



The view up Deep Creek, Coronet Loop Track, Part of a great mtb ride

Coronet Peak & Glencoe Station Tracks

STATUS - DRAFT

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Report Prepared for: Queenstown Lakes District Council and Walking Access Commission

Report prepared by: Southern Land Ltd, Wanaka

1. Project Scope

Southern Land Ltd has been engaged by the Queenstown Lakes District Council (QLDC) and the Walking Access Commission (WAC) to review the proposed and existing tracks proposed as part of public access on Coronet Peak and Glencoe Stations pastoral leases. This report focuses on three areas:

1. Review of the proposed alignments and track users/standards
2. Report on preferred track standards for each route to be accepted including works required to meet standards
3. Track construction specifications to meet Council approval

The purpose of this report is to inform Council of the preferred construction standards and the expected outcomes prior to Council accepting ongoing maintenance.

During the assessment process it has become clear that additional background information could be valuable to Council to ensure the success of these public access projects. This includes some detail of the process to date and going forward together with some cost implications and maintenance obligations and an understanding of how the public access fits with current and future use.

2. Project Background

In June 2011 as part of the Overseas Investment Office (OIO) approval for the purchase of Coronet Peak Station by Soho Property Ltd (SPL – Russell Hamilton, Manager), SPL agreed to the formation of a number of walking and mountain bike (mtb) tracks over the pastoral leases. This was to meet the requirements of the Overseas Investment Act 2000 Section 17(2)(e) – Walking Access

During the OIO process, the Walking Access Commission (WAC) and the QEII National Trust (QEII) became involved and have been leading the process to complete agreement for and development of the tracks. Additionally SPL have also agreed to gift additional public access as well as forming a number of the tracks to a higher standard than anticipated by the OIO process.

The WAC is in the process of applying to the Crown (Commissioner of Crown Lands) as the landowner for Walkway easements for the tracks. These easements secure legal public access for the designated tracks. However, WAC require a 'controlling authority' to be responsible for the management and maintenance of its walkway easements and QEII has agreed to fulfil this role on the condition that day to day management and maintenance is provided by the Department of Conservation (DOC) and QLDC under a management agreement with QEII for specified tracks.

In 2014, the Queenstown Lakes District Council (QLDC) 'agreed in principle' to the ongoing maintenance obligations of some of these tracks subject to certain conditions. The Queenstown Mountain Bike Club (QTMBC) and the Queenstown Trails Trust (QTT) have also been involved in this process particularly in the creation of the Coronet Loop Track (CLT) as this track has the potential for use as part of the 'Motatapu' mtb event and would offer a stunning backcountry mtb ride or event.

3. Project Details

A total of 18 specified tracks will be secured by walkway easements. Eleven of these tracks will be managed under a management agreement between QEII and the QLDC. The balance will be managed by DOC. All tracks will be fully completed including all earthworks, drainage, signage, marker posts and mapping at the time of handover.

The tracks QLDC will maintain are shown on the following map Figure 2 and in more detail in the detailed Appendix maps. We summarise the tracks as follows:

WAC #	Track Name	Current formation	User Group
3	Skippers Pack track (Long Gully Track)	<u>Formed</u> historic pack track	Experienced mtb riders and walkers and horse trekking on a managed basis)
4	Green Gates Saddle	Partly formed , follows historic pack track	Experienced mtb riders and walkers
5	Deep Creek & Coronet Creek (Coronet Loop Track)	Not formed	Experienced mtb riders and walkers
8	Bush Creek	Benched track <u>formed</u> in 2013, partly formed on legal road	Intermediate mtb riders and walkers
9	Sawpit Gully	<u>Formed</u> walking track	Walking - moderate
13	Saddle Exit track	Not formed	Experienced mtb riders and walkers
14	Water Race or Coronet Faces Track	Not formed	Intermediate mtb riders and walkers
15	New Chum Track	<u>Formed</u> walking track	Walking - strenuous
16	Tobin's link Track	<u>Formed</u> walking track	Walking - strenuous
17	Brackens Gully Track	<u>Formed</u> historic pack track	Walking - easy
21	New Chum ridge track	<u>Formed</u> 4wd track	Intermediate mtb riders and walkers

Table 1: Summary of tracks to be managed by QLDC

The tracks range from easy tramping style tracks suitable for walking and intermediate mountain bike riding e.g. Bush Creek and Coronet Faces, through to back country adventure mtb rides and tramps lasting many hours (Coronet Loop).

