



## Design Concept Rationale



## About this document

This document is the Design Concept Rationale prepared as part of the Ardeer Green Activity Hub Cycle Sports Facilities Master Plan.

## Acknowledgments

**Jeavons Landscape Architects** have prepared the master plan for this site.

**Ecology and Heritage Partners** prepared the flora and fauna assessment and cultural heritage review.

**Meinhardt Engineering** prepared the stormwater assessment.

We thank the following agencies who formed the Project Steering Group, as well as the input provided by VicRoads, and the Footscray Cycle Club.



## Contents

<b>The project</b>	<b>2</b>
<b>Cycle sports facilities – concept and rationale</b>	<b>3</b>
<b>The Draft Master Plan</b>	<b>7</b>
<b>Site design and images</b>	<b>8</b>
<b>Attachment 1.</b>	
<b>Criterion tracks in Australia</b>	<b>16</b>

All rights reserved.  
No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form, by any means, without the prior written permission of the Brimbank City Council and @leisure



Rear 534 Mt Alexander Rd  
Ascot Vale Vic 3032  
03 9326 1662  
info@atleisure.com.au  
www.atleisure.com.au



**Jeavons Landscape Architecture**

## The project

This project is the Ardeer Green Activity Hub Master Plan. The project will create a key destination in the west for cycling.

The site chosen for this master plan is an area in the suburb of Ardeer bounded by Forest Street to the South; the Western Ring Road / M80 to the West; Ballarat Road to the North; and the Kororoit Creek to the East (see below).

This Master Plan will be used to guide the future development of this site and will be a key document used to seek funding opportunities to assist the Steering Committee in developing the Ardeer Green Activity Hub.

This document provides a design concept and rationale for providing cycle sports facilities at the Ardeer Green Activity Hub.

## Methods

The following methods were used in the preparation of this document:

- Consultation with Footscray Cycle Club and Cycling Victoria
- Discussions with the Project Steering Group (Department of Health, City West Water, Melbourne Water and City of Brimbank)
- Site analysis
- Review of Cultural heritage, drainage / water, and ecological reports provided by sub-consultants.

The scope of the project did not provide for community consultation.



**Ardeer Green Activity Hub Master Plan area**



## Cycle sports facilities – concept and rationale

Cycle sport facilities are ideal to activate this site, as cycling has the second highest participation rate of any sport and physical activity in Australia. Cycle sports can be participated in at a range of levels, such as recreationally and as a competitive sport. Cycle sports have mass appeal, with people of all ages, genders, abilities and cultural backgrounds taking an interest.

Additionally, there are a wide range of different disciplines. The site is conducive to siting several different cycling facilities.

Specific types of cycle sports facilities have been selected and designed so as to integrate with the site objectives.

The site will be redesigned and managed in order to:

- Allow indigenous and other appropriate specific vegetation to thrive
- Enhance the amenity and environmental integrity of the site.
- Increase physical activity on the site, in a municipality where sport and physical activity participation is the lowest of all municipalities in Victoria
- Provide for a sport that is in high demand, currently not well served, and can be provided in a relatively sustainable way. Additionally, the sport is relatively compatible with the environmental objectives for the site.
- Provide for activities that are likely to add diversity to the offerings available to local young people, for organised sport as well as unorganised recreation.

The site has the opportunity to cater for cycle sports and cycling as a recreational pursuit. Most importantly, there is an opportunity to provide multiple disciplines of cycling. This is important for a cycle club, as cycling clubs that focus on just one discipline of the sport or one age group are unlikely to be sustainable, nor can they encourage greater participation.

There are a number of cycle sports disciplines. These include:

1. Mountain biking (MTB) (such as down hill, cross country, Four cross, freeriding etc.)
2. BMX (such as competition racing, dirt jumps, pump, freestyle and flatland)
3. Road cycling: cyclocross, road racing and criterium racing
4. Track cycling (on a velodrome).

### MTB

The greatest growth in cycle sport disciplines at present is in MTB. The closest cross country MTB park may be located in the You Yangs, although there are a few urban tracks, which may not have been purpose built, and are in varying conditions. One such track is in Westgate Park.

This site provides an opportunity for a short, local level recreational mountain bike trail.

#### *A small single track cross country MTB circuit*

Such a small single track cross country circuit would be suitable for young people learning, e.g. parent and son / daughter recreational riding. The most similar urban track is in Westgate Park. Reportedly, this track is not in good condition at present. However, it has been used for recreational riding and twilight competition.

The suggested track in Ardeer could be approximately 3km long. It would use the “goat track” that already exists along the top of the escarpment on the west side of the Kororoit Creek, and would return via the maintenance track along the M80 (which is unsealed).

Small deviations from this alignment could be made in less significant areas to create changes in grade, utilise structures such as ladders / timber ramps (see images further in the document) to create challenges, and utilise existing rocks and fallen timber as features of the track. These areas would need to be carefully mapped on site and trial ridden by an experienced mountain bike rider. Also, where the more challenging features are provided, a “chicken run” would be provided for less proficient riders to be able to bypass these features.

The single track may require some minor armouring to prevent erosion on slopes. This track has the benefit of not only providing a new experience to young people in the area, but also bringing people into a site which has beautiful trees, interesting environmental features, views of the creek, as well as high restorative values. A single track can sit on top of the ground (in this case largely the existing alignment), with little impact on environmental features. Therefore it is highly compatible with the nature values of the site (see images further in the document).

## **BMX**

BMX tracks can be provided as dirt jumps, pump tracks or recreational circuit tracks, or even as a competition-racing track.

### ***Dirt jumps / pump track***

These tracks should provide graded challenges in height and jump form. More proficient riders need a run of doubles that are formed with launch and landing jumps. A maximum height of 1.5 meters is recommended in a public place.

Young and less proficient riders should have access to lower jumps that are formed as table tops that can be jumped or ridden over. Three runs of jumps are recommended to provide graded challenges, so all riders are catered for, and so as to encourage rider development.

The closest dirt jumps and pump track is in the City of Melbourne.

### ***BMX track (competition or recreational)***

There is no BMX track in Brimbank. The closest competition track is in Sunbury or Wyndham.

The site has the space to provide a BMX track. The space required is approximately 120m by 100m. A BMX track is generally between 300m - 400m long. The track could be provided as an informal recreational track that could be developed as a competition facility at a later stage.

A lower grade recreational track would encourage skill development and allow for training. An experienced BMX designer must prepare the design of this facility.

