Gradient<br>Climbs and descents are mostly shallow<br>Ave. trail grade - 7% or less<br>Max. trail grade - 15%                   | Climbs and descents are mostly shallow   |   |  |
| Risk Assessable Criteria |   | Quality of Markings<br>Trailhead signs and route markers at intersections   | Clearly signposted   |   |  |
|                          |   | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes downward slopes of up to 30%                        | Minimal exposure on either side of the trail corridor  |   |  |
|                          |   | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable bridges 2100mm or wider  | No obstacles   |   |  |
|                          |   | Experience Required<br>Suitable for beginner / novice cyclists with basic bike riding skills<br>Suitable for most bikes               | Suitable for beginner / novice cyclists with basic bike riding skills<br>Suitable for most bikes                       |   |  |


### Easy mountain bike trail

|                          |  | <b>Technical Description</b><br><i>(for land Manager use)</i>   | <b>Trail Description</b><br><i>(for public information)</i>  | <b>Generic Description</b><br><i>(for public information)</i>                                    | <b>Short Classification Key</b>   |
|--------------------------|---|---|--|--|---|
|                          |   | Grade of trail<br>Easy  |  |  |   |
|                          |   | Description<br>Likely to be a combination of fire road or wide single track with a gentle gradient, smooth surface and relatively free of obstacles<br>Short sections may exceed these criteria   | Likely to be a combination of fire road or wide single track with a gentle gradient, smooth surface and relatively free of obstacles<br>Short sections may exceed these criteria | Wide trail with a gentle gradient smooth surface<br>Some obstacles such as roots, logs and rocks | Wide trail, gentle gradient, some obstacles<br>For beginner mountain bikers with basic mountain bike skills |
| Guiding Criteria         |   | Trail Width<br>900 mm plus or minus 300 mm  | Handlebar width or greater   | Suitable for beginner cyclists with basic mountain bike skills, and off-road bikes               |   |
|                          |   | Trail Surface<br>Mostly firm and stable   | Mostly firm and stable   |  |   |
|                          |   | Trail Gradient<br>Climbs and descents are mostly shallow, but trail may include some moderately steep sections<br>Ave. trail grade - 7% or less<br>Max. trail grade - 15%   | Climbs and descents are mostly shallow, but trail may include some moderately steep sections   |  |   |
| Risk Assessable Criteria |   | Quality of Markings<br>Trailhead signs and route markers at intersections   | Clearly signposted   |  |   |
|                          |   | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes downward slopes of up to 30%  | Minimal exposure on either side of the trail corridor  |  |   |
|                          |   | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable obstacles to 1000mm high, such as logs, roots and rocks<br>Avoidable, rollable obstacles or jumps may be present<br>Unavoidable bridges 900mm or wider<br>Short sections may exceed these criteria | Trail may have obstacles such as logs, roots, rocks and jumps  |  |   |
|                          |   | Experience Required<br>Suitable for beginner / novice mountain bikers with basic mountain bike skills<br>Suitable for off-road bikes  | Suitable mountain bikers with basic mountain bike skills<br>Suitable for most bikes  |  |   |

### Easy / Intermediate mountain bike trail

|                          |  | <b>Technical Description</b><br><i>(for land Manager use)</i>   | <b>Trail Description</b><br><i>(for public information)</i>   | <b>Generic Description</b><br><i>(for public information)</i>                           | <b>Short Classification Key</b>                              |
|--------------------------|---|---|---|---|--|
|                          |   | Grade of trail<br>Easy with Intermediate Sections   |   |   |  |
|                          |   | Description<br>Likely to be single track with a moderate gradient, variable surface and some obstacles<br>Short sections may exceed these criteria  | Likely to be single track with a moderate gradient, variable surface and some obstacles<br>Short sections may exceed these criteria | Likely to be single track with a moderate gradient, variable surface and some obstacles | Single track, moderate gradient and some obstacles           |
| Guiding Criteria         |   | Trail Width<br>725 mm plus or minus 200 mm  | Handlebar width   | Suitable for mountain bikers with mountain bikes  | For beginner mountain bikers with basic mountain bike skills |
|                          |   | Trail Surface<br>Mostly firm and stable   | Mostly firm and stable  |   |  |
|                          |   | Trail Gradient<br>Climbs and descents are mostly shallow, but trail may include some moderately steep sections<br>Ave. trail grade - 7% or less<br>Max. trail grade - 20%   | Climbs and descents are mostly shallow, but trail may include some moderately steep sections  |   |  |
| Risk Assessable Criteria |   | Quality of Markings<br>Trailhead signs and route markers at intersections   | Clearly signposted  |   |  |
|                          |   | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes downward slopes of up to 30%  | Minimal exposure on either side of the trail corridor   |   |  |
|                          |   | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable obstacles to 200mm high, such as logs, roots and rocks<br>Avoidable, rollable obstacles and jumps may be present<br>Unavoidable bridges 900mm or wider<br>Short sections may exceed these criteria | Trail may have obstacles such as logs, roots, rocks and jumps   |   |  |
|                          |   | Experience Required<br>Suitable for beginner / novice mountain bikers with basic mountain bike skills<br>Suitable for off-road bikes  | Suitable mountain bikers with basic mountain bike skills<br>Suitable for most bikes   |   |  |