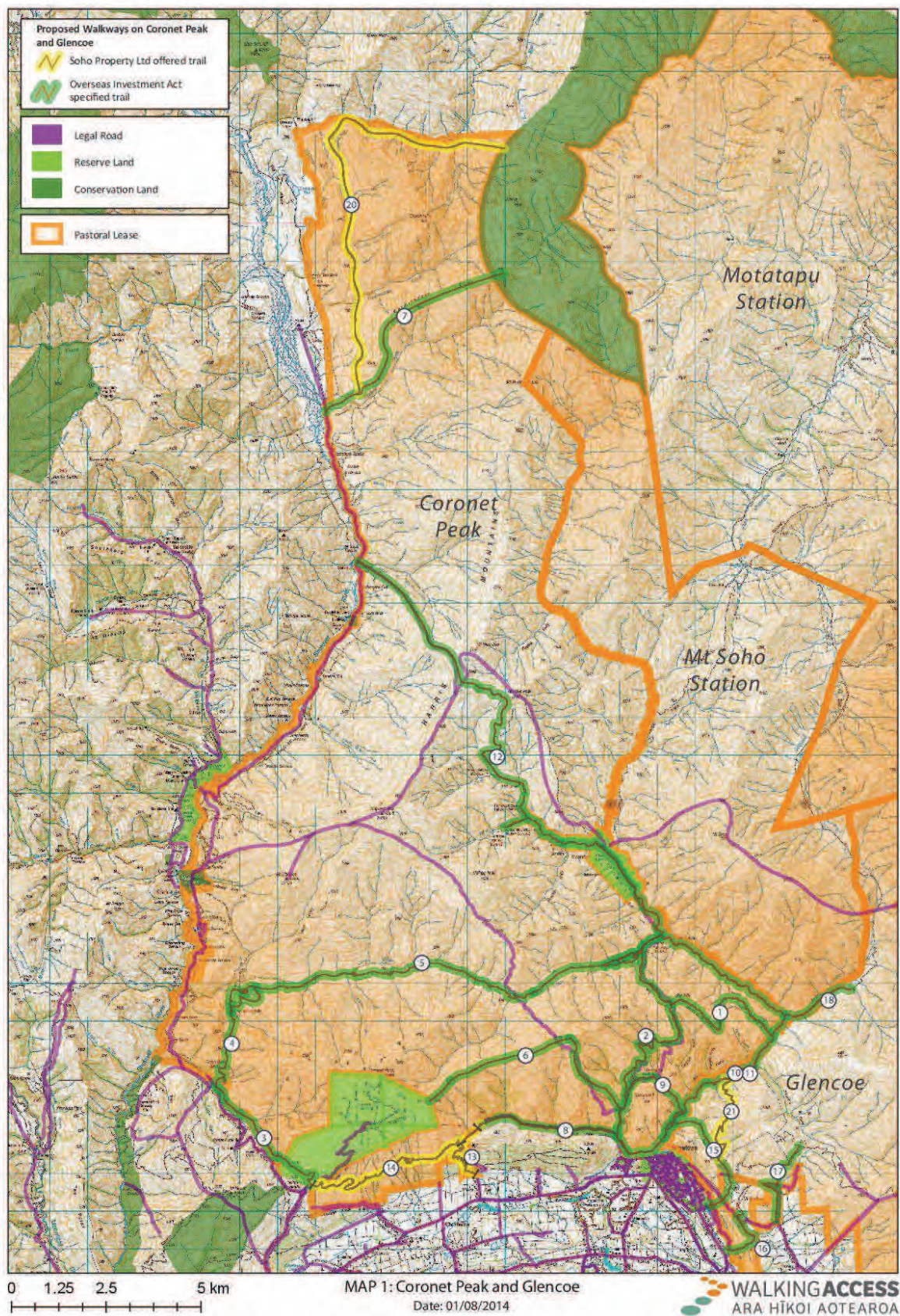


Figure 2: Map of proposed tracks, source; Walking Access Commission

In terms of Council's current range of track assets, the tracks can be best compared to the following:

- Walking tracks are similar to Ben Lomond or Fernhill Loop tracks
- Mtb tracks would be similar to Sunshine Bay Track and easier parts of Ben Lomond Track
- 4wd tracks/roads similar to Macetown Road

4. Overarching Goals

4.1 Existing tracks (#'s 3, 8, 9, 15-17 & 21)

SLL have reviewed the current and proposed alignments of the eleven tracks summarised. The existing track alignments are not being changed with their alignments either long standing (Sawpit Gully, New Chum Ridge) or recently completed (New Chum). We have also drawn on the Arrowtown Residents Association survey of track users that found overwhelming support for the current alignments and formation standards.