All competition tracks are operated by a club. It is a very family-oriented sport. They are often fenced, but have an open gate to allow for cyclists to enter. At present the Footscray Cycle Club (who are the likely main users of the criterium circuit) do not offer BMX competition. The best position for such a track has been identified on site for if/when Council or a club wishes to pursue this element.

The start hill and finish line are best located adjacent to the west, so as to be serviceable off the maintenance vehicle track.

Competition tracks are typically provided on a regional basis. New facilities tend to have lights.

This is a good site for such a facility, as it is away from residences. In the long term, this track could be used for events if developed to a competition standard.

Competition tracks are typically provided on a regional basis.

## Road Racing

### *Criterion track*

This site has potential to provide the following facilities - all of which have direct relevance to the local community, provide family-based opportunities, graded challenges for local people to develop skills, and present opportunities for club competition or a pathway to competition. The potential facilities possible include:

- A criterium circuit
- A small single track cross country MTB circuit
- A recreational or competition BMX track
- Dirt jumps / pump track.

The criterium circuit could be approximately 1km in length and frame the large open space, which will be remediated as native grassland (see images further in the document). This will be a sealed "road" facility 8m wide. It will enable a club to run competitions, as well as younger and older people to learn to ride and train in a safe environment off-road. For supporting information related to other criterium circuits Australia-wide, see *Attachment 1*. The track will need to be supported by a toilet / change room and space for a commissaire, marshalling area, and it would be desirable to include warm up facilities. However, as there are several shared paths for the site (M80, Kororoit creek trail, and the trail from Derrimut to Sunshine Rd), these paths could be used for warming up.

The closest cycle club is the Footscray Cycle Club. It currently races in Wyndham.

This site would provide the club with a base, from which to grow participation (especially juniors) and potentially offer other disciplines of cycling, as without a facility, the club will struggle to attract additional riders.

The closest criterium circuits are in Wyndham (off-road), Moonee Valley (Essendon Fields on-road) Hume (Campbellfield on-road) and Melton (off-road). The Wyndham facility is a private driver training facility and may not be available in future. The Melton off-road facility is poorly designed and not used for racing.

There is a major demand for a criterium circuit that is well designed and off-road, as it is increasingly difficult and expensive for club to close roads for racing. The other benefits of providing an off-road criterium circuit are that they can be used by both older and young people, and people with a disability (such as hand cycling and wheel chair racing) to learn and train safely off-road.

## Other options for cycling facilities

The other options for types of cycling facilities are cyclocross (CX) track or a velodrome.

### *Cyclocross*

It is not proposed to provide for cyclocross on this site. Cyclocross is a discipline that is growing and becoming very popular with both females and males in Australia. Seniors and juniors race on-road or on mountain bikes. Cyclocross is ridden on an off-road course on a circuit of approximately 1km to 3km in length. Races are typically short (an hour for men and 40mins for women). Whilst this site would be perfect for cyclocross, due to the environmental significance of the site and the creek embankment, it would seem difficult to find a course on the site with elevation that can be accommodated around environmentally sensitive areas. The closest cyclocross circuit is the Fields of Joy CX Circuit in Essendon Fields (City of Moonee Valley), which is operated by the Sunbury Cycling Club.

## Track Racing

### *Velodrome*

A velodrome is a concrete banked cycle track and is not appropriate on this site due to the interest in remediating the site for environmental purposes.

There are no velodromes in Western Melbourne. Previously, there was a velodrome in Hansen Reserve in Maribyrnong. However, it was removed as its condition deteriorated due to the site being filled.

The closest velodrome is likely to be the Brunswick velodrome.

# The Draft Master Plan

## ARDEER GREEN ACTIVITY HUB

### DRAFT MASTER PLAN: CYCLE SPORT FACILITIES

#### Objectives

- Allow indigenous and other appropriate specific vegetation to thrive
- Enhance the amenity and environmental integrity of the site
- Increase physical activity on the site, in a municipality where sport and physical activity participation is the lowest of all municipalities in Victoria
- Provide for a sport that is in high demand, currently not well served and can be provided in a relatively sustainable way. Additionally, the sport is relatively compatible with the environmental objectives for the site
- Provide for activities that are likely to add diversity to the offerings available to local young people, for organised sport as well as unorganised recreation



Skiness Playground, South Melbourne  
source: Thorne Architects



The Verry in JJ Holland Park, Kensington

Investigate stormwater treatment to creek

Investigate stormwater treatment by wetlands from M80 water runoff. Runoff used to irrigate tree planting

Vehicle maintenance track to be used as part of MTB Cross Country Single Track

#### Mountain Bike (MTB) Cross Country Single Track

(approx 3km long)

The single track will run along the existing goat track using natural elements as features as well as logs and ladders with minimum impact to the environment. It's proposed to be a small track deviating up and down the slope and around existing and plantings of new trees. Water bodies will create interest and challenges. In less sensitive areas, the trail could go down the slope either in armoured routes to prevent erosion or by using timber structures or strategically placed logs. Chicken runs - short alternate routes to avoid challenging elements will be provided. The exact route will need to be mapped on site and ridden by an experienced MTB rider before construction. The track would best use the vehicle maintenance track and provide a start and finish area for racing opportunities

#### BMX Track

There is opportunity for a BMX Track in this area (approx 300m - 400m long). The track could be provided as a recreational circuit that could be developed as a competition facility at a later stage if demand increases. Features include: table-tops, step-ups, berms and rollers.

#### M80 Path

The existing M80 path is in poor condition and is to be refurbished and re-aligned to avoid the Criterium Track. Add a 2m wide granitic gravel path on the embankment side to allow vehicle access. The MTB single track runs along the M80 path and existing vehicle maintenance path.

#### Dirt Jumps

(approx 50m long)

Series of three runs of jumps suited to riders of different levels of proficiency. The first two runs may be table tops and the last doubles.

#### Pump Track

(approx 70m long)

A 1m wide pump track. It is typically smaller than a BMX competition track and is designed to pump through the berms and mounds - rather than pedal. Features include: berms and rollers at varied heights.

