

Point Walter Reserve

MTB Facility

Detail Masterplan

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SECTION A

Project & Site Introduction

Point Walter Reserve MTB Facility

Mountain Bike Facilities in the City of Melville

In 2020 the City of Melville identified the growing need for mountain bike (MTB) facilities within its local government area. This was not a localised growth trend as MTB has grown in popularity and stature both state and nationally wide in recent years.

Point Walter Reserve is identified in the Perth & Peel Mountain Bike Masterplan as a site suitable for the development of a MTB facility. This location for the development of a MTB facility greatly benefit the residents of the City of Melville area but also encourage visitors to the area from the greater reaches of Perth and beyond.

Further to this the City of Melville are developing the City Wide Wheeled Play Strategy. *"Wheeled play as a whole has been identified as an expanding recreational activity and will be reviewed in a wider community consultation process in the coming years."*

The Point Walter Reserve Mountain Bike Facility

In September 2020 Common Ground were engaged by the City of Melville to get involved with the development of MTB trails at Point Walter Reserve. The engagement was initially broken into two stages:

Stage 1

Review the existing site, its current uses and look for opportunity for MTB trails. This was to be developed into a basic masterplan for presentation to the City of Melville.

Stage 2

Develop the masterplan in conjunction with the community to produce a detail design of the MTB trail in preparation for construction.

Stage 1 works were undertaken and a masterplan was presented to the City of Melville as presented on page 7 in this masterplan document. During the stage 1 works the potential the site has to accommodate a facility with additional riding opportunities/experiences beyond the intended trails was discussed and reviewed. Following this it was agreed that Common Ground's engagement would shift to prepare a detailed masterplan document with the intention to best explore the site potential and opportunities and provide the most considered and desirable outcome.

The intention of this masterplan document is to provide guidance to the development of the MTB facility by considering site opportunity and constraints, testing various facility types and potential layout of the masterplan.





Site Aerial Provided By Nearmap



LEGEND

- 1 CONCRETE PATH**
A dual use path borders the site on the North and West sides. The site has a good interface with the existing path on the west side. The north side of the site has a steep batter down to the path and overgrowth in most areas.
- 2 PLAYGROUND AND SHADE STRUCTURE**
There is an existing play area to the south of site at the top of the hill. It is connected to the west path and its uses will be complemented by the proposed bike facility.
- 3 TIMBER FENCELINE**
There is an existing play area to the south of site at the top of the hill. It is connected to the west path and its uses will be complemented by the proposed bike facility.
- 4 CONSERVATION AREA**
High value remnant bushland, previously subject to a degree of damage by unsanctioned NTB trail building.
- 5 CARROLL DRIVE INTERFACE**
This area is a Steep hill below a winding road and metal barrier. There is a potential safety issue here and should be considered. The steep hill however is a great advantage for the mountain bike trails
- 6 SITE INTERNAL VIEW**
Flat area at lower western end of designated site area, identified within this masterplan as location for asphalt pumphack.
- 7 CARPARKING**
Existing carparking lies to the north and south of the project site
- 8 PUBLIC TOILETS**
- 9 LAKE - MAN MADE**

A.4 Drainage Review



Due to the nature of the project site being naturally established bush and grassland the stormwater typically drains overland in the direction of the natural contours. This means the water drains north east on a downhill course towards the dual use path and northern carpark. The extent of structural stormwater infrastructure to the north of the site has not been investigated as part of this masterplan.

Due to the sandy nature of the site it is anticipated much of the stormwater goes to ground immediately and in the event of any large rain event any standing water would also dissipate to ground relatively quickly. This will require geotechnical confirmation to develop any drainage strategy upon in future design works.

The design of the Point Walter Reserve MTB Facility should take into account the existing land form and drainage paths. The existing drainage paths will likely form part of a larger drainage network that may impact upstream storm-water, therefore are required to be maintained during the design process.

