

# Tainui and Hikanui Reserves Mountain Bike Tracks Safety Audit

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## 1. INTRODUCTION

### 1.1 Context

Peak Safety has been commissioned by Hastings District Council (HDC) to conduct a safety review of the mountain biking tracks and shared walking/cycling tracks in the Tainui and Hikanui Reserves. There was a Brief for Consultancy Services that included the following specifications:

#### INCLUSIONS:

1. Carry out an independent safety audit of the tracks in the following reserves covered under the Tainui Tanner Tauroa & Hikanui Reserves Management Plan:
  - • Tainui Reserve tracks including the (1) separate mountain bike track; and (2) shared walking/cycling tracks leading down through Keith Sands Grove
  - • Hikanui Reserve
2. The scope of the safety audit will focus on the following areas:
  - • Safety design of the new mountain bike track and shared pathways used in the reserves; including surface, design, safety aspects, hazards and signage
  - • Identification of conflict points/cross over points (where cyclists and walkers share a common entry/exit point)
  - • Current risks and mitigations
  - • Recommendations for improvements (ensuring cyclists and walkers remain separated where possible)

#### EXCLUSIONS:

- 1) All work over and above that specified under “inclusions” above.
- 2) It is not expected that any community or stakeholder consultation is required for this safety audit.

The review takes into account usability, signage and safety for all walking and cycling users of the park.

### 1.2 Safety Audit Personnel

The review is undertaken by Mark Woods of Peak Safety. Mark is a Certified Lead Auditor and a Technical Expert in Mountain Biking under the Health and Safety at Work (Adventure Activity) Regulations 2016.

### **1.3 Site Visits and Documents Reviewed**

Mark Woods undertook an initial site visit on 11 & 12 November 2019. During an initial meeting with council staff members Rachel Stuart, Colin Hosford and Nikola Bass the Tainui Tanner Tauroa & Hikanui Reserves Management Plan and Tainui Reserve Tracks map were reviewed during general discussion of the project.

During the site visit every walking track in Tainui Reserve was walked, and the mountain bike trail was ridden 5 times. The mountain bike descending and climbing trails on Hikanui Reserve were also ridden.

Although the brief specified: *“It is not expected that any community or stakeholder consultation is required for this safety audit”* meetings were held with representatives of the Bennelong Mountain Bike Club, Te Mata Park Trust Board, Tainui Care Group, the Friends of Tainui Group and Greenstone Land Developments. While it was valuable to meet with these groups to gain a perspective of how the reserves are being utilised, the focus of this audit is specifically the safety of the tracks identified in the Brief for Consultancy Services.

### **1.4 Disclaimer**

The findings and recommendations in this report are based on the site visits undertaken, the documents provided and the auditors professional knowledge and experience. However, it must be recognised that no audit can guarantee the elimination of all possible safety concerns, as there are a multitude of elements that are never completely within the control of the trail engineering and signage.

While every effort has been made to ensure the accuracy of the report, it is made available on the basis that anyone relying on it does so at their own risk, without any liability to the auditor or Peak Safety Limited.

## 2. AUDIT PROCEDURE

### 2.1 Risk Assessment Method

The risk assessment method used for the existing facilities was to physically inspect each section of trail and identify any elements of safety concern. Any identified hazards were then risk assessed. The risk assessments take into account the anticipated user group for the trail.

The risk assessment was conducted by a general view of the terrain they are to traverse and viewing the plans that have been created for each trail.

The following is the risk assessment matrix used to assess the danger related to each section of trail or hazard that was viewed.

<b>Consequence</b>	Fatality	<b>5.0</b>	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0
		<b>4.5</b>	4.5	6.75	9.0	11.25	13.5	15.75	18	20.25	22.5
	Serious Injuries	<b>4.0</b>	4.0	6.0	8.0	10.0	12.0	14.0	16	18	20.0
		<b>3.5</b>	3.5	5.25	7.0	8.75	10.5	12.25	14.0	15.75	17.5
	Significant Injuries	<b>3.0</b>	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
		<b>2.5</b>	2.5	3.75	5.0	6.25	7.5	8.75	10.0	11.25	12.5
	Minor Injuries	<b>2.0</b>	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10
		<b>1.5</b>	1.5	2.25	3.0	3.75	4.5	5.25	6.0	6.75	7.5
	Insignificant Injuries	<b>1.0</b>	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
			<b>1.0</b>	<b>1.5</b>	<b>2.0</b>	<b>2.5</b>	<b>3.0</b>	<b>3.5</b>	<b>4.0</b>	<b>4.5</b>	<b>5.0</b>
			Rare		Unlikely		Possible		Strong Possibility		Almost Certain
<b>Frequency</b>											