#### Bicycle Education Centre / Support Facility

A series of shipping container buildings with bike hire, green roofs, clubhouse & educational facilities. Trackside facilities to be confirmed when building location has been confirmed. Roof and hardstand drainage directed to local storage. Arbour with climbing plants over section of track adjacent the clubhouse

#### Road Entry into Site

Entrance into site provides access to the Criterium track, facilities and for maintenance

Provide car parking node adjacent building and external angled parking along Forrest Street to minimise impact on the environment within the site. Criterium track to go around existing mobile-phone tower and power pole



#### LEGEND

- Proposed trees
- Proposed grasses / shrubs as buffer planting to criterion track
- Existing wetland with additional planting
- Bicycle education centre / support facility
- Proposed 8m wide criterium circuit (approx 1.0km)
- Proposed Mountain Bike (MTB) cross country single track (approx 3km)
- Proposed M80 path re-alignment
- Proposed walking track
- Proposed stormwater treatment
- Proposed gravelled waste
- Proposed car park
- Existing roadside drain
- Existing stormwater drain
- Existing trees to be removed
- Existing trees
- Existing shrubs
- Existing pit
- Existing vehicle maintenance path (gravel)
- Existing M80 path
- Section of M80 to be removed & realigned
- EVG 120, 30' linear path (plant grassland (see notes))
- Grassland rehabilitation area
- Current area of rehabilitation



Fremantle Youth Precinct, Fremantle



Fremantle Youth Precinct, Fremantle

Investigate stormwater treatment to creek

Pedestrian main entrance to site

Possible alternative water storage location

Surface drainage collected and directed to storage

Criterium Circuit

(approx 1.0km)

An 8m wide sealed cycling circuit suitable for a range of competitive and non-competitive road cycling activities

Harvesting control pit on existing pipe and irrigation controller

Proposed open or underground tank storage

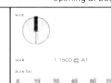
Possible wetland

MTB single track runs between row of trees

Strengthen existing tree planting with indigenous species

Existing Stormwater drain

Retain Existing Fence. Provide fence opening at both sides of site



PROJECT NUMBER	DRAWING NUMBER	Revision
2153	MP01	1
ISSUE DATE:	DATE:	DATE:
21/01/15	CU	NO



## Site design and images

### Location /Details

### Image

#### East of reserve

There appears to be sufficient space to provide the following:

- Single track between trees
- Walking path route (unsealed) drain between private fence and trees
- Criterion track outside canopy west of the existing double row of trees.



Eastern boundary



Eastern boundary



Extend double row of trees where these are not present



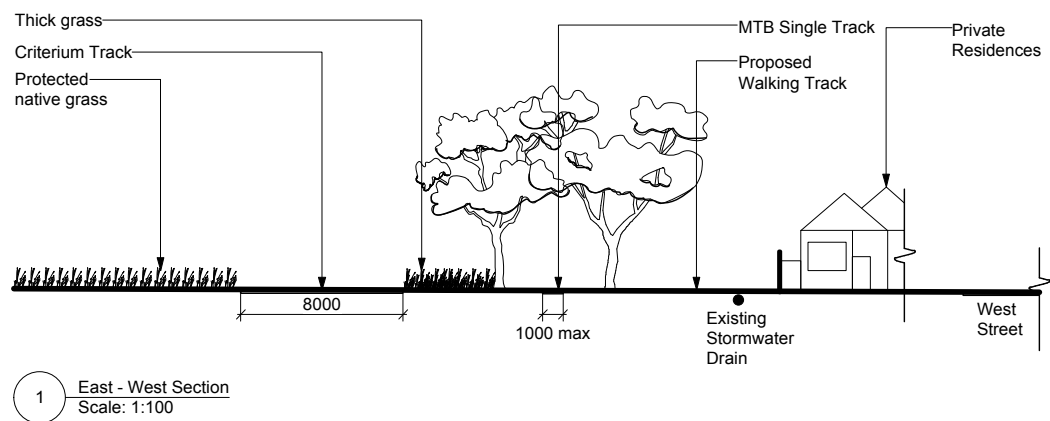
## Location /Details

## Image

"Looking north" space for a walking path and single track along the edge of the reserve



Section from central grass land to residences on eastern boundary



## West of reserve

The M80 path is narrow and in a dangerous condition. It should be upgraded (by others) and segments could be realigned to better fit with other facilities, in order to minimise the crossing of the criterium circuit.



## Location /Details

## Image

### West of reserve

Single track MTB to use the existing maintenance vehicle alignment.

The route could use some of the embankment in areas west of the maintenance track alignment.

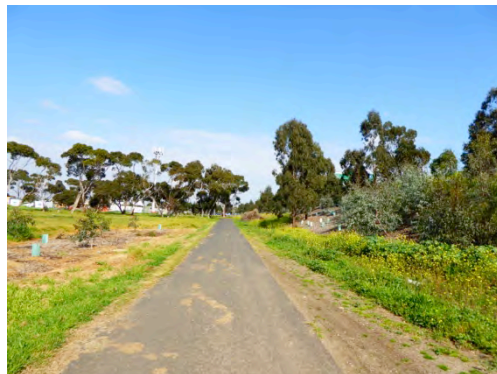
This is unsealed for some distance and sealed closest to Forrest Street.



There is some opportunity to take a small deviation up the slope if allowable.



The M80 path is sealed toward Forrest Street.



### Alignment of the single track

Unsealed vehicle maintenance track which could be used as part of the MTB trail.





## Location /Details

## Image

### Alignment of the single track

Single track – travel is primarily along the existing “goat track”



### Alignment of the single track



### Alignment of the single track

Utilise existing alignment and, where appropriate, other rock / timber obstacles.





## Location /Details

## Image

Move up and down the slope in less sensitive areas.



### Central area

The criterium circuit would frame the central grass area. With thick swathes of grass between the track and the rest of the native grass land able to provide a buffer between the track and the existing tree trunks and canopy to minimise fruit and leaf fall on the track.



### Dirt jumps / pump track

These tracks would service local riders that are interested in recreational BMX. They have been sited on the area most degraded. Where the works depot for the rail link was located.



## Location /Details

## Image

### Criterion circuit

The criterium circuit and future BMX track would utilise existing mown grass area (some of which has limited amount of native grass cover).



### Criterion circuit

Thick swathe of native grasses - all the way around to buffer from tree trunks / leaf and nut fall onto the criterium track.



**Front of the reserve- along Forrest Street.** Potentially there is space for angle parking and an extension of the pedestrian path along the road, a swale drain and single track between two rows of trees.

Potentially retain the fence for site containment.



## Location /Details

## Image

**Front of the reserve - along Forrest Street.** Angle parking between Forrest Street and Fence



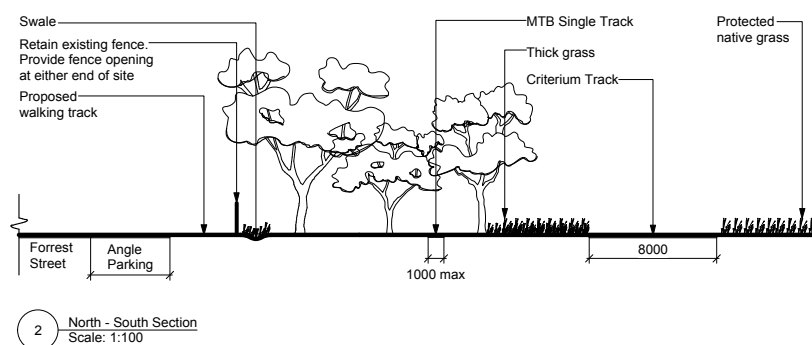
**Front of the reserve - along Forrest Street.** Extension of the existing footpath path along the front and into the site.