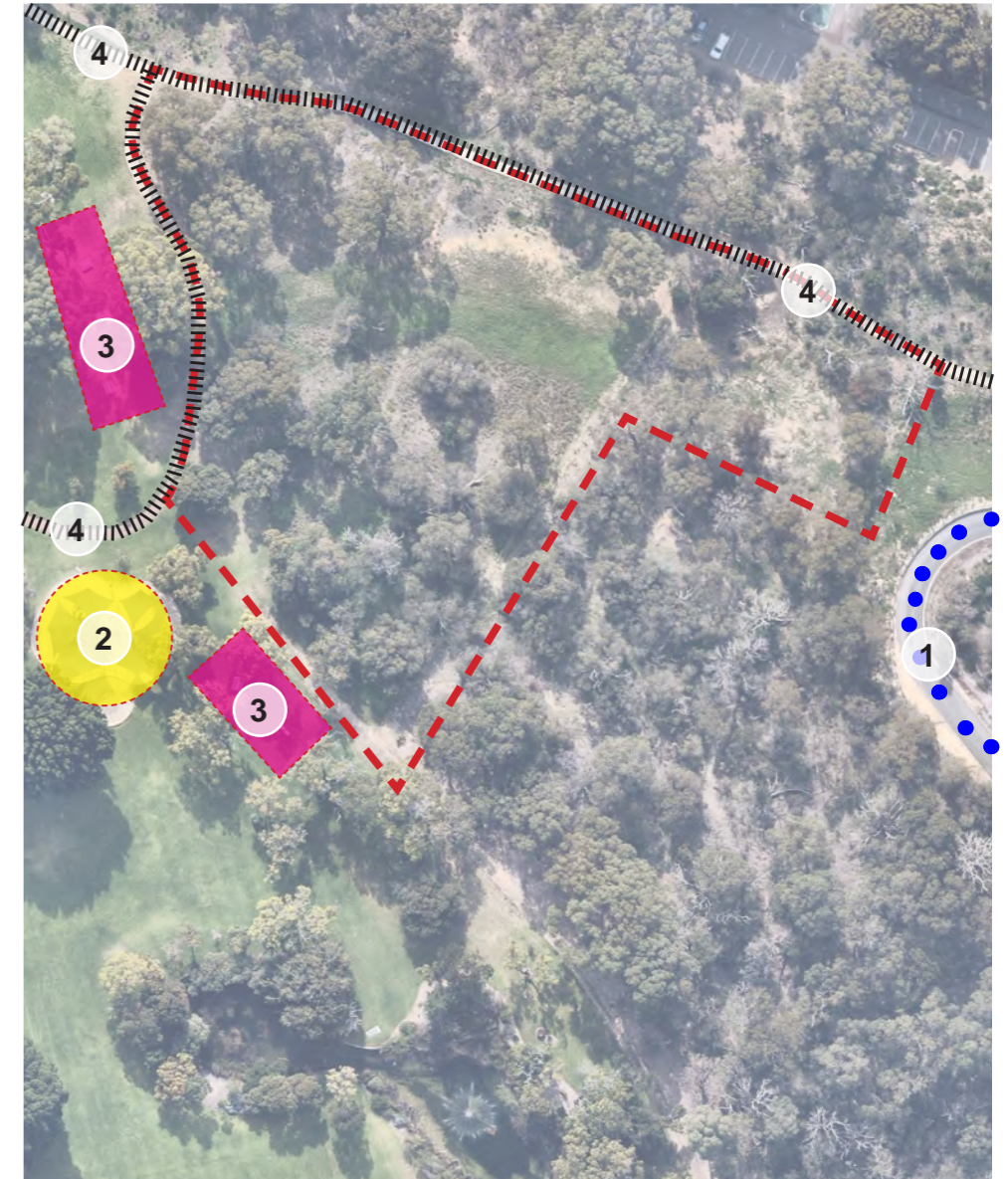
A.5 Existing Tree/Vegetation Review



There project site can be considered in 4 zones for existing vegetation strategy and quality:

1. The area shown in green in the above diagram is outside of the project site and is considered conservation, no impact is to be made to the vegetation in this area.
2. The area shown in yellow is within the project site and is a suitable for low impact development to best to minimise impact of any of the existing trees within the area. Trails may be suitable here that typically are able to avoid impact on vegetation.
3. The area shown in blue is within the project site, contains the most existing open space and the grade allows it to be suitable for more intensive development like a pump track. The vegetation within this zone is to be considered during future design phases to be incorporated as best as possible. Feature trees may be nominated as not for removal.
4. The pink area is outside of the project site and provides a buffer strip between the project site and the carpark. All vegetation within here is to be protected.

A.6 Existing Infrastructure Review



There are four infrastructure items immediately adjacent the project site that will require consideration in development of the masterplan:

1. The blue dotted line is Carrol Drive. This is a slow speed loop road and vehicle movements along it are not expected to impact the masterplan site, however it is elevated above the site and has steep grade batters from the road down into the site which will need consideration in design.
2. The yellow circle is an existing playground for best incorporation with the masterplan design
3. The pink areas are picnicking furniture and areas that has been positioned to cater to the playground and open turf. There is a share use and expansion opportunity for the picnic areas given their proximity to the MTB masterplan site. The playground offers recreation diversification which can be terrific and a draw-card for families with varying age and ability children.
4. The final infrastructure item is the concrete dual use path along the northern and western boundaries of the masterplan site providing connection to the broader Point Walter Reserve and beyond. In design there will need to be consideration to protect the pedestrian and slow speed nature of this path by designing adequate bike specific paths to ensure movement about the MTB facility does not negatively impact these existing paths.