### 3. INDUSTRY STANDARDS

#### 3.1 Mountain Biking Trail Grading

## Mountain Bike Track Types

Choose a track that match your skills, fitness and the experience you're after. Most tracks are more difficult when wet. Avoid riding in the mud and rain.



**Grade 1. Easiest**  
Fairly flat, wide, smooth track or gravel road.



**Grade 2. Easy**  
Mostly flat with some gentle climbs on smooth track with easily avoidable obstacles such as rocks and potholes.



**Grade 3. Intermediate**  
Steep slopes and / or avoidable obstacles possibly on narrow track and / or with poor traction. There may be exposure at the track's outside edge.



**Grade 4. Advanced**  
A mixture of long, steep climbs, narrow track, poor traction and difficult obstacles to avoid or jump over. Generally exposed at the track's outside edge. Most riders will find some sections easier to walk.



**Grade 5. Expert**  
Technically challenging. Giant climbs, narrow track and numerous hazards including dangerous drop-offs, sharp corners and difficult obstacles. Expect walking and possibly bike carrying.



**Grade 6. Extreme**  
Downhill / free ride specific tracks. Extremely steep sections with large drop-offs and other unavoidable obstacles. May include man-made structures and jumps.



Respect others	Respect the rules	Respect the track
<ul style="list-style-type: none"> <li>- Stay in control</li> <li>- Give way to walkers</li> <li>- Signal your approach and pass with care</li> <li>- Ride shared-use tracks in small groups</li> </ul>	<ul style="list-style-type: none"> <li>- Ride only where permitted</li> <li>- Obtain permission from private land owners</li> <li>- Leave gates as you find them</li> <li>- Be prepared - take food, water, tools, First Aid and warm clothes</li> </ul>	<ul style="list-style-type: none"> <li>- Don't skid, cut corners or make new lines</li> <li>- Avoid riding in the mud and rain</li> <li>- Take rubbish home</li> <li>- Clean your bike to prevent spreading weeds</li> </ul>

Department of Conservation  
Te Papa Atawhai
New Zealand Government

#### 3.2 Mountain Biking Trail Design and Construction

Recreation Aotearoa has released a document in 2019 titled **New Zealand Mountain Bike Trail Design & Construction Guidelines** and is specifically aimed at off-road mountain biking trails.

The Ministry of Business Innovation and Employment (MBIE) has released the 5<sup>th</sup> edition of the **New Zealand Cycle Trail Design Guide** in August 2019.

