

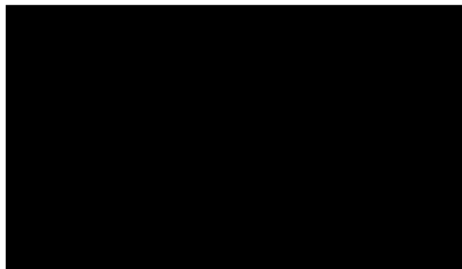


Ref: [REDACTED]

Civic House, 110 Trafalgar Street  
PO Box 645, Nelson 7040, New Zealand

4 October 2021

P (03) 546 0200  
E LGOIMA@ncc.govt.nz  
[nelson.govt.nz](http://nelson.govt.nz)



Dear [REDACTED]

**REQUEST FOR THE COPY OF THE AUDIT REPORT THAT CONTAINS THE REASONING  
BEHIND THE DECISION TO UPDATE MOST OF NELSON'S MOUNTAIN BIKE TRAIL  
GRADES**

I refer to your official information request dated 16 September 2021 for the copy of the audit report that contains the reasoning behind the decision to update most of Nelson's mountain bike trail grades.

The information you requested is enclosed below.

Council engaged Envisage NZ to undertake a grade audit of mountain biking trails in the Nelson region, including trails on Ngāti Koata owned land. Following this audit Elevate Trail Building audited a number of other trails as well as per reviewing some of those undertaken by Envisage NZ.

The final step of the process was a working group that included mountain biking representatives from Ngāti Koata, the Nelson MTB Club and local industry. The purpose of this group was to arrive at a consensus grade for each trail. Council facilitated the working group process but did not participate in grade recommendations. All of those present (other than council staff) are considered to be well respected in the field and provided a robust cross section of the mountain biking community. The names of individuals from organisations involved in the working group are withheld under s.7(2)(a) of the Local Government Official Information and Meetings Act (LGOIMA), in order to protect their privacy.

The following documents are attached:


- Attachment 1: Envisage NZ - Nelson City Off-road Cycle Trail Grading Assessments.
- Attachment 2: Elevate Trail Building audits (which includes further comments from Envisage NZ)
- Attachment 3: Spreadsheet from the consensus working group.

Internal Document ID: [REDACTED]

You have the right to seek an investigation and review by the Ombudsman of this response.  
Information about how to make a complaint is available at [www.ombudsman.parliament.nz](http://www.ombudsman.parliament.nz) or

If you wish to discuss this decision with us, please feel free to contact me at  
[rosie.bartlett@ncc.govt.nz](mailto:rosie.bartlett@ncc.govt.nz).

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Rosie Bartlett', with a stylized flourish at the end.

**Rosie Bartlett**

Manager Parks and Facilities

# Nelson City Off-road Cycle Trail Grading Assessments.



*On Supplejack, Grade 4 or Grade 5?*

**Prepared by:** Simon Noble, Envisage New Zealand  
**Prepared for:** Nelson City Council, 27 May 2021



## DOCUMENT CONTROL

Version	Date	Notes
1.0	22 April 2021	Complete draft
1.1	14 May 2021	Final
1.2	27 May 2021	Final, for combining into single document and with new appendix for specifications used. Revised cover page.

### Intellectual Property

The client owns the Intellectual Property inherent in this report. Envisage New Zealand asserts its ownership of the assessment methodology and spreadsheet, and of the template for both this report and the appended trail reports.

### Acknowledgments

Thanks to Brett, Loui and Luke for your company on the riding, Jess, Belinda, Sally and Anna for ideas and opinions, Steve for the uplifting uplifts and Paul and the team at NCC for the support and information.

### Warranty and disclaimer

We stand by this work and are very confident it gives Nelson City Council a clear sense of how to move ahead managing the off-road cycling experiences it offers in its regional context and in light of the relevant standards. We are confident we have graded the assessed trails accurately although we mostly only visited them once and aware grading is subjective.



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## EXECUTIVE SUMMARY

Nelson City has an extensive and excellent Network of about 60 off-road cycling Experiences (trails) clustered in six Destinations. It is nationally and globally renowned and brings many health, social and economic benefits to both city and region. The Network is operated on land owned by Nelson City Council and Ngāti Koata in a partnership with the Nelson Mountain Bike Club.

The trails in the Network are graded using a 1 to 6 scale established in the New Zealand Cycle Trail Design Guide. This document standardises certain trail features and seeks to provide for a range of riding and riders, with 'Grade 1' being the easiest grade and 'Grade 6' being the most technically demanding. The standard is not unanimously agreed to and has not eliminated the subjectivity of grading. However, it is the best guide available for land managers and experience providers increasingly seeking to ensure they are fulfilling the promise they make through their marketing to riders, both visiting and resident.

The riding experience in the Nelson Network is significantly harder than its marketing suggests, which is likely to be causing dissatisfaction and injury, and reducing the flow of benefits. We assessed 41 meaningful trails in the Network and consider 32 of these to be under-graded by one grade, with three under-graded by two grades. The average 'under-grade' is 0.9 of a grade, which is significantly more than we have found elsewhere but consistent with word-of-mouth feedback about the Nelson Network among the cycling community.

Our findings also suggest – especially if extrapolated to the eighteen trails we didn't ride – that the distribution of trails across the six grades is strongly stacked towards the difficult end of the grade spectrum: the marketed Network is about 50% Intermediate (Grade 3) but we found it to be more than 50% Advanced (Grade 4). Our analysis also suggests there might be no Grade 1-2 (Beginner-Novice) riding in the City at all. This is unlikely to be the ideal proportion even though there is no established best-practice for the distribution of grades in a track Network and there are some Grade 1-2 trails within 75 kilometres' driving.

The main reasons that Nelson's trails are harder than their marketed grade are their (too-small) turn radii, their narrowness (with consequent fall exposure), and their deterioration-induced ruts and surface looseness. We found that steepness, while a good guide to nominal grade, was not often the cause of under-grading alone. However, the length of a trail or the amount of climbing/descending in it, were certainly factors, and some trails can only be accessed or exited via a harder-graded trail. In other cases, the problem with a trail's grade was a simple disagreement between the grade posted in different information sources.

The principal recommendation of the work summarised in this report is that up to 32 of the Experiences in the Network should be re-graded to a higher grade. In some cases, this might be avoided by resolving differences in the information sources or splitting trails into two. Alternatively, minor works could be undertaken to retain current grades without changing the (essentially) fixed components of width, slope and turn radius.

These actions will be relatively cheap. They will ensure that the Network's promise - made through its marketing - is fulfilled and should reduce unmet expectations, dissatisfaction and harm. However, the overall effect will be to emphasise the lack of Experiences available at the lower (easier) grades, for beginner riders. As such, a rethink of the Network's layout is recommended and, in a few places, capital works to either make key existing trails easier or provide completely new ones.



# **1. INTRODUCTION**

## **1.1. Background and history**

Off-road cycling is an increasingly important aspect of New Zealand society. Imported from the USA, it has grown substantially over the last 30 years, starting out as an anti-establishment activity but becoming quite conventional more recently with the emergence of the Great Rides (from 2010), the development of e-bikes, the increasing political influence of its adherents and the generally increased acceptance of cycling as a valid activity with many benefits.

As off-road cycling has matured, it has become more institutionalised and formal, especially since there is some risk involved in it, and much of it occurs on public land and/or on facilities developed with public funding. Part of this maturation process has seen the development of a grading system for off-road cycling trails that is intended to standardise specific aspects of those trails so riders of all skill levels can accurately form expectations that are likely to be met by their experiences.

The grading system itself is still developing and, in fact, there are now three formal systems in New Zealand. While the systems have a high level of consistency and include at least some objective measurables, grading is still a subjective process. Track builders and track professionals throughout New Zealand seem to still approach grading differently; many are very highly skilled riders whose idea of an 'easy' trail is very different to what the grading system suggests. They often build trails for Councils or other property owners, who sometimes have little understanding of off-road cycling as an activity or of the grading system.

The net result is that the extent to which trail grades are accurate varies from region to region. On average, trails are probably somewhat under-graded – they are harder than they described in their marketing materials. This means that trail networks (and the national network) are not as representative or diverse as they might be, or as they need to be in order to see the activity reach its full potential. The specific effect of this is that riders' reasonable expectations, formed by their sense of trail gradings in Place A, are not met when they go to Place B. This expectation gap is a cause of dissatisfaction and has likely caused many injuries, and some high-profile fatalities.

Within the professional recreation sector and government, there seems to be an increased desire to see trail grading improved and made more consistent nationally so that cycling's benefits are maximised, provision is diverse and fair, and negative consequences are minimised. It is against this background that Nelson City Council has hired Envisage New Zealand to independently and formally assess certain tracks within its boundaries and provide a grade for them.

## **1.2. Scope**

### **1.2.1. In-scope**

The brief was to grade the trails in six riding Destinations: Codgers, Codgers-Maitai, Fringed Hill, Maitai Face, Marsden Valley and Sharlands. The exact number of trails in these Destinations is difficult to pin down precisely: information sources can be out of date or disagree with each other. In the end, 61 trails were considered to be in-scope; 43 of these were ridden (or otherwise assessed) although two have been excluded from the final analysis in Part 5 below. A full list of the trails assessed is provided in Appendix 1.

All of these trails are in Nelson City on land owned by the City Council or Ngāti Koata<sup>1</sup>. As part of a partnership with those owners, the Nelson Mountain Bike Club carries out

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<sup>1</sup> Most of the Ngāti Koata land is production forest managed for them by Tasman Pine Forests.

maintenance work on some of the trails, builds new ones with their approval, and organises events on them. The club – New Zealand’s biggest - has over 3,500 members, employs staff and is also involved in trails in Tasman District, especially Wairoa Gorge.

The partners’ branding is on the printed and on-site official visitor information sources while club membership is the principal way for riders to obtain the permit they need for the trails that are on Ngāti Koata land. The club fulfils the “Local Trail Association” role on the critical Trailforks website (see 1.3.3) where it is acknowledged that the land on which the trail sit is Ngāti Koata’s “Traditional Indigenous Territory”.

### **1.2.2. In-scope Trails not Ridden**

There are eighteen trails that we did not ride, mainly for safety reasons but also due to rain one morning and time availability. A list of these trails is provided in Appendix 2.

### **1.2.3. Out of Scope**

The scope of this work is essentially restricted to track grading. It excludes higher-level, destination- or network-level analysis and comprehensive review of information sources, social media, management agreements etc. There are also some rideable trails in the city that were not in-scope, among them:

- The Centre of New Zealand trails
- Trails in the Grampians
- The Maitai valley Trail
- The two Great Rides that are in or partly in the City
- Trails that mainly have a transportation purpose
- The roads that appear as graded trails in the trail maps
- A number of illegal or informal trails

These trails - at least the legal ones and those where cycling is sanctioned - should be considered part of the overall Network when considering the implications of our findings regarding trail grade distribution that are discussed in Part 5 of the report below.

### **1.2.4. Trails elsewhere in the region**

We also audited 11 trails in Tasman District during the same period as our Nelson work, where Tasman District Council was both Land Manager and Experience Provider. In this work we found trails to be somewhat under-graded generally, but also recommended that one, currently Grade 2 trail on Rabbit Island, be considered a Grade 1.

We approached the Land Manager at Silvan Forest Mountain Bike Park with a view to grading trails for them, just outside the City. They declined but have since added one grade to eight of their 26 trails. We completed 15 audits voluntarily at Kaiteriteri Mountain Bike Park – also in Tasman District – which is popular with Nelson and visiting riders. We understand that some trails there will have their grades increased too. Finally, we note that the c50 trails at the (club-managed) Wairoa Gorge Destination have also been re-assessed: in late 2020 the network there was marketed as having Grade 2 to 5 trails but now appears to only have trails graded from 3 to 6.

## **1.3. Methodology**

### **1.3.1. Assessment method**

At the present time, there is no documented procedure or recognised competency related to (baseline or regular) inspection of off-road cycling trails, or to their grading. While the Department of Conservation has developed such systems for walking tracks (based on the Standards New Zealand Handbook 8630:2004), they have yet to do the same for cycling trails.

Envisage New Zealand has developed a methodology based on our knowledge of best practice, the grading system and DOC's walking track assessment processes. Our methodology is only designed to provide a one-time or one-off grading for a trail and, while it does include discussion of what may be considered 'low-hanging fruit' at each trail, it does not generate a detailed plan of remedial or upgrade tasks.

The methodology we have developed involves riding, eyeballing and measuring each trail and recording certain data in a 'smart' spreadsheet that generates a one-page report for each trail and allows managers to compare trails to each other at a number of scales. Some specific features of the methodology are discussed here:

- 1 We collect and display grades for each trail from major official information sources and specific unofficial ones.
- 2 We assess a trail's average slope from its length and change in altitude. Where a trail climbs (or falls) consistently, this can give a sense of its nominal grade.
- 3 We can separately do the same for a significant specific part of a trail where that might be germane to deciding upon a recommended grade.
- 4 We separately assess each trail's 'fixed components' - width, slope and turn radius - since these give some sense of the lowest grade that might be assigned to a trail without the significant expense of realignment.
- 5 Our methodology culminates with a recommended grade (which is usually different to the fixed components grade). We provide a justification for the grade we recommend, especially if it differs from the marketed one.
- 6 We describe any 'low-hanging fruit' - simple, cheap changes that might be made to keep a trail at its marketed grade. Sometimes, re-grading is the low-hanging fruit.

### **1.3.2. Standard applied**

There are currently, and somewhat problematically, three documents that give standards-like guidance for off-road cycling track standards in New Zealand. These are:

- *NZ Mountain Bike Construction Guidelines*. (Recreation Aotearoa, 2018).
- *Cycle Trail Design Guide* (New Zealand Cycle Trail, 5<sup>th</sup> edition, 2019).
- *Cycle Track Service Standard* (Department of Conservation, 2021)

Fortunately, the differences between the three standards are minimal for the critical features of slope, turn radius, width, surface and obstacle height for trail grades 1-3. Above Grade 3, the differences are greater but still not significant given the skill and risk tolerance of riders seeking those experiences. The one exception to this is the provision of barriers to prevent falls. In this complex area, the three standards are irreconcilable. We have considered the implications of falling from a trail in our assessments. Where we feel that a dangerous fall is a likely factor, this has significantly contributed to our recommended grade for a trail but we have avoided recommending the addition of barriers, which would hardly be 'low-hanging fruit'.

We have pointed out the inconsistency regarding barriers to the relevant organisations and recommended that this be resolved. We are also recommending a standardised approach to the provision of signage to warn riders of significant fall hazards or, indeed, other hazards or over-grade features. We would recommend Nelson City Council doing this proactively within the Nelson Network.

Taking all of the above into consideration, we have adopted the New Zealand Cycle Trail Design Guide (5<sup>th</sup> edition) to drive our grading (and other) work. We do this because that system has been around the longest and is proven through its use to develop the very successful Great Rides stable of experiences. Furthermore, it is the most detailed of the three standards, by virtue of its inclusion of matters relating to principle, network design, trail sharing, marketing and signage. We also note that one of the official Trailmaps says that Trail are graded to the NZCT guidelines



### 1.3.3. Assumed Current Grade

Throughout New Zealand, the Trailforks website and app are, increasingly, the only source of online, pre-visit trail information; the app is also a major source of in-experience information. While Trailforks doesn't have an actual grading system, its 'difficulty' rating scheme is sufficiently similar to the New Zealand one to be understandable here, at least among experienced riders (Figure 1).

For the purposes of our work, we assume the grade posted on Trailforks to be the principal grade for the in-scope trails, and the Grade that we will compare our own assessment to. We do this because:

- we consider pre-visit information to be the most important in expectation formation
- trail grades are often inconsistent between website, signs and maps
- the club's and land owners' websites have no maps on them other than the Trailforks ones
- Trailforks covers all the in-scope trails but the published maps don't cover Marsden Valley.
- there is minimal trail grade information on signs for Widdershins and Involution.

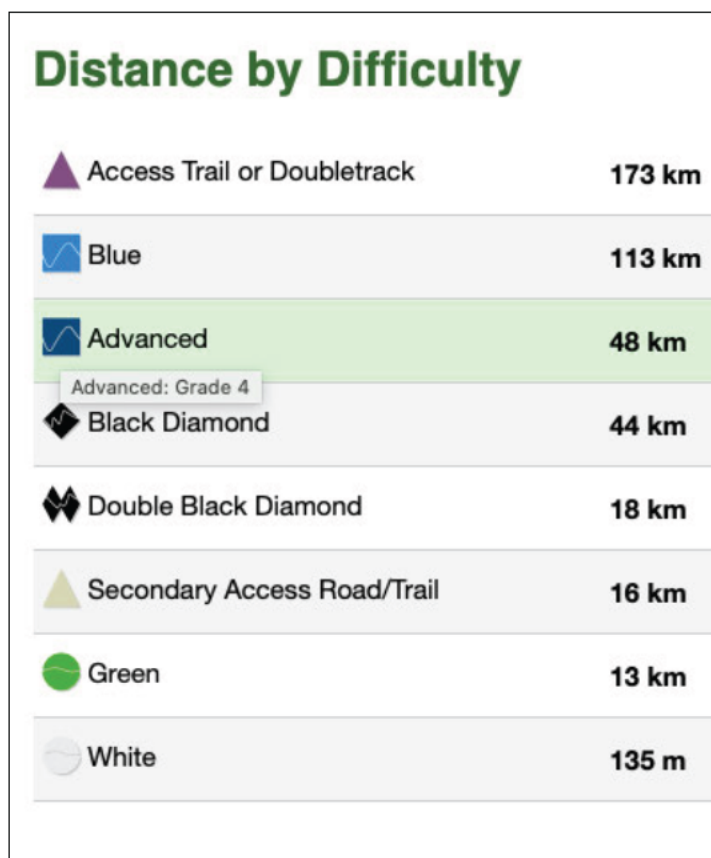


Figure 1. This screenshot, from the Trailforks website, shows its "difficulty" rating scheme and the distribution by difficulty of the 222 trails in its Nelson\* region.

While this scheme is not explicitly a grading system, and is somewhat different to the New Zealand one (p9), it is similar. It is seemingly used in New Zealand as if it did represent our system ("White" is assumed to be NZ Grade 1, "Green" is 2, "Blue" is 3, "Advanced" is 4 "Black Diamond" is 5 and "Double Black Diamond" is 6).

#### Notes:

- The difficulty ratings are not explained on the website. Hovering over "Advanced" brings up the wee box shown here - the only use of the word "grade" we could find.
- On the website's maps, the trail line colours match the symbols here but Double Black Diamond trails are red, which matches the signs in Nelson (see Figure 2, p9).

\* Not the same as Nelson City.

### 1.3.4. Nomenclature

A number of terms used in this report and our grading reports require specific understanding. First, the terms 'trail' and 'track' are largely used interchangeably. On the other hand, we will usually use the term 'slope' when discussing the steepness of a trail rather than 'gradient' or 'angle'. When discussing slope, we generally use angles in degrees but may sometimes refer to a rate of climb or fall (i.e., one in X.X or 1:X.X or -1 in X.X).

### Grades and difficulty adjectives

When discussing the grade of a specific trail we will use capitals (Grade 3, Grade 6 etc.) but a lower case 'g' will be used where trail grade is referred to generally. We will often (and sometimes simultaneously) refer to a difficulty-describing adjective for each trail grade. The terms we use are Beginner (Grade 1); Novice (Grade 2); Intermediate (Grade 3); Advanced (Grade 4); Expert (Grade 5); Extreme (Grade 6). We use these terms because they can all describe trails, riders or the riding a trail provides.

Our naming convention for Grade 1 and 2 trails/riders is not the most common one but we prefer not to use the terms 'Easiest' (for Grade 1) or 'Easy' (for Grade 2) as most systems and providers do. This is because those words are less flexible and we prefer to reserve them (with lower case first letters), along with hard/difficult/harder etc for general use. We note furthermore that there is seemingly an increasing trend around the country to four-grade systems in which the 'usual' adjectives have differing meaning and/or are omitted.

We grade all trails 1-6 and do not add a '+' (or indeed a '-') symbol to our grades since this is not explicitly provided for in any grading system. While we see merit in the idea of adding a plus to grades for specific reasons, until this is formalised, it has no particular meaning.

### Trail Management

In terms of trail management, we will refer to the Land Manager and the Experience Provider. The Land Manager is the owner or managing agency of the land on which an Experience exists. This organisation - often but not always a Council - permits the activity to occur and it permits the construction of the Experience. It carries a certain underlying responsibility for the experience provided and needs to be satisfied that any separate organisation - the Experience Provider - meets its obligations.

The Experience Provider, which may also be the Land Manager, manages the Experience in accordance with the law and the conditions imposed by the Land Manager in view of any stakeholders. The Experience Provider owns the experience (although it might not own the brand the experience wears such as the New Zealand Cycle Trail brand). The Experience Provider is responsible for the management of the Experience, usually including maintenance, marketing, compliance, advocacy, reporting and asset management. The Experience Provider is the organisation making the promise to the Experience's users (the customer) and is responsible for fulfilling that promise.

### Experience Hierarchy and Management Units

Finally, we use a specific hierarchy of concepts in all our work relating to the planning, provision and management of visitor experiences. This hierarchy is Experience, Destination, Network. In the context of this report:

Experience means a discrete (usually named) whole visitor experience - an individual cycling trail comprising physical assets and understandable services or intangibles.

↳ Destination means a place where people may go (by bike or by car) to enjoy at least one experience, cycling and/or non-. Most (cycling) Destinations will have more than one (cycling) Experience.

↳ Network means the entire collection of cycling Experiences, considered in their Destinations within the sphere of interest of a specific stakeholder (in this case, Nelson City Council)

When we refer to these terms with the meanings above, we will capitalise them but we may also use any of them more generally, for instance to describe the experience of a place or the network or sub-network within a specific area.

### **1.3.5. Limitations and assumptions**

The key limitation in our work (this report and the appended trail grade reports) is the time we had on site to complete the work. We have only been able to visit and ride most trails once in completing our field work, although we did ride the main climbing trails and several of the downhill trails at the Codgers Destination twice or more.

In the time available it has not been possible to measure every corner or obstacle, or every over-steep section. Instead, we have generally measured the first section and turn/slope of a trail carefully, and any grade-marginal or interesting ones further on. Measurement is important but we have also sought to simply ride parts of each trail to get a sense of how it feels and compares to other trails we know.

We have not formally or comprehensively researched all possible information sources or investigated social media posts about the in-scope trails. We have not formally surveyed riders but have generally spoken to or observed other riders as much as practicable. This work is essentially limited to Experience-level trail grading and while certain other matters are unavoidable, it is not a full Destination- or Network-level report.

## **1.4. Principles**

The fundamental principle we apply to all of our work is that reasonable visitor expectations (formed from official sources especially) must be met by the experience on the ground in order for visitors to be satisfied. Only if visitors are satisfied will they receive the full benefits of their experience and pass on good feedback to others. Without visitor satisfaction there are likely to be losses in a number of forms.

The other principles we apply to this work are:

- Trails should be coherent and meaningful. In particular their design and layout needs to consider non-cyclist users, direction and design.
- Duration, remoteness and height gain are not part of the grading system. However, riding should generally get harder with increased height or remoteness and beginner/novice riders generally lack the skills, nerve and fitness to cope with very long trails or those that climb or fall substantially.
- Trail layout and design at a Destination should not leave riders 'grade-hung': in a situation where the options for exiting a place are harder than the option they rode in on.
- In an overall Network (or indeed in a large Destination), trail grades should be 'fairly' distributed. The range and collection of trails should allow for a full range of riders to have a long-term relationship with the activity. The provision of a full range of trails is a Network-level responsibility - individual Destinations or providers need not cater for all rider needs.
- In determining whether an overall Network is sufficiently diverse, consideration should be given by a Network manager to what is provided by neighbouring managers where driving distances remain manageable.
- Network-level planning and consideration is likely to fall to the relevant local authority in a New Zealand context. However, provision by DOC and by private providers (on private land and non-) should be taken into account. Private providers should not be required to provide Experiences they don't value or want to provide but should be held to account if they are involved in any grade-based works with public funding and encouraged to adhere to a recognised grading system, including its associated colour scheme/nomenclature.
- The grading system and accompanying standards exist for a good reason. Riders are generally 'grade-conversant' and likely to report on their riding in precisely the terms contained in the standard.
- The Design Guide should be interpreted as it is written. Grading should be done by the standard without fear or favour.