SECTION B

Bike Park Zone Study

Point Walter Reserve MTB Facility



COMMON
GROUND



Pump track - asphalt surface



Pump Track -back to back berms



Pump Track - hipped Roller



Pump track - berm to berm



Pump track - built around existing trees



Point Walter Reserve MTB Facility
 Concept Masterplan April 2021

- LEGEND**
- 1 TRAIL HEAD PRIMARY
 - 2 TRAIL HEAD UPPER
 - 3 TRAIL HEAD LOWER
 - 4 OUTER LOOP TRAIL ONE WAY - STAGE ONE
 - 5 OUTER LOOP TRAIL TWO WAY - STAGE 1
 - 6 BEGINNER DESCENDING TRAIL - STAGE 1
 - 7 INTERMEDIATE DESCENDING TRAIL - STAGE 1
 - 8 INTERMEDIATE JUMP LINE - STAGE 1
 - 9 ADVANCED JUMP LINE - STAGE 1
 - 10 RETURN CONNECTION - STAGE 1
 - 11 MTB SKILLS AREA - FUTURE STAGE
 - 12 PUMP TRACK AREA - FUTURE STAGE
 - 13 ACCESS PATH - BIKE AND FOOT
 - 14 PARKING ACCESS PATH
 - 15 PRIMARY PARKING
 - 16 ACCESS TO RIVER AND FURTHER PARKING
 - 17 PROJECT AREA BOUNDARY
- 0m 10m
 SCALE 1:500 @A1
 N



Descending trails - earth berms, consecutive



Jump line - table top jump



Descending trails - timber features, drop off



Descending trails - timber wallride



Descending trails - flowing natural surface features



Descending trails - flowing berms



Skills obstacles - log Ride



Skills obstacles - log drops



Skills obstacles - balance logs



Signage and trail marking



Advanced jump line hip jump - Hip Jump



Multiple descending trails - timber features

B.1 Project Design & Process

Design

The design of the Point Walter MTB Facility comprised of 2 components. Firstly, the introduction of the following bike related facilities in a cohesive manner with existing facilities, services and uses of the greater Point Walter Reserve:

- Pump Track
- Jump Lines
- Skills Track
- Safety Track
- Trail head

Secondly, consider the landscaping of the site which is required to provide site connectivity and assist with place-making, functionality, maintenance and beautification of Point Walter for all within and beyond the City of Melville..

Process

The process to develop the masterplan has been a two step approach with phase 1 undertaking spatial zoning investigations where location and relationship of each component of the park was explored. This stage also included a public consultation session where participants gave input into the type of features and function they would like to see in the Point walter MTB facility.

Phase 2 includes the development of each component of the park to best demonstrate how the various components interacted with the existing site and each other. This phase also involved the preparation of a preliminary costing for future budgeting requirements.

B.2 Proposed Bike Facilities

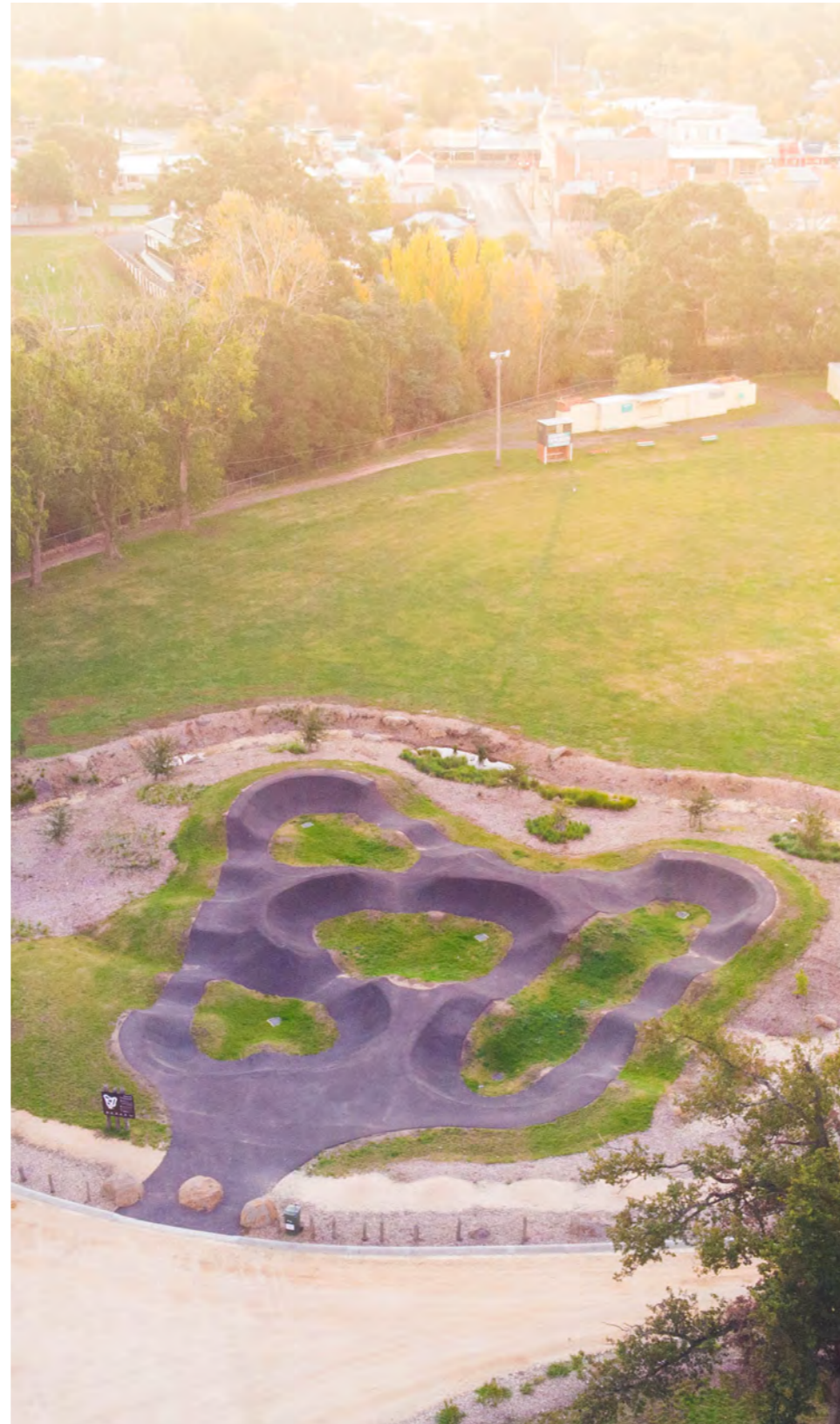
The exploration of the zones at Point Walter Reserve accommodates a physical area of each bike related component to ensure we have adequate physical space to accommodate a proposed facility type. A breakdown of the components are as follows:

