

# WILLIAMS RESERVE TRAIL NETWORK CONCEPT PLAN

FINAL CONCEPT | June 27, 2023



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Prepared by Common Ground Trails Pty Ltd for the Shire of Boddington

## Acknowledgements

The authors of this Williams Reserve Trail Network Concept Plan respectfully acknowledge that this land on which the trail network is located is traditional land of the Noongar people who have a rich social, spiritual and historical connection to this country, which is as strong today, as it was in the past.

Common Ground Trails wishes to acknowledge the significant contribution from stakeholders, organisation representatives, users and individuals.

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Revision	Description	Date
A	Broad Concept for review	30/11/22
B	Draft Concept for Review	03/04/23
C	Final Concept	27/06/23

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# Introduction

## Project Overview

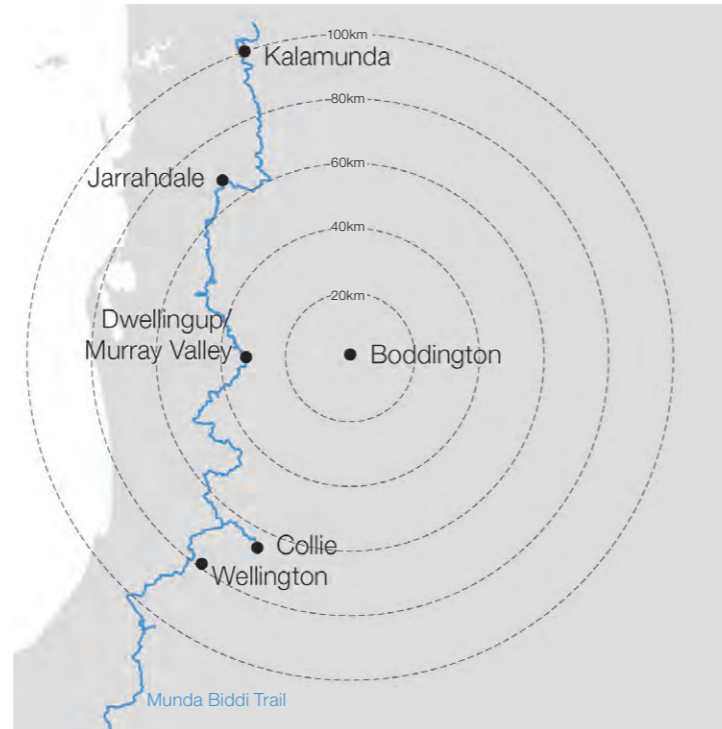
Boddington is a small rural township situated on the banks of the Hotham River, 120km south east of Perth. The Perth and Peel Mountain Bike Master Plan identified potential for Boddington to be developed to a locally significant mountain bike destination. The Master Plan noted the area has existing demand for mountain bike trails and if development is well considered, the cluster of Dwellingup, Boddington and Jarrahdale could become a major trail provider for the Peel region, capturing all segments of the tourism market. Williams Reserve was earmarked as a medium priority site with potential for a network of cross country (XC) trails.

Hotham Park in town has recently been developed into a state-of-the-art facility featuring a pump track, skate park, nature play playground and other outdoor sports facilities. The pump track provides an ideal opportunity for riders to practice their riding technique and progress their skills. Establishment of a trail network close to town will enable riders to develop their skills and fitness further.

The proposed Williams Reserve project area provides desirable terrain for MTB trail development. The site is easily accessible from Boddington town centre and offers ideal conditions for beginner-intermediate MTB trails. There is a growing cycling culture in Boddington with a high demand for good quality, single track MTB trails. The provision of an MTB trail network will allow for continued growth and participation in MTB activities for the community, including recreational riders and local schools.

The proposed trail network in Boddington will offer riders an experience in a different setting to that offered in the nearby Dwellingup/Murray Valley Trails Centre, enticing riders to Boddington for a different riding experience, or as part of a larger southwest MTB destination road trip, refer to Map 1 and Figure 1.

Williams Reserve (approx. 240Ha) is located approximately 3km south of Boddington (refer to MAP 2) and was recently transferred to the Shire of Boddington from the Water Corporation. The reserve can be accessed from Bannister-Marradong Road and Newmarket Road. The reserve contains open jarrah woodland with scattered laterite outcrops. Currently the reserve is not formally used for recreation, however there are a number of 4WD tracks traversing the site. Rural residential properties neighbour the project area on the north and east and the local rifle range club is located to the southwest on Newmarket Road.



MAP 1 - Project location

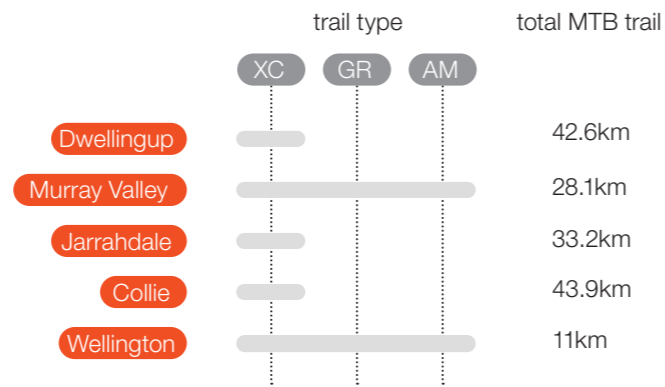
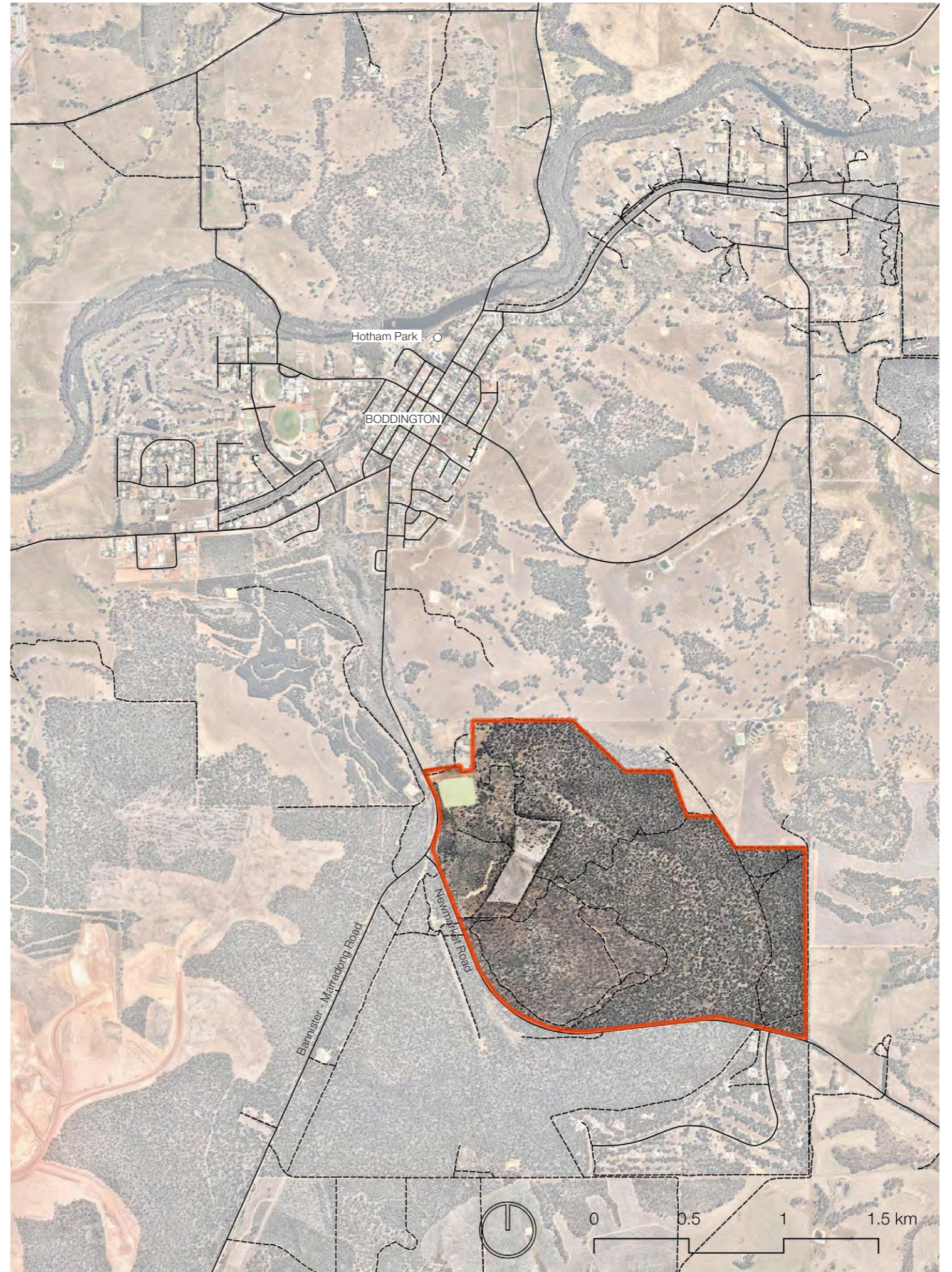


FIGURE 1 - Existing MTB networks in vicinity of Boddington



MAP 2 - Project area

## Project Objectives

The Objectives of this project, as defined in the framework and project brief, are to:

- Create a locally significant MTB trail network which forms part of the greater Boddington location as outlined in the Perth and Peel Mountain Bike Master Plan.
- Develop a high quality, sustainable and accessible cross country (XC) single track trail network suitable for a diverse range of users, and which has the ability to host XC events.
- Design a trail network that enables progression for beginners to intermediate MTB riding.
- Provide a local recreation resource for local residents and a tourism resource to attract new and return visitors to Boddington.
- Design trail opportunities that encourage MTB users to stay on designated trails and reduce the impact to environmental and cultural values.
- Develop a trail network that maintains the sense of place and is appropriate to the landscape.
- Develop high quality, low maintenance technical trail features.
- Consider future connections to potential MTB trail development in the Timber Reserves to the West.
- Consider connection into town along Shire managed land.
- Ensure trail development implements best practice planning, design and construction standards.

## Target Market & User Types

The Williams Reserve Trail Network is intended to cater for both locals, destination trail users and trail users while on holidays. In terms of the mountain bike cohorts the terrain available is best suited to a trail network that caters to leisure and enthusiast cohorts. These markets are comprised of a diverse mix of trail users, including general cyclists and recreational cyclists. Trail styles for these target markets will vary from accessible easy trails to purpose designed trails with technical trail features.

Trail types best suited to the terrain include cross country (XC) mountain bike trails and park style trails. The terrain also lends itself to adaptive cycle suitable trails. Walk trails may also be appropriate and shared use where trails are connecting zones and infrastructure within the project area.



## Scope & Scale

The Williams Reserve trail network will be a locally significant network that forms part of the proposed broader Boddington trail network outlined in the Perth and Peel Mountain Bike Master Plan. Up to 25km of trail is proposed within the project area.

The proposed area contains topography and landscape features that are desirable for MTB trail development. The primary focus is the provision of trails for recreational riding, however the network design also considers potential for cross country event use and opportunities for concurrent recreation use while events are taking place.

## Project Methodology

To fulfil the project brief and objectives the following stages were undertaken as per the Trail Development Process:

### Site Assessment

Site meetings were held with Shire representatives. An audit of the existing conditions was undertaken to gain a detailed understanding of the landscape, topography, soil types, vegetation and ground conditions. The site study identified areas where trail development is and is not appropriate.

### Broad Concept

A broad concept was developed outlining initial findings. The Broad Concept was presented to the reference group and options and inclusions discussed enabling conformation of concept direction. The reference group consisted of representatives from the Shire of Boddington, the local community, Department of Local Government, Sport and Cultural industries (DLGSC) and Gnaala Karla Booja Aboriginal Corporation.

### Draft Concept Plan

This draft concept plan illustrates the trail system configuration with an overall network description and individual trail summaries.