- A trail grade should reflect the current condition of a trail. The grade of the underlying fixed componentry is a valid consideration but a trail should be graded as it stands.
- Some flexibility must be allowed and is indeed provided for in the grading system, along with a freedom to offset difficulty in one component (say, turn radius) with ease in another (say, surface).
- The Design Guide is not entirely clear about how to handle crux sections but if there are a significant number of these, especially on easy trails with no alternative, then a higher grade should be chosen. Where there is just a small number of over-grade obstacles a higher grade might be retained so as not to frustrate those looking for a high-grade experience.
- Grading should take into account the increasing number of e-bike riders but trail grades should, fundamentally, always be achievable on non-e-bikes.

## 2. EXPECTATION FORMATION

### 2.1. Official Information Sources

For the purposes of this work, the sources we considered to be 'official' were Trailforks, the Nelson Mountain Bike Club maps and the on-site signs. The club publishes both the signs and the maps and holds the crucial relationship with Trailforks (where it appears as the "Local Trail Association"). We did not research or review the Council or club websites.

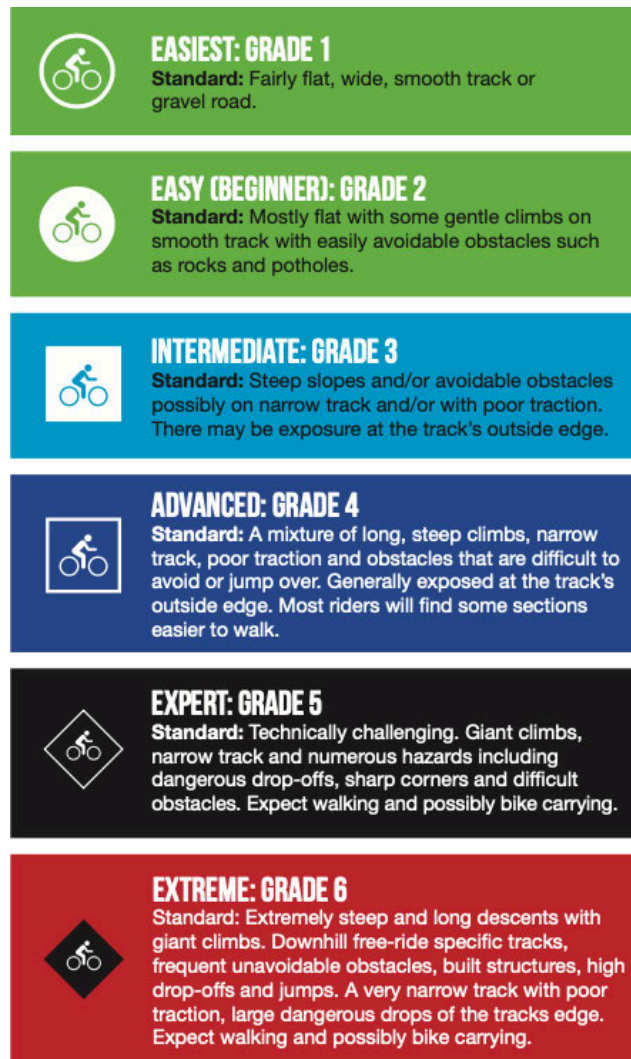


Figure 2. This image, from the club's trail map, shows the way the trail grading system is described to visitors. It is consistent with what is seen in the roadend orientation signs and nicely co-ordinated with the signs at each trail entry (although some trails have one grade on their sign and another in the map and/or website).

This colour scheme (and symbol set) has reasonable consistency with the one in the New Zealand Cycle Trail Design Guide, although the descriptor sentences make Grades 3 and 4 seem harder than the design guide ones do.

This scheme also has reasonable consistency with the one on the US-based Trailforks website (Figure 1, p3). Trailforks is, at least, a six-level system even if it uses some different names and colours. What is increasingly problematic in New Zealand is the emergence of four-grade scheme in some places with different applications of the names and colours shown here.

### 2.2. Unofficial Information Sources

We did not research these information sources extensively but did refer to the seminal *Classic New Zealand Mountain Bike Rides* (9<sup>th</sup> ed, 2017) by the Kennett Brothers, and some of their other books. There is quite a lot of information in these books about the in-scope trails. They don't provide grades for every in-scope trail, but they do provide some grades, which we record on our assessment reports (in the appendices). We note that the Kennetts generally grade trails a bit harder than they are graded in the above-mentioned official sources, often using the + or - symbol in addition to the simple number.

### 2.3. Word of Mouth

Nelson is widely reputed across New Zealand as a destination with lots of riding, much of it quite difficult and probably under-graded.

### 3. THE EXPERIENCE – DESTINATION-LEVEL ANALYSIS

#### 3.1. Codgers

This Destination provides the largest number of trails in the city. It is the most accessible riding area and the easiest. It has a strong connection to the distinctly more technical trails in the Codger-Maitai Destination but riders going there need to be able to cope with Grade 5 trails if they want to exit down to the Maitai valley.

The trails at Codgers are very well marked and generally well maintained. There are however, inconsistencies between grades given on signs, online and in the trail map. The Codgers trails are graded consistently relative to each other but under-graded with respect to the standard. This is mostly due the turns being too tight, surface looseness or roughness, and speed created by built obstacles. These issues exacerbate each other, for instance where riders gather speed on humps and rollers on P51 then face corrugations on the bends which, while not too tight, do encourage high speed.

##### 3.1.1. Feature by feature analysis

###### Slope

The nominal/average slope of most of the Codgers trails is consistent with their current marketed grade, but one grade less than our recommendation. This is to be expected since trails are rarely perfect and we would generally expect slope alone to not be consistent with actual grade above Grade 1.

Slope itself is not a big issue at Codgers but there are some specific problems. The most important one is the over-steepness of Lower Jacks Trail. Its average slope (1:9 or 6.33 degrees) is well above the Grade 3 maximum (5 degrees) plus it has shorter sections that are even steeper. We consider this to be one of the most important findings of the entire project since Grade 3 access to Middle Road is 'required' in order for descents from that road to also be Grade 3.

Other Codgers trails with slope issues are Pipeline, Tu Meke and Whanake. Pipeline has a very short but critically steep slope at the Jacks Hub end and then drops steeply at the other end down to Tu Meke. Tu Meke itself has a too-steep section for its grade. Whanake has a 134-metre section of Grade 5 climbing in it (7.65 degrees). The problem here is that riders must ride up that slope (and a steep part of Middle Road) in order to ride the popular P51, the easiest of all the Codgers descent trails.

One additional slope issue is noted: the extreme slope (and in-turn height loss) of the drop-in at the middle of P51.

###### Width and sidefall

The trails at Codgers are generally wide and unencumbered by vegetation. As such there are few places where the potential sidefall seems perilous. Viral Flow is certainly narrow, but certainly not for its recommended grade (5). Pipeline is not particularly narrow unless its current grade (2) is retained, in which case greater clearance to the outside, or a barrier, should be provided. IV line is narrow in places and on a generally narrower formation than other Codgers trails. Hulk n Hogan has more sidefall exposure than most Codgers trails. It is narrow for its current grade (3) but wouldn't be for the recommended one (4).

###### Turn Radius

Many trails through the city have too-tight turns in light of their current grades. At Codgers, this is especially problematic for the climbing trails, Hulk n Hogan, Tu Meke, Crazy Horse and IV Line. On the faster descents, turn radii are wider than the standard and issues with those trails are to do with the surface and obstacles instead.



The turn radius issue is difficult to resolve without realigning. It could be improved somewhat on lower Jacks (and even Tasman Journeys) by refreshing the sidewall and improving the surface. However, realigning is recommended for lower Jacks Track, where both turn radius and slope are not to-standard, meaning the compliance of one feature cannot offset the non-compliance of the other. Some realignment of Tu Meke is also recommended but re-grading would likely be a better option above and beyond where lower Jacks Track reaches Centre Road (Firball Climb, Firball, Hulk n Hogan, Koata Whetu).

#### Obstacles and surface

The trails are Codgers are mostly cut-surface rather than natural-surface ones. As such, there are few obstacles or root masses except on IV Line where there are at least two of Grade 5 height (>200mm) and Viral Flow (multiple step downs). Trail surfaces are generally good too, being mostly angular stones or remnants of the construction phase with at least some binding power.

There are some places where erosion and deterioration is exposing loose stones capable of rolling around under riders' wheels, which is more consistent with the surface standard for Grade 4 trails (firm and loose) than Grade 3 (generally firm but may have some muddy or loose sections). This is most significant on the portion of Firball above Middle Road, which therefore involves riders on the new Koata Whetu trail.

Wear and tear, e-bikes, rider behaviour and erosion are also having an effect on some trails. Most telling are the corrugations on P51. There are also rolls and bench features provided on several trails that add fun, but also speed. These were noted on trails of all grades. Reducing the speed- and fatigue-inducing effect of these features, in conjunction with corrugation removal, is likely to be enough to allow some trails to continue to be marketed as Grade 3 trails: P51 and the lower half of Firball especially.

In places, rider line selection and e-bike power is causing issues. On Tasman Journeys, corner cutting is making it harder for riders who need it to use the track's full width. On other trails (Firball, Crazy Horse, P51, Hulk n Hogan) there are places where secondary lines or jumps are available but in a way that might cause difficulties for Intermediate riders.

#### Out of standard matters (remoteness, duration, height gain, exertion)

The key issues here are height gain and the duration of the main descents. While it might be possible to provide compliant Grade 3 riding to the Firball lookout (up Tasman Journeys, lower Jacks, Middle Road and Firball Climb), this would be difficult and is too high/far for Intermediate riders. In our view riding above Middle Road requires Advanced skills and good strength - marketing those trails as Grade 4 would signal this. We consider that a full descent from Firball lookout (down Firball or Koata Whetu) or the top of Whanake (down P51) is also too taxing for genuinely Intermediate riders, which provides another reason to concentrate Grade 3 rides below Middle Road.

#### Signs

This Destination is very well signposted, although there are several cases of disagreement between the grades on signs and those in other media. Most notably it is not clear whether Firball Climb is intended to be one-way or two-way and Lower Jacks is shown as Grade 2 on Trailforks but Grade 3 on signs. The Firball Drop Out sign disagrees with itself by saying Grade 3/Advanced instead of Grade 4/Advanced or Grade 3/Intermediate.

### **3.1.2. The Coppermine Trail**

The Great Ride passes through the bottom of the Codgers Destination, and provides a critical entry way to it. It is graded 3 (Intermediate) where it runs through Codgers and this is correct given the slope of the Brook Street to Tasman Journeys section. Grade 3 is also appropriate for the long climb from where it leaves Codger and carries on to Coppermine Saddle.

The Coppermine Trail was out of scope for this project but is impossible to ignore. It is suggested that if the surface of its first kilometre or so was improved, so that the short steep pinches were easier, it could be marketed as a Grade 2. This might change the way riders relate to the (currently Grade 2) Tu Meke and Pipeline trails, which are only accessible currently from higher-grade trails.

### **3.1.3. Hard-to-grade trails at Codgers**

Due to their configuration, Te Ara Kōpiko and Upper Jacks trails don't readily lend themselves to the assignment of a single grade. Te Ara Kōpiko is isolated and not connected to the Destination. Upper Jacks is dual-purpose and has radical slope changes. Pipeline is also a little difficult to evaluate given it runs parallel to a major water supply pipe.

### **3.1.4. Destination-level Recommendations**

A number of recommendations are made for this important destination. These are mostly 'low-hanging fruit' as per the appended trail reports but are specifically designed to 'reset' the destination to be more sustainable and to have more genuinely Intermediate riding:

- There are too many Grade 3 trails to sustain given they require more maintenance than higher-grade trails.
- Riding above Middle Road should be Grade 4 and above. All Grade 3 riding should be provided below there to reduce the fitness/experience needed to climb and descend to/from Firball lookout.
- The lower Jacks Track is both too steep and too tight in its corners to be redeemable as a Grade 3 Trail. Realignment is recommended, to Middle Rd
- P51 and Firball are too long for Intermediate riders to descend (as well as being rough/loose/corrugated in places). While it might require new trail names, they should each be split in two at Middle Road - Grade 3 below and Grade 4 above. This would involve building a short connection from Middle Road to P51.
- A lower-altitude Grade 3 loop could be provided using Firball Drop Out and the bottom of Firball.
- Crazy Horse is something of an anomaly and should be re-graded 4.
- IV Line and Gully make a bit of a joined-up pathway out of the Destination and should have a single grade - 4. IV Line requires some attention to avoid it becoming an Expert (Grade 5) trail and Gully would need a lot of work to be a Grade 3.
- The whole Pipeline/Tu Meke connection, including the overlapping of the Coppermine Trail is confusing and not suitable for Novice (Grade 2 riders). It needs to be rebuilt.
- Tu Meke is too speed-inducing for Novice (Grade 2) riders and the turns at the bottom are too tight.
- Pipeline is too narrow in places and has some over-grade slopes that should be removed if Grade 2 is to be retained for it.
- Ideally, a Grade 3 trail should be available from the main carpark up to the bottom of Tasman Journeys. The current road climb is unsatisfactory.

- Upper Jacks Trail should be signposted explicitly as an emergency exit from the Destination. It should not be graded and should appear on Trailforks as an "Access Trail" rather than a graded trail.
- A Grade 3/Intermediate exit should also be available from Codgers-Maitai (right down to the Maitai Valley Track).
- Firball Climb could not be a Grade 3 trail without realigning so should be a Grade 4. Clarity is needed with respect to whether it is a one-way or two-way trail (the sign at the top says two-way but Trailforks and the one at the bottom say one-way).
- Wayne's Passage should be two-way and be more easily seen from Firball. In this way, it would act both to get people on to and off Firball if they were struggling with the climb or descent.
- Viral Flow is clearly not well-used and perhaps redundant.
- Whanake and the upper section of P51 (above the current drop-in or the new link suggested above) should be Grade 4, partly reflecting the difficulty of sustaining Grade 3 trail and partly to reduce the tiring/speed gathering effect of P51 for genuinely Intermediate riders.

### **3.2. Codgers-Maitai**

This Destination links nicely to Codgers and is best accessed through that area – the two Destinations even share a hub area for some trails. Codgers-Maitai provides distinctly more difficult riding than its bigger neighbour and, like Codgers, it is under-graded relative to the standard. Unlike Codgers, the under-grading here is mostly due to wear and tear caused by riding, and erosion. We rode the access trails (Turners and Take Me to you Leader) twice and descended Hot Box and Top Dog. We rode parts of Beer Bottle but found it difficult to follow completely.

#### **3.2.1. Feature by feature analysis**

##### Slope

The average slope of the trails is not excessive but there are some very steep and committing slopes here, certainly in excess of the maxima in the standard (15 degrees for Grade 4 and 20 degrees for Grade 5). While there is no perfectly discernible boundary between Advanced and Expert riders, we consider the descent lines in the Destination to require Expert-level skills; they are too difficult for those who are unable to rapidly select the flow line or might be intimidated by roots, deep ruts and jumps.

##### Width

In places the downhill trails traverse too narrowly for the current grades. In other places they are wide by virtue of being ill-defined where erosion has turned them to root masses or where different lines are available.

##### Turn Radius

Generally, the downhill turns are either fast wide ones with very big turn radii. Where turns are tight, they are wide enough for their marketed grade and certainly the recommended grades. Turn radius is not nominally an issue but erosion has still made many of the turns difficult and riders unable to take the faster lines may find they are effectively making very sudden tight turns at the bottom of difficult steep sections to avoid a crash.

On Take me to your Leader, the only climbing trail in the Destination, turn radius must be considered differently to the downhill trails. The turns on it are easily too tight for the marketed grade.

##### Obstacles and surface

This is the real issue with the harder downhill trails in this Destination (not Turners) and what leads us to consider they are under-graded. Wear and tear and erosion certainly

mean that the obstacle size on Hot Box and Top Dog was frequently bigger than the standard allows.

#### Out of standard matters (remoteness, duration, height gain, exertion)

The higher (than Codgers) grades here mean that duration and elevation change need not be considered issues. What is worth considering though, is that the downhill trails we rode do require riders to make instant decision to select between riding options or to place their bike on a broad root mass. This is an expert-level skill especially where slopes are very steep.

#### Signs

The signs in the Destination are good except for Beer Bottle, which is difficult to find.

### **3.2.2. *Difficult to Grade Trails***

While its purpose is clear, Beer Bottle is difficult to find and follow.

### **3.2.3. *Destination-level recommendations***

- The principal recommendation for the Codger-Maitai downhill trails is to grade them higher to reflect their difficulty. Upgrade works would be theoretically possible to bring the trails to their marketed grade but it's hard to see how this would be sustainable with the slopes involved and given the erosion that has already occurred.
- Take me to your Leader should also be graded harder, especially given what it provides access to.
- The overall network would benefit from one of the Codgers-Maitai descending trails (or a new trail) being sustainably Grade 3 or 4 and providing an exit to the Maitai Valley Track for Grade 3 riders (coming from Codgers) or even Grade 4 riders (entering the Destination via Turners and Take me to your Leader).

## **3.3. *Fringed Hill***

Fringed Hill is a huge hill sitting behind the city with a selection of massive trails on it, with big reputations. One is Grade 6 – one of just two so graded in the city. Another – Te Ara Koa – has become very popular with riders and has been listed by the Kennett Brother among their 40, bucket-list New Zealand rides. They have graded it 4+, adding a + symbol to a marketed grade as they often do and making special note of two Grade 5 drops. This is the only trail we rode in the Destination due to safety considerations and, on one day, a bit of rain.

### **3.3.1. *Feature by feature analysis***

Only one trail was ridden so this analysis is not provided here.

### **3.3.2. *Recommendations for the Fringed Hill Destination***

While we ultimately only rode one trail here, we consider that the configuration of the trails here might be just about right and we see no harm in such a big, remote hill having a fearsome reputation. We consider that it might be good for one trail off this hill to be Grade 4 but that would depend on how other recommendations in this report are implemented.

We are aware that the original intention for Te Ara Koa was to provide a Grade 3 trail but we consider a 700-metre descent is too far for Intermediate riders. There is scope to make Te Ara Koa Grade 4 and this would be both more feasible and more appropriate for the scale of the Destination.

### 3.4. Maitai Face

There is a small number of trails (4) in this Destination. They overlap somewhat and emerge at the bottom of a very steep face. We only rode one trail here, Mr Chomper, and that was in damp conditions. We also walked a reasonable distance up Maitai Face from the parking area at the bottom. It is noted that the Maitai Face trails are shown quite differently on the trail map and on Trailforks; we consider that the latter is more correct (although Trailforks doesn't identify Maitai Face as a stand-alone Destination).

#### 3.4.1. Feature by feature analysis

Only one trail was ridden so this analysis is not provided here.

### 3.5. Marsden Valley

This Destination, the furthest from the CBD, is essentially focused on one popular trail, Involution, and its purpose-built access trail, Widdershins. There are two other trails at the bottom, that are nominally easy-graded but hardly useful given issues with their position and configuration.

Access to Widdershins (and thereby, Involution) is up a steep road that is mostly closed to private vehicle but used by walkers. At the top is a paragliding take-off area and a number of tracks that connect both walkers and riders to other Destinations, including to Third House (on the Coppermine Trail via the Brook Sanctuary fenceline) and to the off-road cycling available at Silvan and Kingsland (Richmond Hills).

#### 3.5.1. Feature by feature analysis

The small number of trails in this Destination means there is little gained from a feature-by-feature analysis. The individual trail reports and the information in section 5.5 below will suffice.

### 3.6. Sharlands

This Destination includes some of the original single-track Experiences created in Nelson, among them trails whose original purpose was walking. This Destination is the most diverse in the city, including a range of grades and providing for a range of riding preferences.

#### 3.6.1. Feature by feature analysis

##### Slope

As expected in such a diverse Destination, slopes are varied. The (3) former walking trails and the (3) purpose-built thrill trails between the western ridge top and Sharlands Creek are steep but appropriately so. The incline of the (6) linked trails running parallel to Sharlands Creek is fit for purpose but Chings Highway and Sharlands Creek Trail have some sudden slope changes and steep pieces that are problematic.

##### Width

Width and the fall exposure it creates are certainly a factor in the three trails in native forest and, to a lesser extent, on the six trails in the valley. Being a digger-cut trail, Chings Highway has plenty of width, which makes it feel very safe. There is width on most of Aorere but it's not necessarily easy to access for even Expert riders. On the thrill trails (Broken Axe, Putakari and Kaka), width is not an issue intrinsically but the existence of secondary parallel lines (used by lower-grade riders) is 'spoiling' the 'principal line' in places and somewhat problematic for the target riders.

### Turn Radius

Turn radius – so often a factor at Codgers – is not a significant matter at Sharlands, where the trails are relatively straight. In places it was a factor in recommending higher grades, especially on Supplejack where tight turns sometimes occur simultaneously with short, steep drops and narrow trail.

### Obstacles and surface

Obstacles and surface roughness have played a big part in our assessment of the Sharlands trails, in some cases reflecting the trails' age. On most trails in this Destination, obstacle height and surface are considerations that led us to recommending higher grades.

### Out of standard matters (remoteness, duration, height gain, exertion)

Height gain is not a factor at Sharlands since all the trails there are downhill ones. This might be considered a failing in itself, but we consider that the roads provide adequate uphill access in this Destination – the only uphill addition we might suggest would be a shortcut climb up to Chings Highway at whatever grade is adopted for that trail overall (Grade 3 is suggested).

While height gain is not a factor, exertion and duration definitely are, and most of the trails in this destination are long and/or intense enough to require reasonable endurance from riders. There is also an element of remoteness about the upper valley for riders heading up to Aorere or Slingshot.

### Signs

We note a very inconsistent approach to the signs leading from the valley road down to the trails in the valley: some point to the tracks below and some appear to indicate the trails start at the road. The way the road-side signs refer to Sharlands Creek and What the DOctor Ordered trails may require reconsideration depending on how the trail configuration is reconfigured and how the specific safety issues discussed below (5.6.1) is resolved.

The signs on Sharlands Creek trail disagree with respect to the trail's one-way/two-way status.

### **3.6.2. Destination-level recommendations**

- The trails in this diverse destination are under-graded.
- The configuration of the Destination is good although more direct access to Chings Highway (and thereby to Aorere) would be an enhancement.
- The linked trails in the valley floor are too long and fragile for upgrade. They would be best considered as an Advanced-level (Grade 4) challenge, possibly even under one name.
- Chings Highway, with its generally benign slope and the the safe feeling imparted by its width, has good potential to be a genuinely Grade 3 (Intermediate) ride.
- The roads in the Destination are not rides and probably wouldn't be grade 3 if measured. They should not appear as trails (of any grade) on the map or sigs but should be treated (as they are on Trailforks) as accessways.
- Some of the structures and items added to the surface in this Destination are crude and should be removed or replaced.

## 4. THE EXPERIENCE – EXPERIENCE LEVEL ANALYSIS

The main part of our Experience-level analysis is included in the appended grading reports. Our key findings for each experience are as follows.

### 4.1. Codgers Destination

#### **4.1.1. *The climbing trails (Tasman Journeys (Grade 3, no change), Lower Jacks (Grade 4, +2<sup>2</sup>), Firball Climb (Grade 4, +1)).***

These are generally good – arguably the most important trails in the entire Network. The turn radii on all of the corners is marginal for Grade 3 at the bottom and too tight higher up. Lower Jacks is also over-steep for its current grade and despite the recent repair of a very exposed rocky section, it needs realignment to be genuinely Grade 3. Re-grading it as a Grade 4 would be easier but this would nominally leave Grade 3 riders 'grade-hung' if any trails it accesses are Grade 3.

Firball Climb is distinctly and satisfyingly more demanding than the trails below it. Because of its slope and turn radii; it is hard to consider how it could be marketed as Grade 3. Grade 4 is recommended, which again has implications for the two trails it accesses (Koata Whetu and Firball).

#### **4.1.2. *Wayne's Passage, Grade 3 (no change)***

This excellent short trail is considered to have two purposes. It provides access to a mid-point of Firball and could, with the construction of an 'off-ramp' provide egress from that trail too. Wayne's Passage provides an easy way on to and off Firball.

#### **4.1.3. *Whanake, Grade 4 (+1)***

Whanake starts out nicely but then offers up a stiff, near 150m climb to the top of P51. This climb is Grade 5 in itself (more than 7 degrees for more than 100m) but Grade 4 is the recommend grade. If Whanake is indeed too steep – and Grade 4 – there are implications for P51 which it accesses.

#### **4.1.4. *Viral Flow, Grade 5 (+2)***

This classic old trail is good fun and offers perhaps the gnarliest bit of climbing trail in the entire city. It is however, a bit of an outlier that might be redundant.