1. Trail Head(s)

The trail head(s) are a key item in the planning and design of a bike park in scale to that of Point Walter Reserve. Ideally the primary trail head is located to capture the majority of park users upon arrival and as such facility use and safety signage is typically located here. Access to each facility and secondary trail head should be logical and ideally close from the primary trail head. Trail heads are the ideal spot to provide shelter, furniture and amenities such as water so users, supervisors and passive users have somewhere to congregate, rest and view/ supervise the activity.

2. Pump Track

There are many ways of designing a pump track which will impact the total amount of space required for the track and associated landscape/landforms. For the purpose of this masterplan we have targeted a scale ratio of 1:4 (track surface area : total area for track and associated landscape). This ratio provides scope for high variability in track design but can be designed more compact if useable area is of concern. Pump tracks are often the center piece of bike parks given their friendly nature to a lot of varying ability (and age) users. The primary trailhead often pivots directly off the pump track.



3. Skills Loop/Area

Due to the scale and shape of Point Walter it is suggested that a section of trail becomes the skills loop. Through design development a loop arrangement will need to be investigated also. Each feature will require varying challenge to cater to beginner, intermediate and advanced users.



4. Gravity Trail

The fall across the site provides adequate opportunity for the development of a gravity trail. Gravity trails are a one-way trail with features commonly found on descending trails. These include but not limited to jumps, drops, wall rides, berms etc. Typically there is a requirement for an "up-trail" to get the riders back to the top and a trail head at the top to allow for re-grouping, hanging out, shelter and any required signage



B.2 Proposed Bike Facilities (cont.)

5. Jump Line

A jump line requires an ideal lineal run of 60m minimum. Given the shape and fall of Point Walter Reserve a jump line will be comfortably accommodated. The lineal run of the jump line can bend however not aggressively, this is typically achieved with the use of a feature like a hipped table jump or similar. The kicker ramp, landing ramp and trail surfaces will all need material consideration which in turn will impact the cost of this facility.



6. Trail

The scale of Point Walter Reserve will allow for a variety of facility types which creates the requirement for connection within the site rather than relying on external path networks. An opportunity exists for a looping beginner/green loop to provide access for all users around the facility. This could include optional beginner skill feature and should be of adequate width for dual direction use and passing



B.3 Additional Facilities and Amenities

1. Pedestrian Access

The existing dual use concrete path network addresses the access for users and pedestrians to the MTB facility. During detail design consideration shall be given for logical connection points off of the existing path network (on the northern and western side of the site) to areas such as the Train Head(s). Within the site the trail will accommodate the pedestrian and user movements