### Next steps

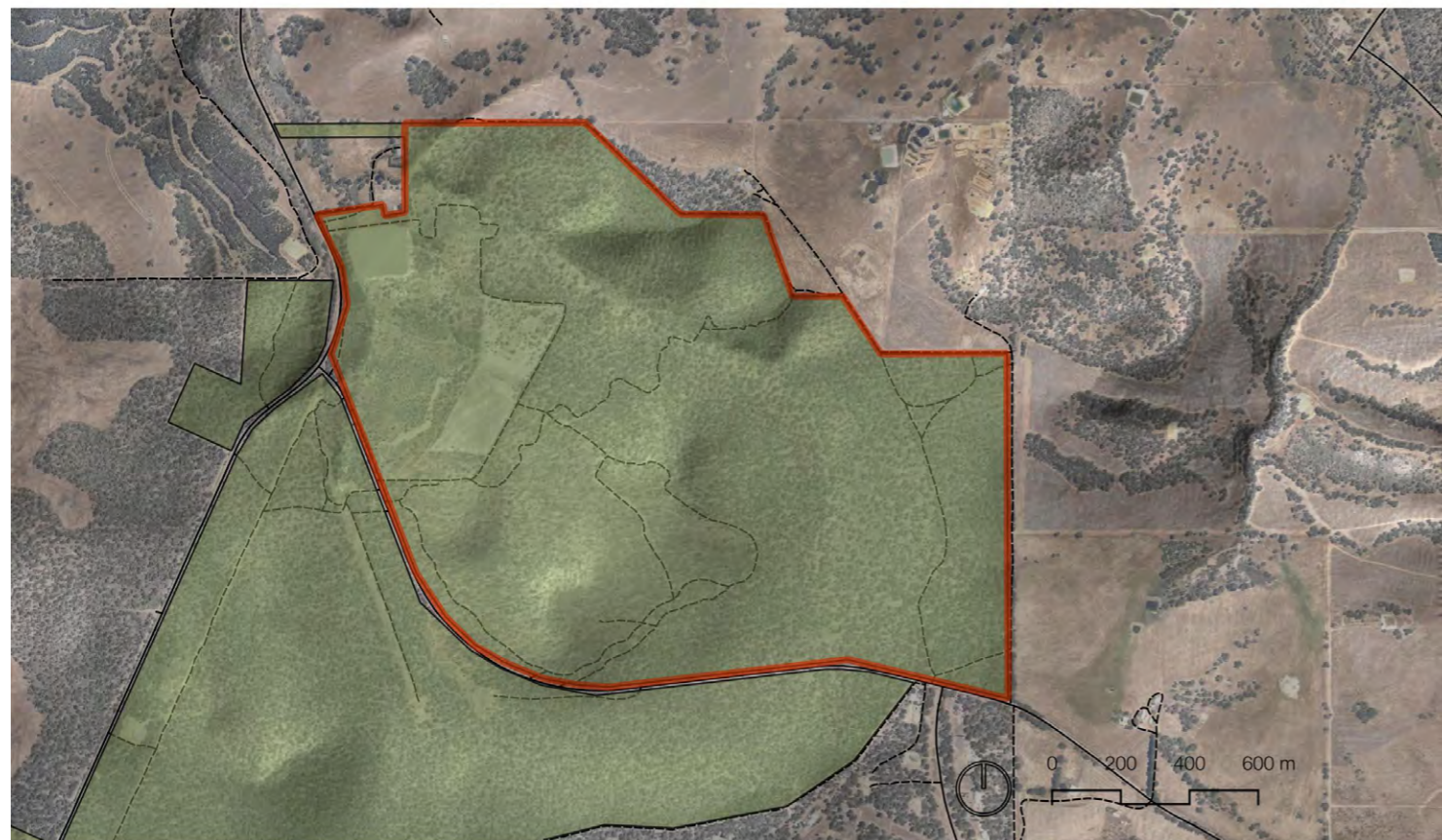
Once the Concept plan is finalised with feedback from the reference group, appropriately qualified consultants will be engaged to undertake corridor evaluation as per the Trail Development Process outlined by DLGSC/DBCA Trail Development Series.

# Site Assessment

Site assessment undertaken considered the inherent qualities of the landscape such as terrain and vegetation types, existing trails and infrastructure and constraints such as heritage values and threatened ecological community presence.

## Tenure

The project area is Williams Reserve which is currently managed by Water Corporation however is in the process of being transferred to the Shire of Boddington. The project area is bounded by freehold to the north and east and Reserve to the west and south, refer to MAP 3. Proximity of dwellings will need to be accounted for in development of the network design with adequate buffer allowed (minimum 200m) to reduce any potential noise and limit potential for public access to neighbouring freehold land. Additional planting in buffer areas will also help to screen adjacent private dwellings.



Project Area  
Reserves

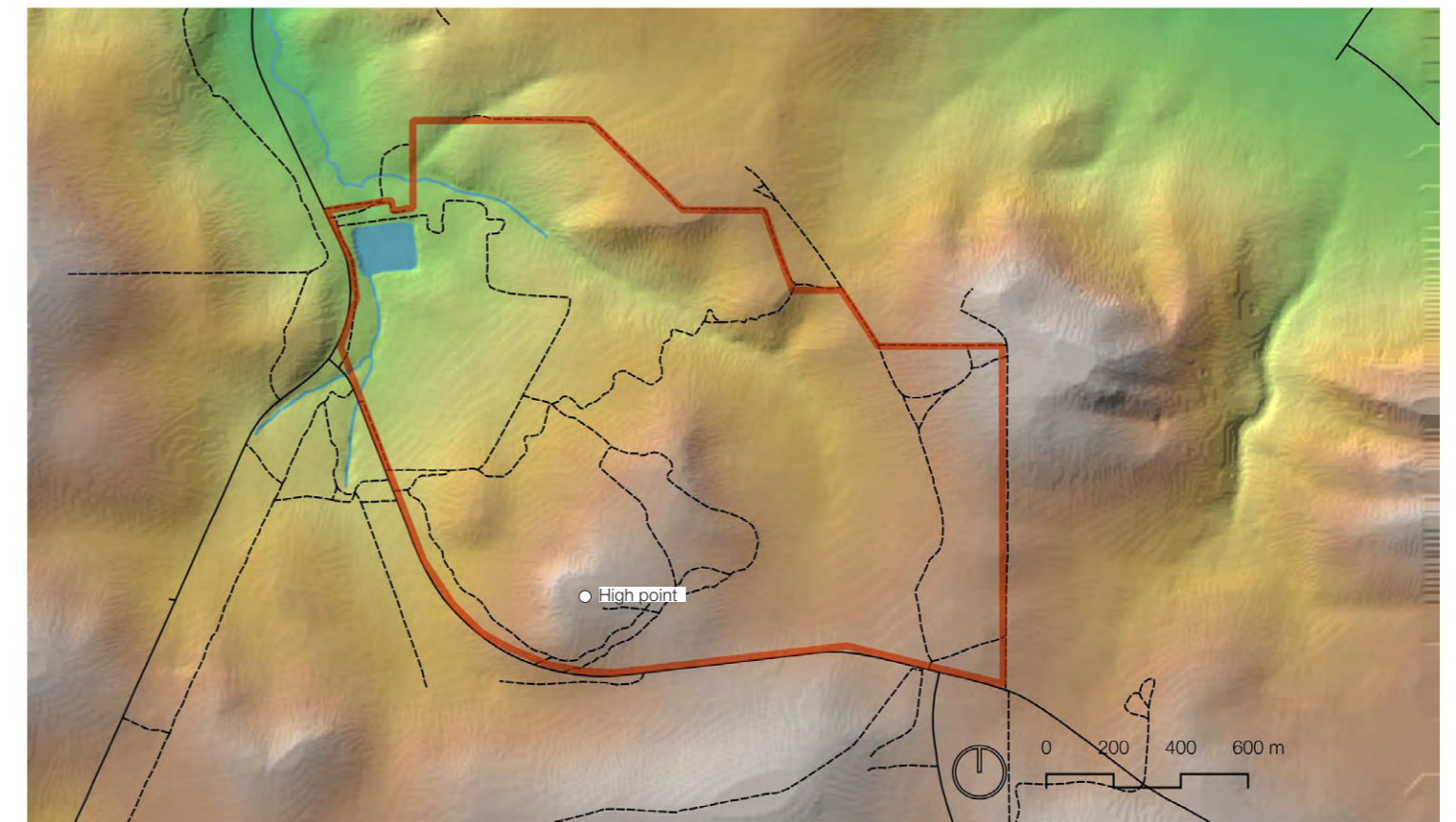
MAP 3 - Project area tenure

## Topography & hydrology

Williams Reserve is characterised by gently sloping flat topped ridges and shallow gullies. There is a dominant high point in the central - southern portion of the site and also in the north east corner both 320m AHD. Mellow slopes converge from these highpoints into a gully traversing east-west which drops to a height of 240 at the lowest point in the project area on the western boundary, refer to Figure xx. Slope gradients vary with mostly gentle slopes (5-9%) and small pockets of steeper slope (15-30%), refer to MAP 4. The elevation variance provides good opportunity for engaging trail with purposeful ascents and exhilarating descents. The terrain features provide for a range of slope aspects with the dominant being north

and east facing slopes, this allows for a mix of microclimates and potential for an engaging array of trail experiences traversing through the different zones. There are a few pockets of laterite outcrops throughout the site which will allow for some more technical focus trails.

The gully supports a non-perennial minor watercourse which when flowing flows into the Hotham River. Should the trail network cross the watercourse appropriate measures such as bridge or armouring will be proposed to minimise impacts downstream.



240 298  
259 318  
279 337

MAP 4 - Project area topography and hydrology

## Ecological values

The vegetation onsite can be broadly categorised as woodland featuring a mix of jarrah, marri and wandoo. The open woodland character allows for a fast and flowy trail experience with filtered views. Desktop ecological assessment suggests there is potential for threatened and priority flora and fauna occurrence onsite, but targeted surveys are needed to confirm (refer to Ecological Desktop Assessment Report). Once a concept design is developed targeted surveys will be conducted as part of the corridor assessment phase of the trail development process. Proposed trails will be realigned to avoid critical species and minimise impact.

While phytophthora dieback survey has not been undertaken for the project area the highly disturbed nature of the site and land use history would suggest the area is likely infested. It is proposed to ensure all equipment used in construction of the trail network be thoroughly cleaned on commencement and completion of works and a clean down station be installed at the trailhead for use by trail users.

The vegetation and landscape allow opportunity to create a varied trail experience and work towards fostering a greater understanding of the landscape and ecosystem values for visitors, through experience, appreciation and interpretation.



## Cultural Values

The project area has many layers of cultural heritage including Aboriginal and European values. One registered site currently exists within the project area and several occur in proximity. The registered site is the Hotham River and is of Mythological significance. Targeted on ground surveys may uncover sites of significance within the project area (refer to Cultural Heritage Desktop Assessment).

There is opportunity in development of the trail network concept for interpretation of sites of cultural significance which can assist in maintaining a sense of place and informing visitors about the values of the area.