#### A Specific Safety Note

We found an uncapped waratah on a retaining wall at a bend on this trail not too far from the finish (about 100 metres below where Viral Flow finishes on Whanake)

#### **4.1.5. *The main descending trails (Firball, Te Tirohanga Whetu o Koata, Hulk n Hogan, IV Line, P51 (all Grade 4, +1))***

Generally, the fixed components for these trails largely indicate they are Grade 3. However, in every case, there is something indicating that Grade 4 is more suitable, even if that mainly relates to current condition and could be rectified fairly cheaply. Most notably, removing or reducing corrugations and speed-building features on P51 would make it better for Intermediate riders. On Firball, similar work is required but loose rock (above Middle Road) is at play more than corrugations.

We consider both trails are too hard to access and too long/tiring to descend fully to be considered Intermediate. We recommend splitting off their top sections for Advanced (Grade 4) riders and restricting repair and easing work to the lower parts. This significant

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<sup>2</sup> Note that the recommended Grade (4) is 2 higher than the Trailforks Grade we use as a baseline. However, we suspect this is an error, and the map and on-site sign both say Lower Jacks is Grade 3.



recommendation goes hand in hand with another recommendation to realign Lower Jacks Track and to provide an even lower Grade 3 loop using Firball Drop Out to link Tasman Journeys to the bottom of Firball.

Hulk n Hogan is an excellent trail that is fine as it is if regraded (4). It is too narrow (and exposed to sidefall) for Grade 3 and the turns (one of which is a bit broken) are too tight/steep. IV Line is at the difficult end of Grade 4 or at least threatens to be with further deterioration. Line selection by riders - somewhat intimidating for Intermediates - is affecting its overall presentation and it has at least one big step in it, plus very narrow sections at start and finish.

The new trail – Te Tirohanga Whetu o Koata – is excellent but it's in the wrong place given that it can only be accessed by a grunty Grade 4 climb (Firball Climb) and exited using the roughest section of Firball. In itself, it is new enough for its surface smoothness to make it Grade 3 as marketed. However, in time it will deteriorate and has some aspects that are not grade 3:

- The turns are not all wide enough (the first one is 200m too tight for grade).
- It has a smooth but very big dipper on it.
- It has a chicane requiring riders to make a very quick body position adjustment
- It has an off-camber section where it crosses a walking line on the main ridge.
- Near the bottom, it suddenly includes a jump option or two and the surface becomes loose.

#### **4.1.6. The Easy Trails (Pipeline, Tu Meke, Young Codgers (all Grade 3, +1)**

It's hard to see what these Trails contribute for actual Novice (Grade 2) riders given that they're not really accessible except by Grade 3 trails. All three are problematic in themselves too, with width (Pipeline), slope (all) and turn radius (Tu Meke) being out-of-grade. Their nexus where Coppermine Trail crosses the water pipeline and their intersections with Gully and IV Line are also problematic.

#### **4.1.7. Firball Drop Out, Grade 3 (-1)**

This trail appears on Trailforks as a Grade 4/Advanced but its curious signs says "Grade 4/Intermediate". It provides a good opportunity to link Tasman Journeys with Firball to make a truly Grade 3 loop ride that would be sufficiently short to entice riders wanting to test themselves or unable to make the bigger climb up Lower Jacks Track.

#### **4.1.8. Crazy Horse, Grade 4 (+1)**

Crazy Horse is just too tight and 'crazy' to be suitable for Intermediate riders, with its many turns and alternative lines coming too thick and fast for them.

#### **4.1.9. Gully, Grade 4, (+1)**

While Gully has the potential to be a nice, Grade 3 exit trail, it is very narrow and overgrown, with surprises and tricky gradient changes, especially in the first creek. Grade 4 is recommended since there is no real need to invest in an upgrade to Grade 3 here.

#### **4.1.10. (Upper) Jacks Trail, Grade 5 (+3)**

The idea of a trail here, acting as a walking link and an emergency exit from the network is supported. However, this is a very strange trail that can't easily be graded. While it's nominally two way, it's not very rideable in the southerly direction (from Atmore Terrace in to the Destination).

The grade we have recommended here is based on the very steep (in both directions) section in the middle of the trail but also the very tight turns, with a loose surface at the

Atmore Terrace entrance. We consider a better way to manage this trail would be to market it as a foot track, with bike access, and to explicitly indicate its emergency exit role. It is currently shown on Trailforks as one-way (south), Grade 2 trail but might be better shown as an "Access Trail".

Because of the vagaries of this trail and the distortionary effects of the recommended 3-grade increase, we have left it out of the Network-level analysis in the Summary below (Part 5 of the report).

#### **4.1.11. *Te Ara Kōpiko, Grade 3 (+1)***

This is another somewhat strange trail, rendered difficult to grade by its access and the closed lower section. In a strict sense, this trail doesn't quite have the turn radius for its marketed grade (2). It is also a bit rough and has a rubbly stream crossing near its beginning. It doesn't serve or open up any Grade 2 riding and the 61-metre height gain, at 3.15 degrees, while consistent, is considered too much for Novices.

### **4.2. Codgers-Maitai Destination**

#### **4.2.1. *Turners, Grade 4 (no change)***

This is a fabulous trail and a genuine joy to ride. It could be argued that the speed gained on Turners, the camber changes, drops/jumps and chicanes make it Expert-level (Grade 5) riding. However, we rode it twice and measured a few spots in detail and take the view that it is so well built, it is suitable as currently graded, for Advanced riders.

#### **4.2.2. *Take me to Your Leader, Grade 4 (+1)***

Being at the bottom of a Grade 4 Trail and only accessible via that trail, means Take me to your Leader should not be easier than Grade 4 and it's not. While it is marketed as a Grade 3 – and the average slope is Grade 3 – it is too narrow for that grade especially in a couple of places with tree roots to climb over and fall exposure on the outside. The turn radii are distinctly tighter than allowed under the Grade 3 specification – more than one turn is too tight for Grade 4 even, and one is followed immediately by a very difficult rocky lump.

Grade 4 is recommended but with deterioration Grade 5 could be justified. Grade 5 would fit with the recommended grade for Beer Bottle and the descending tracks in this Destination but not with the recommended grade for Turners or the idea of providing a Grade 3/4 exit from the Destination to the Maitai valley.

#### **4.2.3. *Hot Box and Top Dog, Grade 5 (+1)***

These trails have some near-flat sections but several committing drops too. Top Dog has two jumps and Hot Box's average downhill slope is Grade 4, meaning any imperfections likely render it a Grade 5. Indeed, our view is that both of these trails require Expert-level skills to ride properly and safely. Both have several badly eroded and very rooty sections, many rapid-fire line choices to make and a deep-and-worsening ruts.

#### **4.2.4. *Beer Bottle, Grade 5 (+2)***

It was hard to find where Beer Bottle actually begins and in one critical place it is in-common with a fast part of upper Hot Box. The top part of Beer Bottle ramps up very steeply to the top of its hill where Top Dog, Hot Box and Lollipop start. It's a useful concept as a trail but not well executed. Ideally, perhaps, it should be contiguous with Take me to Your Leader.

#### **4.2.5. Trails not ridden**

We did not ride Smasher, DiVAS or Lollipop for safety and time reasons. All of these are graded 5 currently so if they have suffered the same deterioration as Hot Box and Top Dog, they may be Grade 6.

### **4.3. Fringed Hill Destination**

#### **4.3.1. Te Ara Koa**

We rode this long and varied trail in near-perfect conditions. We consider it to be a Grade 5 trail. While its average slope is just Grade 2 and, unlike so many trails, it has very few corners so cannot fail a turn radius test, it is just too narrow, demanding and committing to be suitable for Advanced Riders.

It is very rooty at the top and narrow along much of its length, with serious exposure. It has, throughout its length, many root/rock drops that are well in excess of the Grade 4 maximum (200mm). Collectively, these features combine to move us to recommend Grade 5. Our grading of this trail is not significantly influenced by the two big drops on it. These could be accepted (if marked with hazard signs) should either grade be adopted but they are certainly more out of place on a Grade 4 trail than they are on a Grade 5.

#### **4.3.2. The unriden trails**

In light of what we found on Te Ara Koa and heard about the other Fringed Hill trails, it seems very likely that the nine trails we didn't ride here are also under-graded. We suspect that they may even all be Grade 6.

### **4.4. Maitai Face Destination**

#### **4.4.1. Mr Chomper, Grade 5 (+1)**

Slope is the major factor in determining the grade of Mr Chomper. Its average slope is Grade 3 (-9.41 degrees). The trail twists and turns a bit and the average is explained by frequent low-angle sections and then very steep bits, including in the turns. We noted that the last c200m falls particularly steeply and our online analysis suggests this reaches Grade 5 levels (above -15 degrees).

Width is a factor on Mr Chomper too, especially given the side slope. On some of the traverse sections, including a big dipper near the top, width is on the Grade 4/5 cusp. In other places are erosion-caused channels, which are kind of a width issue. The turn radii on Mr Chomper are generally very wide, but rutting and fall still make the turns very intimidating.

The surface and obstacles on the trail are OK for Grade 4 or 5, although the ruts are very committing and traps for out-of-depth riders.

#### **4.4.2. Loam Ranger**

We did not actually ride Loam Ranger and have therefore not graded it. However, where Mr Chomper's average slope is Grade 3 (-9.41 degrees), Loam Ranger's is Grade 5 (-16 degrees). Trailforks shows it falls 15% further than Chomper but in just 2/3 of Chomper's length! Therefore it is almost certainly also a Grade 5 trail.

#### **4.4.3. The unriden trails**

We did not ride Keyboard Warrior or Maitai Face for safety and time reasons. We consider Maitai Face is very likely to be under-graded and note that its average slope is -23.5 degrees – Grade 6.

## **4.5. Marsden Valley Destination**

### **4.5.1. Widdershins, Grade 3 (no change)**

Not recommending a grade change here was a marginal call. This trail 'wants' to be a Grade 3 and much of it is compliant. However, it is eroding a bit and there is the odd step up and rocky section in it. Measurements done online suggest the average gradient of the last 400m is 5.28 degrees but a slope of 5-6 degrees is only permissible for 20 metres (the Grade 3 maximum is 3.5 and 3.5-5 degrees is permissible for 200m).

There is, perhaps, a choice to make with this trail. It can be allowed to deteriorate if the recommendation to re-grade Involution from 3 to 4 is accepted or it could be improved if its primary role is considered to be its link to the ridgeline vehicle track.

### **4.5.2. Involution, Grade 4 (+1)**

This trail is seemingly one of the most loved, and strategically important ones in the city, perhaps because of its length and position. We are aware there are different views on what grade it is and understand that a local shuttle driver often takes out-of-town visitors there for their first Nelson ride, to gauge their ability and consider from their feedback where to take them next.

As a downhill ride, Involution is clearly a grade harder than its marketing suggests. While long stretches are very rideable, there are too many drops, rough bits and turns for truly Intermediate riders. Our strong sense is that Involution should be marketed for Advanced riders; it is even - arguably - the perfect Grade 4.

Curiously perhaps, Involution is marketed and signposted as a two-way trail. In the uphill direction, it is likely to be very physically challenging; its 7.1 degrees uphill slope is Grade 5, which is the grade we would recommend for it as a climb. It is primarily a descent trail though so its marketing grade should be the downhill one - 4.

#### A Specific Safety note

We found an uncapped waratah on this trail a few hundred metres above the bottom.

### **4.5.3. Weir and Piwakawaka, Grade 6/3 (+4/1)**

These are strange trails that add little to the network, especially Weir. Even if they were grade-compliant, their (short) length and isolation renders them pointless for Grade 2 (Novice) riders and they are hardly useful connectors for those riders finishing Involution or starting up the Barnicoat Road.

Piwakawaka is natural-surfaced so somewhat lump. The awkward turns, while seemingly quite wide are not grade-compliant. It also has an awkward entry/exit at the bottom, with a stile/gate and some wooden steps. Finally, and critically, its uphill average slope of 4.1 degrees is Grade 3 (the Grade 2 maximum is 3.5 degrees and 95% of the trail must be less steep than this).

Weir is sufficiently wide and level in its central section to be a Grade 2 (Novice) ride but at both ends it has very over-steep sections. The one at the upstream (Involution) end is, for most people, unrideable. While we didn't measure it, online analysis suggests it is Grade 6 (Extreme).

We have left Weir out of our summary and analysis in Part 5 below because of the distortionary effect of the recommended addition of four grades to its current grade, and because of its incoherence and disconnectedness.

## **4.6. Sharlands Destination**

### **4.6.1. *Supplejack, Matai and Rimu, all Grade 5 (+1)***

These three trails are all former walking tracks that allow direct descent through native forest from the ridge top above. We only rode Supplejack (the longest trail) and the top part of Matai but understand that Rimu and the rest of Matai are very similar. We found the riding is very committing but satisfying. Interestingly, there was little evidence of the erosion-caused deterioration that is a factor on so many other trails; this can be attributed to the forest cover.

These trails are narrower, and the turns tighter than the standard for Grade 4, and there is frequently an intimidating sidefall hazard. We recommend they be re-graded to Grade 5, reflecting the expert-level skills required to navigate them completely. This recommendation is consistent with the one we make above for the Sharlands Creek Trail (see 4.6.3 below).

### **4.6.2. *The (six) linked valley floor trails, Grade 3 or 4 (+1)***

These six trails work nearly seamlessly to provide a sustained, 8.7-kilometre ride down nearly the entire length of Sharlands Creek. In fact, while they can be accessed and ridden individually, the access tracks from the roads in the valley are variable and not well signposted, and these six trails function almost as a single experience.

All of these trails are a grade harder than the grade they are marketed with. Over their combined length, their average downhill gradient is just under 3 degrees, which is nominally Grade 1 (Beginner). However, in every other respect they require Advanced (Grade 4) riding skills. The critical factor underlying this assertion varies over the complete journey but it is precisely this variability, and the trails' combined length, that makes them too hard for Intermediate riders.

In places, each of these trails provides easy riding but each also has moments where any or all of the following factors create over-grade difficulties: sidefall, darkness, steepness, surface looseness or turn radius. In addition, the trails side constantly and width certainly doesn't meet the required standard: 900mm 90% of the time. The trail at the bottom (Willow Lane, marketed as a Grade 2) is generally wider than the others but still has over-steep sections, root obstacles, sidefall exposure, mud and puddles so it too is under-graded.

While these trails are considered under-graded, they are essentially consistent with each other and work well together. If they are all regraded Advanced (Grade 4) they need little work; they provide an excellent experience largely as they are. While we consider this the best option, and a more efficient one than full upgrade, another option might be to leave the upper three to four trails as they are (and re-grade them 4) while doing upgrade works on the lower two or three to Grade 3 standard. This would help retain some diversity in the overall Network. However, it would involve a lot of consent-requiring excavation close to the creek and our view is that network diversity would be more easily provided by upgrading the already-benched Chings Highway.

#### A specific safety note

As discussed above the access tracks leading on to these trails from their parallel roads are variable. One, however, has a significant hazard on it: on the trail down from the Sharlands Road the top of What the DOC Ordered (bottom of Waterloo), there is a 'no-radius' turn to negotiate, with an uncapped pipe that supports a retaining wall with a very serious fall below it (See Figure 3). As shown in Figure 4, this turn is technically on Sharlands Creek Trail, which is Graded 4. However, even if this trail is graded 5 (as we recommend below), the turn is still far too tight and too accessible to less-skilled riders.

We recommend a dismount sign here as a minimum. However, it would be better practice to completely rebuild the corner to Grade 4 standard and market the access way as part of What the DOC Ordered rather than part of Sharlands Creek (Figure 5).

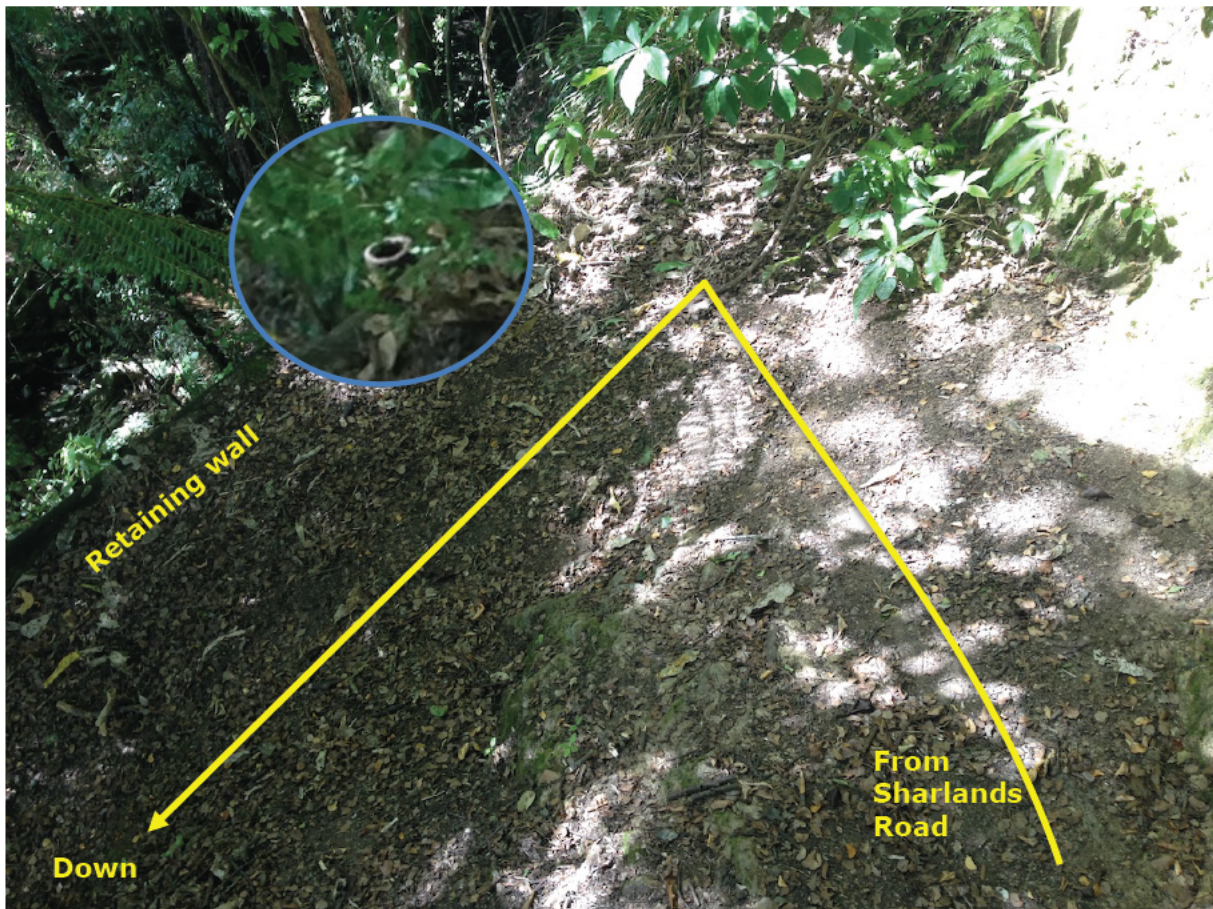


Figure 3. The 'no-radius' turn on the very uppermost portion of Sharlands Creek Trail (just below Sharlands Road).

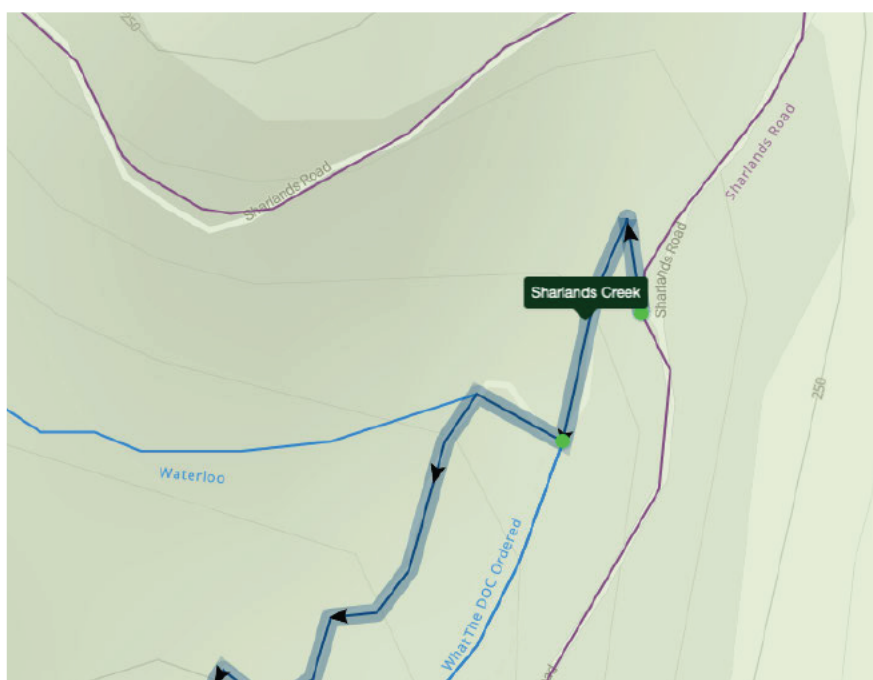


Figure 4. A screenshot from Trailforks showing how the Sharlands Creek, Waterloo and What the DOCTOR Ordered trails are configured. The tight corner in question is visible just above the "Sharlands Creek" label.



Figure 5. The entry sign to Sharlands Creek on Sharlands Road.



#### 4.6.3. Sharlands Creek, Grade 5 (+1)

This is an interesting and unusual trail: fun and almost easy in places yet near-unrideable in others. It is narrow and there are some short, very steep sections reflecting the fact this is a former walking track, built by the Forest Service as long ago as 1982.

The Sharlands Creek Trail stands alone as an alternative to What the DOC Ordered but mainly serves as an exit route for riders descending Supplejack, Rimu and Matai. It is also a two-way trail (although the sign in Figure 5 says otherwise) and, as such, allows riders descending those three tracks to recirculate and tackle them again.

This variable trail simply has too many very steep climbs, rough sections and intimidating falls for Advanced riders and better suits Experts. An important consideration is that Sharlands Creek forms a sub-Destination with the three trails above it and shouldn't be graded higher than them. Like Sharlands Creek they are currently Grade 4 (Advanced) but we recommend that all four trails be re-graded 5 (see 4.6.1 above).

#### 4.6.4. Chings Highway, Grade 4 (+1)

This machine-built track occupies a somewhat surprising mid-slope position on the true left of Sharlands Creek. It is somewhat neglected nowadays and seemingly out of favour compared to the many single track rides available. It has also deteriorated somewhat: this factor and the difficulty of getting down on to it from the Sharlands Rd/Isolated Spur Road junction, lead us to consider it is graded correctly in the trail map at Grade 4, whereas Trailforks and the on-site signs show it as a Grade 3.

The Grade 4 recommendation is unfortunate since the machine-built formation has the potential to perform as an excellent Intermediate-level exit option from the mid valley if it were tidied up and if entry to it was easier than what is it currently<sup>3</sup>. We commend this

<sup>3</sup> Getting on to Chings at the moment involves a steep climb up from Sharlands Road or a rough descent (on a section know formerly as Eddy's Trail) from the Sharlands/Isolated Spur Road junction.



trail as a potentially important piece of genuinely Intermediate (Grade 3) riding and, while it's not exactly 'low-hanging fruit', we recommend the necessary work be undertaken to facilitate that.

We make this recommendation in light, particularly, of a separate one (above) that the six contiguous trails in the Sharlands Creek valley should be left as-is but graded 4. Their upgrade to Grade 3 would be much more difficult than the recommended upgrade of Chings, and likely less sustainable.

#### **4.6.5. Aorere, Grade 6 (+1)**

This trail is unusual for a Grade 5 trail; these are commonly simple or single descents. Instead, Aorere is over 4km long and has several 'pauses' in it, even some road sections. It reads more like a cross country track for Adventure-seekers than a ride for Thrillseekers. This trail lends its name to an Enduro event and in 2021 was the longest of seven timed sections in that race.

Aorere was the most difficult of all the (43) trails we rode in our work in Nelson and riding it involved some walking. We understand there are harder trails still in the city, or at least parts of trails that are harder than Aorere might be overall. With this in mind, we were initially unsure about assigning a grade to Aorere. However after considering all the information we have gathered and the standard, we consider Aorere to involve enough extreme riding to be a Grade 6 trail.

While parts of the trail were essentially unmeasurable (there is often no clear line, and measurable drops sometimes merged with the trail itself), the critical reason behind our recommendation is that the trail exceeds specifications for Grade 5 (Expert) riding in too many ways and too often. The slope exceeds the (20-degree) maximum frequently and combines with ruts or exposed roots to make for very difficult riding. The trail is very narrow or missing in places and often outward-cambered.

Aorere has, near its top, a very steep, rutted drop and its bottom 400 metres descends at just over the maximum for Grade 4; in our experience downhill trails normally read 1 or 2 grades higher than their average slope, unless otherwise perfect. This part of Aorere – marked as it is with a skull symbol - is deeply rutted and anything but perfect, requiring a very high level of commitment and skill from riders.