## 4. MOUNTAIN BIKE TRACK ASSESSMENTS

### 4.1 Tainui Reserve Mountain Bike Track

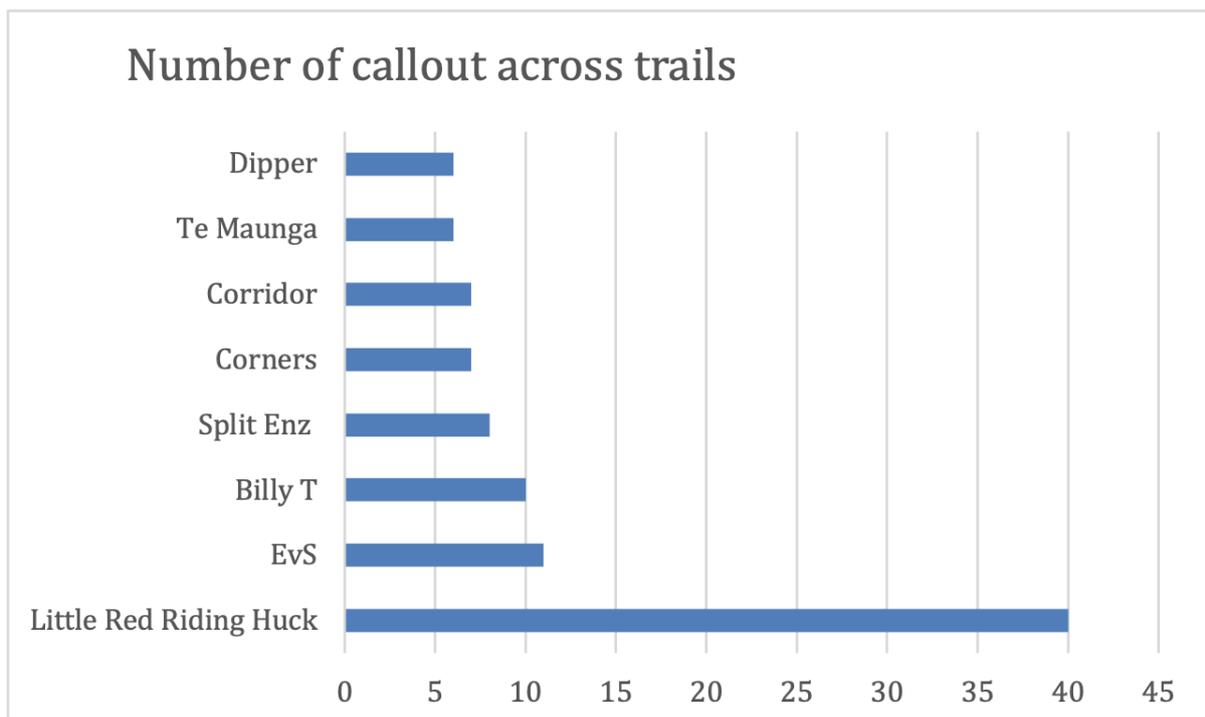
#### 4.1.1 Track Description

The Tainui Reserve Mountain Bike Track is a purpose built biking descending trail of approximately 750 metres in length. The surface is largely rocky dirt. There is no signage to indicate the grade but I was informed by Richard Mills of the Bennelong Mountain Bike Club that they consider it to be a Grade 3 trail.

While grading is definitely subjective it should be noted that this trail has a number of jumps that require jumping skills. There are some dropping corners on the trail and some exposure on the outside edges of some of the corners.

Therefore, in my opinion, this trail grade may be a 3 for a rider with jumping skills but present challenges beyond grade 3 for a rider not experienced in trails of this style. There is one particular jump after a dropping corner that feeds the rider into the jump take-off and loads up the bikes suspension “kicking” the rider if they are not prepared for this feature.

Based on the auditors experience, this style of track is prone to rider error on the jumps, causing injury, more so than a non-jump style trail of the same grade (reference Rotorua First Response Unit – the ACC sponsored medical response unit for the Whakarewarewa Forest of which the auditor is a director of the service. The graph below is the number of callouts by trail over the 2018/19 season. Little Red Riding Huck is a Grade 4 jump style trail. EVS G3, Billy T G4, Split Enz G3, Corners G3, Te Maunga G4)



This observation is not to suggest that this trail is unduly unsafe. The risk is consistent with other trails of similar style and grade around the country.

If the trail is left unmaintained the jumps will flatten out with time and reduce the “kicky” nature of the current take offs reducing the potential frequency of injuries occurring (refer risk matrix).

There are some corners that are dropping and off camber and require good braking and cornering control.

There are no intersections on the trail until the end where the trail feeds into a bermed corner which slows the rider somewhat and allows a merging into a shared use uphill trail.

### **4.1.2 Signage**

There was minimal signage in place during my site visit. There was one sign at the top of the trail that advised users that the trail was open and not to ride it in the wet. There was no reference to trail grading or any other safety information (refer image below).



There also was a “No Entry” sign at the base of the trail just above the exit berm.