**Front of the reserve- along Forrest Street.** Retain and remediate central area with possible wetland and natural value for appreciation by walkers. No paths in this area.



## Section from Forrest Street Frontage to central grass area





## Location /Details

## Image

### Support Facilities

Support facilities: small-scale facility with toilet, shelter and small administration space. Potential to provide a series of shipping containers.



### Support facilities

In order to encourage recreational use of the park, it will be necessary to provide a toilet.

For the purposes of the criterium circuit to be made available for events, access to a small space for club administration and potentially race officials, will be necessary. Space to store first aid equipment is required and potentially a small canteen or a trailer provided. Storage will be necessary in order to allow for the storage of bikes for hire or club bikes for use by juniors. The toilet could initially be one or two unisex accessible toilets that double as change places for race competitors.

The support facility could include other elements to accommodate the running of programs, bike maintenance, collection or repurpose centre, bike hire, lessons an a bicycle education and information centre.

The footprint of this facility should be small. It should be sited on the periphery of the reserve and in the noisiest area (such as adjacent to the M80). Due to the potential expansion of this facility in the future, a series of converted shipping containers that are durable could be added over time. The siting of the facility may depend on the extent and currency of the blast zone on the site.



**Attachment 1. Criterium tracks in Australia**

<b>Essendon Fields Criterium Track (VIC)</b>	<b>17</b>
<b>The Stephen Hodge Criterium Cycling Circuit, Mt Stomlo (ACT)</b>	<b>18</b>
<b>Albert Bishop Park Criterium Circuit, Nundah (QLD)</b>	<b>20</b>
<b>Armidale NSW (UNE cycling clubs)</b>	<b>21</b>
<b>Murray Bridge Pedal Prix Circuit, Murray Bridge (SA)</b>	<b>23</b>
<b>Victoria Park Pedal Prix Circuit, Adelaide (SA)</b>	<b>24</b>
<b>Casey Fields Criterium Circuit, Cranbourne (VIC)</b>	<b>25</b>
<b>Toowomba Criterium Circuit (NSW)</b>	<b>26</b>
<b>Girraween Criterium Circuit, Noosa Heads (QLD)</b>	<b>27</b>
<b>Geelong Criterium Circuit, Belmont (VIC)</b>	<b>30</b>
<b>Other</b>	<b>31</b>

## Essendon Fields Criterium Track (VIC)

The course is a 1.3k road-based circuit around Essendon Fields, in the vicinity of Essendon Airport. It is a wide track that rides quite fast, with a perfect surface for cycling. The track is also relatively flat from start to finish (6m elevation). This facility is used by The Sunbury Cycling Club and by the Northern Combine, for the winter road season.



## Profile



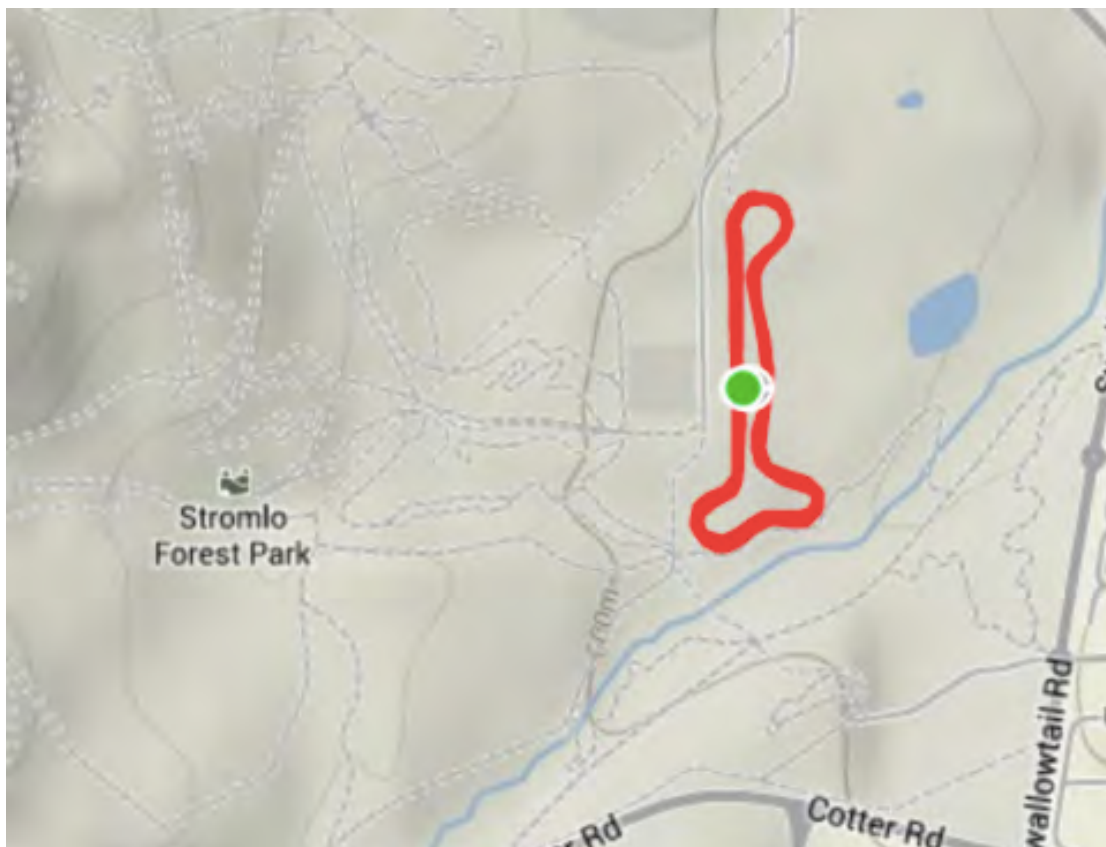
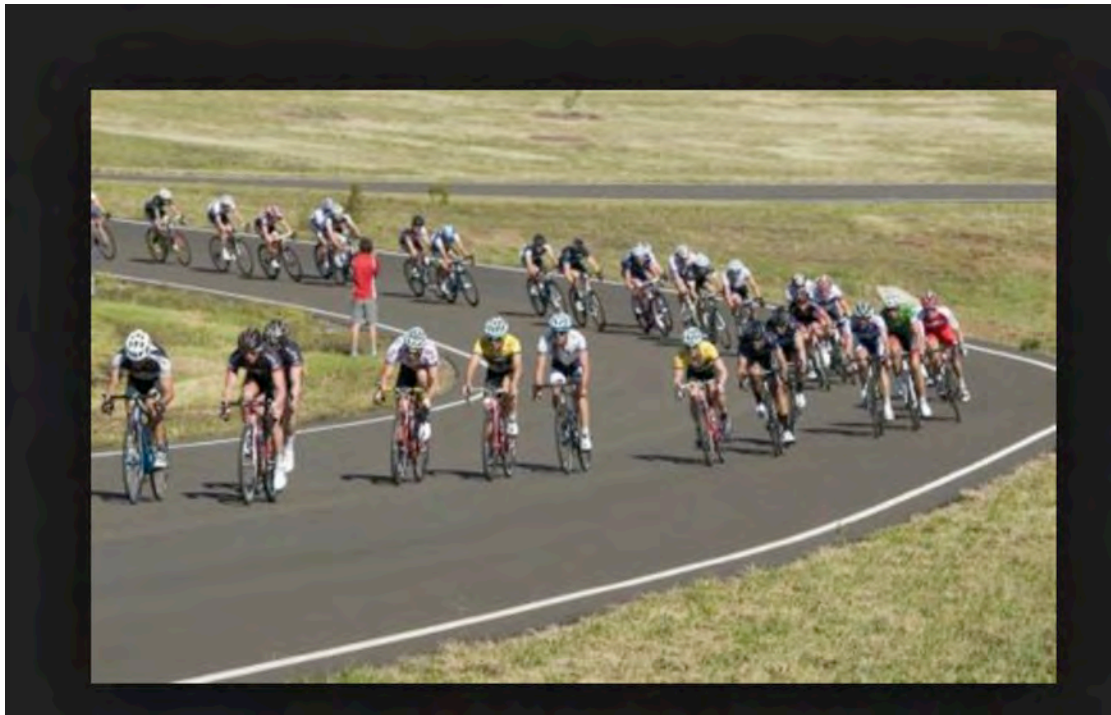
\*statistics and image via strava