For these tracks the goal is securing enduring public access to already popular tracks plus the addition of further public access that will only enhance the liveability of communities within the Queenstown Lakes. We believe the gains for the communities are significant and worth protecting. Given the growth in walking and cycling use in the Wakatipu, there will be no shortage of people enjoying these tracks.

4.2 New Tracks (#'s 4, 5, 13 & 14)

We have separated out the tracks yet to be constructed by SPL. These comprise the Coronet Faces (Water race), Saddle Exit and Pack Track/Green Gates/Coronet Loop tracks and make up a sizable chunk of the total public access tracks QLDC are being asked to maintain.

These tracks, if properly formed including an alignment that is gently graded and with consideration to riding flow could form a loop track of around 50km and create a unique mtb ride or longer day walk of an **international standard**. Tracks of this style are rare in New Zealand and the opportunity exists for Queenstown to once again be a leader in track development and be able to offer a high standard day ride with numerous options for transport connections and destination riding centred on Arrowtown. All within an hour of Queenstown International Airport.

We believe a loop track around Coronet Peak would be on a similar standard to the Old Ghost Road (www.oldghostroad.org.nz), a single track ride on the South Island's West Coast that forms part of the New Zealand Cycle Trail 'Great Rides' project. This would mean Queenstown would not only have great cycle trails, but great mtb rides as well. This could bring significant additional cycle tourism benefits for Queenstown.

SPL have demonstrated an ability to build tracks that have low maintenance and withstand not only the range of weather conditions but also high numbers of mtb riders and walkers with minimal maintenance. The Bush Creek Track formed in 2013 is a good example and has had almost no ongoing maintenance since construction.

5. Proposed Track Standards

At the time of writing SPL have completed the development of tracks 3, 9, 15-17 and 21 as shown in Figure 1.

Standards for tracks in New Zealand are set out in the Standards New Zealand Handbook "SNZ HB 8630:2004 - Tracks and Outdoor Visitor Structures" and this has been used by SPL as the reference. The tracks range in standard from Back Country Comfort (BCC) to Back Country Adventure (BCA).

However HB8630 does not provide any guidance about how to achieve these standards. Of more use for the construction of these tracks is the DOC handbook "Track Construction & Maintenance Guidelines, 2008". This provides detailed practical design guidance. And where mtb use is planned, the IMBA guide "Building Sweet Single track" is the most specific.

The DOC and the New Zealand Cycle Trail (NZCT) use similar grading systems and are more current than SNZ HB 8630. For this reason we will refer to DOC/NZCT standards and not SNZ HB8630.

The most appropriate grades for this project are:

SNZ HB 8630	DOC	DOC 'Name'	NZCT Grade
BCC	Intermediate	Great Walk / Easy Tramping track	Intermediate – Grade 3
BCA	Advanced	Tramping track	Advanced – Grade 4

Table 3: track grading comparison

Overall, the tracks are best categorised as **Intermediate** as follows:

- **Intermediate: Great Walk/Easier tramping track – Grade 3 - Great Rides**
- **Duration:** Comfortable day or multi-day tramping/hiking & riding up to 50km
- **Suitable for:** People with limited backcountry (remote area) experience. Tracks may be suitable for mountain biking.
- **Standard:** Track is generally well formed (benched), some sections may be rough, muddy or steep. Track has signs, poles or markers. Major stream and river crossings are bridged only. May require some walking/pushing if mountain biking
- **Footwear required:** Light tramping/hiking boots.



For full details of the DOC and NZCT specifications refer Appendix A.

6. Construction Specifications

6.1 Formation

As noted in the summary spreadsheet and the recently adopted QLDC Cycle Trail Design guide 2015, the most important aspect of track development is alignment and longitudinal gradient of the track. We have completed detailed survey of all of the new track formations and we confirm that alignments are available that can achieve a Grade 3-4 mtb style track. This track would be suitable for walking and mtb riding so can be considered dual use without being overly specific to mtb riding.