Our recommendation for Aorere will likely be contentious, especially if large portions of the trails we did not ride are actually harder. However, our recommendations have added a whole grade to nearly every trail we evaluated in the City (see Part 5) and have thereby 'created' at least eight more Grade 5 trails. We take the view there are certainly also more grade 6 trails in the Network than suggested in the information sources. If the proportion of Grade 6 trails was changed from 3.2% (2/63) to, say, 14.3% (9/63) then that might simply be the reality.

#### **4.6.6. Kaka, Putakari and Broken Axe**

We walked the top halves of Broken Axe and Putakari but didn't ride them or look at Kaka. In the same way we found Aorere difficult to judge, we found this to be the case in this corner of the Destination. As with our Aorere recommendation, we are conscious that others may see the trails differently to us. On the other hand, adding one grade to current grades has been our very consistent finding; these three trails are certainly more difficult than trails marketed as Grade 4 where we recommend Grade 5.

We understand the 1700m Putakari is a purpose-built enduro trail. While we didn't ride it, it seemed to be unrelenting in its challenge, nearly all very rough and with the added difficulties of tight corners (not under the 1.5m minimum for Grade 5) and/or committing

drops (about right for Grade 5 (up to 600mm)). The combination of these factors leads us to consider Putakari to be an Extreme (Grade 6) trail.

Broken Axe, at 1450 metres long, is a downhill trail. It is shorter, and descends less than Putakari does, which wanders more and has more turns. Interestingly, both descend at exactly the same average slope (-1 in 4.2, which is Grade 4). By contrast, the higher-graded Kaka descends even more steeply: one metre down for every 3.6 forward, which is -15.5 degrees and Grade 5.

Another aspect of Broken Axe is that it has alternative lines in several places that are easier to ride than the principal, downhill line. We understand that this means it sees a bit of riding from riders who could not manage that principal line. This is apparently causing erosion and 'spoiling' the riding on the principal line. It also creates a dilemma for grading and almost means the trail could have two grades; we strongly recommend grading Broken Axe with just one grade, a grade that reflects its principal downhill purpose.

#### Specific safety note

We noticed several stinging nettle (*Urtica ferox*) plants growing close to and directly on the line of Putakari and recommend their immediate removal.

#### **4.6.7. The unriden trails**

While we did not ride or view Kaka or Rimu, and most of Matai, Broken Axe and Putakari, we have incorporated discussion of them with their similar, neighbouring rides in 5.6.3 and 5.6.5 above.

A couple of specific observations are made about Kaka though: the sign at the top is black, which is the colour nominally and usually associated with Grade 5 and 6 trails in New Zealand. However, the grading symbol on that sign says it is "Grade 6/Expert" when it should say "Grade 5/Expert" or "Grade 6/Extreme". Furthermore, we understand that the sign at the top of the only other Grade 6 trail in the Network – Mutleys – is red, which is the colour associated with Grade 6 trails (only) on the Trailforks website. We recommend that all Grade 6 signs in the network should have red signs.

## 5. CONCLUSIONS AND SUMMARY

### 5.1. Summary of findings

It is somewhat difficult to summarise the findings of our work in Nelson, or compare our recommended grades to the 'current' ones there because:

- it is difficult to precisely define the scope of trails that should be considered (discussed in [1.2.1](#) above).
- information sources (mainly Trailforks, on-site signs and the trail map) vary as to what the current grades actually are
- we didn't/couldn't ride all of the in-scope trails
- there are some rideable tracks and trails in the city that were not in-scope (Centre of New Zealand, Grampians, Maitai valley and the two Great Rides).

#### Findings for the 'meaningful' trails ridden

We can proceed to summarise our findings with some caveats and a modicum of care. We rode and audited 41 trails in the city (the full list is in Appendix 1). We walked a substantial part of a further two trails (Broken Axe and Putakari) and would be prepared to defend trail grades for 43 discrete trails. However, our reading of at least two – Weir and Upper Jacks Track – is that they are not meaningful or coherent enough to be considered part of the network. Our recommendation that they are Grade 6, based on specific quirks, would distort any summary analysis so we have excluded them from this part of the report<sup>4</sup>.

Figure 6 compares our recommended trail grades to the current ones for the 41 trails we both rode and consider to be coherent and meaningful. With Upper Jacks and Weir excluded, we recommend increasing the marketed grade of 32 of them by one grade. Of the remaining nine trails, eight should stay the same or increase by two, while our recommendation for Firball Drop Out (which appears with different grades in different media anyway) is that its grade be reduced by one.

The combined effect of these changes is an average grade increase of 0.902 grades for the Trails in Nelson city, up to 4.1 from 3.2 as publicly visible on Trailforks. This average increase would be slightly higher – about 1.1 grades – if our recommended grades were compared to the available maps or the on-site signs, which both display slightly easier (lower) grades than Trailforks does.

The difference in trail grade between reality and what is marketed is certainly significant and, at 0.9 grades, it is higher than we have found anywhere else in New Zealand to date. We have, since beginning this work for Nelson City, assessed 60 or so trails elsewhere and are actively looking to ride more trails to build up a national picture. While the number of trails ridden so far is too small to make solid conclusions, the average extent of under-grading so far is 0.67 of a grade over the entire country or 'just' 0.53 of a grade in areas other than Nelson City<sup>5</sup>.

The most significant implication of the under-grading of the Nelson Network is seen when the distribution of trails across the six grades is considered, as in Figure 7. This shows that there are many more Grade 4-6 trails than marketed and a lot fewer Grade 1-3 trails: the Network is stacked towards more difficult riding. Figure 8 shows that the same outcome can be seen nationally but it is less pronounced.

<sup>4</sup> A few other trails could also be considered to lack sufficient length or coherence to be part of the network but we have left them in for the analysis provided here. These are Beer Bottle (too short and variable), Aorere Climb (short and not really a stand-alone experience), Firball Drop Out (pointless with its current grade) and Piwakawaka (short, duplicates a better option and has fences and steps).

<sup>5</sup> These trails are in Wellington City (5), Central Otago (2), Tasman District (30), Hurunui District (14) and Dunedin City (13).

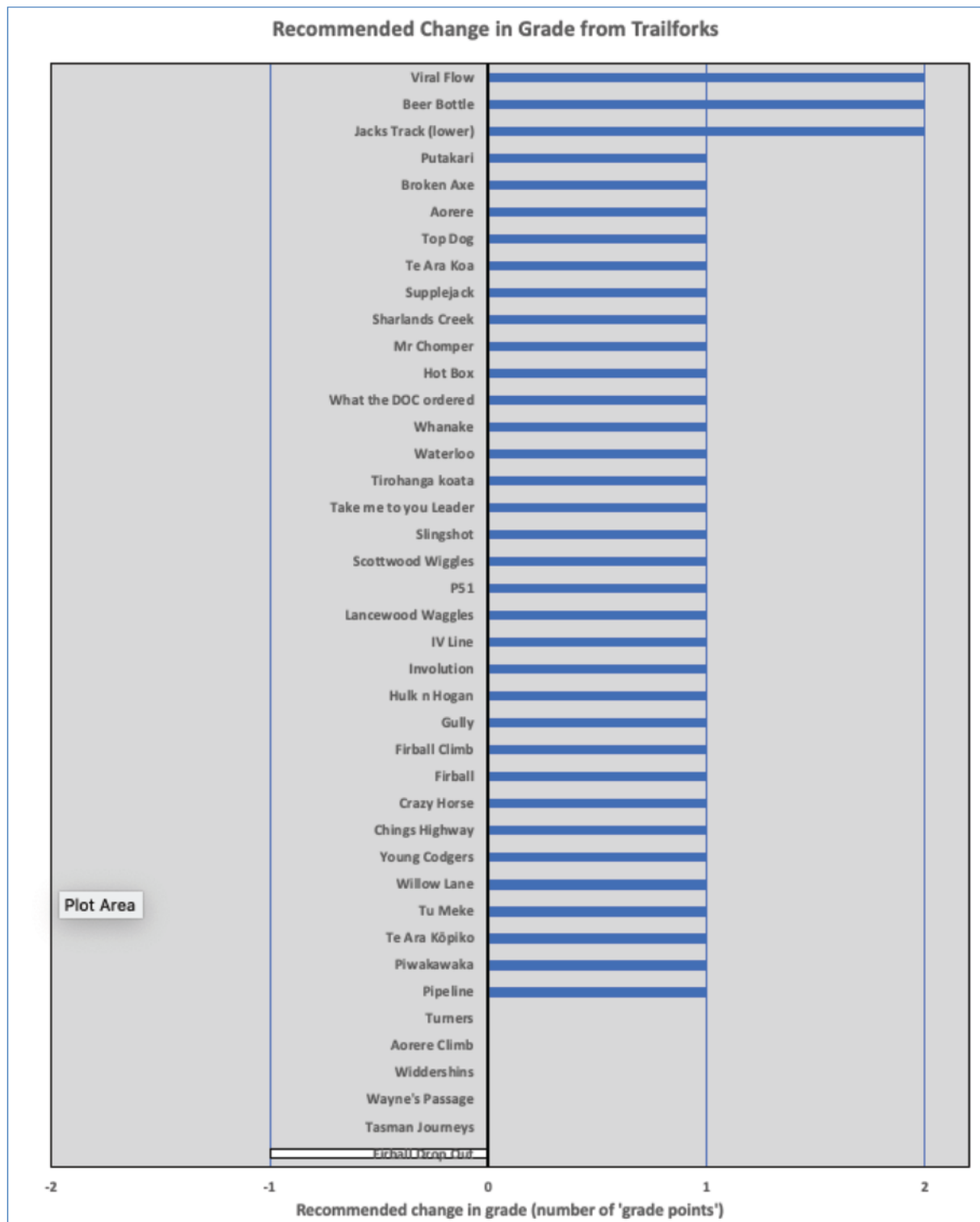


Figure 6. Recommended changes in trail grade for the 41 trails assessed. Note that these are recommended changes to trail grades that appear on Trailforks but Trailforks grades are not necessarily the same as those found on signs on the trail map. By way of example, the map and on-site sign present Jacks Track (Lower) as a grade 3 meaning the recommend change of grade is just 1 instead of 2. Similarly, the Trailforks grade for Firball Drop Out (4) disagrees with the map, while the sign is not clear.

Figure 7. Trail grade distribution (by count) for 41 Nelson City trails.

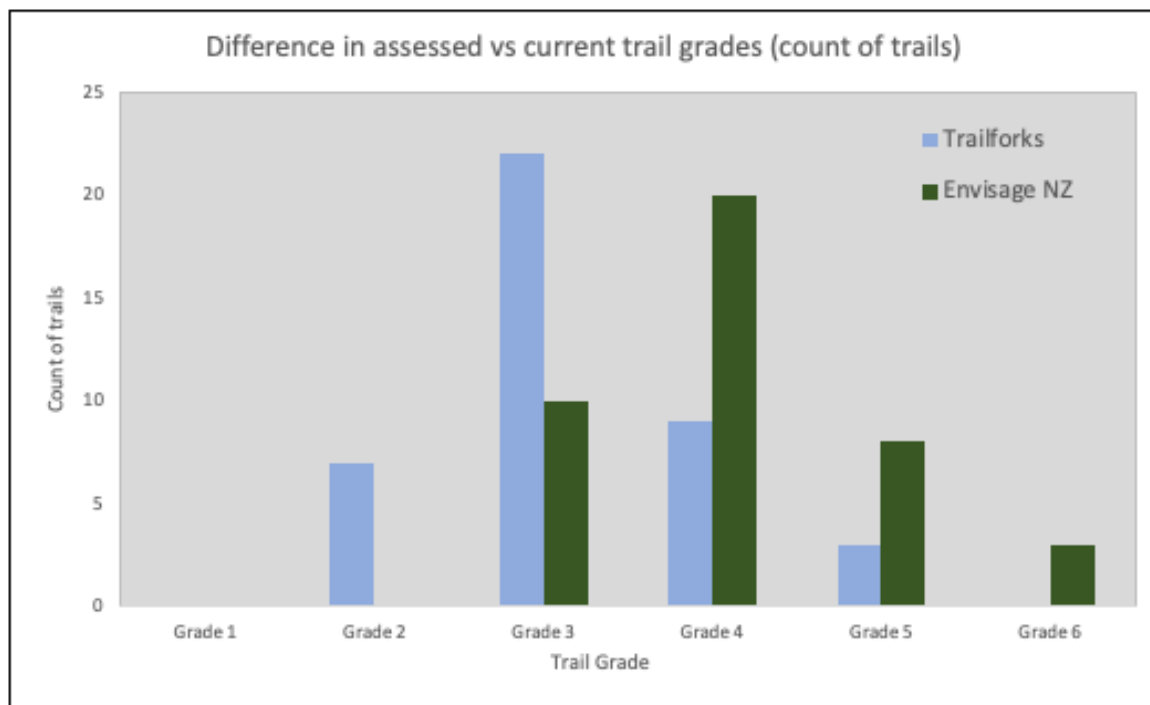
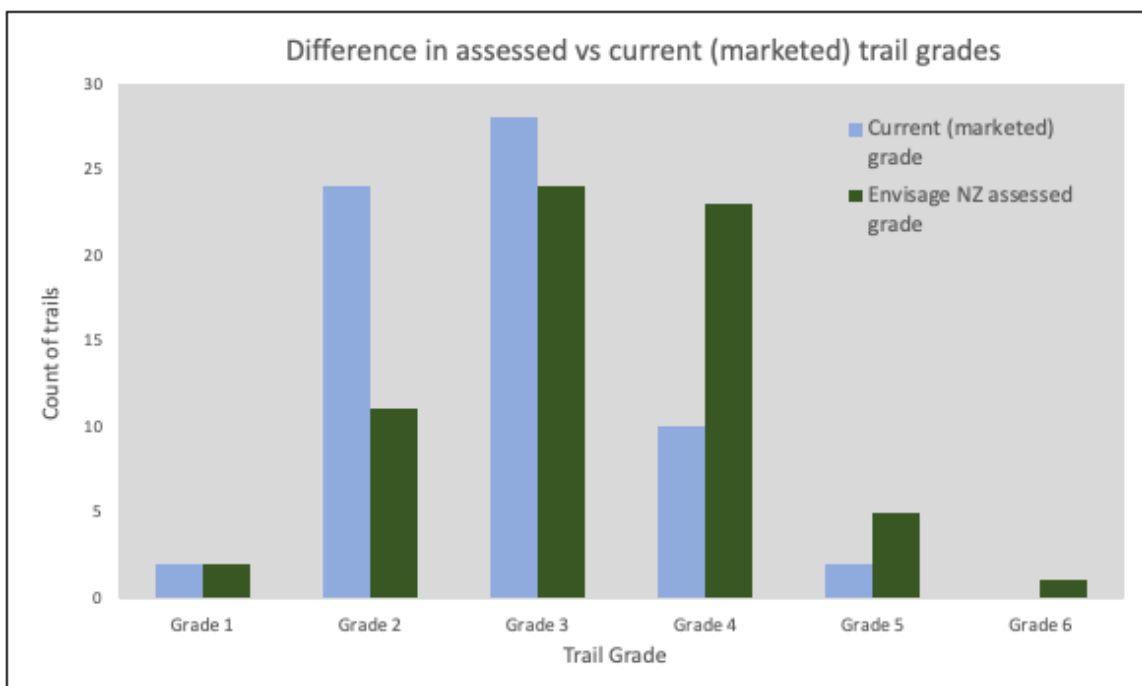


Figure 8. Trail grade distribution by count for 66 trails nationwide (excluding Nelson)



The same data can be considered as percentages (by count of trails or by length) as shown in Figure 9. The difference between these two pie charts is stark. It suggests the overall network is much more difficult than its marketing suggests and, while there is no best-practice ratio of track grades (by either length or trail count), the information here does suggest a large under-provision of easier-grade trails.

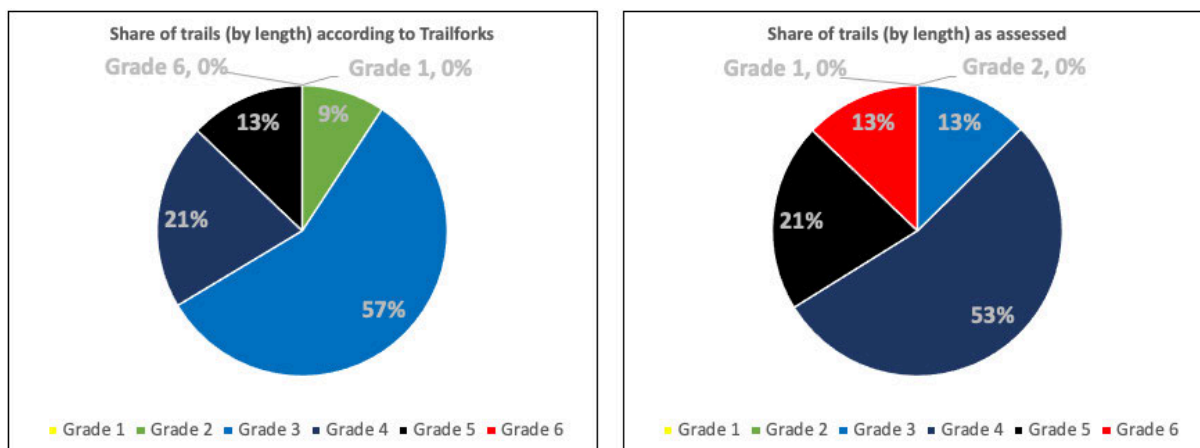


Figure 9a and b. On the left (9a) is a graph of trail grade distribution in Nelson (by trail length) from Trailforks information. On the right (9b) is the distribution for the same 41 trails based on our recent assessments. The Trailforks information shows that the network is 57% "Intermediate" riding (Grade 3) where our assessment shows it to be 53% "Advanced" (Grade 4). Our assessment also suggests there is no Beginner-Novice (Grade 1-2) riding. Note that we have used red for Grade 6 and black for Grade 5. We have used the well-known two blues for Grades 3 and 4, and green for Grade 2. We have adopted yellow for Grade 1 (should there be any trails of this grade).

#### Findings for all the trails that were in-scope

The analysis above (and in figures 6, 7 and 9) is only for the 41 trails that we rode and assessed. Since we didn't ride some the Grade 4-graded trails, most of the trails currently graded 5 and the two that are graded 6, it could be considered impossible to make any meaningful statements about the entire in-scope network. However, given that we recommend adding an entire grade to 32 out of 41 trails (an average grade increase of 0.9), we consider it would be worth considering how trail distribution in the network would look if one grade was added to the eighteen trails not assessed.

Figure 10. Trail grade distribution (by count) for 59 Nelson City trails. In this graph, the Trailforks grade distribution for the overall Network looks reasonably balanced (cf. Figures 7 and 9a). However, the post-assessment Network looks even more stacked towards difficult riding than it is when only the trails we rode are considered (Fig 7 and 9b).

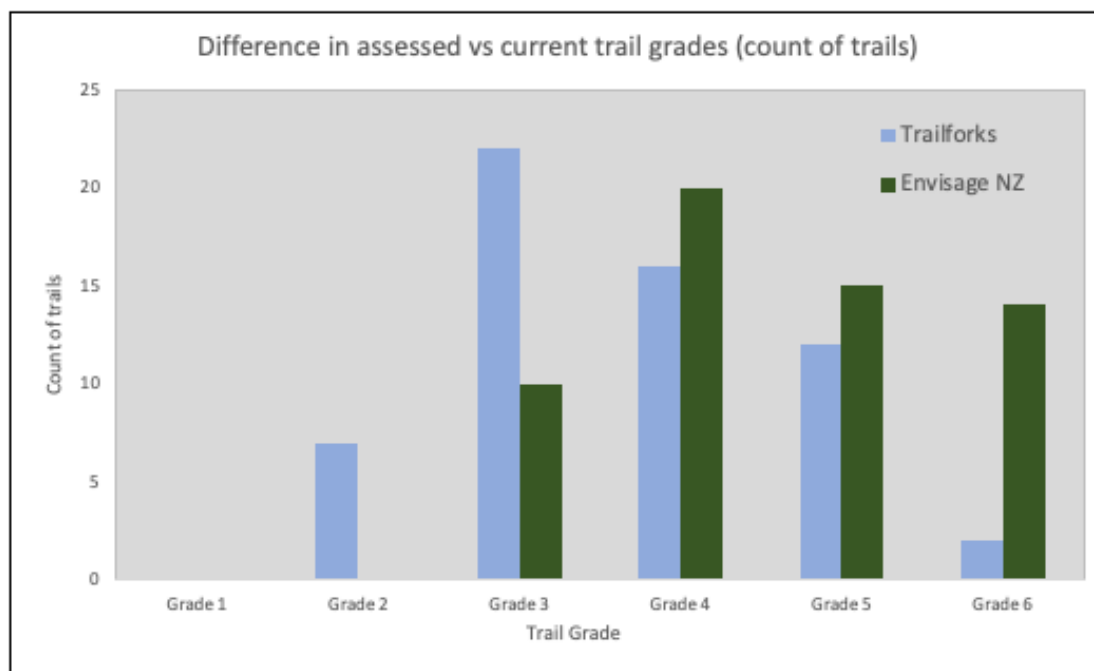
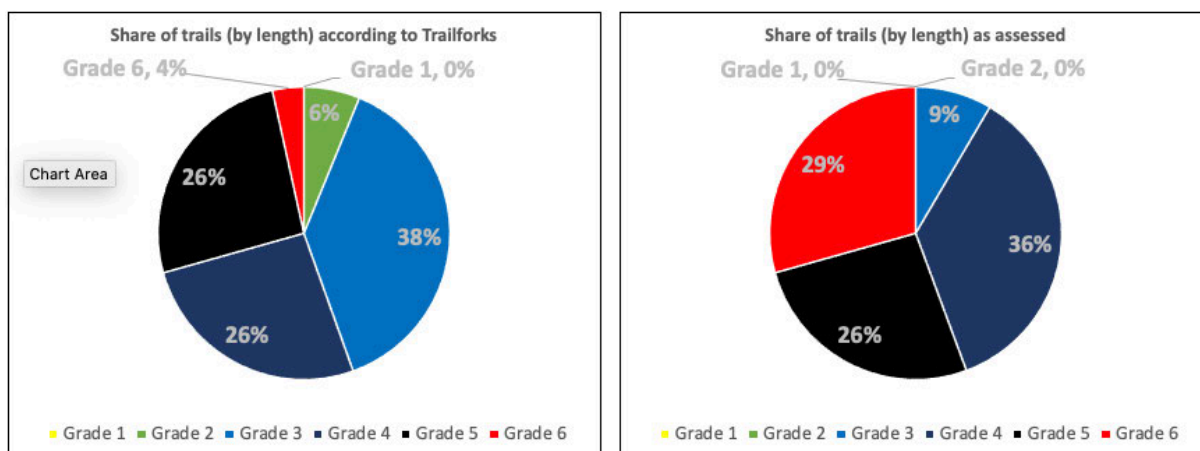




Figure 11a and b. Adding one grade to the 18 trails not assessed has the effect of reducing the amount of Advanced (Grade 4) riding from 53% (see Figure 9b) of the Network to 36%, which might be 'about right'. However, the amount of Expert/Extreme riding (Grades 5 and 6) increases from 34% of the trails ridden (Fig 9b) to 55% of the in-scope trails. The amount of Novice/Beginner (Grade 1/2) riding is 0%.



## 5.2. Conclusions

The Network of off-road cycling Experiences provided in Nelson City is nationally significant in its size and quality and globally renowned. It is well managed and clearly an important aspect of the city's recreation and tourism offer. It will be generating very large health and economic benefits.

The Network is however, under-graded: the riding it offers is harder than its marketing suggests by almost a whole trail grade on average. This will be limiting the benefits the Network brings and causing both dissatisfaction and harm. The Nelson Network is over-endowed with difficult riding and there is a consequent under-provision of the easy riding necessary to satisfy a full range of people and safely allow for rider development.

Some of the issues with trails in the Network are due to deterioration only and/or things that can be fixed relatively easily. However, making trails meet the standard for an easier grade is difficult and expensive where there is an issue with the 'fixed' components of width, turn radius and slope. Furthermore, making every trail easier would likely eliminate some of the harder riding Nelson is renowned for; there's a lot to commend simply re-grading trails but leaving them physically alone.

The key conclusion of our work is that a substantial regrading of the Network is recommended, although it is acknowledged that some of our recommendations will not be agreed to. Adopting the recommended higher grades – 0.9 of a grade on average – will certainly change the way the Network is perceived and will reveal a big gap in provision of the easiest-grade trails. While some easy riding (Grades 1-2) is available at Kaiteriteri and Moturoa, and the out-of-scope trails should be considered, it seems likely that a new trail or two will be needed to provide a more balanced network that is close to the bulk of the population.