### 4.1.3 Hazards

Hazards	Suggested mitigation strategies			
<p><b>Jumps on track</b></p> <p>The jumps on the trail provide a hazard creating a risk of injury which is greater to a lesser experienced rider. This risk is consistent with other trails of similar grade around the country.</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 667 786 707"> <tr> <td>C = 3</td> <td>F = 4</td> <td>Risk rating: 12</td> </tr> </table>	C = 3	F = 4	Risk rating: 12	<p>Provide warning on what to expect on the track. The grade should be included at the start of the track along with the grading system description. It should also be specified that there are jumps on the trail.</p> <p>Regular track inspections should be taken to evaluate the jump condition.</p>
C = 3	F = 4	Risk rating: 12		
<p><b>Track Surface</b></p> <p>The track surface is loose in parts and muddy in the wet – which is consistent with what is expected of a mountain bike trail. This risk is consistent with other trails of similar grade around the country. At the time of inspection there were water ruts on parts of the trail that required some skill to negotiate.</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 1173 786 1214"> <tr> <td>C = 2.5</td> <td>F = 3.5</td> <td>Risk rating: 8.75</td> </tr> </table>	C = 2.5	F = 3.5	Risk rating: 8.75	<p>Provide warning on what to expect on the track. The grade should be included at the start of the track along with the grading system. The grading system references traction at this grade.</p> <p>Regular track inspections should be taken to evaluate the surface condition.</p>
C = 2.5	F = 3.5	Risk rating: 8.75		
<p><b>Dropping Corners</b></p> <p>There are several tight corners that are off-camber with small drops on the outside edge. At the time of inspection there were water ruts on two of the corners. These sections required skill at the high end of the grade of the trail.</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 1554 786 1594"> <tr> <td>C = 2.5</td> <td>F = 3.5</td> <td>Risk rating: 8.75</td> </tr> </table>	C = 2.5	F = 3.5	Risk rating: 8.75	<p>Provide warning on what to expect on the track. The grade should be included at the start of the track along with the grading system. The grading system references traction at this grade.</p> <p>Consideration should be given to berming the corners as much as is possible given the topography and surface material available to work with.</p>
C = 2.5	F = 3.5	Risk rating: 8.75		
<p><b>Collision Risk with walkers</b></p> <p>This risk assessment is specific to the mountain bike trail as it exists at the time of inspection and is not related to the other walking trails once the rider is immediately off the MTB trail.</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 1957 786 1998"> <tr> <td>C = 2</td> <td>F = 2</td> <td>Risk rating: 4</td> </tr> </table>	C = 2	F = 2	Risk rating: 4	<p>The current use of the bermed corner for riders to exit the trail and merge onto the shared use trail is a suitable management strategy for this application. There is adequate visibility for riders and walkers to easily avoid a collision.</p>
C = 2	F = 2	Risk rating: 4		

## 4.2 Tainui Reserve Shared Use Trails

### 4.2.1 Track Description

At the time of the site inspection there was a dedicated shared pathway (cyclists and walkers) that runs from Keith Sands road to Keirunga Road where it splits into a walking only trail and biking only trail for a short section and then converges into a shared trail again to a point adjacent to the approximate halfway point of the Mountain Bike Trail. The surface is gravelled.

The Shared pathway is of a gentle gradient and approximately 1.6 – 2 metres wide in most places. This is similar to many New Zealand Cycle Trails construction.

There is some areas at the lower section of the pathway where foliage has encroached on the trail and reduced the visibility and usable width to around 1 metre.

This Shared Pathway is indicated by the green dotted line on the map below.



## 4.2.2 Signage

There is a trail map of the Tainui Reserve (as in the image in 4.3.1) at the entrance of Keith Sands Rd.

There are Shared Pathway signs at various points on the trail. These have graphics on indicating both walkers and bikers are allowed on the pathways.

There is the potential for some confusion to occur where the Shared Pathway merges into a Walking Pathway with the other option for a cyclist to enter the Mountain Bike Track at the midpoint at the highest point of the Shared Pathway (refer image below). Without a map at this point a cyclist may inadvertently keep climbing if their intention was to get to the top of the biking trail. The image below shows the point referred to.

The signs are a combination of Corflute approximately 30cm x 30cm and some decals on posts approximately 20cm x 10cm