## The Stephen Hodge Criterium Cycling Circuit, Mt Stomlo (ACT)

A criterium cycling circuit (short road cycling circuit) of a minimum width of 8m up to 11m in the start finishing straight, and length of 1200m, making it suitable for a wide range of competitive and non-competitive road cycling and related wheeled sports activities.

The full circuit is 1200m long, and is constructed with a central flat paved area joining front and rear portions of the track that adds enormous versatility and potential use for the venue. It can be used to divide the circuit into two 650m tracks, used as a skills training area, as a base for set up of event infrastructure or marshalling area for competitors.

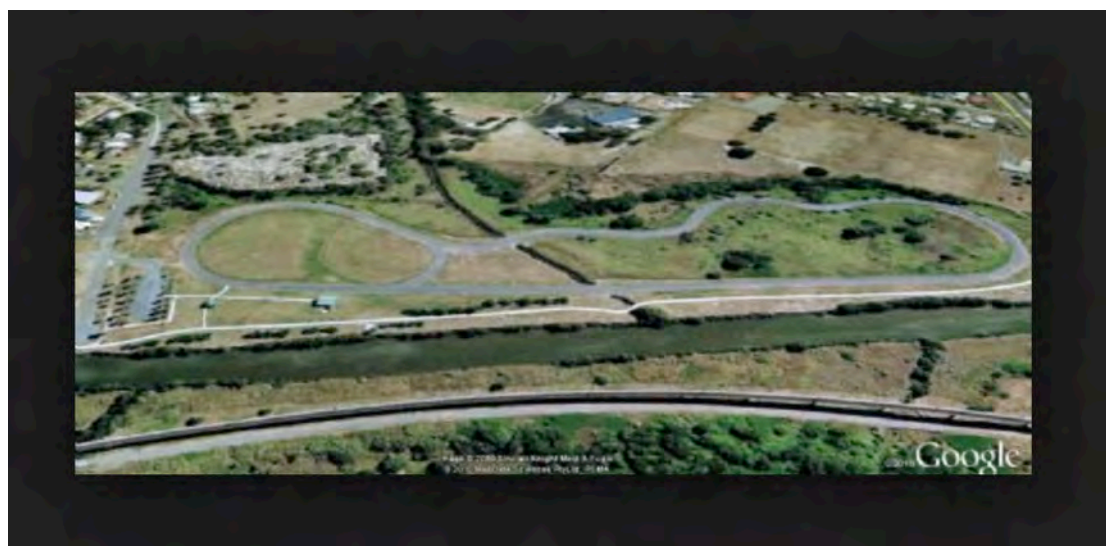






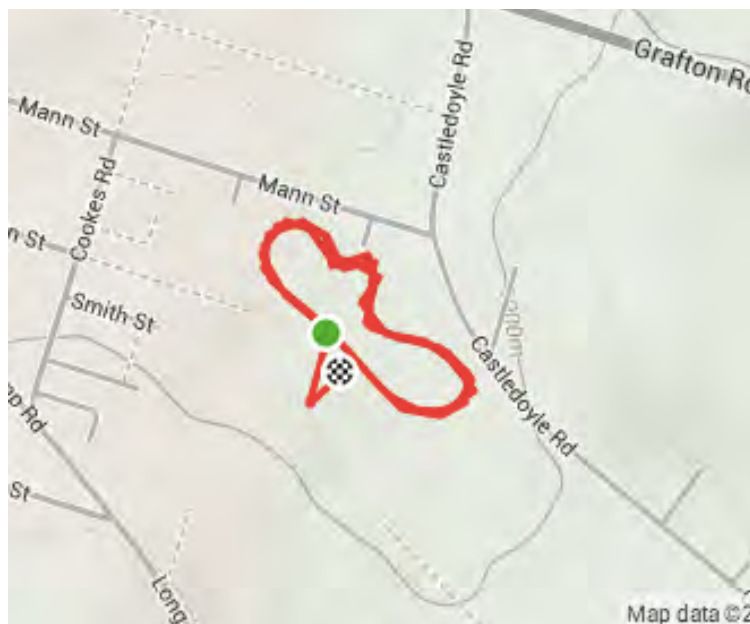
## Albert Bishop Park Criterium Circuit, Nundah (QLD)

The circuit is relatively flat and has a circuit distance of 1200m. There is also a shorter loop of 430m. The cycle track is open for public use, however can be booked for specific races or events.