## APPENDIX 1 - TRAILS RIDDEN

#	Name	Destination	Length (m)	Current Grade*
1	Firball Drop Out	Codgers	97	4
2	Tasman Journeys	Codgers	426	3
3	Wayne's Passage	Codgers	278	3
4	Widdershins	Marsden Valley	1863	3
5	Aorere Climb	Sharlands	217	4
6	Turners	Codgers-Maitai	874	4
7	Pipeline	Codgers	678	2
8	Piwakawaka	Marsden Valley	512	2
9	Te Ara Kōpiko	Codgers	1107	2
10	Tu Meke	Codgers	745	2
11	Willow Lane	Sharlands	1090	2
12	Young Codgers	Codgers	404	2
13	Chings Highway	Sharlands	3980	3
14	Crazy Horse	Codgers	672	3
15	Firball	Codgers	2913	3
16	Firball Climb	Codgers	819	3
17	Gully	Codgers	710	3
18	Hulk n Hogan	Codgers	1590	3
19	Involution	Marsden Valley	3822	3
20	IV Line	Codgers	1167	3
21	Lancewood Waggles	Sharlands	805	3
22	P51	Codgers	2220	3
23	Scottwood Wiggles	Sharlands	3352	3
24	Slingshot	Sharlands	855	3
25	Take me to you Leader	Codgers-Maitai	935	3
26	Te Tirohanga Whetu o Koata	Codgers	1520	3
27	Waterloo	Sharlands	1306	3
28	Whanake	Codgers	647	3
29	What the DOC ordered	Sharlands	1332	3
30	Hot Box	Codgers-Maitai	1150	4

#	Name	Destination	Length (m)	Current Grade*
31	Mr Chomper	Maitai Face	899	4
32	Sharlands Creek	Sharlands	1491	4
33	Supplejack	Sharlands	1129	4
34	Te Ara Koa	Fringed Hill	5100	4
35	Top Dog	Codgers-Maitai	837	4
36	Aorere	Sharlands	4163	5
37	Broken Axe	Sharlands	1450	5
38	Putakari	Sharlands	1715	5
39	Jacks Track (lower)	Codgers	730	2
40	Beer Bottle	Codgers-Maitai	232	3
41	Viral Flow	Codgers	1100	3
Trails considered not meaningful or likely to distort Network-level analysis				
	Weir Track	Marsden Valley		2
	Jacks Track (upper)	Codgers		2

\* Current grades are from Trailforks not from signs or the available maps

## APPENDIX 2 - IN-SCOPE TRAILS NOT RIDDEN

#	Name	Destination	Length (m)	Current Grade *
42	Black Diamond Link	Fringed Hill	737	4
43	E tū	Fringed Hill	2440	4
44	Keyboard Warrior	Maitai Face	1056	4
45	Loam Ranger	Maitai Face	601	4
46	Matai	Sharlands	1065	4
47	Rimu	Sharlands	965	4
48	Sunrise Ridge	Fringed Hill	3536	4
49	629	Fringed Hill	2343	5
50	Black Diamond	Fringed Hill	2574	5
51	Crankenstein	Fringed Hill	951	5
52	DiVAS	Codgers-Maitai	1152	5
53	FDH	Fringed Hill	2631	5
54	Lollipop	Codgers-Maitai	709	5
55	Maitai Face	Maitai Face	762	5
56	Peaking Ridge	Fringed Hill	2225	5
57	Smasher	Codgers-Maitai	1302	5
58	Kaka	Sharlands	1401	6
59	Mutleys	Fringed Hill	1551	6

\* Current grades are from Trailforks not from signs or the available maps





## **APPENDIX 3 – STANDARDS APPLIED**

This appendix shows the actual standards applied when completing trail grading. These standards are from the New Zealand Cycle Trails Design Guide (5<sup>th</sup> edition, 2019). The information presented here normally appears on the back of each inspection report so it is easily visible but is removed in Appendices 5-10 to reduce the report size.

## Applicable Standards

The standards shown here are from the NZ Cycle Trails Design Guide, version 5, 2019. There are two other standards: Recreation Aotearoa's 2019 design/construction guidelines and DOC's 2020 Service Standard. There is generally little between them in terms of the elements shown in 1.1, 1.2, 1.3 2.1 and 2.2 below.

### 1. Fixed components

These are the aspects of a track that are 'set in stone' during its construction. There is minimal scope to adjust these in order to achieve a lower grade or to achieve the grade originally sought if that was not achieved for whatever reason. These aspects of a track can only be adjusted with significant effort, impact and expenditure probably capital. We grade the fixed components of a track first, and separately, prior to considering those components that are more readily changed or restored.

#### 1.1 Max gradient

	Main	up to 100m	up to 10m	DH
1	2deg (98%)	2-3deg	3-4deg	4deg *
2	3.5deg (95%)	3.5-5deg	5-6deg	8deg
3	5deg, (90%)	5-7deg	7-10deg	11deg
4	7deg (90%)	7-9deg	9-12deg	15deg
5	10deg (90%)	10-13deg	12-15deg	20deg
6	15deg (90%)	15-17deg	17-20deg	No max

\* = slopes up to 100m long

#### 1.2 Turn radius

	Min radius	Notes	Double	Single
1	6m	outside	2.5-4	1.2-1.5
2	4m	Pref 5m	<b>2.2</b>	<b>0.9-1.5</b>
3	2.5m	4m desirable	N/A	0.9 (90%), <b>0.6</b>
4	2m	3m desirable	N/A	<b>0.3-0.6</b>
5	1.5m	more pref'ly	N/A	<b>0.25-0.4 av</b>
6	1m	more pref'ly	N/A	<b>0.1</b>

G1: double trail preferred for 90%

G3: 0.9 for 90%

G4: 0.6 min on steep terrain, 0.3 on flat ground

G5: 0.4 av

G6: recommended 1 way

#### Slope converter

Slope (1m rise in:)	Angle (degrees)	
57.140	1.00	
28.650	2.00	Grade 1 max
19.100	3.00	
22.900	2.50	
19.100	3.00	
16.330	3.50	Grade 2 max
14.300	4.00	
11.430	5.00	Grade 3 max
9.510	6.00	
8.140	7.00	Grade 4 max
7.115	8.00	
6.315	9.00	
5.670	10.00	Grade 5 max
5.145	11.00	
4.705	12.00	
4.330	13.00	
4.010	14.00	
3.733	15.00	Grade 6 max
3.270	17.00	
2.748	20.00	

### 2. Flexible components

These are the aspects of any track than can be (relatively easily) changed without changing the fixed components: signage, surface, obstacles, vegetation. Changes to these components are likely to be less impactful or expensive than changes to the trail's 'bones'.

#### 2.1 Surface

Surface description, specifications	Obstacles size (ht OR depth) and type
1 Smooth/even, all weather, AP20 min, compacted	None
2 Smooth, easy in all weather, AP30 min, compacted	Occasional, avoidable or no bigger than 50mm
3 Generally firm, short muddy/loose sections	Occasional up to 100mm, may be unavoidable
4 Firm and loose allowable	Many, up to 200mm. Some purpose-built
5 Huge variety	Many, up to 600mm, obstacles envisaged
6 "Anything goes"	Anything goes implied

#### 2.2 Obstacles

#### 2.3 Other standard items and grading considerations

- Navigation certainty, remoteness, amount of climb, signage, water courses/bridges, protection from fall.
- Riders should generally be able to get out of the Network on a trail no harder than what they rode in on (i.e., you can't really have a Grade 3 trail somewhere that can only be escaped on (or accessed by) by a Grade 4 trail).
- The standard allows for "short sections of trail one grade harder than the intended grade" but doesn't specify how to resolve this (except for gradient). It also allows for a 'failure' in one aspect of the standard to be offset somewhat by other criteria (e.g., if turns are too tight but very smooth the trail may still be grade-compliant).
- The provider's intent (strategic goal) is an important consideration as is the grading of other nearby trails. Consider combining or splitting trails to better reflect the experience available.

## **APPENDIX 4 – MAIN DATA FOR ASSESSED TRAILS**

This table presents the 'headline' data for each trail assessed.



## Main Data for the (41) Assessed and Meaningful tracks in Nelson City.

Trail name	Destination	Inspected	Current grade			Envisage New Zealand recommendation	
			T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)
Aorere	Sharlands	28-Jan-21	5	5	5	6	The slope exceeds the 20 degree grade maximum plenty of times. It is narrower than specified (0.4 av, 0.25 min) here and there. There are some essentially 'formationless' sections that are very narrow and out-cambered, or are just root masses with no distinct line.
Aorere Climb	Sharlands	28-Jan-21	4	4	4	4	A steepish climb with tight turns and biggish obstacles, but short and still essentially just Grade 4 riding.
Beer Bottle	Codgers-Maitai	28-Jan-21	3	-	3	5	This is a hard trail to grade given that it's not fully formed (part of it is forest road and part is an extremely steep climb in-common with a descending trail).
Broken Axe	Sharlands	3-Dec-20	5	5	5	6	The nature and intent of this trail is Extreme and while it can be quietly rolled by an Advanced rider, this is not the intent and not what should be graded.
Chings Highway	Sharlands	2-Dec-20	3	3	4	4	Note that the official sources differ on grade. A number of factors require this track to be considered G4: the steepish/damp/tight upper 700m, decay of the original formation, overgrowth, obstacles here and there (especially in the small creeks) and tight corners with steep climbs in places. There is also some navigation confusion brought about by the redundant signs (700m in) and the lack of signs (where Aorere crosses and where the extension begins).
Crazy Horse	Codgers	27-Jan-21	3	3	3	4	While the trail is nominally not steep, it is steeper than other downhill trails in Codgers marketed with the same Grade (3). The bigger problem is that the turns are near-constant in the top half, requiring a bit of experience to navigate. They are also quite steep-sided and there's plenty of loose stones and rollers/lumps etc. The roughness factor increases in the bottom half and there are some over-steep pieces with over-height obstacles near the bottom.

Envisage New Zealand recommendation							
Trail name	Destination	Inspected	Current grade			Explanation/Justification (from full reports)	
			T'forks	Sign	Map		
Firball	Codgers	27-Jan-21	3	3	3	4	In perfect condition, with less intimidating lines available on some turns, better signs at junctions and some general easing, this trail could be a Grade 3. This is however, likely to require a lot of work and besides, the top section can only be accessed by a G4 climb (Firball Climb) so little would be achieved. Grade 4 is a more realistic promise to make to riders of this trail, although there is the option of just completing easing work to Grade 3 standard on the lower half (below Firball Rd) so people can ride up Tas Journeys/Jacks then down.
Firball Climb	Codgers-Maitai	27-Jan-21	3	4	3	4	The turns - with their tightness, loose surface and steep approaches/exits - strongly indicate this trail is a Grade 4 trail, as its (lower) entry sign says. Neither grade necessarily precludes the trail being a 2-way one and it seems that visibility is good enough for this trail to be considered to be two-way.
Firball Drop Out	Codgers	27-Jan-21	4	3	3	3	This trail is not really a stand-alone experience. While its underlying grade could easily be 2, there would be nothing achieved by that and, with the grass and the sign confusion, Grade 3 is considered more accurate. To implement this concept, some improvement at the western end (where it meets Firball) would be required.
Gully	Codgers	5-Dec-20	3	3	3	4	While the nominal fall on this trail is Grade 1, it is much more difficult than that. There are few turns so turn radius is not really a problem but in every other sense the trail is Grade 4. It is narrow and rough in places, with over-grade obstacles, surprises and the unbridged stream crossing. In places the width/sidefall combination is scary.
Hot Box	Codgers-Maitai	3-Dec-20	4	4	4	5	The combination of erosion (effectively creating over-height obstacles), with over-steep sections, run-out hazards and multiple route options (requiring instant decisions) makes this ride like a Grade 5 (requiring Expert rather than Advanced handling skills).

Trail name	Destination	Inspected	Current grade				Envisage New Zealand recommendation	
			T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)	
Hulk n Hogan	Codgers	28-Jan-21	3	3	3	4	This trail is too narrow (with an occasional consequent sidefall hazard) to be considered Intermediate (a Grade 3 trail needs to be 900 wide for 90% of its length). The two big turns are just too tight and steep for Intermediate riding too, and the upper one is showing edge damage.	
Involution	Marsden Valley	1-Dec-20	3	3	-	4	While the average downward slope is G2 and much of the trail is G3, Involution is, overall, too often too rough/tight/narrow to sustain Grade 3. It is quite long and somewhat isolated. It requires more technical skill and courage than should be expected of someone who has just graduated from Grade 2 (which requires avoidable or 50mm obstacles, a 900mm minimum width and 3-4m turns).	
IV Line	Codgers	28-Jan-21	3	4	3	4	This is a marginal call - the entry and exit are both intimidating, there are tight turns and some steep downs - one is well over-height for the marketed grade. Everything is exaggerated by narrowness, grass growth and the cut-off/alternative lines in the bottom half. IV Line is certainly the hardest of all the downhill lines at Codgers but not gnarly enough to be considered a grade harder (Expert/Grade 5)) overall.	
Jacks Track (lower)	Codgers	5-Dec-20	2	3	3	4	This trail is overall too steep for its grade on average, and steeper than its key feeder trail - Tasman Journeys - when it should probably be the same, in a network sense. There are a couple of particular steep pinches. The turn radii are not really wide enough to meet the standard either, and are compromised by informal ride lines.	
Lancewood Waggles	Sharlands	1-Dec-20	3	3	3	4	There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).	



Trail name	Destination	Inspected	Current grade				Envisage New Zealand recommendation	
			T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)	
Mr Chomper	Maitai Face	2-Dec-20	4	-	4	5	The huge vertical drop in some of the turns, combined with minimal berm and deep ruts make this trail quite intimidating. It is very steep in short moments but the bottom is very steep/rutted for a long way. Some parts of the trail that are not so rough or steep are very narrow.	
P51	Codgers	5-Dec-20	3	3	3	4	This is a marginal call and the actual line could readily give users a true Grade 3 experience. Some additional work would be ideal here but the main reasoning for the recommended grade change is the high speed created on the trail and the combination of that with a rough/corrugated surface, (sometimes) slightly tight turns, oversteep moments and built features.	
Pipeline	Codgers	5-Dec-20	2	2	2	3	As it is currently configured, with all the interchanging happening at the eastern end, the occasional narrowness created by the pipeline and the steep slopes (for riders going in either direction), this trail does not work for Novice (Grade 2) riders.	
Piwakawaka	Marsden Valley	1-Dec-20	2	2	-	3	This trail really isn't in suitable terrain to achieve Grade 2 requirements, something heightened by its natural surface of slippery and lumpy clay, and by turns that are both too tight and oddly configured. There are also steps at the bottom where the trail crosses a boardwalk and a fence to negotiate.	
Putakari	Sharlands	3-Dec-20	5	5	5	6	The constant nature of the obstacles and challenges on this trail, and the drops involved at speed with bonyness make it a Grade 6 (Extreme) ride.	
Scottwood Wiggles	Sharlands	1-Dec-20	3	3	3	4	There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).	

Current grade				Envisage New Zealand recommendation			
Trail name	Destination	Inspected	T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)
Sharlands Creek	Sharlands	28-Jan-21	4	3	4	5	The trail is very variable in all respects, and includes some flat easy sections. However, it is difficult overall with a number of near-impossible obstacles, corners and climbs, including an unrideable river crossing.
Slingshot	Sharlands	1-Dec-20	3	3	3	4	The turn radii are too tight for Grade 3 and the rideable width is too narrow. Some obstacles are too high/unavoidable for Grade too, and the structures are dodgy (both in their bearing and surface).
Supplejack	Sharlands	2-Dec-20	4	-	4	5	This is arguably the prefect Grade 5 Trail and needs no changing. The turn radii could be considered to be Grade 4 but some of the turns effectively double as Grade 5-height obstacles. It is very narrow in places and the sidefall is intimidating.
Take me to your Leader	Codgers-Maitai	3-Dec-20	3	3	3	4	The turn radii and slope are marginal for Grade 4 (i.e., nearly Grade 5), especially the two turns in quick succession near the top, which are both tight and ascending. The top one is followed immediately by a tricky/steep rock climb. A couple of rough/steep bits that are quite narrow and have sidefall hazard.
Tasman Journeys	Codgers	5-Dec-20	3	3	3	3	This trail is pretty close to bang-on in all aspects; it's compliant in itself but really needs to continue up to Middle Rd at Grade 3 to give Intermediate riders a range of options from there.
Te Ara Koa	Fringed Hill	3-Dec-20	4	4	4	5	Putting the two marked rock drops aside, this long, adventure trail is simply too committing to be Grade 4 given its constant narrow width (with intimidating sidefall), its natural surface (including lots of roots near the top) and its many 200mm-plus obstacles.

Trail name	Destination	Inspected	Current grade				Envisage New Zealand recommendation	
			T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)	
Te Ara Kōpiko	Codgers	28-Jan-21	2	2	2	3	This trail arguably climbs too high/far for Grade 2 (Novice) riders. In making this judgment, consideration is given to the fact the start point is effectively in the valley floor, making the total climb 140m not a mere 60. The trail starts with a loose/stony section and crosses a tricky creek. The turn radii (3-4m on turns 2 and 3) are wide but not sufficient; there is an exposed edge below turn 3 and a rough bit above it.	
Te Tirohanga Whetū o Kōata	Codgers	29-Jan-21	3	-	-	4	This trail can only be accessed/exited on Grade 4 Trails (Firball climb/Firball). In its near-new state lots of aspects of it are Grade 3 but some of the turns are certainly not, even the first 'confidence builder', which has a radius of c2.3m (the minimum is 2.5m with 4m preferred). In addition to this factor, the scary dipper, an off-camber section crossing the firebreak and a chicane section make this just too intimidating for Intermediate riders. Furthermore it is likely to deteriorate somewhat.	
Top Dog	Codgers- Maitai	28-Jan-21	4	4	4	5	While a new trail on the principal alignment here would be grade 4 (Advanced), the current one feels very much like Expert (Grade 5) territory due to erosion and braiding that has created big obstacles and difficult line selection choices that require very good bike handling. The choices required at the jumps are particularly nasty and rapid-fire, and there is a road crossing in a dangerous place, albeit barely-used.	
Tu Meke	Codgers	27-Jan-21	2	2	2	3	While this trail's fixed components are close to compliant, and the bermed corners at the bottom could be deliberately design as Neslon's easiest, the trail is not truly 'Easy' at the moment due to slope changes, surface looseness, added (speed-building) features and the tightness and steep-sidedness of the two turns at the bottom. Finally, there is a tree trunk jump at the bottom that should be removed.	

Trail name	Destination	Inspected	Current grade			Envisage New Zealand recommendation	
			T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)
Turners	Codgers-Maitai	3-Dec-20	4	4	4	4	A bit of a hero track and a relatively easy Grade 4. Clearly not Grade 3 since this kind of (very fast) riding is not at all 'Intermediate'. Also not Grade 5 despite the speeds attained and the fact it might be oversteep a bit.
Viral Flow	Codgers	5-Dec-20	3	3	3	5	The average grade of the climbing section is over 7deg - Grade 5. The sustained combination of very tight turns, climbing turns, narrowness, exposure and the odd obstacle make it hard to justify Grade 4 for this odd-but-fun trail.
Waterloo	Sharlands	1-Dec-20	3	3	3	4	There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).
Wayne's Passage	Codgers	27-Jan-21	3	3	3	3	The very short sidling trail is very simple. Its width and complete lack of turns means it easily meets the Grade 3 standard - it may even meet the standard for Grade 2 but little would be achieved by that. The merge with Firball is problematic.
Whanake	Codgers	5-Dec-20	3	3	3	4	The trail has a lot of loose stones and is oversteep a bit too long for Grade 3 (too high a percentage of it is well over-steep).
What the DOC ordered	Sharlands	1-Dec-20	3	3	3	4	There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).



				Current grade			Envisage New Zealand recommendation	
Trail name	Destination	Inspected	T'forks	Sign	Map	Grade	Explanation/Justification (from full reports)	
Widdershins	Marsden Valley	1-Dec-20	3				This is a marginal call given several factors. The turns (3 were measured) are close to the minimum for the grade (2.5m, w 4m "desirable"). Deterioration and channeling is becoming a factor and the obstacles, while probably compliant, are significant and growing. In places, the obstacle/turn radius/slope combination is a bit tough for Grade 3. The upper c400m is oversteep on average for the Grade too.	
Willow Lane	Sharlands	1-Dec-20	2	3	2	3	Willow Lane is wide enough but has too many unavoidable/oversize obstacles to be Grade 2. Less frequently it is also over steep (down) with a bit of sidefall hazard and mud. All of these issues are likely to be heightened when wet.	
Young Codgers	Codgers	5-Dec-20	2	2	2	3	The steep section, while only being c22 of 404 metres, completely dominates the experience. A much gentler climb up to the all important Coppermine Trail is needed for the targeted riders.	

## **APPENDIX 5 – TRAIL GRADING REPORTS – CODGERS**





# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Tasman Journeys**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1-way (up)** Use **Not recorded** Functions **Climb, access**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	2	-	-	0

Anomalies in the information sources In this case, the Newport book gives an easier grade (it normally grades harder or same). The entry sign doesn't indicate the trail's shared use status.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Open, climbing trail that gets riders into the network from the Coppermine Trail. This trail is the quickest way into Codgers. Works with (Lower) Jacks to get people up to Middle Rd and beyond.						
Length	426	Start alt	115	End alt	145	Ht gain	30

This track has an overall rise of 1 in 14.2 or 4.03 degrees so it's nominally a Grade 3

Rise/fall, slope and nominal grade for a specific section

Section description		N/A - the whole trail is a single climb					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 3 (turn radius, although marginal above turn 3), 3 (slope, mostly), 2 (width).  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

It seems likely that the trail meets all aspects of the slope standard for its grade. The over-steep sections are short enough to be OK but in places a bit of steepness is worsened by narrowness/loose surface (turns 4 and 5), tightness (turn 7) or secondary lines developing.

**We assess this trail as a Grade 3 (the same as its marketed grade)**

Explanation/Justification

This trail is pretty close to bang-on in all aspects; it's compliant in itself but really needs to continue up to Middle Rd at Grade 3 to give Intermediate riders a range of options from there.

Low hanging fruit

Tidying up (cleaning out) the bends and a bit of smoothing here and there would be 'easy'. This would give maximum smoothness to make up for some of the turns being a little tight. There's plenty of room for this work, without additional digging into the bank. There is a c50m section between turns 5 and 6 that is close to the maximum allowable slope of 5-7 degrees (although this is allowed for 100m).

Notes

This analysis needs to be considered in light of our assessment of Crazy Horse and (lower) Jacks trails as Grade 4 trails, and our assessment of Firball Drop Out as a Grade 3. While Tasman Journeys is fit-for-purpose as it is, it accesses no other Grade 3 trails unless Jacks can be upgraded to Grade 3 too. As a minimum, egress at Grade 3 could be provided from Tasman Journeys via Firball Drop Out and Firball but that requires some upgrade work too and would not be as good as providing Grade 3 access up to Middle Road.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Jacks Track (lower)**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1-way (up)** Use **Not recorded** Functions **Access, climb**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	3	3	3	-	-	0

Anomalies in the information sources Shows differently on Trailforks compared to the printed map and on-site signs.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	A classic climbing trail - part 2 of the climb into the Codgers network - that gets riders right up to Middle Rd where they can pick multiple options: down one of the Codgers trail, out via Upper Jacks or onward to Friball and the Maitai.						
Length	730	Start alt	146	End alt	227	Ht gain	81

This track has an overall rise of 1 in 9.0 or 6.33 degrees so it's nominally a Grade 4

Rise/fall, slope and nominal grade for a specific section

Section description		The whole trail is a single climb. It is steep through the middle and this can be discretely identified on Trailforks.					
Length	124	Start alt	185	End alt	231	Ht gain	46

This section has an overall rise of 1 in 2.7 or 20.35 degrees so it's nominally a Grade 6+

### D. GRADE ASSESSMENT

Fixed components grade: 4 and 3 (slope and turns). 2/3 (width).  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

The average slope of this trail is too steep for its marketed grade. There are also two short over-steep sections (one is 18m long @ 9-11 deg, peaking at 15-18 deg) and the longer section separately analysed above. There is at least one corner with too much climb in it.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

This trail is overall too steep for its grade on average, and steeper than its key feeder trail - Tasman Journeys - when it should probably be the same, in a network sense. There are a couple of particular steep pinches. The turn radii are not really wide enough to meet the standard either, and are compromised by informal ride lines.