### 4.2.3 Hazards

Hazards	Suggested mitigation strategies			
<p><b>Collision Risk between cyclists and/or walkers/dogs</b></p> <p>This risk assessment is specific to the Shared Pathway as it exists at the time of inspection</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 622 788 667"> <tr> <td>C = 3</td> <td>F = 3</td> <td>Risk rating: 9</td> </tr> </table>	C = 3	F = 3	Risk rating: 9	<p>To my understanding the system of separated bike, walker and shared use trails is relatively new. At the time of the site inspection it was apparent that there were cyclists on walking trails and suitable “trail etiquette” respecting the designated use of these had yet to develop.</p> <p>Where there is the possibility of completely separating cyclists and walkers this should be utilised. This could potentially be addressed by making the upper part of the Shared Pathway a Mountain Bike Trail and continue this to the top of the Reserve.</p> <p>There are other options but this option is relatively easy to address.</p> <p>This report recommends a complete uphill biking trail to the top of Tainui Reserve to help reduce current cyclist confusion over how to get to, or return to the start of the cycle track.</p>
C = 3	F = 3	Risk rating: 9		

## 4.3 Tainui Reserve Walking Tracks

### 4.3.1 Track Description

There is a network of unnamed walking tracks within the Tainui Reserve. These appear to have been formed in an ad-hoc way over time. Some of these have steps, some are graveled and some are dirt surface. Some of sections of the trails are narrow and some sections are steep, some sections are both steep and narrow.

### 4.3.2 Signage

There is some existing signage on trails that appears quite old (wooded posts indicating a Loop Track for example).

There is newer signage on Corflute cardboard and also marker posts with decal signage. These newer signs are there to define the use of the trails indicating that they are walking only tracks.

### 4.3.3 Hazards

Hazards	Suggested mitigation strategies			
<p><b>Surface condition on track</b></p> <p>The surface condition on the walking tracks varies throughout the reserve. There are some uneven rooty sections and some steep sections that would be muddy during rain events.</p> <p>Refer risk assessment matrix:</p> <table border="1"><tr><td>C = 2</td><td>F = 3</td><td>Risk rating: 6</td></tr></table>	C = 2	F = 3	Risk rating: 6	<p>Route the track away from significant drops where possible.</p> <p>When this is not possible then undertake groundworks to reduce the likelihood of a fall.</p> <p>Maintenance schedule. Regular track inspections</p>
C = 2	F = 3	Risk rating: 6		
<p><b>Falling from Height off track</b></p> <p>There are some sections of the walking tracks that are adjacent to steep terrain</p> <p>Refer risk assessment matrix:</p> <table border="1"><tr><td>C = 3</td><td>F = 2</td><td>Risk rating: 6</td></tr></table>	C = 3	F = 2	Risk rating: 6	<p>Route the track away from significant drops where possible.</p> <p>When this is not possible then undertake groundworks to reduce the likelihood of a fall.</p> <p>Maintenance schedule. Regular track inspections</p>
C = 3	F = 2	Risk rating: 6		

**Collision Risk between downhill cyclists and walkers/dog**

This risk assessment is for the risk if cyclists disregard or do not see the signage and descend the walking trails. There are some narrow, steep sections that have poor visibility and this risk assessment reflects that scenario

Refer risk assessment matrix:

C = 3	F = 3	Risk rating: 9
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Improve current signage to ensure that cyclists are aware that the walking trails are closed to them.

Promote the use of the cycling descending trail and "trail etiquette" within the cycling community.

Construct a completed cycling climbing trail to the top of the cycling descending trail which will provide a separated alternative track for cyclists to utilise.

## 4.4 Hikanui Reserve Mountain Bike Descending Track

### 4.4.1 Track Description

This is a short section (approximately 300 metres) of purpose built mountain bike trail with small jumps and dropping corners. There is no signage to indicate the grade but it is estimated as grade 3. It exits adjacent to Tauroa Rd where there is a fence to prevent riders entering the road in a perpendicular direction into the path of traffic. Instead it slows the rider and sends them either up the road or into the climbing track.



### 4.4.2 Signage

There is a mountain biking sign at the entrance of the trail with no grade indicated. There is a No Entry sign at the bottom of the trail (refer image above).