2. User Parking

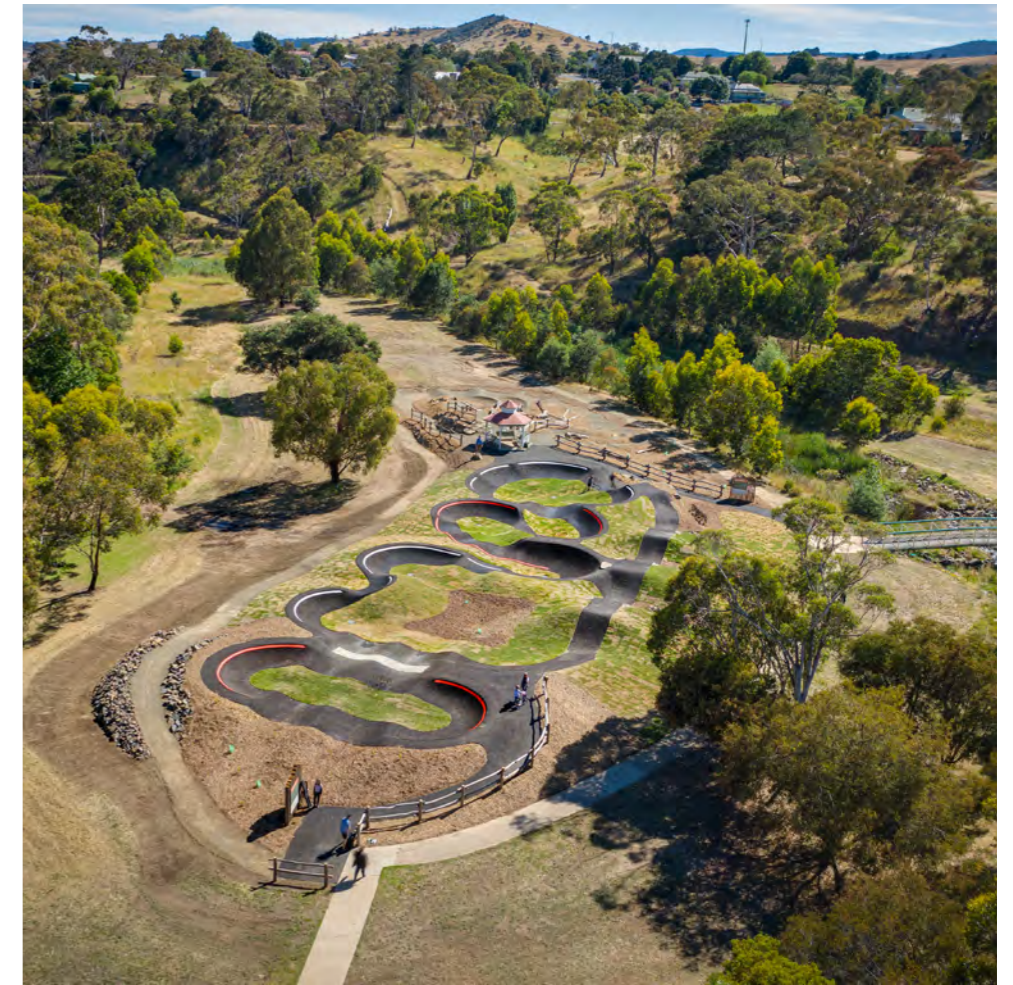
The MTB facility site has existing parking area on the southern side and northern sides. The parking on the southern side will provide the closest and most accessible parking. Any proposed additional parking is for consideration externally to this masterplan by the City of Melville.

3. Maintenance Vehicle Access

There needs to be consideration towards the access of maintenance vehicles into the site. Frequent access will be required to the BBQ/picnic facilities as well as access for regular maintenance and repairs to the bike features and facilities. It is anticipated this will be from the southern parking lot.

4. Landscape Treatment

The landscape treatment of Point Walter Reserve MTB Facility should be designed to be most appropriate to the adjacent MTB feature, be aligned to the existing environment and be considered from a maintenance perspective. The landscape finishes will become the glue of the bike facility providing logical connections into and through the Point Walter Reserve MTB Facility, provide amenity and create beautiful spaces that will make the site a pleasure for an active or passive user to experience.



SECTION C

Bike Park Masterplan

Point Walter Reserve MTB Facility













COMMON
GROUND



LEGEND

- 1** PRIMARY TRAIL HEAD AND SHELTER
- 2** LEARN TO RIDE TRACK
- 3** PUMP TRACK
- 4** PROPOSED CONCRETE PATH
- 5** MOUNTAIN BIKE SECONDARY TRAIL HEAD START MOUND
- 6** GRAVITY TRAILS
- 7** REST PLATFORM
- 8** SKILLS TRAIL
- 9** JUMP LINES SECONDARY TRAIL HEAD START MOUND
- 10** JUMP LINES
- 11** DUAL DIRECTION TRAIL
- 12** RETURN CLIMB TRAIL

-  COMPACTED TRAIL SURFACE
-  OXIDISED ASPHALT
-  ASPHALT PUMP TRACK
-  PROPOSED CONCRETE HARDSTAND
-  EXISTING CONCRETE DUAL USE PATH
-  SKILL LOOP FEATURES
-  JUMP LINE FEATURES
-  SHELTER
-  FURNITURE
-  EXISTING TREES