The grade of the tracks is critical, as mtb riders cannot comfortably ride up grades exceeding 6 degrees for significant lengths of time. Likewise walking up steep inclines is undesirable. The result of steeper grades is rutting under braking and the likelihood of increased maintenance or erosion.

Our survey has relied on information supplied by QTMBC (Bruce McLeod) together with our own site survey to confirm that for all of the proposed tracks there are alignments that would achieve the following specification:

- Maximum continuous grade not to exceed 6 degrees,
- Short sections not exceeding 10m which may be up to 10 degrees if separated by equal length of <4 degrees to allow for resting
- Cut track bench between 1.2-1.5m wide using approx. 1.5T excavator. Some sections may be wider which is acceptable
- Form rock armour at wet areas and to facilitate water course crossings – (preferred), or
- Form water tables and min 300DN culverts at water courses, or
- Install timber boardwalks min 1.2m clear width where permanent wet areas or softness cannot be addressed as above by armour or culverts
- Surface trail using insitu materials to create level riding & walking surface
- Defects period of minimum 18 months post construction at which point any subsidence or slumping can be rectified prior to handover
- Clear vegetation (herein referred to as scrub, bracken, thistle & other invasive weeds) to minimum of 1m clear from edge of the tracks

These are the main components for the track formation. Additional practical detail can be found in DOC's guide or that produced by the IMBA referred to earlier.

6.2 Construction Oversight

SPL propose to construct all the tracks using their own men and machines under the direction of SPL management. We believe that to ensure the alignment meets the specification, technical oversight is essential. We accept that SPL have demonstrated the ability to form stable tracks with low maintenance. However, due to the very high standards of tracks recently built in the Southern Lakes, the bar against which new tracks are compared is very high and requires specialist technical knowledge that SPL do not possess in house.

Tom Hey of Extra Mile Trail Building Ltd has a wealth of experience in the design and construction of mtb specific tracks in partnership with the QTMBC. Additionally Tom has already been involved in this project and has a good understanding of the terrain having built tracks on Coronet Peak conservation land. The QTMBC has set the benchmark in terms of mtb track development and it is

by this benchmark that any new tracks will be judged. To attract riders to such a long track such as Coronet Loop, the track needs to ride well not just stand the test of time. We recommend that technical expertise forms part of the construction process to ensure that the **track line achieves great riding**.

As part of the construction oversight we recommend that at the completion of the tracks they are independently reviewed to confirm they have meet the specification or agreement made between the parties that they are acceptable.

6.3 Defects Period

In discussion with SPL, they have promoted a defects period of between 1 and 2 years following the completion of the earthworks. We believe there is significant benefit to Council in the longest defects period possible as this reduces the likelihood of any significant maintenance within the first 5 years of taking over the tracks.

Our experience and that of Council in administering the Queenstown Trail is that during the first two years post construction the insitu materials will compact, settle and slump. If SPL agree to complete defect repairs over the first two years then most of the areas likely to move will do so and Council will be able to take over the tracks in the knowledge that significant works are very unlikely and that the construction is more or less proven. The defects period is also an opportunity to review construction and amend areas that are problematic prior to handover.

We recommend a defects period of 2 years.

7. Maintenance Expectations & Costs

It is anticipated that the tracks would be maintained only periodically. There would be no 'day to day' monitoring of the tracks with maintenance undertaken on a scheduled basis. Major events (slumps, wash outs etc.) would be reported by track users. The response time for major events would be measured in weeks rather than days. We believe this is appropriate for easy tramping/great walk style tracks which are aimed at more experienced users.

We have contacted Council's trail maintenance contractor, Asplundh and requested some indicative pricing for the maintenance of the tracks. Maintenance activities consist of:

- Weed spraying of the trail surface – Service interval – every 2-3 years
- Noxious weed control (spray) – Service interval – every 2-3 years
- Mechanical Weed & Vegetation Control – Service interval – Every 3 years
- Clearance of major slumps and drainage – service interval – Every 5 years
- Surface repair – service interval – Every 5-7 years

There is no allowance being made to repair surface defects in the tracks. The tracks are all constructed from insitu materials that will wear over time. This is expected and in keeping with easy tramping and intermediate mtb tracks.

In Table 3 we detail a rough estimate of costs to undertake weed control and selected vegetation control. We base the estimate on our survey of the tracks and extent of areas likely to require the various control methods.