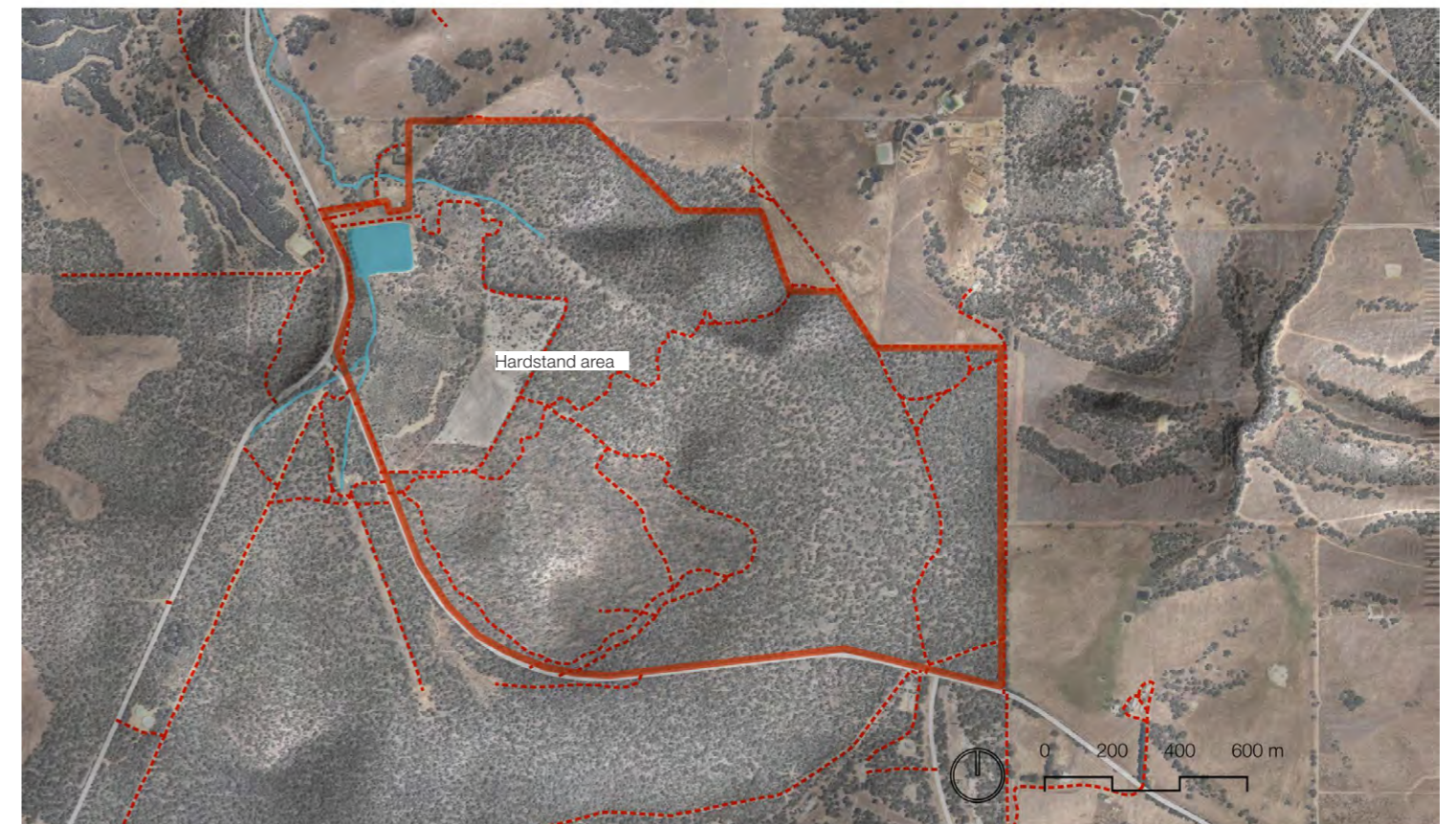
## Existing Trails and Facilities

The project area currently contains no formal trails or facilities. There is a network of vehicle tracks (refer to MAP 5) most of which appear to have been informally created over time. The vehicle tracks that appear to be formally created service the western pocket of the project area that was historically cleared for grazing or sand extraction. All roads will be assessed for suitability to be retained to service public, management and emergency access.

Formal access to the project area is proposed to be off Newmarket Road opposite the Rifle Range access. Facilities proposed include carparking, and trailhead signage with need for toilets to be considered once use patterns and volumes are better understood.

The Shire are currently investigating options for development of infrastructure adjacent the dam in the north west corner of the project area which if progressed would ideally link into the proposed trail network. The large hardstand area was constructed as a

catchment for the dam. At this stage the Shire would like to leave the hardstand in place to ensure there is maximum water in the dam for proposed future recreation purposes.



MAP 5 - Existing trails and facilities

## Opportunities and Constraints

Analysis of the landscape features and values has enabled a clear picture of the opportunities and constraints to be considered in development of the concept plan.

Key constraints and issues identified include:

- Ensuring impacts to the flora, fauna and cultural values are minimised
- Need for appropriate setbacks to allow buffer from adjacent private land and dwellings

Key opportunities identified include:

- Formalising key access points and roads
- Maximise the features in the terrain including elevation, aspect and vegetation type to provide engaging trail experiences
- Maximising interpretation opportunities

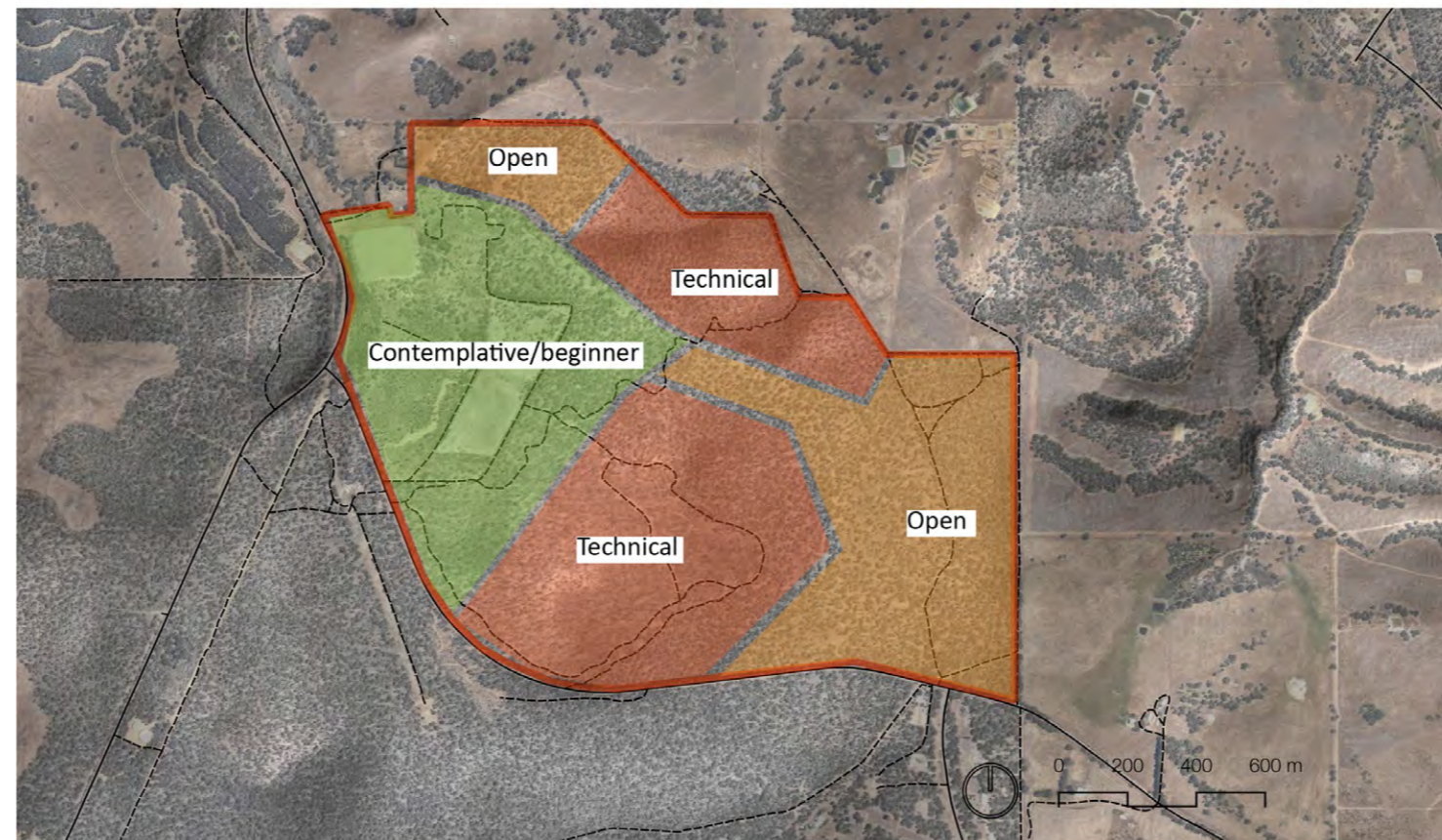
## Characteristic zones

The result of the desktop analyses and on site ground truthing was the categorisation of characteristic zones. The diverse characteristics of each zone, from flat and open to rocky steep slopes all suit different trail types, refer to MAP 6 for location. The characteristic zones will inform the overall site zoning and placement of trail styles. Each of the zones are:

Contemplative/beginner zone: flat terrain offering potential for more intimate contemplative experiences and interpretation opportunities.

Open zone: Mellow slopes and more open vegetation type providing opportunity for cross country mountain bike trails with a mix of ascents and descents.

Tech zone: Steeper slopes and pockets of laterite boulders provide challenging and varied terrain for more technical trails.



MAP 6 - Characteristic Zones



# Concept

## Trail network overview

Taking into account the opportunities and constraints within the project area, the concept proposes a stacked loop system based on a primary trailhead and a series of trail nodes. With a clockwise direction the network is proposed to offer opportunity for riders to session zones or ride longer loops. Adjacent the primary trailhead it is proposed to incorporate a park zone with a series of jump lines which get progressively harder. There is also potential to include a skills development area in the vicinity of the primary trailhead to enable riders to hone their skills learned on the pump track in Hotham Park before heading out onto the broader trail network. The intention would be to include technical trail features in the skills park that riders would encounter out in the trail network. A walk trail connects the trailhead to the high point in the reserve and takes walkers and runners through the most scenic sections of the project area including along the gully and up and along the ridge with views towards Boddington.

The primary trailhead is intended to be located alongside the proposed recreation site at the dam in the north west corner of the site. Inclusions and layout for this recreation site are yet to be determined but should include parking, toilets and picnic facilities. Locating primary trailhead for the trail network in this location will enable riders to make use of the amenities provided. A secondary shuttle trailhead is proposed to be located adjacent the high point within the reserve allowing riders shuttle access to the longest descents in the network.

The Williams Reserve network prescribes to the following best practice principles;

- The network avoids areas of environmental significance, problematic landforms, and is generally sympathetic to the landscape and viewsheds
- Where possible the network connects users with the natural environment and it's features within the project boundary
- Trail alignments are purposeful and provide direct movement through the landscape
- A range of trail difficulties have been provided allowing for progression in the network
- The network caters for a wide variety of riding styles and abilities and will offer a riding experience in a setting that differs from other nearby networks
- The stacked / linked loop trail system places the easiest trails closest to the trail head and more difficult trails are progressively reached or accessed via separate loops
- Most trails are designed to be bike optimised and single direction, allowing purposeful descents and climbs. One shared use trail and a walk only trail allow walkers to complete a loop taking in the highlights of the reserve.
- The overall system is accessible, intuitive and easy to navigate with simple loops and trails following an overall clockwise direction.
- The majority of the trail system is able to be ridden in a continuous lap without backtracking, repeating or crossing over other trails, allowing for cross country marathon racing and longer uninterrupted rides
- Provides a range of trail options suitable for hand cycle and other mobility equipment use

The network contains 20.7km of mountain bike trail with figure 2 outlining the breakdown.

While the trail framework outlined a greater percentage of black trail the site assessment determined limited opportunity for advanced trails in the terrain. Advanced trails have been included in the network where the slope and natural feature allows. Table 1 below outlines each trail style, length and classification.

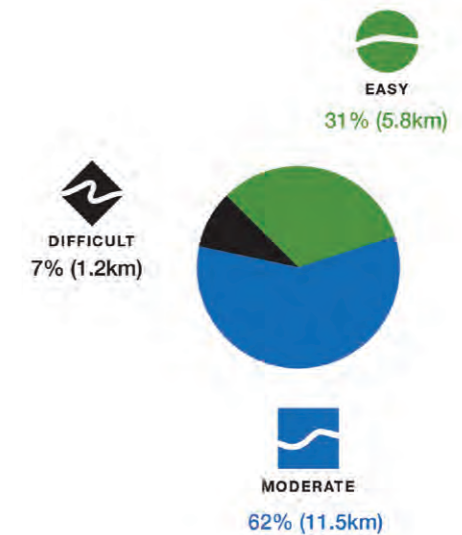
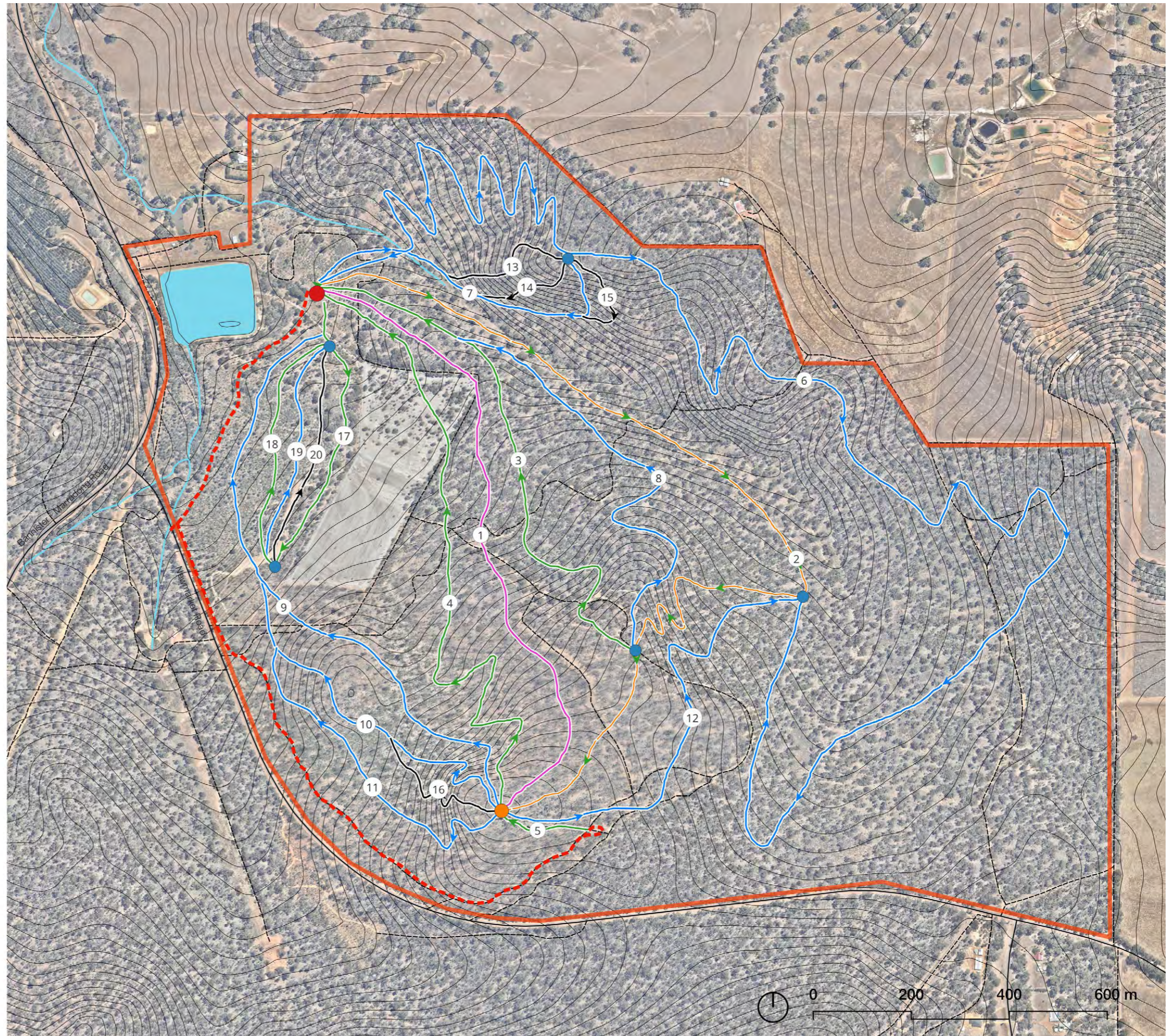