## Armidale NSW (UNE cycling clubs)

The Armidale Criterium track is 6.5km long and relatively flat, with an overall increase in elevation from start to finish by 5.6m. Has a few dips and inclines, with the steepest decline being 10m, and the steepest incline being 11m.



## Honeysuckle St Circuit, Newcastle (NSW)

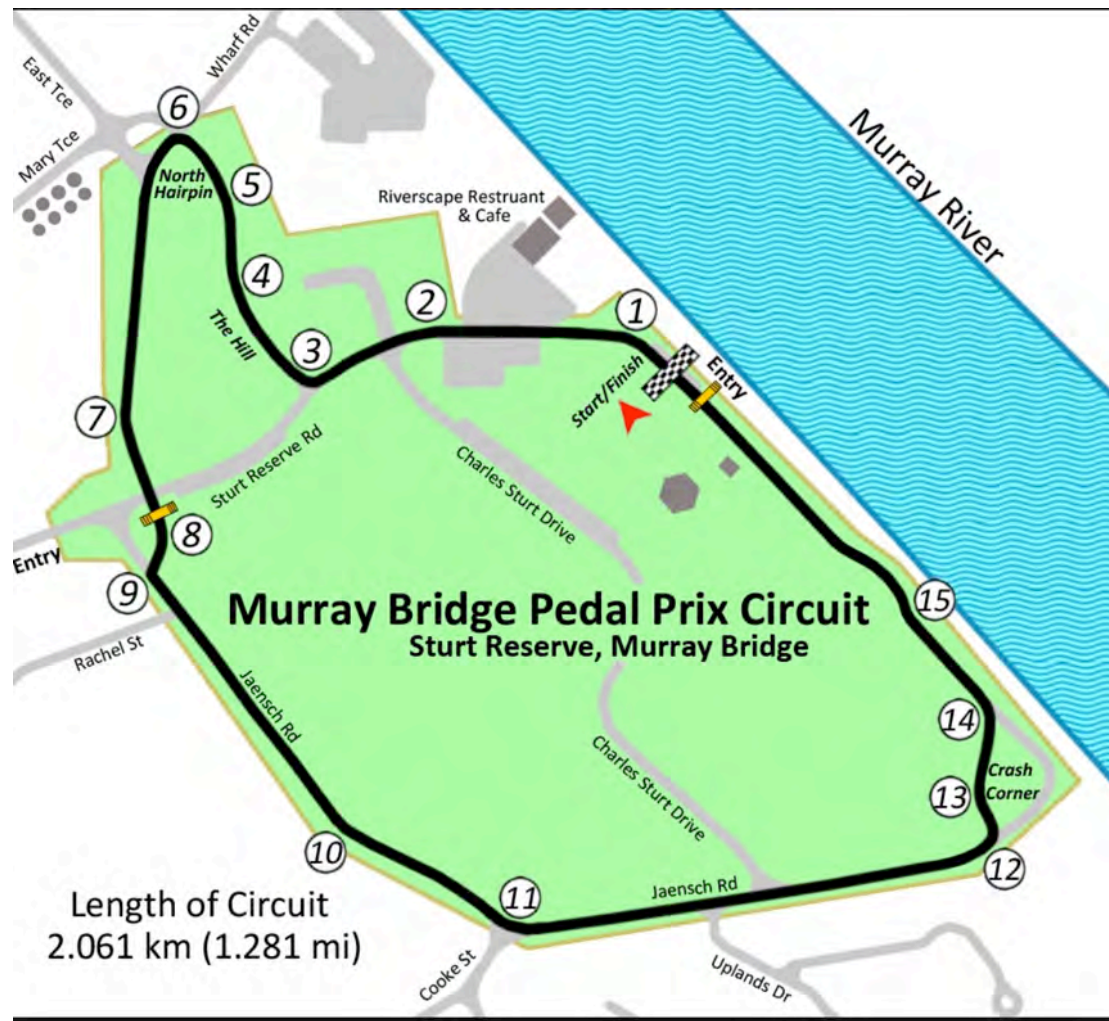
The Honeysuckle St Circuit is only used for the yearly Newcastle bikefest, and for the Mick Chapman Memorial Criterium. The track is a relatively small and enclosed temporary circuit, with the track length only being approximately 770m.





## Murray Bridge Pedal Prix Circuit, Murray Bridge (SA)

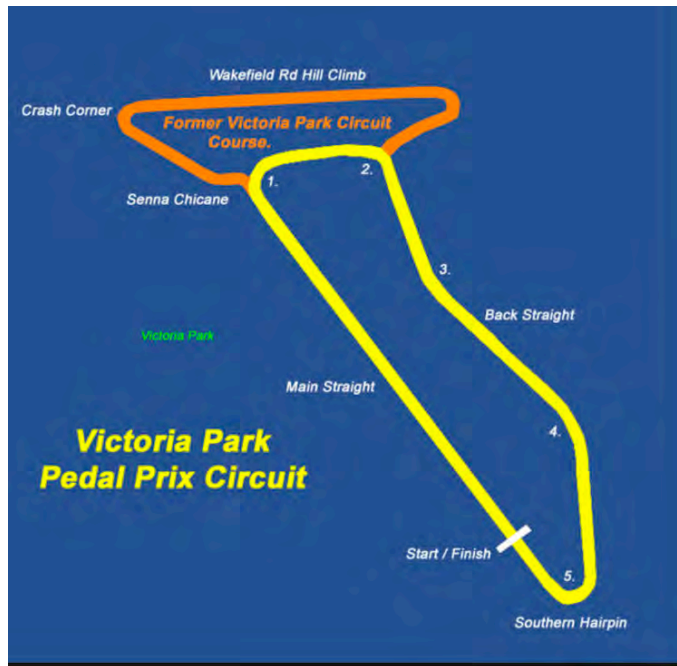
The Murray Bridge Pedal Prix Circuit is a criterium track located at Sturt Reserve, Murray Bridge (SA), located around 75km from Adelaide. Held at this track are A, B and C grade cycling and racing, as well as racing for hand cycles / trikes.





## Victoria Park Pedal Prix Circuit, Adelaide (SA)

The circuit has been designed to provide a mixture of fast flat cycling combined with some more technically challenging corners and easy grades at either end. The park entrance has been designed to accommodate road racing finishes coming in from the public road system, with a spur road onto the cycling circuit off the main park. The track is 1.354km long, and is also used by the University of South Australia for the SA-wide HPV (human powered vehicle) racing.