### Intermediate mountain bike trail

|                          |  | <b>Technical Description</b><br><i>(for land Manager use)</i>  | <b>Trail Description</b><br><i>(for public information)</i>   | <b>Generic Description</b><br><i>(for public information)</i>        | <b>Short Classification Key</b>                                     |
|--------------------------|---|--|---|--|---|
|                          |   | Grade of trail<br>Intermediate   |   |  |   |
|                          |   | Description<br>Single trail with moderate gradients, variable surface and obstacles<br>Dual use or preferred use   | Single trail with moderate gradients, variable surface and obstacles                                | Single trail with moderate gradients, variable surface and obstacles | Single trail, moderate gradients, obstacles and some steep sections |
| Guiding Criteria         |   | Trail Width<br>600 mm plus or minus 300 mm   | Handlebar width or greater  | May include steep sections   | For skilled mountain bikers   |
|                          |   | Trail Surface<br>Possible sections of rocky or loose tread   | Possible sections of rocky or loose tread   |  |   |
|                          |   | Trail Gradient<br>Mostly moderate gradients but may include steep sections<br>Ave. trail grade - 10% or less<br>Max. trail grade - 20%<br>Short sections may exceed these criteria   | Mostly moderate gradients but may include steep sections  |  |   |
| Risk Assessable Criteria |   | Quality of Markings<br>Trailhead signs and route markers at intersections  | Signposted  |  |   |
|                          |   | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes downward slopes of up to 50%   | Sections of trail will include moderate exposure on either side of the trail corridor               |  |   |
|                          |   | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable obstacles to 350 mm high, such as logs, roots and rocks<br>Avoidable, obstacles to 600 mm may be present, width of deck is greater than half the height of the obstacle<br>Tabletop jumps to 1500mm high, rollable double jumps and avoidable gap jumps<br>Unavoidable bridges 600mm or wider<br>Short sections may exceed these criteria | Trail will have obstacles such as logs, roots, rocks and jumps                                      |  |   |
|                          |   | Experience Required<br>Suitable for skilled mountain bikers with basic mountain bike skills<br>Suitable for mountain bikes   | Suitable for skilled mountain bikers with basic mountain bike skills<br>Suitable for mountain bikes |  |   |





Intermediate / Difficult mountain bike trail

|                          | <b>Technical Description</b><br><i>(for land manager use)</i>   | <b>Trail Description</b><br><i>(for public information)</i>  | <b>Generic Description</b><br><i>(for public information)</i>                  | <b>Short Classification Key</b>  |
|--------------------------|---|--|--|--|
|                          | Grade of trail<br>Intermediate with Difficult Sections  |  |  |  |
|                          | Description<br>Likely to be a challenging single trail with moderate gradients, variable surface and obstacles<br>Dual use or preferred use   | Likely to be a challenging single trail with moderate gradients, variable surface and obstacles      | Suitable for competent mountain bikers, used to physically demanding routes    | For competent mountain bikers<br>Large, unavoidable obstacles and features |
| Guiding Criteria         | Trail Width<br>600 mm plus or minus 300 mm  | Handlebar width or greater   |  |  |
|                          | Trail Surface<br>Possible sections of rocky or loose tread  | Possible sections of rocky or loose tread  | Expect large and unavoidable obstacles and features                            | Some steep climbs or descents and loose surfaces                           |
| Risk Assessable Criteria | Trail Gradient<br>Mostly moderate gradients but may include steep sections<br>Ave. trail grade - 20% or less<br>Max. trail grade - 30%<br>Short sections may exceed these criteria  | Mostly moderate gradients but may include steep sections   | Challenging and variable with some steep climbs or descents and loose surfaces |  |
|                          | Quality of Markings<br>Trailhead signs and route markers at intersections   | Situated   |  |  |
|                          | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes downward slopes of up to 90%  | Sections of trail will include moderate exposure on either side of the trail corridor                |  |  |
|                          | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable obstacles to 400 mm high, such as logs, roots and rocks<br>Avoidable, obstacles to 1000 mm may be present, width of deck is greater than half the height of the obstacle<br>Tabletop jumps to 2000mm high, rollable double jumps and avoidable gap jumps<br>Unavoidable bridges 600mm or wider<br>Short sections may exceed these criteria | Trail will have obstacles such as logs, roots, rocks and jumps                                       |  |  |
| Experience Required      | Suitable for competent mountain bikers with good mountain bike skills<br>Suitable for mountain bikes  | Suitable for competent mountain bikers with good mountain bike skills<br>Suitable for mountain bikes |  |  |