Legend

- Concrete
- Pump Track Platform
- Pump Track
- Learn to Ride Track
- Feature Paving
- Garden Bed
- Turf
- Mulch or Existing Surface
- 1 Shelter with Picnic Setting and BBQ
- 2 Bike Racks
- 3 Water Fountain
- 4 Sitting/Hangout Furniture
- 5 Rubbish Bin
- 6 Linemarked Learn to Ride Track with Signage
- 7 Role Play Nodes e.g. Police Station
- 8 Retention Drainage Basin
- 9 Primary Platform
- 10 Secondary Platform
- Rest Platforms
- 12 Transfer Opportunities
- 13 Double Roller
- 14 Step Up/Down Roller
- 15 Roller Rhythm Straight
- 16 Hipped Roller
- Maintenance and Emergency Vehicle Access
- Pedestrian Path Arrival Points to Trailhead
- ... Drainage Pipes
- Drainage Pits

Pump Track

Shown is an indicative asphalt pump track that would provide a facility that would cater to a large cross section of the active population of City of Melville. The surface treatment of asphalt provides a very accommodating smooth surface for most wheeled sports, is typically 2m wide, allows very smooth form of shapes and requires a very low ongoing maintenance program.

The design of the pump track provides a designated beginner area with the remainder of the loop classified as intermediate. Advanced features are found in the transfer opportunities within the track, there are 3 opportunity areas within this indicative design.

The track layout accommodates many popular pump track features including a double rollers, step up/down rollers, rhythm straights, hipped rollers and berms. The shown layout accommodates a primary platform at the southern end of the track and a secondary platform located at the northern end. There is also an additional rest platform as shown on the plan. The multiple transfer options provides multiple opportunities for varying direction.

Turf has been shown internally within the pump track and is a robust choice to best accommodate the batters and shapes of the adjacent ground. Where appropriate mulched or garden beds can be adjacent the exterior of the track however with caution that mulch doesn't become inhibiting on the track by constantly blowing onto the asphalt.

Trailhead

The Trail head needs to function as the primary node of the Point Walter Reserve MTB Facility. All features of the park need to hinge or be accessible from the Trail head. As such the trail head provides shelter, signage, sitting/relaxing furniture, rubbish bins, water point, bike racks etc.

Adjacent the shelters is the pump track primary platform, the main access point into the pump track. The primary platform will provide a gentle roll-in to the beginner portion of the track however will accommodate all pump track users with intermediate and advanced users able to exit the beginner portion of the track after one berm. The pump track is typically a heavily used facility in a bike park and is why the primary platform of the pump track is ideally associated with shelter, furniture and signage.

The trail head also accommodates vehicle access via the dual use path and allows space for a vehicle to perform a 3 point turn and leave.

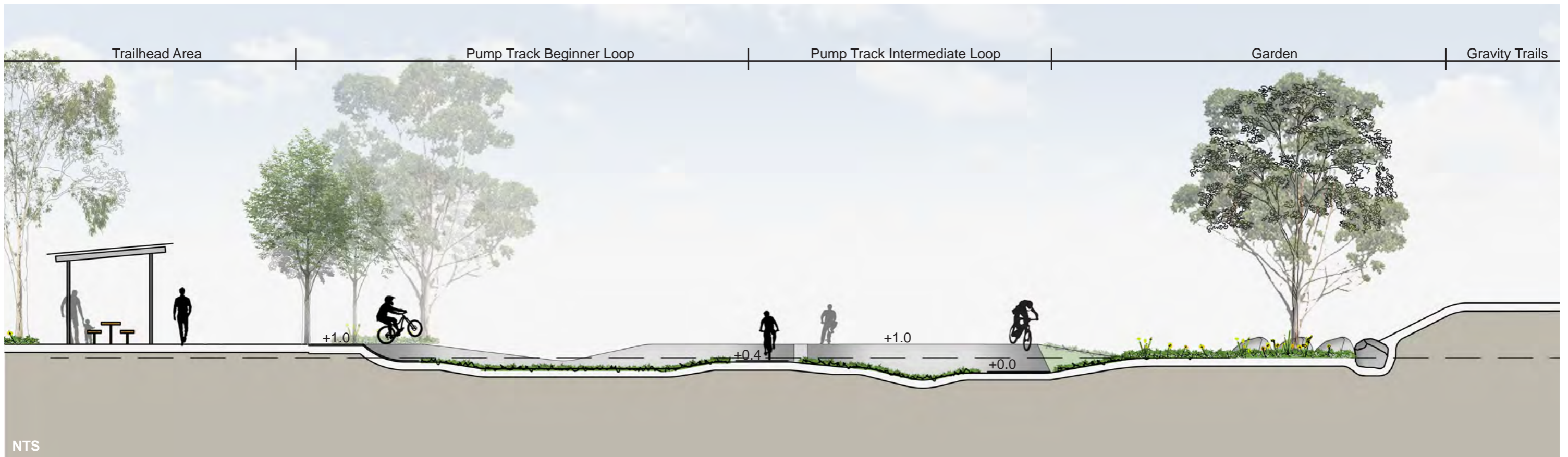
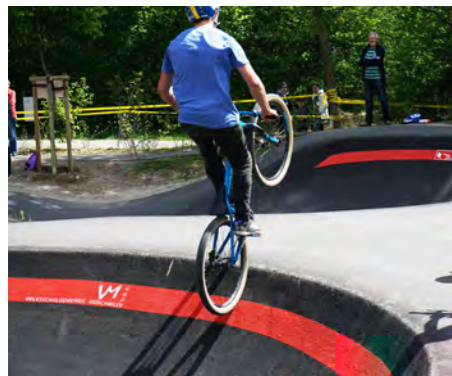
There are adequate areas within and around the trail head allocated to a soft landscape finish to accommodate the planting of additional trees and shrubs/groundcovers for both shelter and amenity.