FIGURE 2 - MTB trail classification breakdown (not including park trails)

Table 1: Proposed Trails

ID	Provisional Name	Type	Style	Classification	Length (m)	Elevation change (m)	Average gradient	Adaptive suitable
1	Walk	Walk	Open	Grade 3	1,510	75	5%	
2	Green climb	XC	Open	Easy/Grade 3	2,600	76	3%	Y
3	Green descent 1	XC	Flowing	Easy	1,310	61	5%	Y
4	Green descent 2	XC	Technical	Easy	1,680	75	4%	Y
5	Green link	XC	Open	Easy	210	3	1%	Y
<b>Subtotal</b>					<b>5,800</b>			
6	Blue adventure	XC	Technical	Moderate	5,310	152	3%	Y
7	Blue descent 1	XC	Technical	Moderate	790	32	4%	
8	Blue descent 2	XC	Flowing	Moderate	1,150	47	4%	Y
9	Blue descent 3	XC	Flowing	Moderate	1,470	74	5%	Y
10	Blue descent 4	XC	Technical	Moderate	910	59	6%	
11	Blue descent 5	XC	Technical	Moderate	840	49	6%	
12	Blue descent 6	XC	Technical	Moderate	1,100	35	3%	
<b>Subtotal</b>					<b>11,570</b>			
13	Black descent 1	XC	Technical	Difficult	330	28	8%	
14	Black descent 2	XC	Technical	Difficult	260	26	10%	
15	Black descent 3	XC	Technical	Difficult	260	17	7%	
16	Black descent 4	XC	Technical	Difficult	390	25	6%	
<b>Subtotal</b>					<b>1,240</b>			
17	Green park climb	PK		Easy	660			
18	Green park descent	PK		Easy	570			
19	Blue park descent	PK		Moderate	550			
20	Black park descent	PK		Difficult	520			
<b>Subtotal</b>					<b>2,300</b>			
<b>GRAND TOTAL</b>					<b>22,420</b>			





MAP 7 - Draft Concept

### Walkers/Trail Runners

Walkers and trail runners will be able to do a 4km loop utilising the Green climb trail which is proposed to be shared use and the walk trail which descends from the high point back to the primary trailhead. This loop will take in the most scenic sections of the project area including along the gully and up and along the main ridge to the highpoint where they will be rewarded with views towards Boddington.

### Mountain Bikers

For riders there are a range of options and trail styles to cater for different rider skill levels and desired riding experience. Riders that like to session trails have a few options including between the primary trailhead and the shuttle trailhead and in the north of the network intermediate and advanced riders have the option to session between the primary trailhead and the northern highpoint node. For those seeking a longer ride the 5km adventure loop traverses between the highpoints with climbs and descents in the mix.

### Adaptive riders

It is proposed that a number of trails be designed and constructed to be fully accessible for adaptive bikes, these trails (total 13.5km) will allow for a range of distance options for adaptive cyclists. It is also proposed that the whole network be audited post construction and each trail signposted indicating its adaptive rating.

### Event use

The overall network has been designed with consideration for events. The sessionable descent zones and the green and blue loops create the opportunity for gravity enduro racing. There is also potential for marathon cross country racing utilising the climbing trails and select descents with subsequent events being able to vary the route by using different descents. The proposed dam recreation site should be designed with ample space available for event infrastructure and carparking.

### Trail maintenance/management

It is recommended that a formal trail network management plan be established to ensure the ongoing longevity of the trails and minimise potential for unintended impacts. Well designed trails require less maintenance, but all trails require a certain level of ongoing management and maintenance. The trail maintenance program should consist of:

- A regular trail audit program– to identify any trail surface issues that require maintenance e.g. drainage, vegetation re-growth, condition of signage and condition of any build infrastructure.
- Schedule – The frequency of the maintenance required depends on the level of use that the trail receives and should allow for additional inspections following severe weather or trail events where there has been a concentrated volume of trail users over a shorter period of time.
- Standards – Trails should be maintained to the original classification, original trail standards and drainage standards. There should be no alteration to technical features or import/removal of material without extensive review and consultation.

There is opportunity to involve volunteers in the maintenance of trails and potential to include trail and landscape management activities in an Aboriginal ranger program.

## Infrastructure

A range of infrastructure is required to ensure the proposed trails are accessible, safe and enjoyable.

### Access

Due to limited sightlines and traffic speed on Bannister-Marradong Road, access to the site is proposed to be off Newmarket Road. This primary site access road will lead to the proposed dam recreation site and the primary trailhead. A shuttle road is proposed to come off the main access road and utilise mostly existing informal vehicle tracks to access the high point, where a turn around point and drop off parking bays will be provided. It is recommended that all other existing informal vehicle tracks on the site be gated for management access only, to improve rider safety where trails cross roads while still allowing management and emergency access to the network.

### Trailheads

The network has been designed around an accessible primary trail head with a secondary trailhead providing shuttle access and a series of trail nodes enabling different loops to be created.

The trail head fulfils a number of important functions:

- Is visible and a safe place to leave a vehicle.
- Provides needs of trail users – water, toilets, information and car parking
- Encourages social interaction as the primary meeting place and finishing point for users.
- Promotes positive use of the site through additional infrastructure such as seating, shelters, landscaping Is easily accessible and promoted to suit visitors
- Provides all of the necessary trail information to plan a ride through good signage.

Trail heads require a range of infrastructure to meet these functions. Inclusions range from essential through to desirable and are dependent on budget and location. As a minimum the primary trailhead will need to provide carparking, toilets, and signage depicting the trail network and information. Pending vision and design of the proposed dam recreation site the primary trailhead may also have additional value add features such as picnic facilities, and water based activities. The shuttle trailhead will only require basic infrastructure including 2-3 drop off bays and signs with trail network map and information. The proposed trail nodes will only require a small map indicating location in the network.

### Bridges

No significant bridges will be required, there is some drainage channels associated with the dam catchment system which may require either modification or a small bridge structure. The main gully though the site is shallow and only holds water during rain events, armouring of trail crossing is considered sufficient at this stage, but to be considered further in detailed design. This gully is also a registered aboriginal site and as such crossing has been minimised to the one location.

### Dam catchment area

The existing hardstand area and drainage infrastructure associated with water catchment for the dam has been minimally impacted with the proposed trail network. This will ensure that the dam water levels are maximised for future proposed recreational use.

# Trail Summaries


## Trail 1. Walk Trail

Trail 1 is a 1.5km dual direction walk trail from the highest point in the reserve down to the primary trailhead. Combined with Trail 2, this walk trail enables walkers and trail runners to complete a 5km loop. Views towards Boddington and the surrounding hills can be taken in from the top of the trail before walkers traverse through open jarrah/marri forest back to the trailhead. The trail will have a groomed surface with a finished trail width of 0.7m.



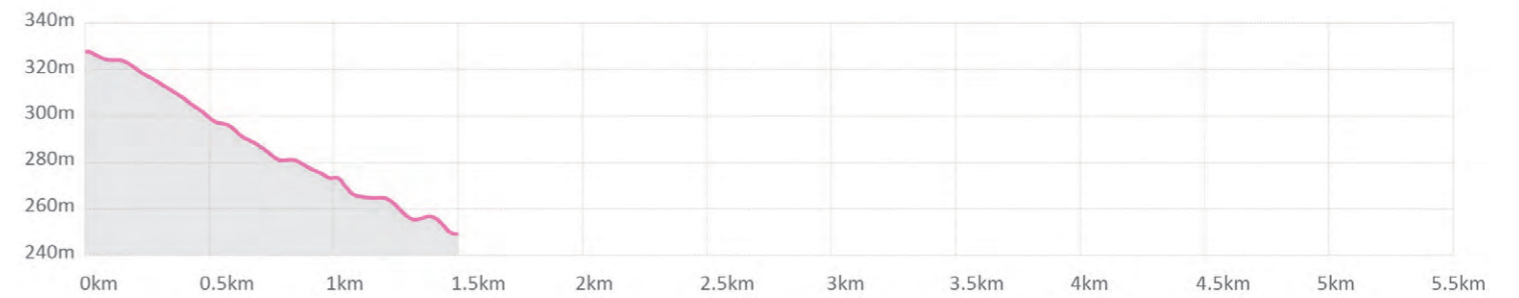
MAP 8 - Trail 1  
Williams Reserve Trail Network | Concept Plan

### Trail 1 Summary

<b>Classification</b>	 Class 3
<b>Trail Length</b>	1,510m
<b>Trail Type</b>	Open
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.7m
<b>Use</b>	Walk/trail run
<b>Direction</b>	Dual Direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	75m
<b>Average Trail Gradient</b>	5%

### Anticipated TTFs

N/A



Precedent image



## Trail 2. Green Climb

Trail 2 is a 2.6km easy shared use trail which is proposed to be single direction for cyclists and dual direction for walkers. Trail 2 traverses alongside the main gully through open forest before climbing to the shuttle trailhead. Walkers can combine this trail with Trail 1 for a 5km loop back to the primary trailhead. Riders have a number of options to descend back to the primary trailhead. The trail will feature continuous rolling grade reversals with minimal technical trail features and a groomed surface with a typical finished width of 1.2m.