### 4.4.3 Hazards

Hazards	Suggested mitigation strategies			
<p><b>Jumps on track</b></p> <p>The jumps on the trail provide a hazard creating a risk of injury which increases to a lesser experienced rider. The jumps on this trail are small and well within grade 3</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 611 783 656"> <tr> <td>C = 2</td> <td>F = 2</td> <td>Risk rating: 4</td> </tr> </table>	C = 2	F = 2	Risk rating: 4	<p>Provide warning on what to expect on the track. The grade should be included at the start of the track along with the grading system. It should also be specified that there are jumps on the trail.</p> <p>Regular track inspections should be taken to evaluate the jump condition.</p>
C = 2	F = 2	Risk rating: 4		
<p><b>Track Surface</b></p> <p>The track surface is loose in parts and muddy in the wet – which is consistent with what is expected of a mountain bike trail.</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 936 783 981"> <tr> <td>C = 2</td> <td>F = 2</td> <td>Risk rating: 4</td> </tr> </table>	C = 2	F = 2	Risk rating: 4	<p>Provide warning on what to expect on the track. The grade should be included at the start of the track along with the grading system. The grading system references traction at this grade.</p> <p>Regular track inspections should be taken to evaluate the surface condition.</p>
C = 2	F = 2	Risk rating: 4		
<p><b>Dropping Corners</b></p> <p>There are several tight corners that are off-camber but well within the grade</p> <p>Refer risk assessment matrix:</p> <table border="1" data-bbox="204 1294 783 1339"> <tr> <td>C = 2</td> <td>F = 2</td> <td>Risk rating: 4</td> </tr> </table>	C = 2	F = 2	Risk rating: 4	<p>Provide warning on what to expect on the track. The grade should be included at the start of the track along with the grading system. The grading system references traction at this grade.</p>
C = 2	F = 2	Risk rating: 4		

## 4.5 Hikanui Reserve Shared Pathway

### 4.5.1 Track Description

This is a short uphill track of about 300 metres that is shared use between climbing-only cyclists and walkers (climbing or descending)

### 4.5.2 Signage

There are signs at the top and bottom of the trail indicating that they trail is for walkers and cyclists.

### 4.5.3 Hazards

Hazards	Suggested mitigation strategies			
<p><b>Collision Risk between downhill cyclists and walkers</b></p> <p>There is some possibility that a cyclist could descend the Shared Pathway</p> <p>Refer risk assessment matrix:</p> <table border="1"><tr><td>C = 2</td><td>F = 2</td><td>Risk rating: 4</td></tr></table>	C = 2	F = 2	Risk rating: 4	<p>Install signage that designates the trail as an uphill biking trail only</p>
C = 2	F = 2	Risk rating: 4		

## 5. General Observations

### 5.1 Managing the Shared Use of Tainui Reserve

The Tainui Reserve is a beautiful piece of bush nestled in Havelock North. There are a range of user groups enjoying what it has to offer. The brief of this Safety Audit is limited to the safety of the mountain bike trails and the interaction with the walking trails and takes no account of the needs or desires of any particular group. The Tainui Tanner Tauroa & Hikanui Reserves Management Plan (December 2015) states that: *Cycling is encouraged within Tainui Tanner Tauroa & Hikanui reserves, specialised walking and cycle paths will be provided together with shared paths through the reserves to facilitate access and use, but also limit conflicts on tracks with pedestrians, cyclists and dogs.*

It goes on to specify in Objective 1.5.1: *To provide for cycling in specified areas to ensure that it does not create unnecessary conflict with pedestrians.*

While shared use (cyclist and walkers) is a situation that comfortably exists all over the country (refer NZTC extract below) a safer option, where possible, is to separate these two activities especially in regard to descending cyclists. This option appears to be possible within Tainui Reserve with the construction of an uphill specific cycle trail and the separation of the Shared Pathways into cycling and walking specific tracks.

Below is an extract from the New Zealand Cycle Trail (NZCT) Design Guide  
*Sharing with Pedestrians*

*It is common in New Zealand that off-road provision for cycling is combined with pedestrian provision. The term "pedestrian" is often used in New Zealand to cover all people travelling by foot (e.g. walkers and runners) plus wheel-chair users and people pushing baby "prams" or on small wheeled devices such as skateboards, push-scooters or mobility scooters (even though people using many of these devices are legally not "pedestrians").*

*All trails on the NZCT are available for people walking, although in many of the more rural trails the numbers of pedestrians are expected to be low. In general, with good design for cycling, no particular provisions for pedestrians will be needed on the NZCT. However, it is also worth considering other potential mobility devices, such as scooters, skateboarders and wheelchairs.*

*There are four general off-road trail types that cater for cycling:*

- 1. Shared (the most common type);*
- 2. Segregated (by mode or by direction);*
- 3. Separated; and*
- 4. Exclusive*

**Shared paths** are available to both cyclists and pedestrians, without any form of segregation of users. This is a common type of path on the NZCT

**Segregation** can occur in two distinct forms: by mode or by direction. Paths segregated by mode allocate different spaces for walking and cycling by signs, markings or guidance measures such as varied surface types. Path users are supposed to remain in their allocated section but are not physically prevented from crossing over to the other section.