Low hanging fruit

Not really. Regrading would be easy but that would just emphasise the lack of a single-grade link from the park entry right up to Middle Rd, where the descending trails begin.

Notes

Note that the official information sources disagree on the Grade for this trail (Trailforks shows it as Grade 2). The over-steepness of this trail poses a critical question for the network manager: what grade should the climb up to Middle Road be? Or, at what level is the lowest Grade 4 trails and how should the grades of the climbing trail relate to all the descending trails?

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 27-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Firball Climb**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (up)** Use **Not recorded** Functions **Access/climb**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	4	3	3	-	-	0

Anomalies in the information sources The on-site signs disagree with each other (the upper one says "Grade 3, 2-way" while the bottom one says "Grade 4, 1-way")

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

The hardest, uppermost and final climb to the Codgers high point. One-way or two-way is not clear on signs.							
Length	819	Start alt	281	End alt	349	Ht gain	68

This track has an overall rise of 1 in 12.0 or 4.75 degrees so it's nominally a Grade 3

Rise/fall, slope and nominal grade for a specific section

Section description		None					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 3 (average slope), 4 turn radius, 3/4 (width), 4 (slope, in places)  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

The average gradient calculates to 4.75 degrees - below the nominal Grade 3 maximum of 5 degrees. There are however, some steep pinches, including leading up to, and in, the four corners.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

The turns - with their tightness, loose surface and steep approaches/exits - strongly indicate this trail is a Grade 4 trail, as its (lower) entry sign says. Neither grade necessarily precludes the trail being a 2-way one and it seems that visibility is good enough for this trail to be considered to be two-way.

Low hanging fruit

None. If the trail is marketed as a G4, there is no intervention required. There is a need to decide whether the trail is 1- or 2-way and to update the signs accordingly.

Notes

It is suggested that this trail - in fact, all the trails above Middle Rd - should be marketed and managed as Grade 4 trails given how much more climbing is required to get to the top and how much more maintenance effort is required to sustain any of them at the Grade 3 standard (see reports for 'Atmore', Firball and Wayne's Passage).

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 27-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Wayne's Passage**  
Select from dropdown  
 TLA **Nelson City** Land owner **Koata/NCC**  
 Direction **1 way** Use **Not recorded** Functions **Access and egress exit, facilitates repeats**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources **None.**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description							
Short, near-flat linking track from a road to the mid-point of upper Firball. A significant connector in the destination.							
Length	278	Start alt	259	End alt	267	Ht gain	8

This track has an overall rise of **1 in 34.8 or 1.65 degrees** so it's nominally a Grade 1

Rise/fall, slope and nominal grade for a specific section

Section description		The entire trail backwards					
Length	278	Start alt	267	End alt	259	Ht gain	-8

This section has an overall FALL of **1 in -34.8 or -1.65 degrees** which is nominally a Grade 1 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **Ignoring the drop-in to Firball: Grade 3 (rideable width), Grade 1-2 (turns and slope).**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are no slope issues on the trail itself but the junction with Firball at the western end is both steep and sudden, with no 'merge' signage.

**We assess this trail as a Grade 3 (the same as its marketed grade)**

Explanation/Justification

The very short sidling trail is very simple. Its width and complete lack of turns means it easily meets the Grade 3 standard - it may even meet the standard for Grade 2 but little would be achieved by that. The merge with Firball is problematic.

Low hanging fruit

The easiest change would be to warn riders of the imminent junction with Firball just before (east of) the picnic table. A bit more work is recommended though, to reduce the slope of the drop-in to Firball, to avoid any crashes. Further work might be undertaken to provide an exit from Firball on to Wayne's passage. This would require making Wayne's a 2-way trail, but would facilitate easy egress for anyone finding Firball intimidating.

Notes

This is potentially a strategically very important trail. Its status (1-way or 2-way) and condition could provide a pivotal point in the Network by defining the de facto upper limit of Grade 3 riding.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 29-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Te Tirohanga Whetū o Kōata**  
Select from dropdown  
 TLA **Nelson City** Land owner **Koata/NCC**  
 Direction **1-way (down)** Use **Not recorded** Functions **Fun, exploration, progression**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	-	-	-	-	-	0

Anomalies in the information sources This trail is yet to appear in information sources other than Trailforks. The length used is from our Strava trace.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Classic swooping fun descent line from the Codgers high point joining on to Firball.				
Length	1520	Start alt	354	End alt	230
		Ht gain	-124		

This track has an overall FALL of **1 in -12.3 or -4.66 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description	The entry to the big dipper, about 300m into the trail is assessed here.				
Length	15	Start alt	0	End alt	-3
		Ht gain	-3		

This section has an overall FALL of **1 in -5.0 or -11.31 degrees** which is nominally a Grade 4 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **3/4 (slope and turns), 3 (width)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are occasional over-steep sections for Grade 3, especially a big dip (at c.300m) and near the bottom. The big dip drops c3m in 15m, an average slope of -11.5deg (Grade 3/4) peaking at c25 degrees (Grade 6).

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

This trail can only be accessed/exited on Grade 4 Trails (Firball climb/Firball). In its near-new state lots of aspects of it are Grade 3 but some of the turns are certainly not, even the first 'confidence builder', which has a radius of c2.3m (the minimum is 2.5m with 4m preferred). In addition to this factor, the scary dipper, an off-camber section crossing the firebreak and a chicane section make this just too intimidating for Intermediate riders. Furthermore it is likely to deteriorate somewhat.

Low hanging fruit

Given the difficulty of getting to the top/start and away from the end/bottom, grading as a 4 and allowing deterioration is the lowest-hanging fruit. Work to remove features and high-line options, and to smooth out the dip, would allow the trail, if assiduously maintained, to be Grade 3. Doing this would in turn require substantial work to soften Firball below the Firball junction.

Notes

This trail is a really nice, fun ride but in the wrong place. Just the strength and skill required to get to it suggested it is not for Intermediates.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 27-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Firball**  
Select from dropdown  
 TLA **Nelson City** Land owner **Koata/NCC**  
 Direction **1-way (down)** Use **Not recorded** Functions **Descent**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources **None**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Classic but deteriorated downhill flow track from the scenic high point of the Codgers destination (Sharland Hill at 351m). Crosses the CMT.						
Length	2913	Start alt	348	End alt	58	Ht gain	-290

This track has an overall FALL of **1 in -10.0 or -5.69 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		The bottom half (Middle Road to the bottom)					
Length	1439	Start alt	197	End alt	58	Ht gain	-139

This section has an overall FALL of **1 in -10.4 or -5.52 degrees** which is nominally a Grade 2 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **2 (average slope), 3 (width and some turns), 4 (some turns).**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

This trail does have features and steep sections that would exceed the standard for Grade 3. In places, it has an intimidating rough/loose surface and in-turn berm height that are beyond 'Intermediate'.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

In perfect condition, with less intimidating lines available on some turns, better signs at junctions and some general easing, this trail could be a Grade 3. This is however, likely to require a lot of work and besides, the top section can only be accessed by a G4 climb (Firball Climb) so little would be achieved. Grade 4 is a more realistic promise to make to riders of this trail, although there is the option of just completing easing work to Grade 3 standard on the lower half (below Firball Rd) so people can ride up Tas Journeys/Jacks then down.

Low hanging fruit

There is no real easy solution to any issues with this trail. It may be best to split it into a Grade 4 top half and a Grade 3 bottom half given the difficulty of accessing the upper half and likely expense of upgrading the entire length.

Notes

This is a nice descent, just quite deteriorated. The top half will be hard to restore (and then sustain) and includes problematic mergings (of Wayne's Passage and the new Koata Whetū Trail). This is an important descent with a big name, but it may be better split in two so the bottom half can be marketed as a true Grade 3 (that conveniently starts at the same altitude as the top of Jacks, unlike P51).

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 27-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Crazy Horse**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1-way (down)** Use **Not recorded** Functions **Descent, exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	3	-	0

Anomalies in the information sources There's a significant difference between the map length and the trailforks length. The sign and map say 672m, which is the length used here.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Tight/twisty descent line - crosses the CMT to a twisty finish. The lowest-starting of any of the descents at Codgers.							
Length	672	Start alt	146	End alt	60	Ht gain	-86

This track has an overall FALL of **1 in -7.8 or -7.29 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		Just the top section, down as far as the P51/Firball junction					
Length	279	Start alt	146	End alt	122	Ht gain	-24

This section has an overall FALL of **1 in -11.6 or -4.92 degrees** which is nominally a Grade 2 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **2 (slope), 4 (most turns)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

The top (down to Firball/P51) is nominally G2 in its average slope. However, at an average -7.3 degrees, it is steeper than the other nearby descents (Firball (bottom half), Hulk n Hogan, P51).

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

While the trail is nominally not steep, it is steeper than other downhill trails in Codgers marketed with the same Grade (3). The bigger problem is that the turns are near-constant in the top half, requiring a bit of experience to navigate. They are also quite steep-sided and there's plenty of loose stones and rollers/lumps etc. The roughness factor increases in the bottom half and there are some over-steep pieces with over-height obstacles near the bottom.

Low hanging fruit

There's little flexibility here given how tight the trail is. Even though this is the only trail to descend from Jacks Hub (the top of Tasman Journeys), changing to a harder grade is considered the easiest option.

Notes

If and insofar as Crazy Horse and Hulk n Hogan are Grade 4, Crazy Horse naturally acts as a good finish option for Hulk n Hogan riders, although care is required through Jacks Hub.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 27-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Firball Drop Out**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1 way** Use **Not recorded** Functions **Link**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	3	3	-	-	-	0

Anomalies in the information sources The grades in Trailforks and the map disagree with each other and the on-site sign disagrees with itself! Steve Newport's book (2019 ed) doesn't show this

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description							
Short, near-level linking track from Jacks Hub to a point on lower Firball.							
Length	97	Start alt	149	End alt	151	Ht gain	2

This track has an overall rise of 1 in 48.5 or 1.18 degrees so it's nominally a Grade 1

Rise/fall, slope and nominal grade for a specific section

Section description		None					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 1/2 (slope), 2/3 (width, depending on grass growth)  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

None really, there's virtually no slope except where the trail merges with Firball (where there is no sign).

**We assess this trail as a Grade 3 (easier than its marketed grade)**

Explanation/Justification

This trail is not really a stand-alone experience. While its underlying grade could easily be 2, there would be nothing achieved by that and, with the grass and the sign confusion, Grade 3 is considered more accurate. To implement this concept, some improvement at the western end (where it meets Firball) would be required.

Low hanging fruit

This trail has excellent potential to act as a nice link to the lower reaches of Firball (the bottom 600m). It could therefore provide, in conjunction with Firball and Tasman Journeys, a better G3 loop than Crazy Horse does.  
 A more difficult/expensive fix would see the trail made two-way, including the construction of a 'off-ramp' on Firball to allow riders to get off Firball and (re)climb Jacks.

Notes

A bit of a non-event as it stands but with an interesting potential function.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Whanake**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1 way** Use **Not recorded** Functions **Link/access**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	2	-	-	0

Anomalies in the information sources The Newport book suggests an easier grade.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Really more of a link track from a skid site spiralling around a hill to access two tracks, mainly P51. Clearly once a vehicle track.				
Length	647	Start alt	0	End alt	0
This track has an overall rise of 1 in 0.0 or 0.00 degrees so it's nominally a N/A					

Rise/fall, slope and nominal grade for a specific section

Section description	There are a couple of steep climbs, especially the last pinch up to the high point where P51 starts (this data from Trailforks).				
Length	134	Start alt	245	End alt	263
This section has an overall rise of 1 in 7.4 or 7.65 degrees so it's nominally a Grade 5					

### D. GRADE ASSESSMENT

Fixed components grade: 3-5 (slope), 2 (width and turns)  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Steepens a bit much for a bit long after a nice start - made worse by loose stones.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

The trail has a lot of loose stones and is oversteep a bit too long for Grade 3 (too high a percentage of it is well over-steep).

Low hanging fruit

Re-grade and remove the loose stones here and there.

Notes

This is possibly more of an access way than a named trail, even though it's not an actual road. Read this report in conjunction with those for P51 and Firball and consider it in light of the idea that just the lower part of P51 might be Grade 3, and the fact that the climb up the steep part of Middle Road is itself quite steep.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Viral Flow**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1 way** Use **Not recorded** Functions **Technical/fun**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources **None.**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	A tight trail in mature pines with variety and a few surprises. Sits somewhat alone and clearly not highly used because the style, location and the ascending required.						
Length	1100	Start alt	224	End alt	221	Ht gain	-3

This track has an overall FALL of **1 in -366.7 or -0.16 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		The climb back up from the low point to Whanake.					
Length	655	Start alt	137	End alt	220	Ht gain	83

This section has an overall rise of **1 in 7.9 or 7.22 degrees** so it's nominally a Grade 5

### D. GRADE ASSESSMENT

Fixed components grade: **5 (turn radius and width), 3/5 (slope down/up)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Generally the descent is not oversteep but the climbing leg is (especially the very first part). The turns are so tight that the climbing in them is quite hard too.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

The average grade of the climbing section is over 7deg - Grade 5. The sustained combination of very tight turns, climbing turns, narrowness, exposure and the odd obstacle make it hard to justify Grade 4 for this odd-but-fun trail.

Low hanging fruit

Trimming the vegetation would be a good, easy improvement.

Notes

This is a fun wee track and quite testing - perhaps the most technical bit of uphill trail in the Network. It's a bit of an anomaly and an outlier.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **P51**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1-way (down)** Use **Not recorded** Functions **Learning, fun, exit.**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources **None but signs are needed where the trail merges with Firball/Crazy Horse.**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Swooping, fast, fun trail in pine forest and open areas. Big turns that get closer/tighter toward the bottom.				
Length	2220	Start alt	243	End alt	125
				Ht gain	-118

This track has an overall FALL of **1 in -18.8 or -3.04 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description	0				
Length	N/A	Start alt	0	End alt	0
				Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **3 (width), 3/4 (turn radius and slope).**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Probably a bit oversteep here and there but maybe never for too long. Steepness (combined with roughness, the (in-places) loose surface and the rollers) is an issue, including specifically in some of the corners. The huge bermed corner at the halfway drop-in is way too steep and likely to intimidate Grade 3 riders.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

This is a marginal call and the actual line could readily give users a true Grade 3 experience. Some additional work would be ideal here but the main reasoning for the recommended grade change is the high speed created on the trail and the combination of that with a rough/corrugated surface, (sometimes) slightly tight turns, oversteep moments and built features.

Low hanging fruit

Smoothing the corrugations and removing (or easing) some of the roll-over features would improve certainty and could neutralise the other grade-marginal features. Signage to clarify the route at the bottom would help, and vegetation trimming to improve visibility in the mid section where complexity increases. It's not low-hanging but the very steep corner on the drop-in trail (from the end of Middle Road) needs to be eased significantly.

Notes

This report should be read in conjunction with those for Firball and Crazy Horse, since P51 riders must use one of those to get out of the network. If either of them is to be marketed as harder than P51, then P51 (as the easiest trail) should go right down to the bottom.  
 An option worth considering is to only upgrade to Grade 3 below about Middle Road, thus leaving the top as Grade 4, reflecting the difficulty of climbing up the road and Whanake to access it (see Whanake report).

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **IV Line**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Exit, technical down**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	4	3	3	-	-	0

Anomalies in the information sources Sign disagrees with other sources. Notably, the signs grade this trail higher than Hulk n Hogan, whereas the other sources consider them the same.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Gnarly descent and exit line. A bit eroded here and there, with lots of rider-created cut off options.				
Length	1167	Start alt	281	End alt	153
		Ht gain	-128		

This track has an overall FALL of **1 in -9.1 or -6.26 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description	None				
Length	N/A	Start alt	0	End alt	0
		Ht gain	0		

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **2-4 (slope), 3/4 (width), 4 (turns)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Steep here and there, especially in its turns and at the very top. The final exit (on to the Coppermine Trail) is very steep/narrow and messy.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

This is a marginal call - the entry and exit are both intimidating, there are tight turns and some some step downs - one is well over-height for the marketed grade. Everything is exaggerated by narrowness, grass growth and the cut-off/alternative lines in the bottom half. IV Line is certainly the hardest of all the downhill lines at Codgers but not gnarly enough to be considered a grade harder (Expert/Grade 5)) overall.

Low hanging fruit

To stay at Grade 4 some work is required on the drop-in at the top and the exit to Coppermine. A general easing/smoothing of many of the corners would be good too, and there is at least one over-height obstacle. Allowing more deterioration and regrading as Expert (5) would be easier and might even be the most strategic option, depending on choices made about Firball, Hulk n Hogan, P51, Koata Whetū etc.

Notes

This is a gnarly and interesting trail - perhaps requiring some effort to keep 'to standard' for 'merely' Advanced riders. 'Experts' are making it their own somewhat, cutting off many of the turns. In the same way that it could be argued that one trail down to the Maitai from Codgers-Maitai should be a Grade 3 (see Hot Box report), it might be said that one of the Brook-side Codgers descents should be a Grade 5.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Hulk n Hogan**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **XC/ fun descent**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources **None**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Interesting and varied descent with a range of aspects to it. Mostly sidles rather than turns to descend, so unusual. Passes through tree spared cyclone damage.						
Length	1590	Start alt	281	End alt	156	Ht gain	-125

This track has an overall FALL of **1 in -12.7 or -4.50 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **2 (slope), 3/4 (width) 4 (turns)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Steep in its corners and a bit to start (where there are two fast alternative lines).

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

This trail is too narrow (with an occasional consequent sidefall hazard) to be considered Intermediate (a Grade 3 trail needs to be 900 wide for 90% of its length). The two big turns are just too tight and steep for Intermediate riding too, and the upper one is showing edge damage.

Low hanging fruit

Regrading and a bit of hardening of the loamy turn exits would be easy. A fuller upgrade to Grade 3 (increasing width and smoothing the surface) might be strategic but will be more expensive, and rebuilding the turns would be more expensive again.  
 An option to consider instead is to leave it as it is but change it to Grade 4 and consider Crazy Horse (from Jacks Hub) to be its natural partner for riders exiting the network.

Notes

A really nice trail with some diversity: shade, forest and enticing views. There's a choice to make here: how many Grade 3 descents are required from Fireball Hub? How many of the Codgers descents should be G3? If one descending exit option from Jacks Hub (Crazy Horse) is to be a Grade 4, then one of the trails leading down to that hub should perhaps also be a 4.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Pipeline**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **2-way** Use **Not recorded** Functions **Learn, access and egress**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	2	2	2	-	-	0

Anomalies in the information sources No specific anomalies but there is confusion caused by intersecting trails and the signs at the eastern end.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Wide track following a long-established (water) pipeline. Very mellow slope, two way. The lowest-grade way down/out from Jacks Hub.						
Length	678	Start alt	133	End alt	152	Ht gain	19

This track has an overall rise of **1 in 35.7 or 1.61 degrees** so it's nominally a Grade 1

Rise/fall, slope and nominal grade for a specific section

Section description		The entire trail 'backwards' (Jacks Hub to Tu Meke)					
Length	678	Start alt	152	End alt	133	Ht gain	-19

This section has an overall FALL of **1 in -35.7 or -1.61 degrees** which is nominally a Grade 1 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **Mostly Grade 1, but with two steep bits and narrow bits.**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Uphill or down, the slightly loose-surfaced, 30m slope between the pipeline and the (current) start of Tu Meke is oversteep for Grade 2. The turn on to Tu Meke at the bottom of that slope is likely intimidating for Novices.

**We assess this trail as a Grade 3 (harder than its marketed grade)**

Explanation/Justification

As it is currently configured, with all the interchanging happening at the eastern end, the occasional narrowness created by the pipeline and the steep slopes (for riders going in either direction), this trail does not work for Novice (Grade 2) riders.

Low hanging fruit

None. Dealing with either steep section would require realignment and, at the western end, the pipeline footing reduces scope for this. Reconfiguration of the network - perhaps including re-grading - may be the best solution. Read this report in conjunction with Tu Meke, Gully, IV Flow, Crazy Horse, Firball Drop Out and Firball.

Notes

An interesting, somewhat 'accidental' trail whose usefulness seems limited in light of the other options available. It's not really fit for purpose for Grade 2 riders in either direction, given the steepness of the slope at the eastern end. The network might be reconfigured here.  
 It seems like this trail is little used and this might be because it leaves riders 'grade-hung': it can only be really only be accessed or exited from using harder trails.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Gully**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **1-way (down)** Use **Not recorded** Functions **Exit/finish**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources **None**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Undulating streamside descent - a harder alternative exit to an easier trail nearby in a busyish area.						
Length	710	Start alt	131	End alt	77	Ht gain	-54

This track has an overall FALL of **1 in -13.1 or -4.35 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None, no real stand out section.					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **2 (slope), 4-5 (width, partly caused by grass growth)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Not really any oversteep bits except the very nasty lip up and out of the upper/first stream crossing. This is an erosion/maintenance issue rather than an actual slope problem.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

While the nominal fall on this trail is Grade 1, it is much more difficult than that. There are few turns so turn radius is not really a problem but in every other sense the trail is Grade 4. It is narrow and rough in places, with over-grade obstacles, surprises and the unbridged stream crossing. In places the width/sidefall combination is scary.

Low hanging fruit

Grass/vegetation trimming and a regrade would be simple and cheap. A specific warning sign might be added given the proximity of Grade 2 trails. Alternatively, the entry could be left as it is (a little intimidating).

Notes

This is a mixed trail and quite a cool ride. A genuine G3 might be a better exit option here but the upgrade cost (including providing at least one new bridge) would be significant. Leave as is and regrade as a 4. Consider deleting altogether if it isn't specifically useful as an exit option from IV line. The proximity of this under-graded trail to the beginner zone (Pipeline/Tu Meke) is somewhat alarming.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 27-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Tu Meke**  
Select from dropdown  
 TLA **Nelson City** Land owner **Nelson City Council**  
 Direction **2-way** Use **Not recorded** Functions **Learning/exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	2	2	2	-	-	0

Anomalies in the information sources **None.**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Wide flowing exit route from a secondary hub.						
Length	745	Start alt	130	End alt	80	Ht gain	-50

This track has an overall FALL of **1 in -14.9 or -3.84 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		The first 525m which, according to the Trailforks profile map could be considered a separate section (from the start to a low point)					
Length	525	Start alt	130	End alt	78	Ht gain	-52

This section has an overall FALL of **1 in -10.1 or -5.66 degrees** which is nominally a Grade 2 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **2 (slope (first 525m to the dip)), 2 width, 3 (turn radii)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

The average slope nominally meets grade but slope (and speed) are increased by rollers built into the trail.

**We assess this trail as a Grade 3 (harder than its marketed grade)**

#### Explanation/Justification

While this trail's fixed components are close to compliant, and the bermed corners at the bottom could be deliberately design as Nelson's easiest, the trail is not truly 'Easy' at the moment due to slope changes, surface looseness, added (speed-building) features and the tightness and steep-sidedness of the two turns at the bottom. Finally, there is a tree trunk jump at the bottom that should be removed.

#### Low hanging fruit

There is no truly easy solution but the 'Easy' status of this trail could be assured with a combination of surface smoothing and speed reduction through feature removal. To-standard gravel (30mm "compacted/stabilised base course") should be imported and the corners at the bottom require rebuilding so they are wider and slower.

#### Notes

Recommendations for this trail need to be considered in light of those made for trails which provide access to it, especially Pipeline and the Coppermine Trail. Decisions made regarding IV Line, Gully and Te Ara Kopiko are also relevant.  
 It is noted that the secondary hub formed at the top of this trail is a constricted space that doesn't function well currently.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination  Trail name   
Select from dropdown  
 TLA  Land owner   
 Direction  Use  Functions

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	2	2	2	-	-	0

Anomalies in the information sources

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	A wide, introductory, linking trail in an open area connecting the main carpark up on to the Coppermine Trail and thereby taking riders into the Codger network.						
Length	404	Start alt	54	End alt	56	Ht gain	2

This track has an overall rise of 1 in 202.0 or 0.28 degrees so it's nominally a Grade 1

Rise/fall, slope and nominal grade for a specific section

Section description		The climb up to the Coppermine Trail (altitudes are nominal)					
Length	22	Start alt	0	End alt	3.5	Ht gain	3.5

This section has an overall rise of 1 in 6.3 or 9.04 degrees so it's nominally a Grade 5

### D. GRADE ASSESSMENT

Fixed components grade: 1 (width), 1 (slope, except the climb to Coppermine Trail), 3 (the turn on to Coppermine).  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

The trail flows nicely until it climbs to make the Coppermine Trail height where it is far too steep.