Learn to Ride Track

The function of the Learn to Ride track is predominantly to assist with younger users become comfortable with riding their wheeled sport of choice from an ability perspective and to allow them to begin to understand and recognise typical linemarkings, signage and furniture that they will encounter on an actual street and how to ride and navigate a street environment safely.

The layout of the learn to ride track can include loops or circuits that can be raced or timed for fun, as well as nodes around the Learn to Ride track that should be focused on play. This could be varying items of generic play equipment or role playing type of furniture, maybe to replicate emergency services for example.

C.3 Pump Track, Trailhead and Learn to Ride Track Indicative Sections & Imagery





Legend

- Trail
- Compacted Fill to Jump Mounds
- Timber Features
- Access to Gravity Trails
- Jump Line Start Platforms
- Tabletop Jump
- Hipped Tabletop Jump
- Whale Tale
- Return Berm
- Return Trail
- Rest/Viewing Platform
- Informal Log/Boulder Seating Beneath Existing Trees
- Beginner Jump Line
- Intermediate Jump Line
- Advanced Jump Line
- Jump Line Return Trail

Jump Park

Jump Lines: 3
Typical Width: 2m

The jump park consists of a beginner, intermediate and advanced line. Direct access to the jump lines is from the secondary trail head area. The elevated starting platform provides the necessary vertical drop down the start ramp to generate the appropriate speed for the first tabletop jump and to set the user up for the remainder of the line.

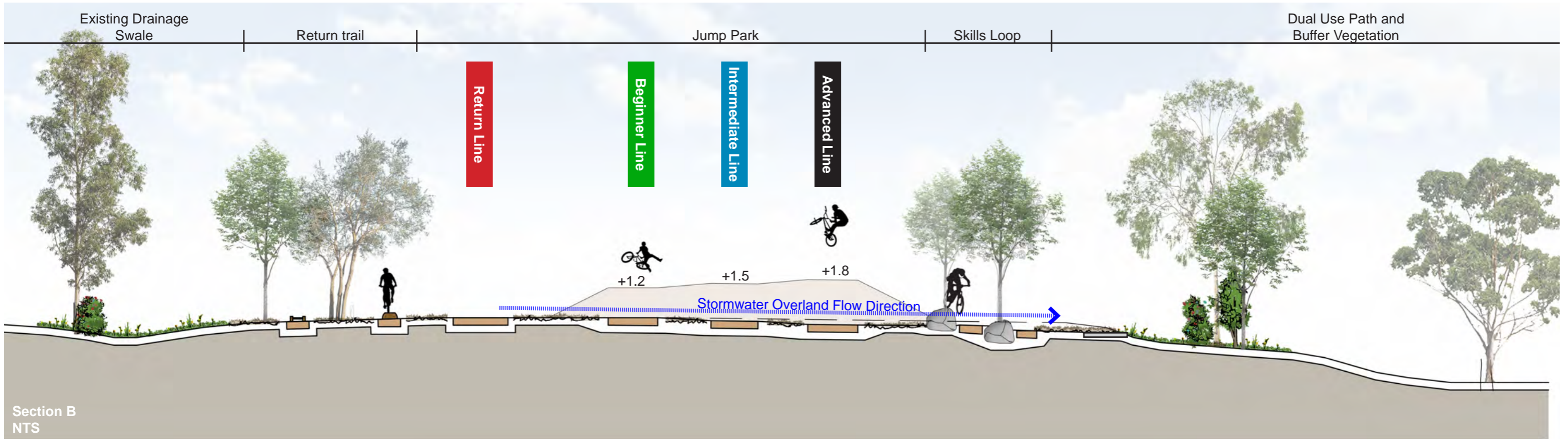
The beginner line provides a place for users to start with the jumps having a lip of 0.9 - 1.2m high and a tabletop length of 1.5 - 2.5m. The pitch of the jump isn't too steep or intimidating. The shape of the jump and tabletop are to accommodate users to roll the feature if they wish. The jumps are straight in nature with no hipped jumps.

The intermediate jumps provide a progression from the beginner line with the jumps having a lip height of 1.2-1.5m and a tabletop length of 2.5 - 3.5m. The jumps are to be shaped to be forgiving if a user comes up short in a jump.