## Casey Fields Criterium Circuit, Cranbourne (VIC)

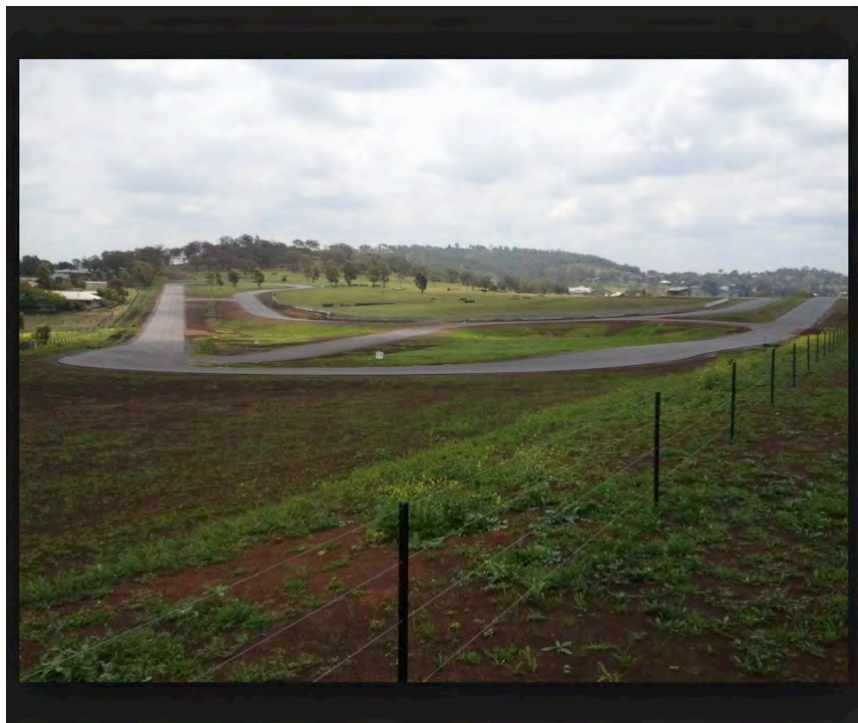
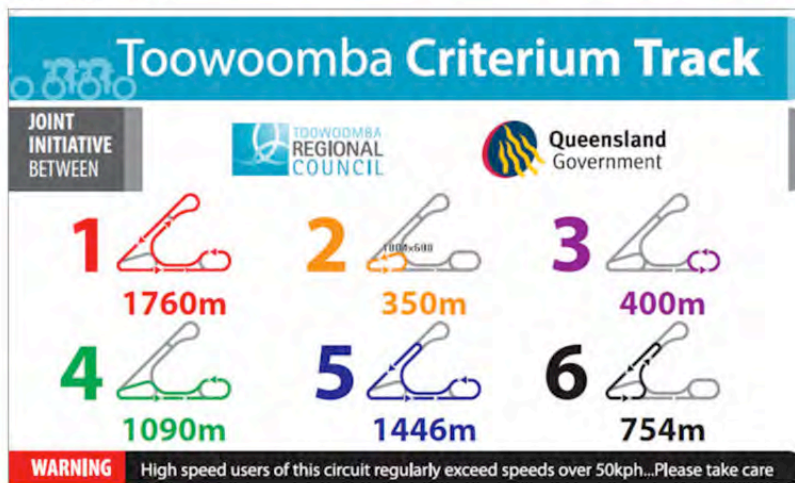
This specially designed 2.2km road track is used by cyclists and human powered vehicles (HPV). This track has a 10m variability in elevation, meaning the track itself is reasonably flat.



## Toowoomba Criterium Circuit (NSW)

The 1.76km circuit is unlike all other criterium tracks around the country. The site's undulating terrain sets the showgrounds facility apart from all other Australian circuits, which makes it an appealing facility for elite state and national competition or training. Six different track configurations offer a versatile and flexible layout with distances ranging from 350m to 1.76km.

Australia's newest and most challenging criterium track has transformed the south-east corner of Toowoomba Showgrounds off Harvey Road at Glenvale.





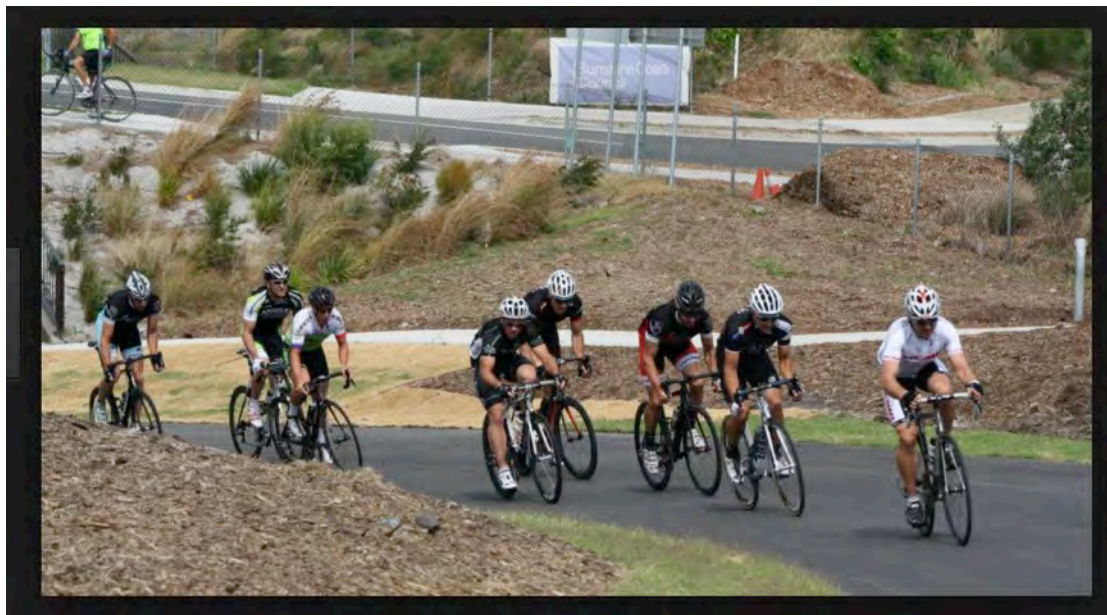
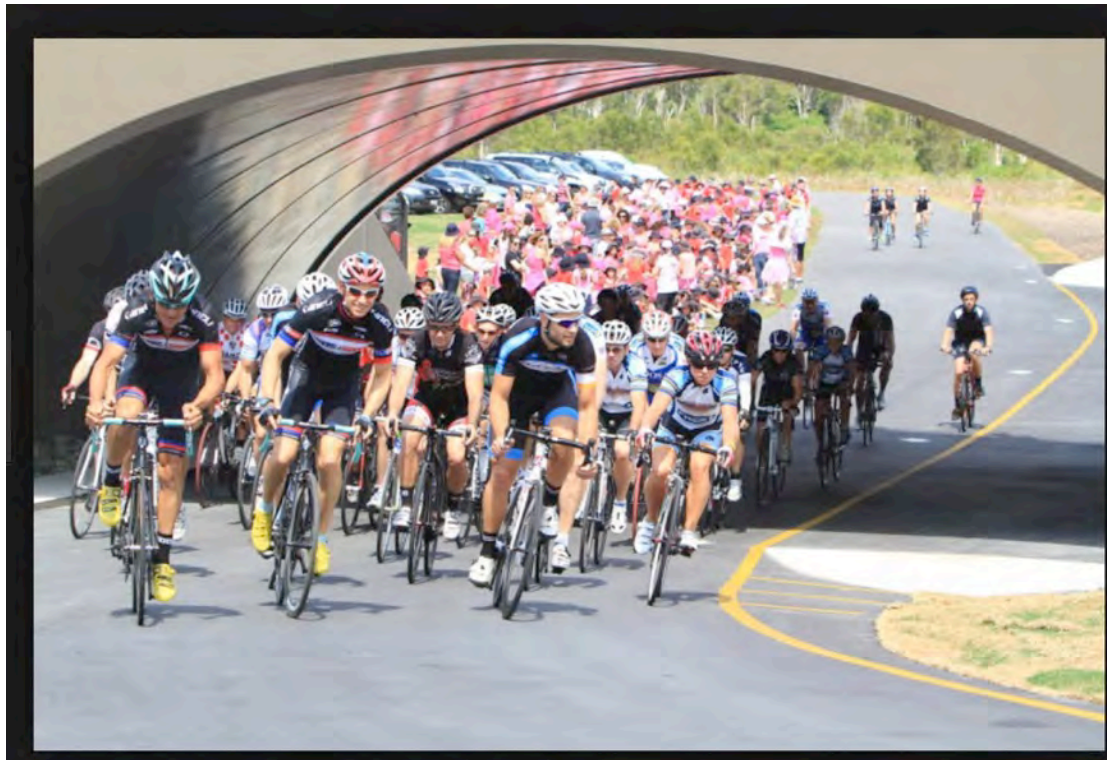
## Girraween Criterium Circuit, Noosa Heads (QLD)