**We assess this trail as a Grade 3 (harder than its marketed grade)**

Explanation/Justification

The steep section, while only being c22 of 404 metres, completely dominates the experience. A much gentler climb up to the all important Coppermine Trail is needed for the targeted riders.

Low hanging fruit

None really. Regrading would be OK since the entire network that Young Codgers accesses is Grade 3 or higher anyway.

Notes

The network configuration is a bit odd here, and begs both a shorter and more gentle climb from the carpark up to the Coppermine and more logical naming. The suggestion is that Young Codgers and Tu Meke both begin immediately after riders cross the main bridge from the main Codgers carpark.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 5-Dec-20

### A. INVENTORY INFORMATION

Destination  Trail name   
Select from dropdown  
 TLA  Land owner   
 Direction  Use  Functions

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	3	3	3	-	-	0

Anomalies in the information sources Shows differently on Trailforks (cf the printed map). There is really no cycling information at the Atmore St end.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration-description	A two-way connector from the network out to the city streets at Atmore Tce (analysed here from Atmore Tce to Middle Rd). If calculated in the northward direction, just up to the high point, this trail is nominally Grade 5.						
Length	854	Start alt	155	End alt	226	Ht gain	71

This track has an overall rise of 1 in 12.0 or 4.75 degrees so it's nominally a Grade 3

Rise/fall, slope and nominal grade for a specific section

Section description		The climb from Middle Rd to the high point.					
Length	149	Start alt	224	End alt	250	Ht gain	26

This section has an overall rise of 1 in 5.7 or 9.90 degrees so it's nominally a Grade 5

### D. GRADE ASSESSMENT

Fixed components grade: 3-6 but very messy  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

This track is so steep it's barely rideable in places.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

While the idea of an entry/exit track from/to Atmore Tce is a good one, this track is distinctly uncomfortable to ride and poorly built. For those riding into the network the slopes are extreme in places and the gravel unconsolidated. On the Middle Road side, the trail crosses other trails and at the Atmore Terrace end, the four hairpin bends are on the Grade 3/Grade 4 cusp but the gravel on them and their shape makes them Grade 5.

Low hanging fruit

There aren't really any low-hanging fruit using the current alignment. The trail should be regraded and, for cycling, be described as a one-way exit track. As an entry track it's really only suitable for walking.

Notes

The idea of an exit here is a good one, including for fire safety reasons. The execution has left a lot to be desired (this may reflect the need to keep the track on an unformed legal road).

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers** Trail name **Te Ara Kōpiko**  
Select from dropdown  
 TLA **Nelson City** Land owner **Koata/NCC**  
 Direction **2-way** Use **Not recorded** Functions **Access**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	2	2	-	-	-	0

Anomalies in the information sources The map gives a length of 2121m and seems to include the closed, bottom part of the trail. Steve Newport's book was published before this trail existed.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Wide/gentle climb to an important saddle. Alternative to a deteriorating road busy with runners and other riders.						
Length	1107	Start alt	120	End alt	181	Ht gain	61

This track has an overall rise of 1 in 18.1 or 3.15 degrees so it's nominally a Grade 2

Rise/fall, slope and nominal grade for a specific section

Section description		No sections could really be identified					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 3 (turns) 2 (width and slope)  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

The average rate of climb nominally meets the requirement for Grade 2 but any imperfections are likely to be telling at this Grade.

**We assess this trail as a Grade 3 (harder than its marketed grade)**

Explanation/Justification

This trail arguably climbs too high/far for Grade 2 (Novice) riders. In making this judgment, consideration is given to the fact the start point is effectively in the valley floor, making the total climb 140m not a mere 60. The trail starts with a loose/stony section and crosses a tricky creek. The turn radii (3-4m on turns 2 and 3) are wide but not sufficient; there is an exposed edge below turn 3 and a rough bit above it.

Low hanging fruit

Regrading is the only low-hanging fruit. Smoothing out the surface could help offset the tight corners, and perhaps a barrier below turn 3 would ease the sidefall exposure.

Notes

It is noted that little is achieved by having a Grade 2 trail on the Maitai side of Tanragee Saddle given that there is no easily accessed, same-grade trail on the Brook side. This could be rectified by the provision of a suitable link down to Pipeline or elsewhere, but at some cost.



## **APPENDIX 6 – TRAIL GRADING REPORTS, CODGERS-MAITAI**





# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 3-Dec-20

### A. INVENTORY INFORMATION

Destination Codgers-Maitai

Trail name Turners

Select from dropdown

TLA Nelson City

Land owner Ngāti Koata

Direction 1-way (down)

Use Not recorded

Functions Fun/speed

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	4	4	4	-	-	0

Anomalies in the information sources None.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	A super flow trail, with big berms giving good fun and high speed. A bit of a hero trail.						
Length	874	Start alt	294	End alt	163	Ht gain	-131

This track has an overall FALL of 1 in -6.7 or -8.52 degrees which is nominally a Grade 3 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		A c27m chicane section, with an estimated 6.5m fall was analysed.					
Length	27	Start alt	0	End alt	-6.5	Ht gain	-6.5

This section has an overall FALL of 1 in -4.2 or -13.54 degrees which is nominally a Grade 4 (down)

### D. GRADE ASSESSMENT

Fixed components grade: 3/4 (slope), 2-4 (turn radius), 2 (width)

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Probably exceeds slope occasionally, even for Grade 4.

**We assess this trail as a Grade 4 (the same as its marketed grade)**

Explanation/Justification

A bit of a hero track and a relatively easy Grade 4. Clearly not Grade 3 since this kind of (very fast) riding is not at all 'Intermediate'. Also not Grade 5 despite the speeds attained and the fact it might be oversteep a bit.

Low hanging fruit

None - no change is needed.

Notes

This is a very fun trail - a bit of a hero trail and something of a rarity in the Network. A trail like this maybe pushes the limits of the standard but needs to be retained as a 4 (see reports for Mr Chomper and P51 for comparison).

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 3-Dec-20

### A. INVENTORY INFORMATION

Destination Codgers-Maitai

Trail name Take Me To Your Leader

Select from dropdown

TLA Nelson City

Land owner Ngāti Koata

Direction 1-way (up)

Use Not recorded

Functions Access and re-access, climbing

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources None

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Classic, consistent but tight climbing line up into Codgers-Maitai destination, mainly for those descending Turners.						
Length	935	Start alt	162	End alt	243	Ht gain	81

This track has an overall rise of 1 in 11.5 or 4.95 degrees so it's nominally a Grade 3

Rise/fall, slope and nominal grade for a specific section

Section description		None - this trail rises fairly constantly.					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 4/5 (turns), 3/4 (width), 3 (slope)

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

More comprehensive measurement might reveal some technically over-steep sections (more than 20m at 9-12deg) but slope is not really an issue on this trail.

4

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

The turn radii and slope are marginal for Grade 4 (i.e., nearly Grade 5), especially the two turns in quick succession near the top, which are both tight and ascending. The top one is followed immediately by a tricky/steep rock climb. A couple of rough/steep bits that are quite narrow and have sidefall hazard.

Low hanging fruit

None really - perhaps there is some scope to ease the turns and chip away at the steep rocky section near the top.

Notes

This is one of very few climbing trails in the entire Network. Its difficulty is about right but its grade is not. Upgrading it to its currently marketed grade would be difficult given that its slope is already that grade and trails are usually one grade harder than their slope. It would be somewhat pointless too, given the grade of its access trail (Turners, G4) and all the trails it accesses.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers-Maitai** Trail name **Beer Bottle**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (up)** Use **Not recorded** Functions **Access**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	-	3	3	-	-	0

Anomalies in the information sources There are no entry or exit signs and confusion at the junctions near the top.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Climbing/access line to a high point with several high grade trails. Impossibly steep start shared (alarmingly) with part of Hot Box. Just the section from the road up to the high point is evaluated (Trailforks shows this trail all the way from TMTYL).						
Length	232	Start alt	254	End alt	283	Ht gain	29

This track has an overall rise of 1 in 8.0 or 7.13 degrees so it's nominally a Grade 5

Rise/fall, slope and nominal grade for a specific section

Section description		None but the initial c20m up from the road is essentially unrideably steep.					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 4-6 (slope). The trail is hard to distinguish completely.  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

This trail is not long enough for there to be any meaningful 100m+ sections to measure but there are some very steep sections of 10m+. The very steep initial climb from the road is in-common with Hot Box, which presents a collision risk.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

This is a hard trail to grade given that it's not fully formed (part of it is forest road and part is an extremely steep climb in-common with a descending trail).

Low hanging fruit

There is no easy fix for this trail but there is arguably a need to get it off the line of Hot Box for safety's sake.

Notes

The longer-term vision, which would solve all issues with this trail would be to delete it but carry Take Me To Your Leader on upward to the point where Lollipop, Hot Box and Top Dog all start. This would be safer, although we note that TMTYL is a grade 4 climb and all of the descents from the top point are probably Grade 5.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 3-Dec-20

### A. INVENTORY INFORMATION

Destination Codgers-Maitai

Trail name Hot Box

Select from dropdown

TLA Nelson City

Land owner Ngāti Koata

Direction 1-way (down)

Use Not recorded

Functions Technical descent, exit

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	4	4	4	-	-	0

Anomalies in the information sources None

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Classic fall track in forest - fastish not super technical. Alternating smooth and eroded surface but rooty not rocky in mature pine forest. Some very steep committing pinches.						
Length	1150	Start alt	283	End alt	25	Ht gain	-258

This track has an overall FALL of 1 in -4.5 or -12.64 degrees which is nominally a Grade 4 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None - a few rests but no distinctive sections					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 4/5 (width of traverses), 5 (slope of the drops), 4/5 (turns)

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are plenty of sections where the downhill slope is intimidating and well over the Grade 4 max (15deg), although not often for very long runs.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

The combination of erosion (effectively creating over-height obstacles), with over-steep sections, run-out hazards and multiple route options (requiring instant decisions) makes this ride like a Grade 5 (requiring Expert rather than Advanced handling skills).

Low hanging fruit

Infilling some rutted/rooty sections might clarify the route and reduce obstacle size. Improving run-out at the bottom of some drop sections would ease the trail too but may require tree removal.

Notes

This trail is probably good as it is, although it is suggested that there should be one genuine Advanced (Grade 4) trail off the Maitai side of this hill. Perhaps, in fact, the easiest exit trail should be Intermediate (Grade 3), especially if Take me to your Leader - the main way in to this area - is to continue being marketed as a Grade 3.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Codgers-Maitai** Trail name **Top Dog**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Thrill/descent, exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	4	4	4	-	-	0

Anomalies in the information sources **None.**

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description							Classic narrow/rough and deteriorating descent line with major jump.								
Length		837		Start alt		284		End alt		162		Ht gain		-122	

This track has an overall FALL of **1 in -6.9 or -8.29 degrees** which is nominally a Grade 3 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		No specific section is analysed. The jump is over-steep but the main line would likely be grade-compliant.					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **4/5 (width, main turns), 3-5 (slope, a bit line-dependent).**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Some very short pieces are over-steep, even for Grade 5. Erosion and riding impacts have made line selection difficult, and effectively steepen the trail in places, especially for Grade 4 (advanced) riders near their technical limits.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

While a new trail on the principal alignment here would be grade 4 (Advanced), the current one feels very much like Expert (Grade 5) territory due to erosion and braiding that has created big obstacles and difficult line selection choices that require very good bike handling. The choices required at the jumps are particularly nasty and rapid-fire, and there is a road crossing in a dangerous place, albeit barely-used.

Low hanging fruit

There is little to be done here easily. Signposting the over-grade drops would help a bit but what would really bring the trail to grade is back-filling some of the holes and re-establishing a more readily ridden line that wasn't so challenging.

Notes

This trail is very deteriorated. It is also somewhat odd in that it doesn't exit the forest. Extending it so it did might be a strategic enhancement to the Network - with enough investment, the line could be the basis of a true Grade 3 exit trail.





## **APPENDIX 7 – TRAIL GRADING REPORTS, FRINGED HILL**



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 3-Dec-20

### A. INVENTORY INFORMATION

Destination **Fringed Hill** Trail name **Te Ara Koa**  
Select from dropdown  
 TLA **Nelson City** Land owner **?**  
 Direction **1-way (down)** Use **Not recorded** Functions **Adventure, big descent**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	4	4	4	4+	-	Kennetts' Top 40 list

Anomalies in the information sources The influential Kennett Brothers book gives a different grade to all the official sources.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Natural surface adventure descent from Fringed Hill in native forest. Relatively new and probably the easiest and most popular descent on the hill. Quite a committing trail with a rooty top section then becoming narrow with many step-downs and near-constant sidefall.						
Length	5100	Start alt	794	End alt	105	Ht gain	-689

This track has an overall FALL of **1 in -7.4 or -7.69 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None, there are seemingly no sections of the trail with a specific slope to analyse					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **5 (width/sidefall, mostly), 4/5 (turn radius), 3 (slope)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

This is an interesting one since the average slope down is nominally G2. In places the slope certainly exceeds this but not for long. Most height loss is by gently sidling down or step obstacles instead, meaning slope is not the deciding factor.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

Putting the two marked rock drops aside, this long, adventure trail is simply too committing to be Grade 4 given its constant narrow width (with intimidating sidefall), its natural surface (including lots of roots near the top) and its many 200mm-plus obstacles.

Low hanging fruit

There are no low-hanging fruit. It wouldn't be worth a bit of tidying here and there since that wouldn't change the grade. It would be worth smoothing the obstacles and widening the entire trail to make a genuine Grade 4 - a strategically significant change but hardly low-hanging.

Notes

There will be those who disagree with this assessment and there are historical reasons why some might want it to remain Grade 4. The argument advanced here is that its exposure over such a long length and its numerous 200mm-plus obstacles make it Grade 5. It is distinctly more committing than Involution (currently marketed as Grade 3 but assessed as Grade 4) and, while more of the big descents in the Network perhaps should be Grade 4, this one is not currently.



## **APPENDIX 8 – TRAIL GRADING REPORTS, MAITAI FACE**





# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 2-Dec-20

### A. INVENTORY INFORMATION

Destination Maitai Face

Trail name Mr Chomper

Select from dropdown

TLA Nelson City

Land owner Ngāti Koata

Direction 1-way (down)

Use Not recorded

Functions Thrill, challenge

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	-	4	4	-	-	0

Anomalies in the information sources Sign at the top of the trail not sighted.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Barely established natural surface trail in exotic forest with minimal construction. Has dippers, huge turns (with significant in-turn fall) and very steep sections. Established on very steep land.						
Length	899	Start alt	195	End alt	46	Ht gain	-149

This track has an overall FALL of 1 in -6.0 or -9.41 degrees which is nominally a Grade 3 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		The last 200m (best estimate from Trailforks)					
Length	200	Start alt	108	End alt	47	Ht gain	-61

This section has an overall FALL of 1 in -3.3 or -16.96 degrees which is nominally a Grade 5 (down)

### D. GRADE ASSESSMENT

Fixed components grade: 4/5 (width), 2/3 (turn radius), 4-6 (slope)

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Lots of short, very steep bits are well over the maximum slope (15 degrees), including in some of the huge turns. At the bottom, this goes on for too long for the current grade and is exaggerated by roughness.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

The huge vertical drop in some of the turns, combined with minimal berm and deep ruts make this trail quite intimidating. It is very steep in short moments but the bottom is very steep/rutted for a long way. Some parts of the trail that are not so rough or steep are very narrow.

Low hanging fruit

Regrade to Grade 5 (Expert). There's nothing wrong with the trail itself; while filling in the ruts may ease the intimidation, the slope is permanent!

Notes

This trail was ridden while still damp. The trail map wrongly shows it finishing into Loam Ranger/Maitai Face whereas it has its own exit. Mr Chomper may be the easiest trail on the Maitai Face but even so it may be that the entire Destination is Grade 5 and 6.



## **APPENDIX 9 – TRAIL GRADING REPORTS, MARSDEN VALLEY**



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination  Trail name   
Select from dropdown

TLA  Land owner

Direction  Use  Functions

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	-	3	-	-	0

Anomalies in the information sources

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Climbing sidle through pine then native. Leads to the start/top of Involution avoiding a road alternative. Shared trail and part of a longer walk to Jenkins Hill and even Third House.						
Length	1863	Start alt	596	End alt	720	Ht gain	124

This track has an overall rise of 1 in 15.0 or 3.81 degrees so it's nominally a Grade 3

Rise/fall, slope and nominal grade for a specific section

Section description		The final c400m of the trail climbs a little more steeply (this analysis is of Trailforks data)					
Length	400	Start alt	683	End alt	720	Ht gain	37

This section has an overall rise of 1 in 10.8 or 5.28 degrees so it's nominally a Grade 4

### D. GRADE ASSESSMENT

Fixed components grade:   
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There is a steep pinch near the beginning and the last few hundred metres (separately analysed above) are also over-steep.

**We assess this trail as a Grade 3 (the same as its marketed grade)**

Explanation/Justification

This is a marginal call given several factors. The turns (3 were measured) are close to the minimum for the grade (2.5m, w 4m "desirable"). Deterioration and channeling is becoming a factor and the obstacles, while probably compliant, are significant and growing. In places, the obstacle/turn radius/slope combination is a bit tough for Grade 3. The upper c400m is oversteep on average for the Grade too.

Low hanging fruit

Some smoothing and installation of features to reduce erosion would stop erosion and increasing obstacle size.

Notes

This trail needs to be considered in light of Involution since it's the only practical way to that popular/important trail. The current situation here (where a Grade 4 trail (to be confirmed) is accessed by a Grade 3) is not a good network layout. If the recommendation to change Involution to G4 is implemented, Widdershins might be allowed to deteriorate to G4, depending on what other functions it serves.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Marsden Valley** Trail name **Involution**  
Select from dropdown  
 TLA **Nelson City** Land owner **?**  
 Direction **2-way** Use **Not recorded** Functions **Descent/exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	-	4	4	-	0

Anomalies in the information sources Grade information on the sign at the top is minimal (NCC sign - not normal one)

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description							
Mixed descending track technical here and there with a range of features and obstacles: side fall, corners, rough sections, small remoteness factor.							
Length	3822	Start alt	720	End alt	243	Ht gain	-477

This track has an overall FALL of **1 in -8.0 or -7.11 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		The entire trail - ridden uphill.						
Length	3822	Start alt	243		End alt	720	Ht gain	477

This section has an overall rise of **1 in 8.0 or 7.11 degrees** so it's nominally a Grade 5

### D. GRADE ASSESSMENT

Fixed components grade: **4 (turn radius and width), 3/4 (slope, (down)), 5 (slope (up))**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Descending: the occasional oversteep section or intimidating combination of turn and fall.  
 Ascending: this is a grade 5 climb and would be a very demanding and technical challenge.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

While the average downward slope is G2 and much of the trail is G3, Involution is, overall, too often too rough/tight/narrow to sustain Grade 3. It is quite long and somewhat isolated. It requires more technical skill and courage than should be expected of someone who has just graduated from Grade 2 (which requires avoidable or 50mm obstacles, a 900mm minimum width and 3-4m turns).

Low hanging fruit

None really, the upgrade task to actual Grade 3 would be significant even focusing just on smoothness. Upgrade to Grade 3 is unlikely to be sustainable without recrafting the fixed components (slope, width, turn radius).

Notes

This is a great trail, making a really good outing, in conjunction with the climb up Barnicoat Road and the Widdershins traverse. However, it is not a Grade 3.  
 (Refer to the Widdershins report in light of the critical relationship between these two trails).



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination Marsden Valley

Trail name Piwakawaka

Select from dropdown

TLA Nelson City

Land owner ?

Direction 2-way

Use Not recorded

Functions Access, learning

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	2	-	-	-	-	0

Anomalies in the information sources Steve Newport's book was published before this trail existed.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Winding, digger-cut but natural-surface climb from carpark to Barnicoat Rd opposite Weir Trail. Acts with Weir as a way to lengthen Involution but also accesses Barnicoat Road. Shared use.						
Length	512	Start alt	160	End alt	197	Ht gain	37

This track has an overall rise of 1 in 13.8 or 4.13 degrees so it's nominally a Grade 3

Rise/fall, slope and nominal grade for a specific section

Section description		None					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 2 (width), 3 (slope), 3/4 (turns).

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Analysis shows the nominal (averaged) slope is G3 but the trail is not perfectly constant so there may even be a bit of Grade 4. The trail climbs 37 metres, which, at Grade 3 steepness would be challenging for most Novice riders.

**We assess this trail as a Grade 3 (harder than its marketed grade)**

Explanation/Justification

This trail really isn't in suitable terrain to achieve Grade 2 requirements, something heightened by its natural surface of slippery and lumpy clay, and by turns that are both too tight and oddly configured. There are also steps at the bottom where the trail crosses a boardwalk and a fence to negotiate.

Low hanging fruit

Regrading would be easy and would give a truer picture to riders. A cattle stop-type entry would be good as would a change to the bridge/boardwalk structure so it is completely rideable.

Notes

Consider in conjunction with Weir. These two trails combined could be a nice wee experience for beginners, but don't work currently in such steep terrain with significant anomalies. Piwakawka is really too big a climb for Novices, and the steps and the oddly constructed corners are too tight for grade.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Marsden Valley** Trail name **Weir**  
Select from dropdown  
 TLA **Nelson City** Land owner **?**  
 Direction **1 way** Use **Not recorded** Functions **Finish/exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	-	-	3	-	-	0

Anomalies in the information sources No entry signs at either end.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	A funny little track consisting of two steep pieces and a short section alongside a pipeline. Acts as (part of) an alternative way out from the bottom of Involution.						
Length	912	Start alt	202	End alt	222	Ht gain	20

This track has an overall rise of 1 in 45.6 or 1.26 degrees so it's nominally a Grade 1

Rise/fall, slope and nominal grade for a specific section

Section description							0
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 1 (slope, pipeline section), 5/6 (slope, both ends), 2/3 (width)  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Both ends of this trail are very steep; the upstream one is probably unrideable (uphill). These slopes render the entire trail pointless, certainly for the targeted riders.

**We assess this trail as a Grade 6 (harder than its marketed grade)**

Explanation/Justification

This trail is either near-flat or - at both ends - too steep for Grade 2 riders, both upwards and down. Assuming it is supposed to be ridden after and above Piwakawaka, the descent down to the stream is way too intimidating for Grade 2 riders as is the crossing itself. Ridden in the other direction - by those exiting Involution - it is also too steep and is of little use.

Low hanging fruit

This could be delete from the riding Network - it's really not adding much and is not fit for purpose for its targeted (Novice/Grade 2) riders.

Notes

Consider in conjunction with Piwakawaka. The two trails combined could be a nice wee experience for new riders, but they don't really work. Weir is way too steep, at both ends.

## **APPENDIX 10 – TRAIL GRADING REPORTS, SHARLANDS**



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Aorere Climb**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (up)** Use **Not recorded** Functions **Access**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	4	4	-	-	-	0

Anomalies in the information sources Steve Newport's book was published before this trail existed.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	A short climbing line that essentially just gets people to the top of Aorere.						
Length	217	Start alt	570	End alt	589	Ht gain	19

This track has an overall rise of 1 in 11.4 or 5.00 degrees so it's nominally a Grade 4

Rise/fall, slope and nominal grade for a specific section

Section description							0
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: 5 (just the short steep pinch), 4 (turns and width)  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

This trail is probably over-steep briefly but on such a short trail that exists only to access a higher grade trail, this doesn't matter.

**We assess this trail as a Grade 4 (the same as its marketed grade)**

Explanation/Justification

A steepish climb with tight turns and bigish obstacles, but short and still essentially just Grade 4 riding.

Low hanging fruit

None really - no change is necessary. The most strategic change might simply be to combine this trail and Aorere itself into a single trail. Alternatively the entry sign could just say "To Aorere, X00m".

Notes

Why not just incorporate this trail into Aorere, which is very long/varied for an Enduro trail anyway and already has an uphill section.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Aorere**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Egress/descent. XC**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
5	5	5	-	-	-	0

Anomalies in the information sources: None. There is a very rough 'hazard!' sign above a particularly tough section. Steve Newport's book was published before this trail existed.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Very varied and unusual trail. Testing technical descent route with several interludes of easy road sections.						
Length	4163	Start alt	589	End alt	53	Ht gain	-536

This track has an overall FALL of **1 in -7.8 or -7.34 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		Approximately 400m of the final descent to the bottom (altitudes and start/finish estimated using the Strava trace)							
Length	400	Start alt	194		End alt	80		Ht gain	-114

This section has an overall FALL of **1 in -3.5 or -15.91 degrees** which is nominally a Grade 5 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **6** (width and downhill slope of several sections); **5** (most aspects, most of the time); **2** (road interludes) (considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There would be several sections where the 20 degree maximum is exceeded for multiple metres at a time. The 400m section analysed above is a good example although its average slope (15.9deg) is not much steeper than allowable for G4, there is the combination of steepness with deep ruts, roots and obstacles.