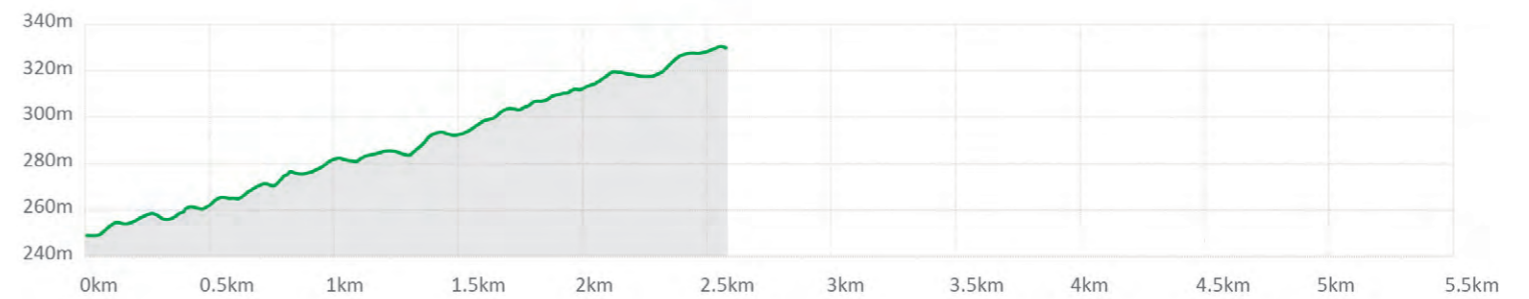
MAP 9 - Trail 2  
Williams Reserve Trail Network | Concept Plan

### Trail 2 Summary

<b>Classification</b>	 Class 3  Easy - Green
<b>Trail Length</b>	2,600m
<b>Trail Type</b>	Open
<b>Corridor width</b>	50m
<b>Tread Width</b>	1.2m
<b>Use</b>	Walk/trail run/cycle
<b>Direction</b>	Single direction cycle, dual direction walk
<b>Total Ascent</b>	76m
<b>Total Descent</b>	0m
<b>Average Trail Gradient</b>	3%

### Anticipated TTFs

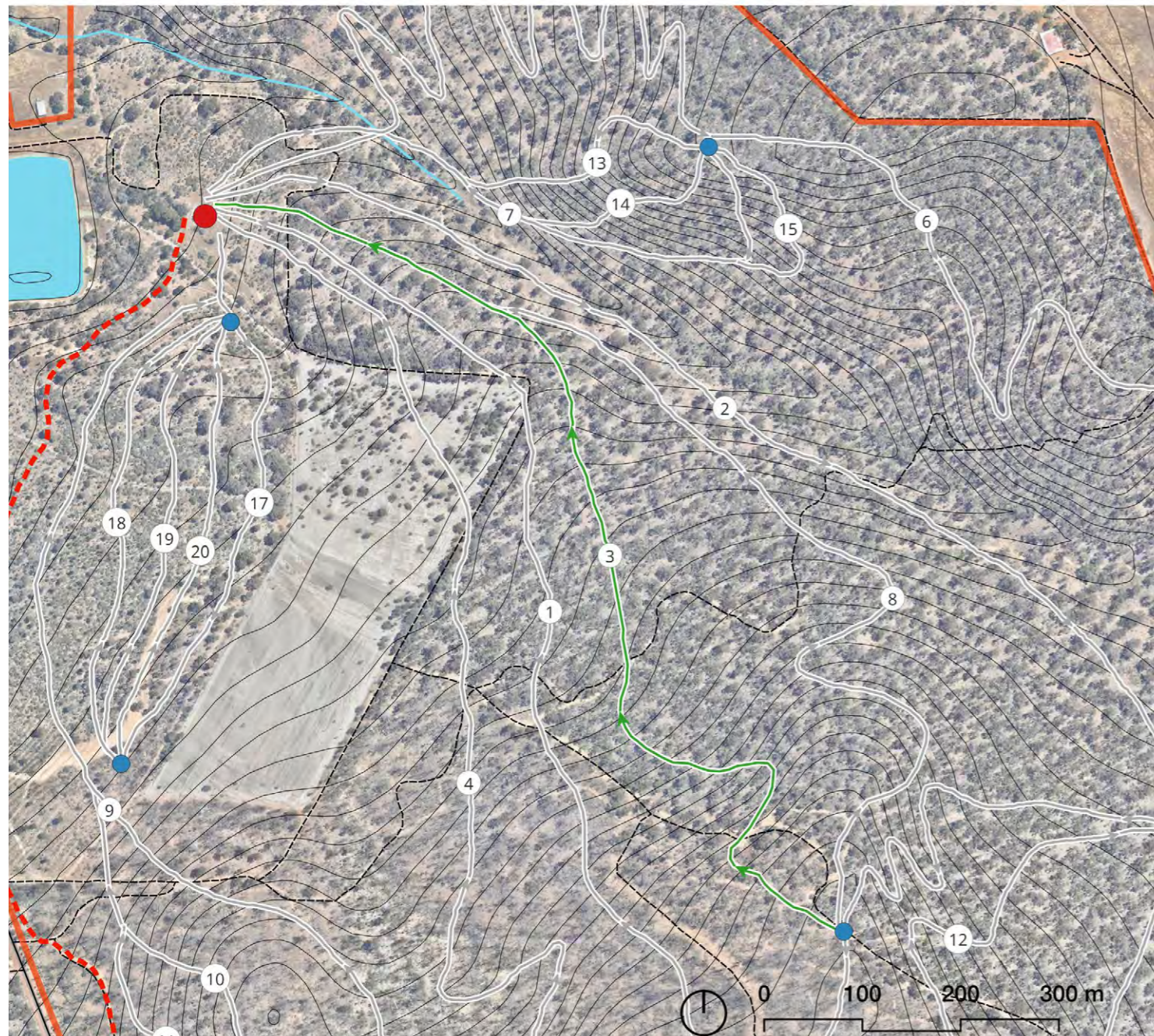
N/A



Precedent image

## Trail 3. Green descent 1

Trail 3 is a 1.3km easy single direction descending trail offering a cross country experience focused on flow trail over predictable natural terrain. Located in generally moderate side slopes, shallow gradient trail switches back and forth on the hill. It features continuous rolling grade reversals, descending switchback corners with flowy trail features and an open feel with smooth surface with typical finished width of 0.9m.



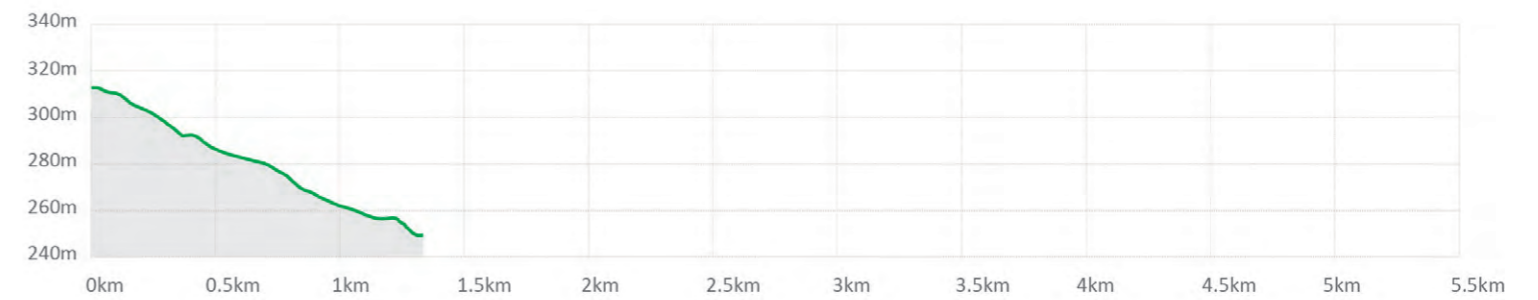
MAP 10 - Trail 3  
Williams Reserve Trail Network | Concept Plan

## Trail 2 Summary

**Classification** ● Easy - Green  
**Trail Length** 1,310m  
**Trail Type** Flowing  
**Corridor width** 50m  
**Tread Width** 0.9m  
**Use** Mountain Bike  
**Direction** Single direction  
**Total Ascent** 0m  
**Total Descent** 61m  
**Average Trail Gradient** 5%

## Anticipated TTFs

Rollers  
 Table top jump  
 Berms



Precedent image

## Trail 4. Green descent 2

Trail 4 is a 1.6km easy single direction descending trail offering a cross country experience focused on technical features over natural terrain. Located on moderate side slopes, the shallow gradient trail switches back and forth on the hill descending back to the primary trailhead. It features descending switchback corners with technical trail features and an open feel with typical finished width of 0.9m.

### Trail 4 Summary

<b>Classification</b>	● Easy - Green	<b>Anticipated TTFs</b>
<b>Trail Length</b>	1,680m	Rollers
<b>Trail Type</b>	Technical	Rock drop
<b>Corridor width</b>	50m	Rock garden
<b>Tread Width</b>	0.9m	Log rollover
<b>Use</b>	Mountain Bike	Berms
<b>Direction</b>	Single direction	
<b>Total Ascent</b>	0m	
<b>Total Descent</b>	75m	
<b>Average Trail Gradient</b>	4%	



Precedent image

## Trail 5. Green link

Trail 5 is a 210m easy single direction trail which links the shuttle drop off to the shuttle trailhead. The trail is proposed to be an open functional trail getting riders to the top of the descending trails. The trail will feature few technical features and a smooth surface with typical finished width of 0.9m.



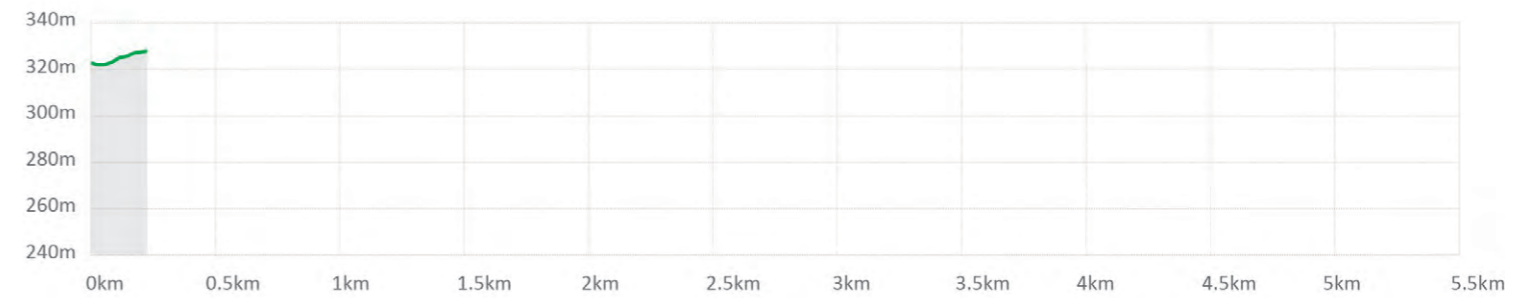
MAP 12 - Trail 5  
Williams Reserve Trail Network | Concept Plan

### Trail 5 Summary

<b>Classification</b>	Easy - Green
<b>Trail Length</b>	210m
<b>Trail Type</b>	Open
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.9m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	3m
<b>Average Trail Gradient</b>	1%

### Anticipated TTFs

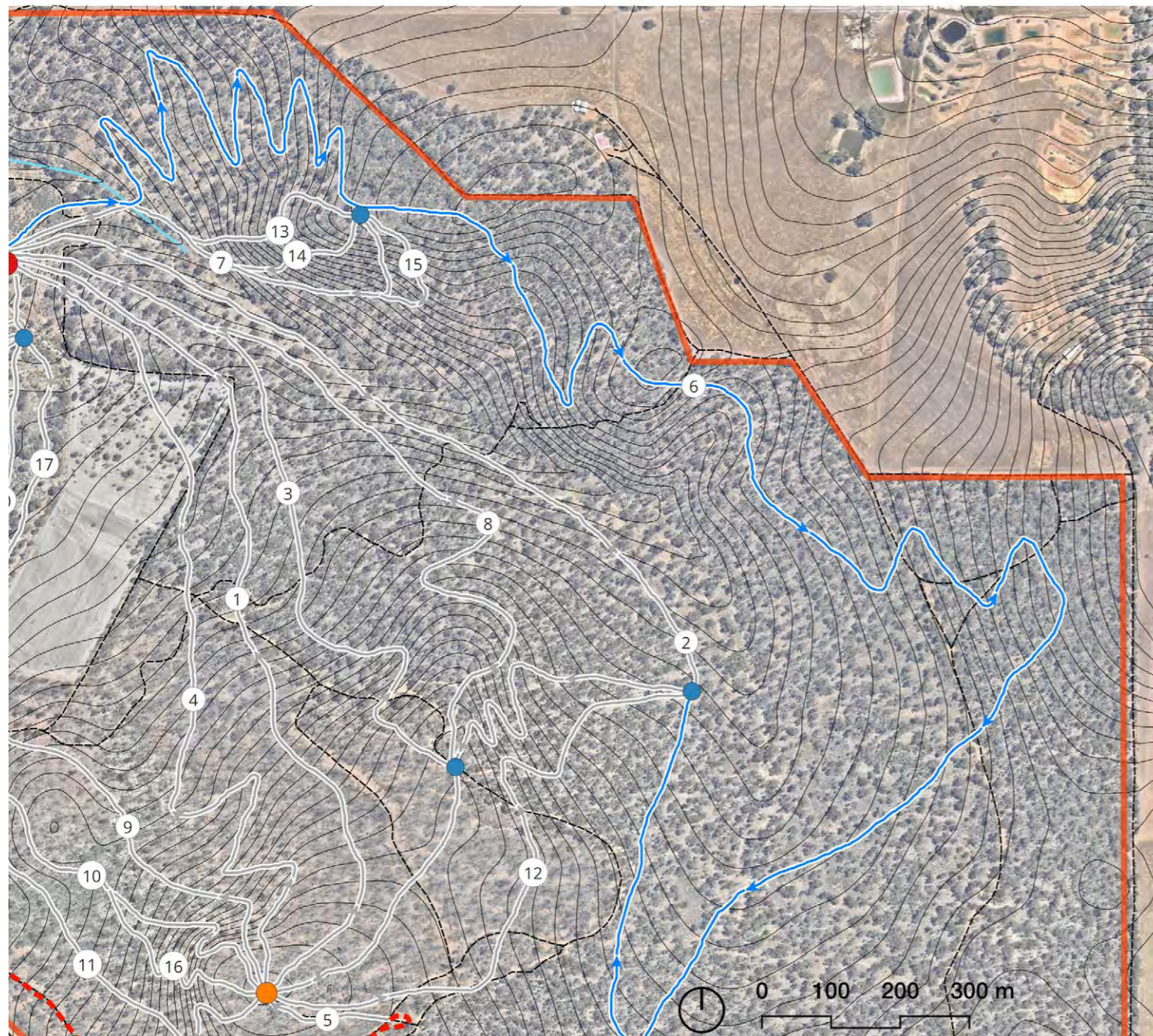
Rollers



Precedent image

## Trail 6. Blue adventure

Trail 6 is a 5.3km moderate single direction cross country trail offering a longer adventure style experience over natural terrain. The trail climbs and descends through the site taking in a range of vegetation communities and slope aspects. It features climbing and descending switchback corners with technical trail features with a rough surface with typical finished width of 0.8m.