Girraween meets the needs of a wide range of users, including but not limited to sporting organisations, schools, community groups, cyclists, triathletes and community members. It is regularly used by the Sunshine Coast Cycling Club for twilight racing.

The Girraween Criterium track is approximately 915m long, and accommodates cyclists of all abilities.

To date the facility has hosted a number of significant events including the U19 Australian Criterium Championships; New Zealand National Junior Triathlon Training Camp; Queensland Criterium Championships and the annual Noosa Gift Sprint Race.







## Tolosa Park, Glenorchy (TAS)

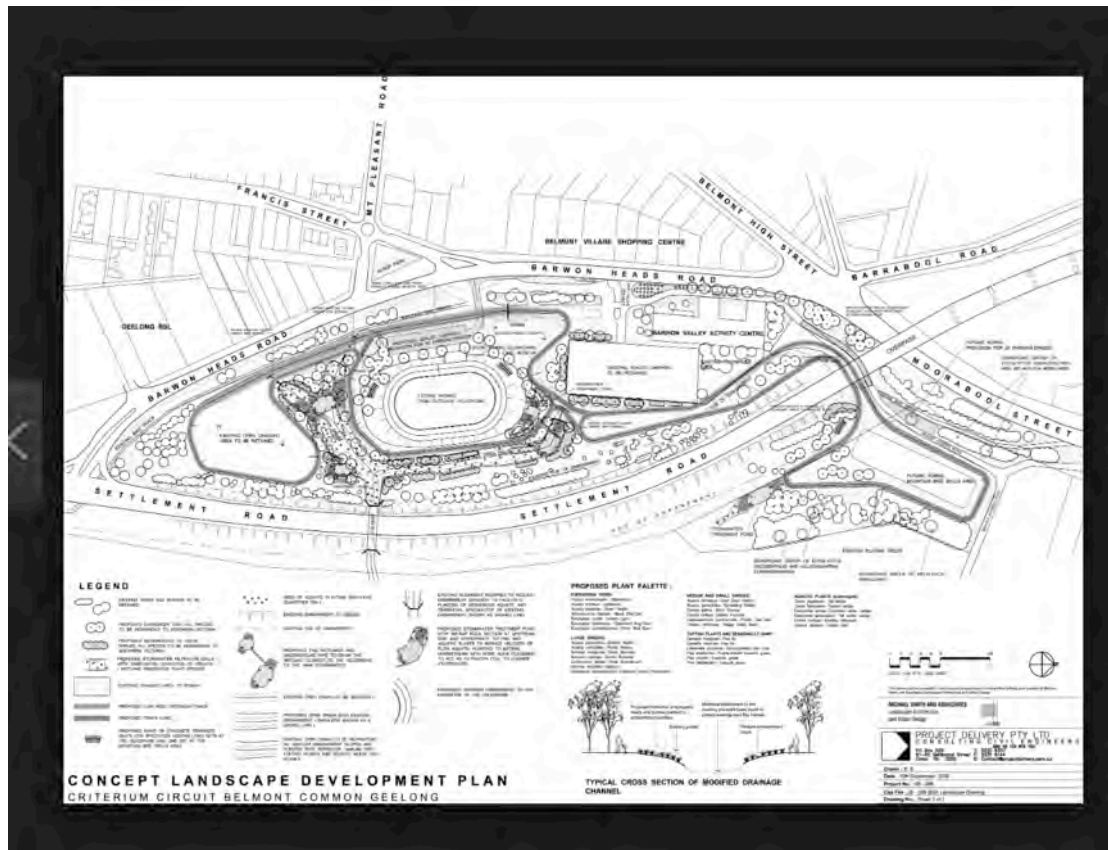
The newly constructed Tolosa Park criterium track is 800m long, and is the focal point of the newly introduced Tolosa Park Cycling Hub. Included within the track are a 400m track, and a road safety track for children. A BMX track has been proposed for the future.





### Geelong Criterium Circuit, Belmont (VIC)

The Belmont Island Criterium Track is a 2.2km cycling track open to the public, located on Belmont Island in Geelong. It is predominantly used by the Geelong Cycle Club.



## Other