**We assess this trail as a Grade 6 (harder than its marketed grade)**

Explanation/Justification

The slope exceeds the 20 degree grade maximum plenty of times. It is narrower than specified (0.4 av, 0.25 min) here and there. There are some essentially 'formationless' sections that are very narrow and out-cambered, or are just root masses with no distinct line.

Low hanging fruit

None really, any adjustments would require significant works to form and formalise a riding line. A more expensive option would be to moderate some of the trickiest sections - by hand essentially - to create more rideable trail for experts by eliminating the bigger drops.

Notes

Lots of this trail was virtually unmeasurable; there is, in places, no discernible line or width or turn radius. Some of this has been caused by erosion and riding. Some great riding is provided for expert and extreme riders, so extreme in places it's dangerous to ride at a cautious speed or walk! In places, even expert riders seem unable to take the 'dynamic' line and may be making the 'safe' line more and more difficult.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 28-Jan-21

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Sharlands Creek**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **2-way** Use **Not recorded** Functions **Exit and link, repeat**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	3	4	4	-	-	0

Anomalies in the information sources The entry sign (on Sharlands Rd) was not photographed but several along the trail show it as a G3 Intermediate trail.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Old walking track that 'collects' three technical descent trails from the hills and provides an exit for all of them. A rambling and variable trail that is two-way.						
Length	1491	Start alt	212	End alt	101	Ht gain	-111

This track has an overall FALL of **1 in -13.4 or -4.26 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		Ridden backwards (uphill), from the bottom of Supplejack to Sharlands Road.						
Length	1120	Start alt	133		End alt	214	Ht gain	81

This section has an overall rise of **1 in 13.8 or 4.14 degrees** so it's nominally a Grade 3

### D. GRADE ASSESSMENT

Fixed components grade: **1-6 (slope), 4/5 (width and turns).**

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Riding in a downhill direction, there are a few very steep little climbs that reflect the trail's original walking purpose. In places, these occur simultaneously with very rough and/or narrow sections.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

The trail is very variable in all respects, and includes some flat easy sections. However, it is difficult overall with a number of near-impossible obstacles, corners and climbs, including an unrideable river crossing.

Low hanging fruit

Re-grading is the only low-hanging fruit here. There's little point in retaining the trail as a Grade 4 or upgrading to that grade if all the feeder trails (Rimu, Matai, Supplejack) are graded 5 (as is recommended for Supplejack at least).

Notes

It is noted that this trail is a two-way one, sometimes ridden upstream by riders wanting to repeat a descent of Rimu, Matai or Supplejack. It's also worth noting that below Supplejack Trail, after a short and difficult climb, Sharlands Creek Trail is fairly easy.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 2-Dec-20

### A. INVENTORY INFORMATION

Destination  Trail name   
Select from dropdown  
 TLA  Land owner   
 Direction  Use  Functions

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
4	-	4	5	5	-	0

Anomalies in the information sources

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Classic, narrow/steep technical descent through native forest. Rocky/rooty w tight turns and step downs.						
Length	1129	Start alt	330	End alt	135	Ht gain	-195

This track has an overall FALL of 1 in -5.8 or -9.80 degrees which is nominally a Grade 3 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None, a bit of traversing is involved but no specific section is worth considering					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade:   
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Mostly, the slope is OK except for very short pinches, including in one or two of the corners.

**We assess this trail as a Grade 5 (harder than its marketed grade)**

Explanation/Justification

This is arguably the perfect Grade 5 Trail and needs no changing. The turn radii could be considered to be Grade 4 but some of the turns effectively double as Grade 5-height obstacles. It is very narrow in places and the sidefall is intimidating.

Low hanging fruit

None - no change is required.

Notes

A great track!

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 2-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Chings Highway**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Reward, learn/grow, exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	4	4	-	-	0

Anomalies in the information sources There is significant disagreement here. Also, one of the signs at the junction 700m in (bottom of old Eddy's) is redundant

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

An old track, mostly a digger-cut bench (sidling and descending), and not used a lot currently. The top/first section - formerly Eddys Track - has taken over the original line (now 'Chings Link') and is the crux (see below)							
Length	3980	Start alt	386	End alt	46	Ht gain	-340

This track has an overall FALL of **1 in -11.7 or -4.88 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

The top section (old Eddys Track) - a twisty damp descent from the start to the main alignment							
Section description							
Length	700	Start alt	386	End alt	276	Ht gain	-110

This section has an overall FALL of **1 in -6.4 or -8.93 degrees** which is nominally a Grade 3 (down)

### D. GRADE ASSESSMENT

Fixed components grade: **4 (first 700m) then mostly 3 (width, slope) with issues here and there.**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

If the trail is marketed as a Grade 4, the tricky entry and the short steep pinches along this track are acceptable. If the trail is to be a Grade 3, then the slope (and other) issues require resolution.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

Note that the official sources differ on grade. A number of factors require this track to be considered G4: the steepish/damp/tight upper 700m, decay of the original formation, overgrowth, obstacles here and there (especially in the small creeks) and tight corners with steep climbs in places. There is also some navigation confusion brought about by the redundant signs (700m in) and the lack of signs (where Aorere crosses and where the extension begins).

Low hanging fruit

On a whole Network scale, upgrading this track to Grade 3 throughout is a small job, although it would be a big undertaking when viewed in isolation. While it remains a Grade 4, the easy work is correcting, adding or removing signs and trimming vegetation. The alignment is mostly good for G4 as it is, although marginal in the first c700m.

Notes

This track provides a style of riding otherwise quite rare in the network, being pleasant and wide, and long enough to feel like an exploration. We would commend fully upgrading to Grade 3. To eliminate the slope issues would create a range of work: some realigning, surface/bench restoration/retension, culverting creeks, removing small vegetation, signage.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Slingshot**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Fun, reward, XC**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources All the Sharlands valley trails suffer from sign confusion caused by the signs pointing to them from Sharlands Rd.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Classic twisty descent in pine on natural surface. Uppermost of five trails that forms a 12km, largely consistent ride out of the forest parallel to Sharlands Creek.						
Length	855	Start alt	499	End alt	443	Ht gain	-56

This track has an overall FALL of **1 in -15.3 or -3.75 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None - fairly constant trail					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **1-2 (slope), 4 (turn radius and width)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

None

**We assess this trail as a Grade 4** (harder than its marketed grade)

Explanation/Justification

The turn radii are too tight for Grade 3 and the rideable width is too narrow. Some obstacles are too high/unavoidable for Grade too, and the structures are dodgy (both in their bearing and surface).

Low hanging fruit

Change grade (to Grade 4), improve drainage a bit and improve structure foundations.

Notes

A nice wee trail - nice as is. Read in conjunction with the other trails in Sharlands valley floor, which have many similarities and should be considered together. All (6) of them could simply be left as-is and reggraded. The firebreak access to this trail is very, very steep. Purists might want to climb to the skyline for the view and to ride the entire valley trail system but many will likely miss out Slingshot.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Scottwood Wiggles**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Reward, link**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources All the Sharlands valley trails suffer from sign confusion caused by the signs pointing to them from Sharlands Rd.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Narrow descending trail in exotic forest w occasional steep bits, dips and some exposure. Works with four other trails to form a 12km-long, largely consistent ride out of the forest alongside Sharlands Creek.						
	Length	3352	Start alt	444	End alt	303	Ht gain

This track has an overall FALL of **1 in -23.8 or -2.41 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None - fairly constant trail					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **1 (slope), 4 (width and turns)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are occasional over-steep sections (for Grade 3), worsened by darkness, grass, sidefall, wetness, obstacles or all of these.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).

Low hanging fruit

No really low hanging fruit but a programme of deliberately widening and smoothing this trail could render it genuinely G3 (possibly with some steep/exposed sections). It really needs to be built rather than merely cut/cleared to be a proper Grade 3.

Notes

Read in conjunction with the other trails in Sharlands valley floor, which have many similarities and should be considered together. All (6) of them could simply be left as they are and re-graded.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Lancewood Waggles**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Reward**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	4	-	0

Anomalies in the information sources All the Sharlands valley trails suffer from sign confusion caused by the signs pointing to them from Sharlands Rd

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Narrow but fairly straight riverside trail in exotic forest with occasional steep bits, dips and some exposure. Works with four other trails to form a 12km-long, largely consistent ride out of the forest.						
Length	805	Start alt	303	End alt	258	Ht gain	-45

This track has an overall FALL of **1 in -17.9 or -3.20 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None - fairly constant trail					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **1 (slope), 4 (width)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are occasional over-steep sections (for Grade 3), worsened by narrowness and sidefall exposure.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).

Low hanging fruit

No really low hanging fruit but a programme of deliberately widening and smoothing this trail could make it genuinely Grade 3 with some steep/exposed sections. It really needs to be more built than merely cut to be a proper Grade 3.

Notes

Read in conjunction with the other trails in Sharlands valley floor, which have many similarities and should be considered together.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Waterloo**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **XC**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	-	-	0

Anomalies in the information sources Perhaps the only Sharlands valley trail not suffering from confusion caused by the signs pointing to it from Sharlands Rd.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Narrow but fairly straight riverside trail in exotic forest w occasional steep bits, dips and some exposure. Works with four other trails to form a 12km-long, largely consistent ride out of the forest between Sharlands Road and Creek.						
Length	1306	Start alt	260	End alt	191	Ht gain	-69

This track has an overall FALL of **1 in -18.9 or -3.02 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None - fairly constant trail					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **1-3 (slope, mostly), 4 (width)**

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are occasional over-steep sections (for Grade 3), compounded by narrowness.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).

Low hanging fruit

There is no really low-hanging fruit but deliberately widening and smoothing this trail could render it genuinely G3 with some steep/exposed sections.

Notes

Read in conjunction with the other trails in Sharlands valley floor, which have many similarities and should be considered together. All (6) of them could simply be left as-is and regraded to a higher grade.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **What the DoC Ordered**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **XC**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
3	3	3	3	4	-	0

Anomalies in the information sources The Sharlands valley trails suffer from sign confusion caused by the signs pointing to them from Sharlands Rd.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Narrow but fairly straight trail in exotic forest with occasional steep bits, dips and some exposure. Works with four other trails to form a 12km-long, largely consistent ride out of the forest.				
Length	1332	Start alt	204	End alt	99
		Ht gain	-105		

This track has an overall FALL of **1 in -12.7 or -4.51 degrees** which is nominally a Grade 2 (down)

Rise/fall, slope and nominal grade for a specific section

Section description	None - fairly constant trail				
Length	N/A	Start alt	0	End alt	0
		Ht gain	0		

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **1-3 (slope, mostly), 4 (width)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are occasional, over-steep section (for Grade 3), worsened by narrowness and grass growth.

**We assess this trail as a Grade 4 (harder than its marketed grade)**

Explanation/Justification

There are many difficulties here that might be offset by the trail's mostly gentle line and its appeal. However, it is over-grade for Grade 3 in too many ways: it is consistently narrow, with too many unavoidable/oversize obstacles. Less frequently, it is also over-steep (mostly downwards) with a sidefall hazard. All of the issues are heightened when it's wet and/or dark, and/or overgrown (in the grass sections).

Low hanging fruit

There is truly low-hanging fruit. A programme of deliberately widening and smoothing this trail could render it genuinely G3 (with some steep/exposed sections) but it really needs to be smoother and wider and this would require significant work on a side slope close to a waterway.

Notes

Read in conjunction with the other trails in Sharlands valley floor, which should be considered together. They could simply be left as they are and re-graded to a higher grade.



# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 1-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Willow Lane**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Exit**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
2	3	2	2	-	-	0

Anomalies in the information sources The on-site sign is presumably wrong.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Rolling riverside descent on natural surface. The lowest/last and easiest part (along with four other trails) of a 12km-long ride descending beside Sharlands Creek from the head of its catchment.						
Length	1090	Start alt	99	End alt	49	Ht gain	-50

This track has an overall FALL of **1 in -21.8 or -2.63 degrees** which is nominally a Grade 1 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None - fairly constant trail					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **1 (slope), 3 (width)**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

There are occasional over-steep sections (certainly for the marketed grade).

**We assess this trail as a Grade 3** (harder than its marketed grade)

Explanation/Justification

Willow Lane is wide enough but has too many unavoidable/oversize obstacles to be Grade 2. Less frequently it is also over steep (down) with a bit of sidefall hazard and mud. All of these issues are likely to be heightened when wet.

Low hanging fruit

There is no truly low-hanging fruit. Some smoothing of this trail could render it genuinely Grade 2 but with some steep/exposed sections. There's little point in this though, given that it's one-way down, and it status is largely driven by the feeder trails upstream.

Notes

Read in conjunction with reports on the other trails in Sharlands valley floor. All (6) of them could simply be left as-is and regraded.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 3-Dec-20

### A. INVENTORY INFORMATION

Destination **Sharlands** Trail name **Broken Axe**  
Select from dropdown  
 TLA **Nelson City** Land owner **Ngāti Koata**  
 Direction **1-way (down)** Use **Not recorded** Functions **Downhill**

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
5	5	5	6	-	-	0

Anomalies in the information sources There is some disagreement, but not in official sources.

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Average slope and nominal grade for the whole track							
Track configuration/description	Pure DH track: bony, involves jumps, rapid-fire changes in slope, width and direction at speed.						
Length	1450	Start alt	402	End alt	55	Ht gain	-347

This track has an overall FALL of **1 in -4.2 or -13.46 degrees** which is nominally a Grade 4 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of **Not applicable** so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade: **4-6 (slope), 4-5 (width), wide turns.**  
(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

Several sections are simultaneously rough and in the 30-40 degrees range for 20-50m. This is well in excess of the standard. In some places, there are relatively easy chicken routes around jumps but these are not what is graded.

**We assess this trail as a Grade 6 (harder than its marketed grade)**

Explanation/Justification

The nature and intent of this trail is Extreme and while it can be quietly rolled by an Advanced rider, this is not the intent and not what should be graded.

Low hanging fruit

No change is necessary.

Notes

This is a specialty track. It may be slightly 'easier' than Kaka but we still consider it to be 'Extreme' and note it does have sections that are measurably over-steep for Grade 5.

# NELSON CITY OFF-ROAD CYCLING TRAILS

## TRAIL GRADE ASSESSMENT REPORT

Assessment date 3-Dec-20

### A. INVENTORY INFORMATION

Destination  Trail name   
Select from dropdown  
 TLA  Land owner   
 Direction  Use  Functions

### B. CURRENT/MARKETED GRADE

Official sources			Unofficial/other sources			
Trailforks	On-site sign	NMTBC map	Newport book ('19)	Kennett bros (ed9)	Other	Other whom
5	5	5	5	-	-	0

Anomalies in the information sources

### C. SLOPE, AVERAGE SLOPE AND NOMINAL GRADE

Rise/fall, average slope and nominal grade for the whole track

Track configuration/description	Enduro Trail. Bony with rough/descending/tight corners and straight sections. Constant obstacles - very rough.						
Length	1715	Start alt	452	End alt	40	Ht gain	-412

This track has an overall FALL of 1 in -4.2 or -13.51 degrees which is nominally a Grade 4 (down)

Rise/fall, slope and nominal grade for a specific section

Section description		None					
Length	N/A	Start alt	0	End alt	0	Ht gain	0

This section has an overall rise of Not applicable so it's nominally a N/A

### D. GRADE ASSESSMENT

Fixed components grade:

(considering just width, gradient and turn radius)

Over-gradient analysis (uphill and down)

It's technically oversteep here and there but this would not be enough alone for a higher grade.

**We assess this trail as a Grade 6 (harder than its marketed grade)**

Explanation/Justification

The constant nature of the obstacles and challenges on this trail, and the drops involved at speed with bonyness make it a Grade 6 (Extreme) ride.

Low hanging fruit

None - no change is required

Notes

Walked the top half only (upwards) in dry conditions.

This sheet is locked to limit data entry. All the grey cells are autofilled when you select a cell in the left hand column (by clicking on a cell and using the fill handle). The white cells at the right are open - put a guess and an explanation here.

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Sort	Trail	Area	T/Forks	Sign	Simon grade	Tom grade	Working group grade	Comment	Priority
1	Tasman Journeys	Codgers	3	3	3	n/a	3	Check trailforks	
2	Jacks Track (Lower)	Codgers	2	3	4	n/a	4	Strategic issue with not having a G3 access into network	
3	Firball Climb	Codgers	3	4	4	n/a	4	Would be good to rework some of the corners and widen the rock bench near the start.	
4	Wayne's Passage	Codgers	3	3	3	n/a	3	Needs work clearing gorse on sides and re-routing entry into corner - signage re merging traffic with Firball	
5	Te Tirohanga Whetu o Ko	Codgers	3	-	4	n/a	4	First table is too short for the speed of the trail and the landing is too short for a beginner jump. Work done. Gap jump needs signage or get rid of it as it's on the main line, Will be significantly cheaper to maintain as grade 4 than 3.	
6	Firball	Codgers	3	3	4	n/a	4	Maybe could make Grade 3 below Middle Rd. This will require some reworking of the trail. Keep in mind this is the best part of firball and many locals love it how it is.	2
7	Crazy Horse	Codgers	3	3	4	n/a	4	High traffic. Good intro to Grade 4. Having as Grade 4 reduces some of the maintenance required. But still needs some love.	1
8	Firball Dropout	Codgers	4	3	3	n/a	4	Should be a 4, short and links to a 4. Regrade to 3 if/when Firball is a 3	
9	Whanake	Codgers	3	3	4	n/a	4		
10	Viral Flow	Codgers	3	3	5	n/a	n/a	Will be wrecked through harvest. Paul to confirm if TPF/NCC has budgeted to put a replacement trail in there. If so, need to discuss strategically best level and style.	
11	P51	Codgers	3	3	4	3	4	Prioritise below skid site to a 3 - Due to the gradient and the aspect of the bottom half this might be a lot of work to make G3.	1
12	IV Line	Codgers	3	4	4	n/a	4	Entrance needs to be a little wider. Last two zigzags full of rough loose rock, signs or work. Other spots too. Important to block or sign some of the cut-lines with blind drops. Could do with some regular spraying down the sides to keep grass down. Widen narrow bridges - get rid of the dodgy grates.	
13	Hulk'n Hogan	Codgers	3	3	4	n/a	4	Jumps need to be tables, doubles are dangerous. Signs needed - trail narrows slow down. Extend to Jacks Hub to avoid climbing track. Get rid of grate bridge things.	1
14	Pipeline	Codgers	2	2	3	n/a	3	Needs to keep clear - drop offs	
15	Gully	Codgers	3	3	4	n/a	4	Small bit of widening, mostly related to spraying sides of the trail so regrowth doesn't reclaim it.	
16	Tu Meke	Codgers	2	2	3	n/a	3	Signage before corners (do you have flow or tech on signs?). Fence/gate instead of log. Removing the log jump is very urgent.	1
17	Young Codgers	Codgers	2	2	2	n/a	3	Need slow signage or barrier as the end is dodgy. Would be good to get a climbing track from the carpark so people arnt riding up this track. The bottom intersection is dangerous for walkers in this area.	
18	Jacks Track (upper)	Codgers	2	3	5	n/a	5		
19	Te Ara Kopiko	Codgers	2	2	3	n/a	3		
20	Turners	Codgers-Maitai	4	4	4	4	4	Dangerous, needs rework to keep at 4. Jumps need to be rollable, or turned into tables, or get rid of doubles that are on main line. Needs to be inline in grade with the Turners extension	1
21	Take Me To Your Leader	Codgers-Maitai	3	3	4	n/a	4		
22	Beer Bottle	Codgers-Maitai	3	-	5	n/a	5		
23	Hot Box	Codgers-Maitai	4	4	4	n/a	5	Let it become a Grade 5	
24	Top Dog	Codgers-Maitai	4	4	5	n/a	4	Needs work to fix to a grade 4. Need to decide if it can be fixed to grade 4 soon, or signposted as Grade 5 now.	?
51	Lollipop	Codgers-Maitai	5		n/a	5	6	Could rework the 2 features to make it a 5, but better to build new Grade 5 trail in the same area. Possibly needs signage at entrance "contains high consequence features with no alternative line"	
52	DIVAS	Codgers-Maitai	5		n/a	5	5	Put XX signs at the chutes. Could Split grade 5/6? Grade 5 upper Divas, Grade 6 Lower Divas, same reasons as Smasher.	1
64	Smasher	Codgers-Maitai	5		n/a	5	5/6 split	Grade 5 at the top, with signage pointing to how to get to Hot Box/Top Dog/Divas/Lollipop at jump and exit road. Grade 6 from there on down.	
25	Te Ara Koa	Fringed Hill	4	4	5	5	5	Some key safety features to be resolved Rut on back side of Wazzas knob needs fixing (cementing or widening to the right?). Several drops need warning signs in both top and bottom sections. Second XX needs a wider and smoother run-in. Several parts after the dun need widening due to trail slipping away. Needs a safety audit.	1
46	Butters	Fringed Hill			n/a	n/a	6	Probably needs an "official review" but certainly a grade 6.	
47	629	Fringed Hill	5	-	n/a	6	6	Could work on bringing to 5 in future by building easier lines around the Grade 6 features.	
48	Black Diamond	Fringed Hill	5	-	n/a	5	6	Chutes are committing, technical climbs, some small sections unrideable	
49	Black Diamond-Third Hou	Fringed Hill	5		n/a	5	6		
50	Cranknstein	Fringed Hill	5		n/a	5	6	Would take significant work on the last 200m or so to get it back to Grade 5. Leave at Grade 6.	
53	Peaking Ridge	Fringed Hill	5		n/a	6	6	Top section 6, option in future to make 5. Alternative route from start to below ladder drop. Could be reworked really easily to make it a 5. This rework is a natural consequence of trail use on a new trail, hopefully is already budgeted.	2
54	Whaimana	Fringed Hill	5		n/a	5 or 6	6	Purpose built DH race track, no reason to lower it to Grade 5.	
58	FDH	Fringed Hill	5		n/a	5	6	Split between west and east 629 to Peaking is 6, BD to Peaking 5	
59	Sunrise Ridge	Fringed Hill	5		n/a	5	5/6 split	With warning signs. Proline. Expect exposure.	
60	Mutleys	Fringed Hill	6		n/a	n/a	6	Has potential long term to be reworked as a Grade 4 by cleaning up and rerouting to the old exit.	
26	Mr Chomper	Maitai Face	4	-	5	n/a	5		
61	Keyboard Warrior	Maitai Face	5		n/a	5	5		
62	Loam Ranger	Maitai Face	4		n/a	5	5	Has potential long term to be reworked as a Grade 4 by cleaning up and rerouting around the cruz rut corner.	
63	Maitai Face	Maitai Face	5		n/a	6	6		
27	Widdershins	Marden Valley	3	3	3	n/a	4	Allow to recognised/managed as a 4 as it links to a 4	
28	Involution	Marden Valley	3	3	4	4	4		
29	Piwakawaka	Marden Valley	2	2	3	n/a	3		
30	Weir	Marden Valley	2	-	6	n/a	?	No biking?	
31	Aoreere Climb	Sharlands	4	4	4	n/a	6	Climbs to grade 6, so no point in grading lower.	
32	Aoreere	Sharlands	5	5	6	5	6	Is possible to make it G5 by rerouting the harder stuff (alternative line options)	
33	Sharlands Creek	Sharlands	4	3	5	n/a	5		
34	Supplejack	Sharlands	4	-	5	n/a	5		
35	Chings Highway	Sharlands	3	3	4	n/a	4	Need to talk to the Volunteer team who love this trail about the regrading and how that might affect their maintenance.	
36	Slingshot	Sharlands	3	3	4	n/a	4		
37	Scottwood Wiggles	Sharlands	3	3	4	n/a	4		
38	Lancewood Wiggles	Sharlands	3	3	4	n/a	4		
39	Waterloo	Sharlands	3	3	4	n/a	4		
40	What the DOC Ordered	Sharlands	3	3	4	n/a	4		
41	Willow Lane	Sharlands	2	3	3	n/a	3		
42	Broken Axe	Sharlands	5	5	6	n/a	6		
43	Putakari	Sharlands	5	5	6	n/a	6		
44	Matai	Sharlands			n/a	n/a	5	Please remember we haven't recently audited these.	
45	Rimu	Sharlands			n/a	n/a	5	Please remember we haven't recently audited these.	
55	Kaka	Sharlands	6		n/a	6	6		
56	Rimu	Sharlands	5		n/a	n/a	5		
57	Matai	Sharlands	4		n/a	n/a	5		
58	629 Gully						6	6+/Pro line	