MAP 13 - Trail 6  
Williams Reserve Trail Network | Concept Plan

### Trail 6 Summary

<b>Classification</b>	<span style="color: blue;">■</span> Moderate - Blue
<b>Trail Length</b>	5,310m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.8m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	96m
<b>Total Descent</b>	56m
<b>Average Trail Gradient</b>	3%

### Anticipated TTFs

- Insloped descending turn
- Outsloped descending turn
- Rising catch turn
- Berm
- Kicker Jump
- Rock Garden
- Rock Rollover



Precedent image



## Trail 7. Blue descent 1

Trail 7 is a 790m moderate single direction descending trail offering a cross country experience focused on natural, open and flowing trail over natural terrain. Located in generally steep side slopes, the moderate gradient trail descends from the northern trail node back towards the primary trailhead. It features continuous rolling grade reversals with flowy technical trail features and a rough surface with typical finished width of 0.6m.



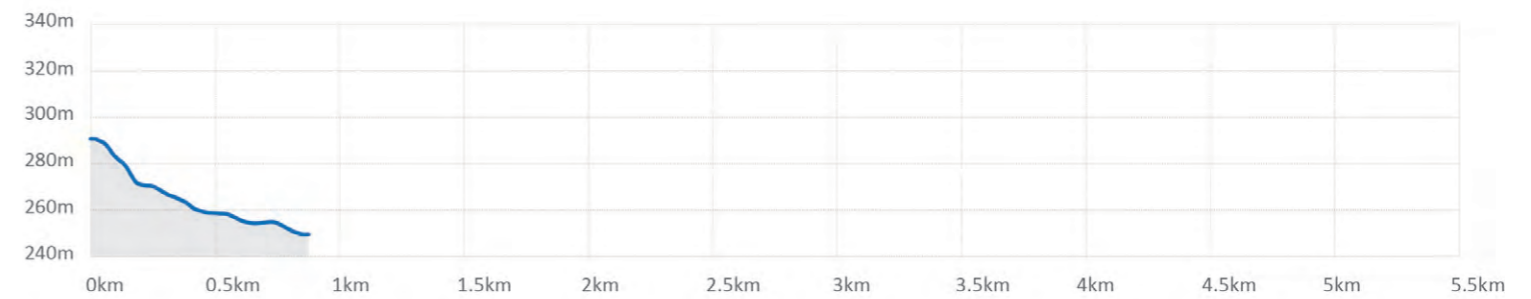
MAP 14 - Trail 7  
Williams Reserve Trail Network | Concept Plan

### Trail 7 Summary

<b>Classification</b>	<span style="color: blue;">■</span> Moderate - Blue
<b>Trail Length</b>	790m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	32m
<b>Average Trail Gradient</b>	4%

### Anticipated TTFs

- Insloped descending turn
- Rock Garden
- Rock Rollover
- Rollers



Precedent image

## Trail 8. Blue descent 2

Trail 8 is a 1.1km moderate single direction descending trail offering a cross country experience focused on natural, open and flowing trail over rocky natural terrain. Located in generally moderate side slopes, it is proposed to feature natural flowy trail features and a smooth surface with typical finished width of 0.6m.



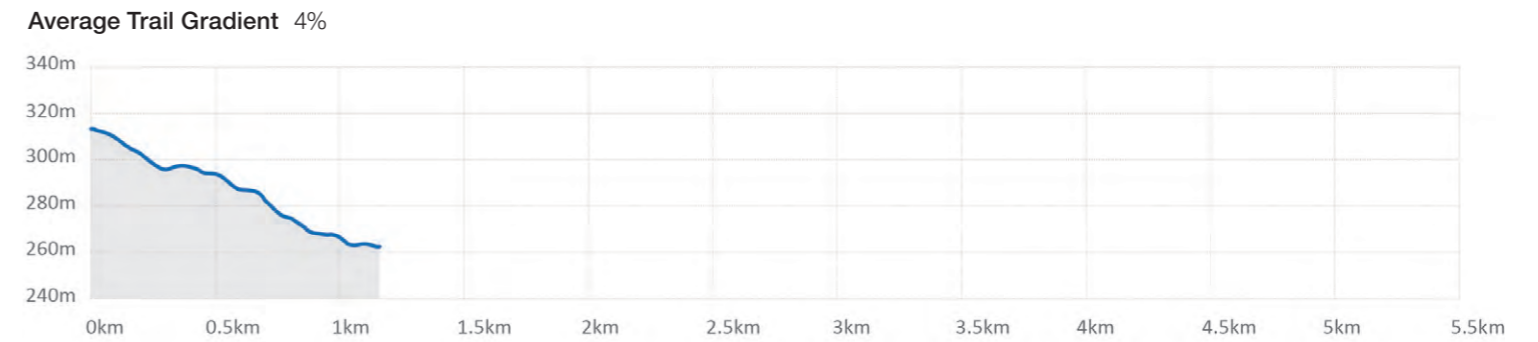
MAP 15 - Trail 6  
Williams Reserve Trail Network | Concept Plan

### Trail 8 Summary

<b>Classification</b>	<span style="color: blue;">■</span> Moderate - Blue
<b>Trail Length</b>	1,150m
<b>Trail Type</b>	Flowing
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	96m
<b>Total Descent</b>	47m
<b>Average Trail Gradient</b>	4%

### Anticipated TTFs

- Insloped descending turn
- Outsloped descending turn
- Berms
- Table top jump
- Kicker jump
- Rollers



Precedent image

## Trail 9. Blue descent 3

Trail 9 is a 790m moderate single direction descending trail offering a cross country experience focused on natural, open and flowing trail over natural terrain. Located in generally steep side slopes, the moderate gradient trail descends from the northern trail node back towards the primary trailhead. It features continuous rolling grade reversals with flowy technical trail features and a smooth surface with typical finished width of 0.6m.



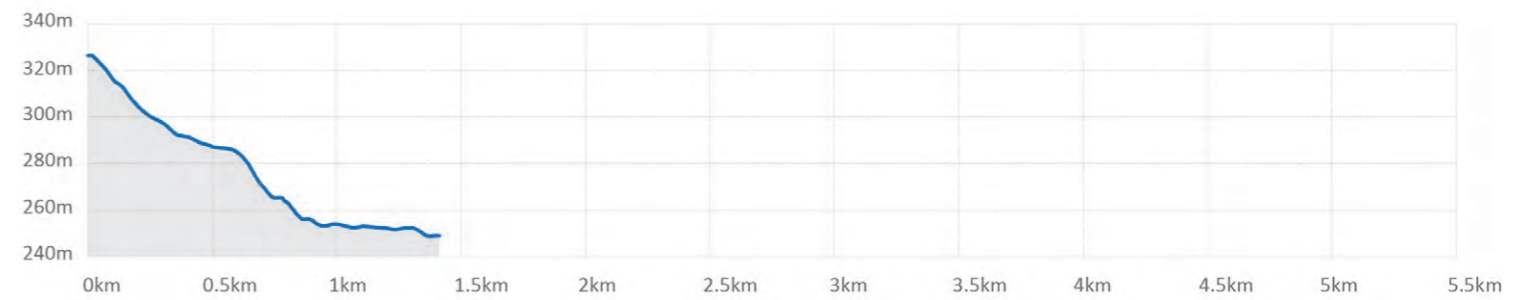
MAP 16 - Trail 9  
Williams Reserve Trail Network | Concept Plan

### Trail 9 Summary

<b>Classification</b>	<span style="color: blue;">■</span> Moderate - Blue
<b>Trail Length</b>	1,470m
<b>Trail Type</b>	Flowing
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	74m
<b>Average Trail Gradient</b>	5%

### Anticipated TTFs

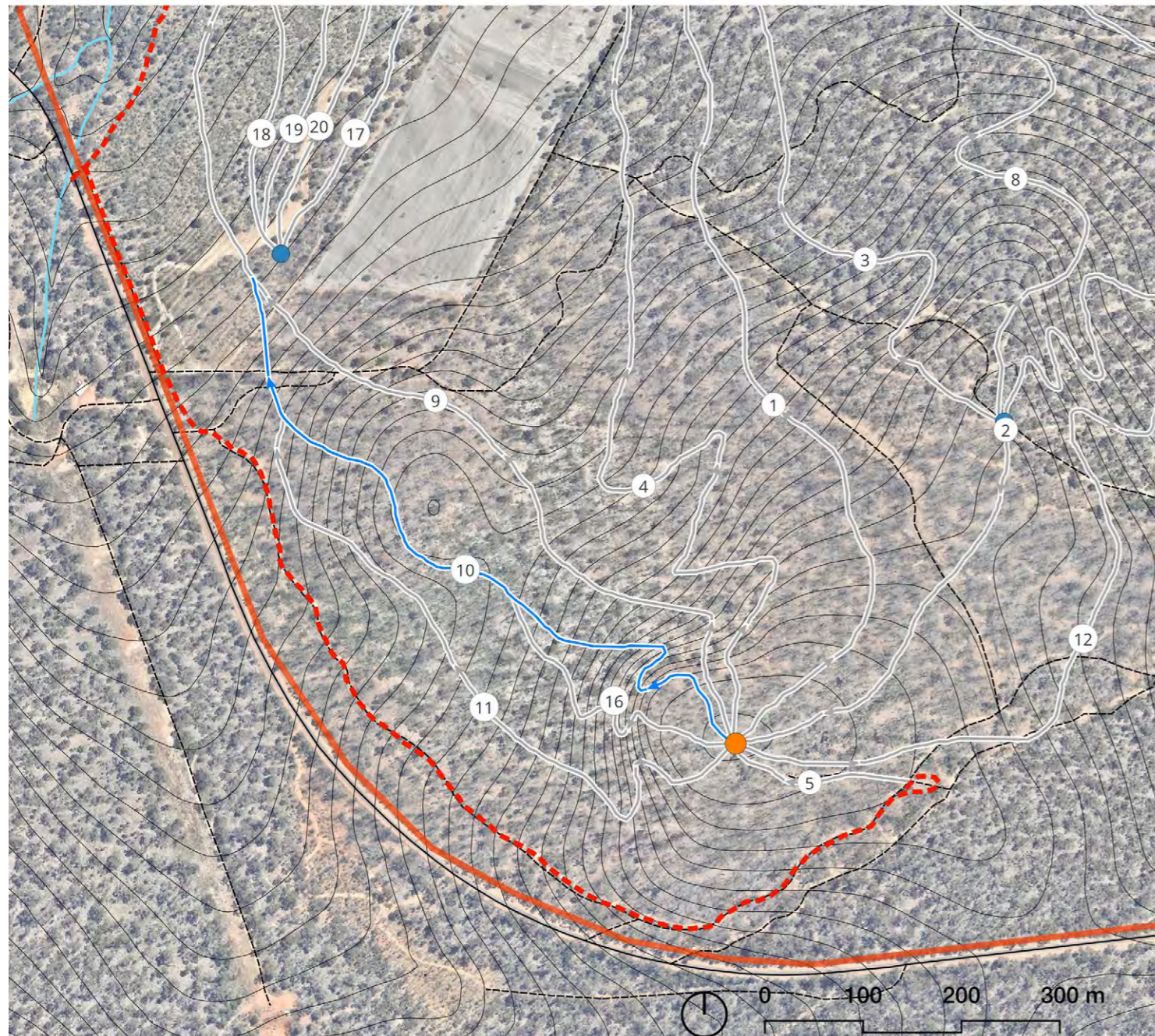
- Berms
- Table top jump
- Rollers
- Log rollover



Precedent image

## Trail 10. Blue descent 4

Trail 10 is a 910m moderate single direction descending trail offering a cross country experience focused on natural, technical trail over rocky and rough terrain. Located in generally moderate side slopes, the trail will feature flowy technical trail features with a rough surface with typical finished width of 0.6m.