Difficult mountain bike trail

|                          | <b>Technical Description</b><br><i>(for land manager use)</i>  | <b>Trail Description</b><br><i>(for public information)</i>  | <b>Generic Description</b><br><i>(for public information)</i>                  | <b>Short Classification Key</b>   |
|--------------------------|--|--|--|---|
|                          | Grade of trail<br>Difficult  |  |  |   |
|                          | Description<br>Likely to be a challenging single trail with steep gradients, variable surface and many obstacles<br>Single use and direction<br>Optional lines<br>Suitable for cross country, downhill or trials   | Likely to be a challenging single trail with steep gradients, variable surface and many obstacles  | Suitable for experienced mountain bikers, used to physically demanding routes  | For experienced mountain bikers<br>Challenging trail<br>Large, unavoidable obstacles and features |
| Guiding Criteria         | Trail Width<br>300 mm plus or minus 100 mm for tread and bridges   | Can be less than handlebar width   | Navigation and personal survival skills are highly desirable                   | Long, steep climbs or descents and loose surfaces   |
|                          | Trail Surface<br>Variable and challenging  | Variable and challenging   | Expect large, dangerous and unavoidable obstacles and features                 |   |
| Risk Assessable Criteria | Trail Gradient<br>Contains steep descents and climbs<br>Ave. trail grade - 25% or less<br>Max. trail grade - 30%<br>Short sections may exceed these criteria   | Contains steep descents and climbs   | Challenging and variable with long steep climbs or descents and loose surfaces |   |
|                          | Quality of Markings<br>Trailhead signs and route markers may be limited  | Limited signs  |  |   |
|                          | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes steep downward slopes or freefall  | Exposure to either side of the trail corridor includes steep downward slopes or freefall   | Some sections will be easier to walk   |   |
|                          | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable obstacles to 500 mm high, such as logs, roots, drop off's or constructed obstacles<br>Avoidable, obstacles to 1200 mm may be present, width of deck is greater than half the height of the obstacle<br>Tabletop jumps to 2000mm high, rollable double jumps and avoidable gap jumps<br>Unavoidable bridges 600mm or wider<br>Short sections may exceed these criteria | Unavoidable obstacles such as logs, roots, drop off's, jumps or constructed obstacles  |  |   |
| Experience Required      | Suitable for experienced mountain bikers with good skills, used to physically demanding routes<br>Navigation and personal survival skills are highly desirable<br>Suitable for better quality mountain bikes   | Suitable for experienced mountain bikers with good skills, used to physically demanding routes<br>Navigation and personal survival skills are highly desirable<br>Suitable for better quality mountain bikes |  |   |