The advanced jumps provide a the most challenging jumps containing lip heights of 1.5-1.8m and a tabletop length of 3.5 - 4.5m. The jumps/features are to be shaped to be safe for the intended user who will typically be going faster and higher than the users of the beginner and intermediate lines. There is the opportunity to include an advanced feature like a Whale Tale as shown in this indicative design.

Safety of users in a jump park needs to be best addressed through eliminating potential collision points for riders utilising multiple lines at the same time, including the return line. There needs to be clear signage at the start of the jump line indicating the severity and risk of each jump line.

Overland drainage is to be designed into the jump line area to drain between the jump mounds to the north into the exiting drainage paths/network. The jump mounds therefore will predominantly be built upon natural ground level.





Legend

- Trail
- Compacted Fill to Jump Mounds
- Rock/Boulder Skill Features
- Log Skill Features
- Timber Skill Features
- 1 Secondary Trailhead and Starting Platform for Gravity Trails
- 2 Berms
- 3 Trail with Features Where Appropriate and Positioned Amongst Existing Trees
- 4 Rest/Viewing Platform
- 5 Return Climbing Trail with Optional Climbing Skill Features
- 6 Secondary Platform at End of Skills Trail for Rest
- 7 Informal Log and Boulder Seating
- 8 Concrete Path Access from Primary Trailhead
- 9 Log Rollover
- 10 Rock Garden
- 11 Ladder Drop
- 12 Balance Log
- 13 Boulder Drop

Skills Loop

The skills trail provides a layout that will be user friendly and appealing to all ability of users. Each feature noted will accommodate a beginner, intermediate and advanced line as well as an option to miss the feature altogether. Typically the trail will be 600-900mm wide with widenings at skill obstacles as required.

The features include but should not be limited to log rollovers, rock drops, teeter totters, balance beams, balance logs, rock gardens, rollers and small jumps.

Ideally there will be a shaded/sheltered area nearby where users can rest and watch others using the skills loop. This is accommodated in the indicative design with the secondary trailhead area and rest/viewing platform.

In the same nature of the jump park the drainage around the skills loop is to overland into the existing drainage path to the north of the skills trail.

Gravity Trails

The indicative layout shows the gravity trails to fall with the natural grade of the site. The true alignment of the trails will require detail understanding and cohesion with the existing site to take advantage of opportune features such as rocky outcrops or steep banks. The trail will need to be designed to reduce impact on the existing vegetation. Retention of the vegetation will provide a desirable environment for the trails.

Varying features will be included on the gravity trails including jumps, drops, berms, wall rides etc. The trails should be flow in nature and the rider should experience a smooth but exciting flow experience from top to bottom with challenge coming with graded features.

There is the opportunity to provide transfer options between the trails however will need to be designed to accomplish this safely including adequate sight lines at and before transfer opportunities.



SECTION D

In Summary

Point Walter Reserve MTB Facility

D.1 Summary of Masterplan

The masterplan presented in this document has developed through a thorough and detailed process to ensure that the end result is a park that will be special to the City of Melville. Common Ground are confident this masterplan arrangement will elevate the Point Walter Reserve to be a landmark for locals and visitors by providing additional programmed uses, retaining passive spaces and by upgrading the aesthetic and amenity value.

To ensure this is the outcome Common Ground have undertaken a thorough review of Point Walter Reserve, undertaken a study and tested a variety of zoning options and finally undertaken masterplan design for each part of the facility to test its relationship to site. A working process from the macro to the micro. The City of Melville has provided review and guidance as part of the process to deliver the masterplan shown in this document.

While the masterplan will evolve further during the full detailed design process, the structure that has been provided in this document provides a clear layout of the various facilities for the Point Walter Reserve MTB Facility. It provides strong connection to the external paths systems and roads (parking), provides strong internal connection, has been scaled appropriately to meet site constraints and has been considered from an aesthetic and amenity experience. It is expected and encouraged that further detail design work will test 'the bones' of this masterplan. With the guidance of this document any shifts in future design stages should be able to be done in a cohesive manner to ensure the entirety of the facility intent stays intact.

D.2 Where To From Here

Common Ground has been engaged to deliver the Masterplan portion of the Point Walter Reserve MTB Facility project. This document may assist in gaining funding for further design and construction of Point Walter Reserve.

This document may be helpful for seeking construction funding purposes in that it provides an overview of the vision and direction of the project. Seeking funding for construction of a project of this nature often requires it to be shovel ready. This would entail:

- going through a design development process to develop detailed concept plans/documents
- proceeding into producing documentation and specification for tendering/construction purposes
- undergoing vigorous cost estimates review at each step of the process

The City of Melville will also need to review how they anticipate the project to be delivered. This includes:

- If the further design or construction of the project is to be staged. If so what is the order of delivery
- Is there comfort and benefit for a Design and Construct contract to develop the masterplan through to completion as one contract or;
- Is there more comfort or benefit with design and construction occurring independently of one another

Whichever approach the City of Melville takes the project is a very exciting one that has a lot of work and joy ahead of it.