Generally, segregation by mode has a poor level of compliance as users tend to travel where best suits them in terms of their course of travel or scenic opportunities and often prefer to keep left. Segregation by mode can also be confusing for some users, for example those on roller skates or parents walking beside small children on bikes who don't know whether to walk on the side of the path for pedestrians or the side for cyclists.

Segregation by direction of travel is a more effective mechanism that divides the path in two and requires users to keep to the side on their left, similar to a two-lane road operation. This minimises conflicts between users by fostering a more orderly approach.

Segregation by direction of travel is a suitable treatment for paths of high volume but it is generally not necessary to specify it for rural paths.

**Separated paths** are similar to segregated paths in that they allocate different spaces for walking and cycling. However, separated paths divide pedestrians and cyclists by physical measures, so that it is difficult or impossible for users to cross to the other mode's path. Separation can be achieved through use of physical structures such as kerbs or even fences, or by wide gaps between the two paths, with grass berms or plantings in between.

## 5.2 Dogs

The Tainui Tanner Tauroa & Hikanui Reserves Management Plan (December 2015) states that: *Tainui Tanner Tauroa & Hikanui reserves are designated off-lead reserves popular for dog walking. Effective dog control is still needed to avoid conflict with pedestrians or cyclists.*

*Policy 1.3.2 The owner or person responsible for the dog shall keep the dog under control and shall have in their possession a leash or lead at all times.*

There is the potential for a dog to roam into the path of a cyclist causing an accident. While this is a possibility the council policy requiring the dog owner to have control of their dog should mitigate that to an acceptable level. This is a reasonable expectation of a dog owner in a multi-use environment.

## 5.3 Emergency Response

There is mostly poor to good cell phone coverage within the reserves on both networks but mostly available in general. There is road access to parts of the walking and biking tracks but in most parts any emergency response would necessitate walking or helicopter access.

It is not possible to land a helicopter in many places within the reserves so most patient retrievals would be by winch or stretcher carrying to a landing site or to a road ambulance.

Adequate briefing of St Johns medical teams with access to track names, maps and access routes should be considered. This would include any access to any required keys to gates etc.

## 6. Recommendations

The Tainui and Hikanui Reserves are an asset to the Hawkes Bay community and the Hasting District Council should be commended in the proactive encouragement of recreational use within these facilities.

While this report identifies that there is a level of risk with the current mountain bike trails, that is the nature of the activity and is in line with what is happening with this fast growing sport throughout New Zealand.

We recommend the following:

1. Develop a separate climbing trail for cyclists to get them to the top of the descending trail at Hikanui Drive. This could be a shared trail with walkers provide it was “climbing only” for cyclists. There are a range of options for this considered during the site visit:
  - a) A continuation of the current Shared Pathway onto the walking only track that takes the most direct line to the top. There are stairs on this route currently and the track would need some ground works to make it an effective trail.
  - b) Allow uphill-only cycling on the current walking trails. Possibly an unpopular option but acceptable from a safety perspective
  - c) Construct a new climbing trail in land adjacent to Tainui Reserve if that becomes an option in the future.
2. Collect data on incidents on the biking and walking tracks and review this data with a view to modify the nature of the trails or modify user behaviour with signage etc.
3. Develop a clear signage system for the mountain biking trails. There needs to be a map of the trails in the park as there is for the walking trails. The trails should be graded and the meanings of these gradings outlined on the general signage at the carpark

## **REFERENCES**

**International Mountain Bicycling Association website**

**Department of Conservation website (trail grading)**

**NZ Cycle Trail Design Guide (MBIE)**

**NZ Handbook for Tracks and Outdoor Visitor Structures (SNZ HB 8630:2004)**

**New Zealand Standard Design and Application of Outdoor Recreation Symbols (NZS 8630:2005)**

**New Zealand Mountain Bike Trail Design & Construction Guidelines (Recreation Aotearoa)**