Extreme mountain bike trail

|                          | <b>Technical Description</b><br><i>(for land manager use)</i>  | <b>Trail Description</b><br><i>(for public information)</i>   | <b>Generic Description</b><br><i>(for public information)</i>                        | <b>Short Classification Key</b>   |
|--------------------------|--|---|--|---|
|                          | Grade of trail<br>Extreme  |   |  |   |
|                          | Description<br>Extremely difficult trails incorporating very steep gradients, highly variable surface and unavoidable, severe obstacles<br>Single use and direction<br>Optional lines<br>Cross country, downhill or trials   | Likely to be a challenging single trail with steep gradients, variable surface and many obstacles   | Suitable for highly experienced mountain bikers, used to physically demanding routes | For highly experienced mountain bikers<br>All sections extremely challenging<br>Large, unavoidable jumps, obstacles and severe features |
| Guiding Criteria         | Trail Width<br>150 mm plus or minus 100 mm for tread and bridges<br>Structures can vary  | Can be less than handlebar width  | Navigation and personal survival skills are highly desirable                         |   |
|                          | Trail Surface<br>Wildly variable and challenging   | Wildly variable and challenging   | Severe constructed trails and/or natural features, all sections are challenging      |   |
| Risk Assessable Criteria | Trail Gradient<br>Expect prolonged steep, loose and rocky descents or climbs<br>Average trail grade - 20%<br>Max. trail grade - 40%<br>Short sections may exceed these criteria  | Expect prolonged steep, loose and rocky descents or climbs  | Includes extreme levels of exposure and/or risk                                      |   |
|                          | Quality of Markings<br>Trailhead signs and route markers may be limited  | Limited signs   | Expect large and unavoidable jumps, obstacles and features                           |   |
|                          | Level of Trail Exposure<br>Exposure to either side of the trail corridor includes steep downward slopes or freefall  | Exposure to either side of the trail corridor includes steep downward slopes or freefall  | Some sections will be easier to walk   |   |
|                          | Natural Obstacles and Technical Trail Features (TTFs)<br>Unavoidable obstacles over 1000mm<br>Avoidable, obstacles may be present<br>Unavoidable gap jumps and doubles<br>Unavoidable bridges 600mm or narrower<br>Width of bridges is unpredictable<br>Short sections may exceed these criteria | Unavoidable obstacles such as gap jumps, logs, roots, drop off's or constructed obstacles   |  |   |
| Experience Required      | Suitable for highly experienced mountain bikers with excellent skills, used to physically demanding routes<br>Navigation and personal survival skills are highly desirable<br>Suitable for quality mountain bikes  | Suitable for highly experienced mountain bikers with excellent skills, used to physically demanding routes<br>Navigation and personal survival skills are highly desirable<br>Suitable for quality mountain bikes |  |   |



## TRAIL STYLES

### **Adventure**

One of the world's most prolific trail styles, traditionally referred to as cross-country, Adventure Trails are the most popular gateway trail for all levels of mountain bike riders. They have a free-flowing style and maximise use of the natural terrain with contour-hugging designs that allow riders to feel confident, while also providing options and features for extra challenge.

### **Wilderness**

Located in remote settings, Wilderness Trails take advantage of the raw natural beauty of diverse landscapes giving riders a unique, immersive and memorable experience. They are generally narrow, longer-distance trails with a focus on ensuring the trail provides an opportunity for riders to challenge themselves over an endurance distance while finishing with a huge smile and desire to do it all over again.

### **Flow**

A descending trail style, Flow Trails offer a constant undulation of groomed rollers, berms, and achievable obstacles. The tyre-hugging trajectory sending riders on a sculptured luge ride through the bush. They create a sensation of speed and rhythm, require minimal decision-making and maximise the ability to feel in control and have fun.

### **Airflow**

Developed by World Trail, Air Flow Trails combine everything we love about Enduro and Gravity Trails – magnifying pure flow, creating exciting line choices, transfers and safe jumping options. Sculptured jumps, berms, rollers abound, but obstacles are usually rollable, putting the emphasis on rider safety, skill progression and undeniable fun.

### **Gravity**

Offering a mix of Flow, Air Flow and Downhill, Gravity Trails embrace the raw beauty of the terrain in an exciting and challenging descent. They will often provide multiple line choices and a variety of features and may include occasional short uphill sections.

### **Downhill**

Of all the trail styles, Downhill Trails are generally the steepest, most raw and challenging. They are the domain of long-travel, design-specific mountain bikes and UCI sanctioned racing. With minimal benching, steep erratic features, off-camber, large transfer and high-risk options, these trails are generally shorter, more aggressive and suited to the more experienced riding.

### **Dual Slalom**

A head-to-head racing trail, Dual Slalom combines speed, precision, and adrenaline. Riders race side-by-side down two nearly identical lanes, designed to test handling and timing. Dual slalom is built for competition, offering a high-energy, crowd-pleasing experience that blends gravity racing with BMX-style finesse.







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