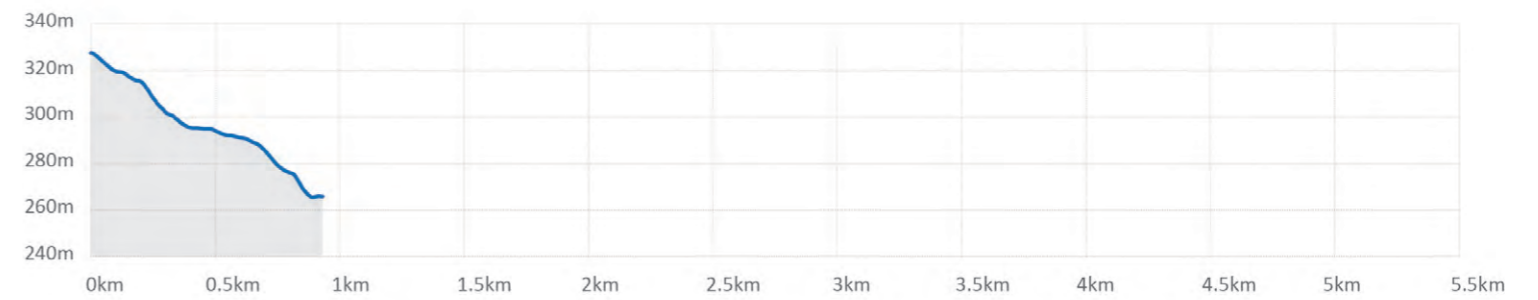
MAP 17 - Trail 10  
Williams Reserve Trail Network | Concept Plan

### Trail 10 Summary

<b>Classification</b>	<span style="display: inline-block; width: 15px; height: 15px; background-color: #0070C0; margin-right: 5px;"></span> Moderate - Blue
<b>Trail Length</b>	910m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	59m
<b>Average Trail Gradient</b>	6%

### Anticipated TTFs

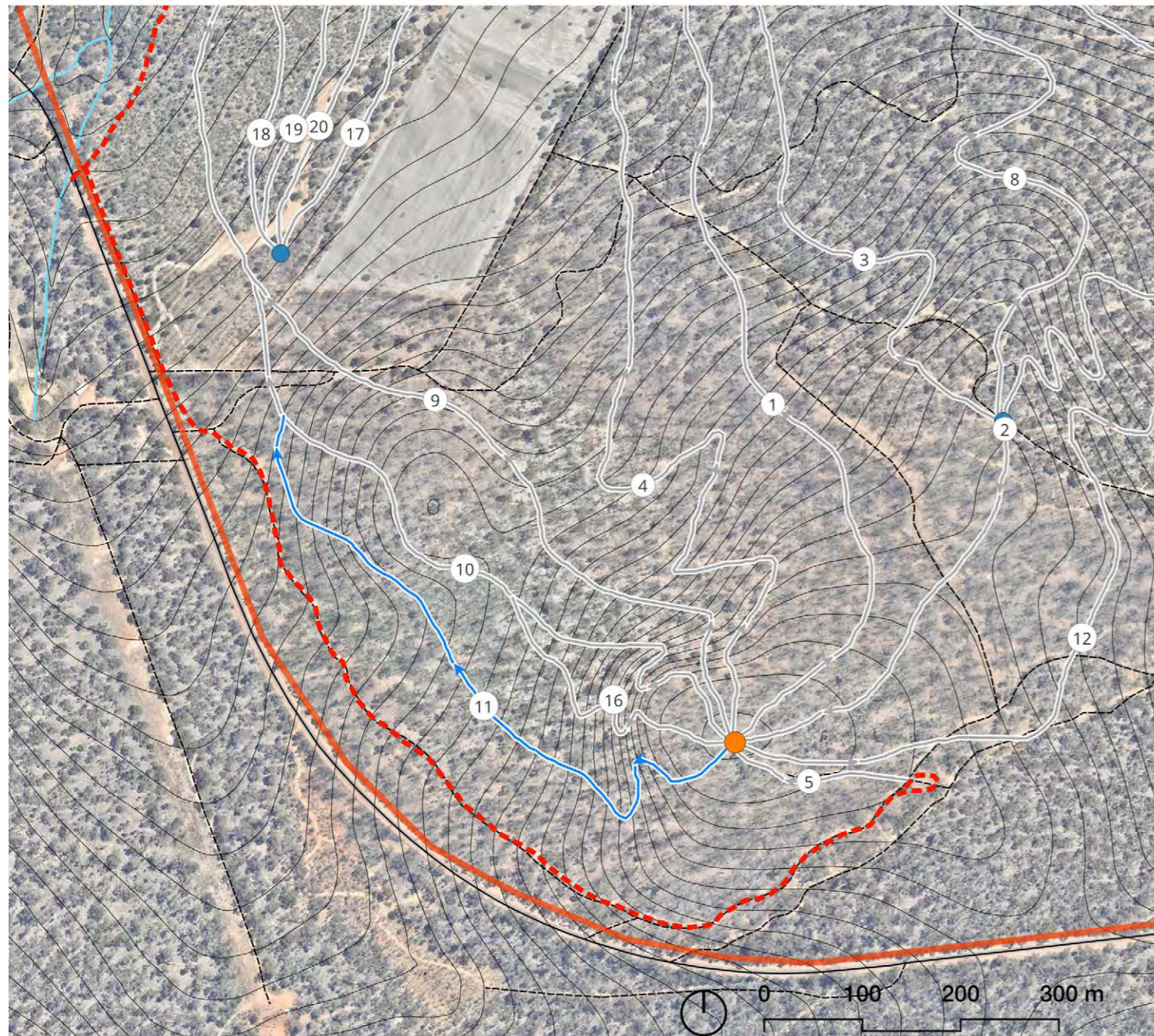
- Insloped descending turn
- Outsloped descending turn
- Berm
- Chicane
- Choke
- Rock Garden
- Rock Rollover



Precedent image

## Trail 11. Blue descent 5

Trail 11 is a 840m moderate single direction descending trail offering a cross country experience focused on natural, technical trail over rocky and rough terrain. Located in generally moderate side slopes, the trail will feature flowy technical trail features with a rough surface with typical finished width of 0.6m.



MAP 18 - Trail 11  
Williams Reserve Trail Network | Concept Plan

### Trail 11 Summary

<b>Classification</b>	<span style="color: blue;">■</span> Moderate - Blue
<b>Trail Length</b>	840m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	49m
<b>Average Trail Gradient</b>	6%

### Anticipated TTFs

- Berm
- Kicker Jump
- Rock Rollover
- Log Rollover



Precedent image


## Trail 12. Blue descent 6

Trail 12 is a 1.1km moderate single direction descending trail offering a cross country experience focused on technical trail over rough natural terrain. This trail offers a descent off the eastern aspect of the highest point in the reserve linking riders from the shuttle trailhead down to meet trail 2 where riders can then climb back up the hill. Located in generally moderate side slopes, the trail will feature technical trail features with a rough surface with typical finished width of 0.6m..



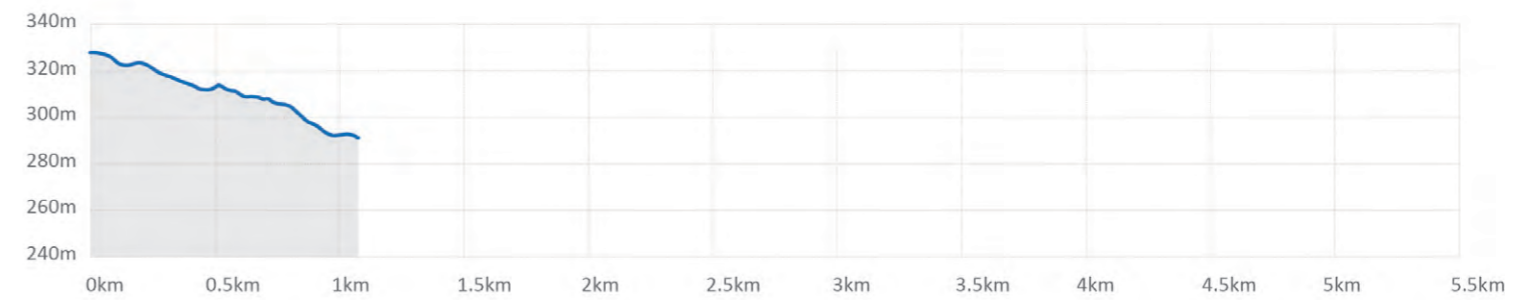
MAP 19 - Trail 12  
Williams Reserve Trail Network | Concept Plan

### Trail 12 Summary

<b>Classification</b>	 Moderate - Blue
<b>Trail Length</b>	1,100m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	35m
<b>Average Trail Gradient</b>	3%

### Anticipated TTFs

- Insloped descending turn
- Outsloped descending turn
- Berm
- Kicker Jump
- Choke
- Rock Garden
- Rock Rollover
- Log ride



Precedent image


## Trail 13. Black descent 1

Trail 13 is a 330m moderate single direction descending trail offering a cross country experience focused on natural, technical trail over rocky and rough terrain. Located in generally moderate side slopes, the trail will feature flowy technical trail features with a rough surface with typical finished width of 0.6m.



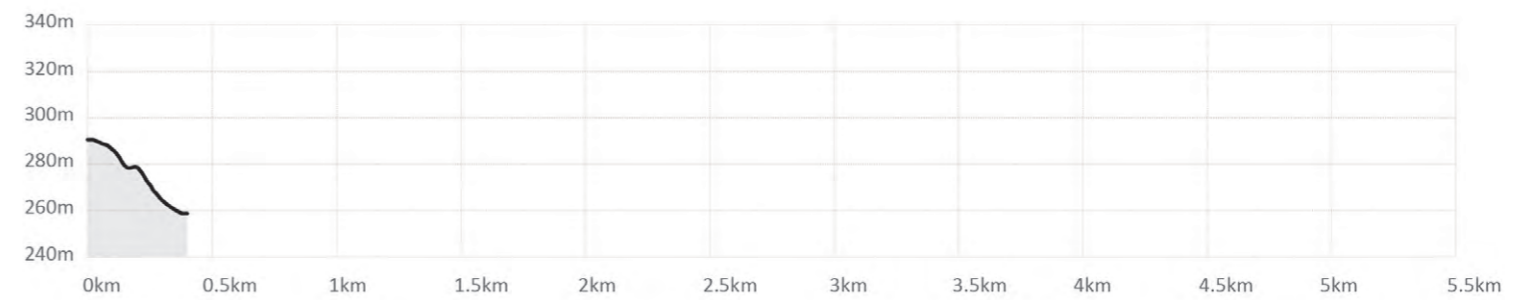
MAP 20 - Trail 13  
Williams Reserve Trail Network | Concept Plan

### Trail 13 Summary

<b>Classification</b>	 Difficult - black
<b>Trail Length</b>	330m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	28m
<b>Average Trail Gradient</b>	8%

### Anticipated TTFs

- Insloped descending turn
- Outsloped descending turn
- Berm
- Kicker Jump
- Chicane
- Choke
- Rock Garden
- Rock Rollover



Precedent image


## Trail 14. Black descent 2

Trail 14 is a 260m difficult single direction descending trail offering a cross country experience focused on steep technical trail over natural terrain. Located in generally steep side slopes, the moderate gradient trail form a part of the northern seasonable zone. It features technical trail features rough surface with typical finished width of 0.6m.



MAP 21 - Trail 14  
Williams Reserve Trail Network | Concept Plan

### Trail 14 Summary

<b>Classification</b>	 Difficult - black
<b>Trail Length</b>	260m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	26m
<b>Average Trail Gradient</b>	10%

### Anticipated TTFs

- Insloped descending turn
- Outsloped descending turn
- Berm
- Kicker Jump
- Grade Reversal
- Chicane
- Choke
- Rock Garden
- Rock Rollover



Precedent image




## Trail 15. Black descent 3

Trail 15 is a 260m difficult single direction descending trail offering a cross country experience focused on steep technical trail over natural terrain. Located in generally steep side slopes, the moderate gradient trail form a part of the northern seasonable zone. It features technical trail features rough surface with typical finished width of 0.6m.



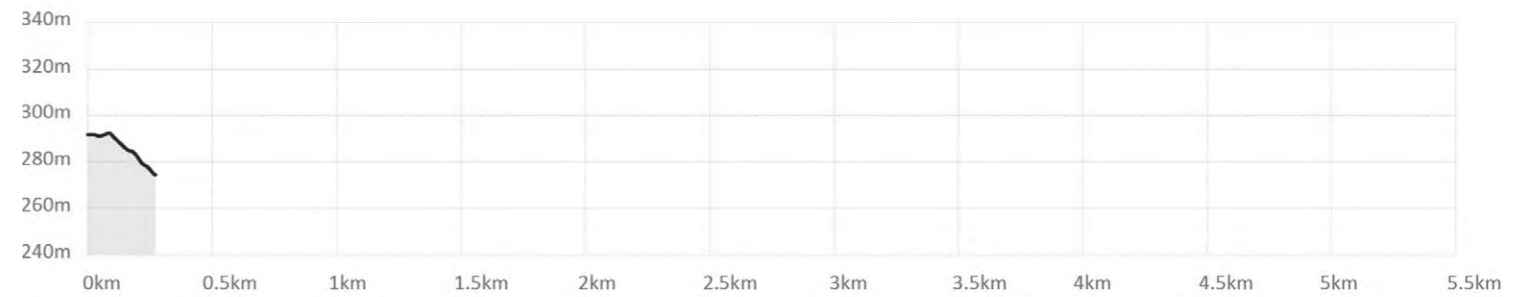
MAP 22 - Trail 15  
Williams Reserve Trail Network | Concept Plan

### Trail 15 Summary

<b>Classification</b>	 Difficult - black
<b>Trail Length</b>	260m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	17m
<b>Average Trail Gradient</b>	7%

### Anticipated TTFs

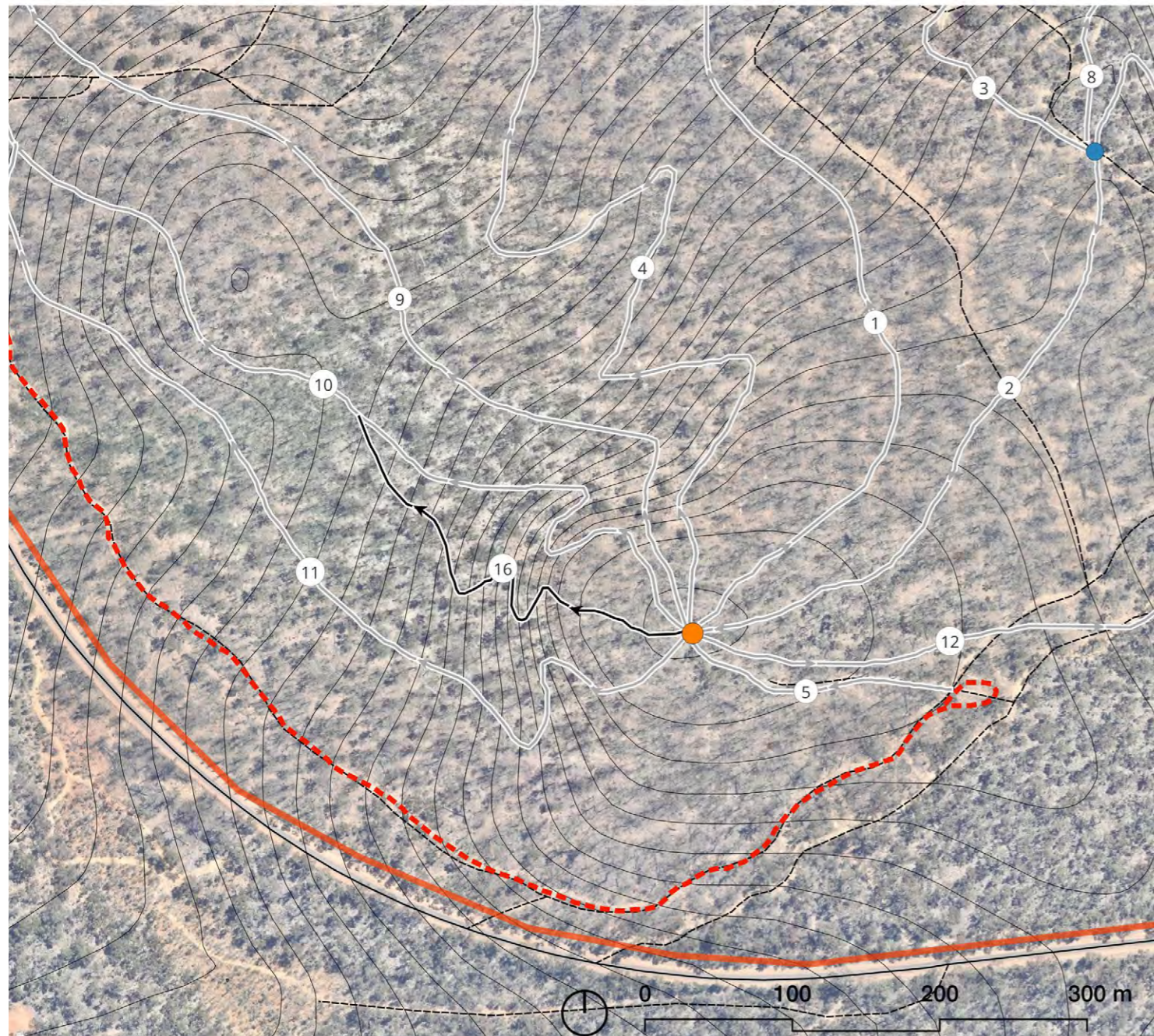
- Insloped descending turn
- Outsloped descending turn
- Berm
- Kicker Jump
- Chicane
- Choke
- Rock Garden
- Rock Rollover



Precedent image


## Trail 16. Black descent 4

Trail 16 is a 390m difficult single direction descending trail offering a cross country experience focused on steep technical trail over natural terrain. Located in generally steep side slopes, the moderate gradient trail starts from the shuttle trailhead and links into trail 10. It features technical trail features rough surface with typical finished width of 0.6m.



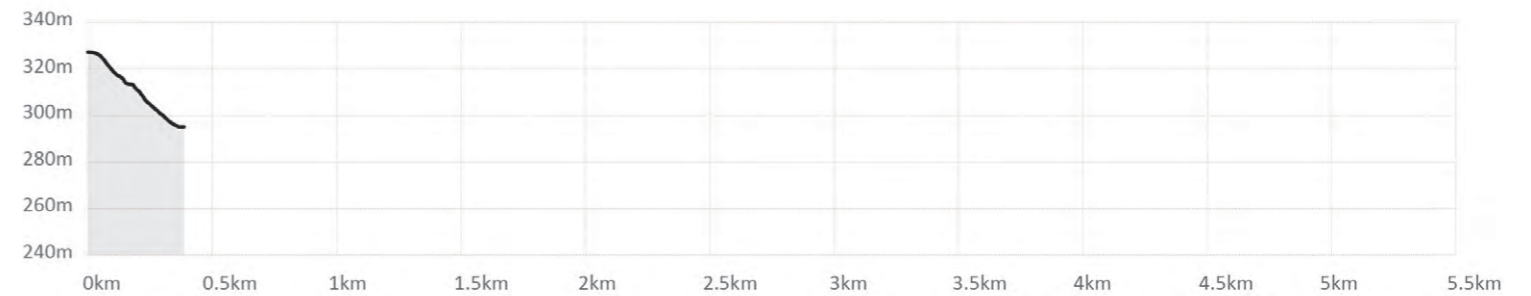
MAP 23 - Trail 16  
Williams Reserve Trail Network | Concept Plan

### Trail 16 Summary

<b>Classification</b>	 Difficult - black
<b>Trail Length</b>	390m
<b>Trail Type</b>	Technical
<b>Corridor width</b>	50m
<b>Tread Width</b>	0.6m
<b>Use</b>	Mountain Bike
<b>Direction</b>	Single direction
<b>Total Ascent</b>	0m
<b>Total Descent</b>	25m
<b>Average Trail Gradient</b>	6%

### Anticipated TTFs

- Insloped descending turn
- Outsloped descending turn
- Berm
- Kicker Jump
- Chicane
- Choke
- Rock Garden
- Rock Rollover

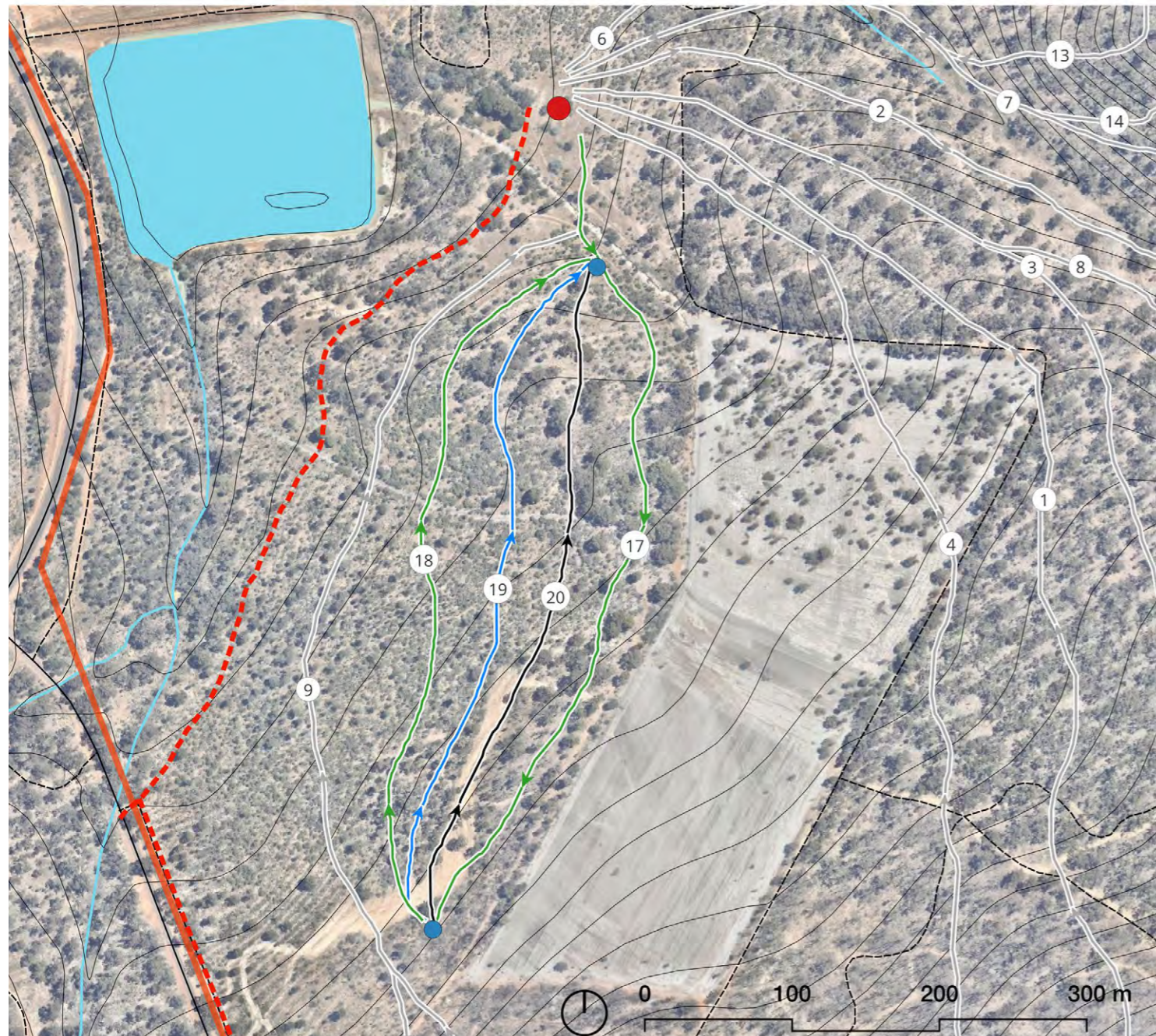


Precedent image

## Park zone

The park zone will feature 3 parallel jump lines featuring various scale and style jumps. An easy green climb trail will take all riders back to the start of each trail. The park will feature a trail within each classification enabling riders to progress their skills. A contained development such as this also allows for riders to watch their more advanced mates and learn technique and form.

It is proposed that the jump lines feature a variety of jump styles including table tops, gaps and hips and also contain varied materiality including timber and dirt elements.



MAP 24 - Park zone  
Williams Reserve Trail Network | Concept Plan



Precedent image



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