#	Track Name	Length (m)	Yr 1	Yr 2	Yr 3	Yr 4
3	Skippers Pack track	650			\$ 1,040.00	
4, 5	Green Gates Saddle, Deep Creek & Coronet Creek (Coronet Loop track)	4,000		\$ 3,120.00		\$ 3,744.00
8	Bush Creek	5,000			\$ 2,080.00	
9	Sawpit Gully	3,500			\$ 2,080.00	
13	Saddle Exit track	2,300		\$ 1,040.00		\$ 1,248.00
14	Water Race or Coronet Faces Track	6,200		\$ 1,040.00		\$ 1,248.00
15	New Chum Track	3,700		\$ 1,040.00		\$ 1,248.00
16	Tobin's link Track	1,000			\$ 1,040.00	
17	Brackens Gully Track	2,500		\$ 520.00		
21	New Chum ridge track	5,000			\$ 1,040.00	
	Contingency			\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
	TOTAL ESTIMATED COST			\$ 9,260.00	\$ 9,780.00	\$ 9,988.00

Table 3: Maintenance Cost Estimates

8. Management Agreements

As noted in Section 2 – Project Details, the specified tracks will be managed by QLDC under a management agreement with QEII. The terms and conditions of this agreement are yet to be finalised and it is highly desirable that QLDC engage in this process to ensure that the parameters around management of the tracks is suitable and realistic.

Additionally, it is recommended to all parties that a governance group be formed to oversee the bigger picture of these public access tracks. This group could include representation from QTT, QTMBC, WAC, QEII, DOC and the landowner. A governance group would likely meet up to twice a year and review the ongoing operation of the tracks to ensure they deliver the outstanding public access outcomes anticipated.

9. Recommendations

We recommend the following outcomes:



- All new tracks be constructed as per the enclosed specification (See section 6)
- Construction of new tracks be overseen by an independent experienced track builder selected by Council/WAC
- Defects period of 2 years for all new tracks
- New tracks reviewed post construction to confirm specifications have been met
- Noxious weeds and vegetation are removed within defined envelope either side of all tracks
- QLDC actively engage in the development of the Management Agreement with QEII
- QLDC actively promote a governance group be formed to oversee the specified tracks

References

- NZCT Cycle Trail design guide, MBIE 2010
- IMBA Guide “Building Sweet Single Track”
- QLDC Cycle Trail Design Standards 2015
- <http://www.doc.govt.nz/Documents/about-doc/role/policies-and-plans/track-construction-maintenance-guidelines.pdf>

Appendix A – Track Spreadsheet


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S4129 - Soho & Coronet Peak Station Tracks							
Review of tracks for WAC & QLDC							
Purpose: Assessment of formation standards prior to acceptance by QLDC							
WAC #	Track Name	Length (m)	Current formation	User Group	Recommended formation standards	Ongoing Maintenance	Alignment Comments
3	Skippers Pack track	650	<u>Formed</u> historic pack track	Experienced mtb riders and walkers	Remedy stormwater drainage and remove/spray invasive weeds up to 5m either side of the track. Track is rough and steep and is mostly used by mtb riders. No formation works considered necessary	weed spraying every 3 yrs. & mechanical removal of vegetation (bracken) every 5 yrs.	historic pack track - Steep and subject to rutting
4	Green Gates Saddle	4,000	<u>Partly formed</u> , follows historic pack track	Experienced mtb riders and walkers	Reform last 200m of track to saddle to achieve better grades. Form balance of track as follows: using 1.5T excavator, maximum grades not to exceed 6 deg except short sections may be up to 10deg for no more than 20m of track length before <4 deg flat of 10m length. The terrain is varied and some short steep sections are inevitable and appropriate for a back country mtb track. Form water tables and use rock armour for grade dips to shed water (ideally as less maintenance) or use min DN 300 culverts . Where permanent wetness we recommend either rock armour or timber boardwalk.	weed spraying of surface (600mm) every 3 yrs. & mechanical removal of vegetation every 3-5yrs over 50% of track	New track - Alignment found to achieve great mtb ride standards
5	Deep Creek & Coronet Creek (Coronet Loop track)	15,800	Not formed	Experienced mtb riders and walkers	As per track 4	weed spraying of surface (600mm) every 3 yrs. & mechanical removal of vegetation every 3-5yrs over 30% of track	New track - Alignment found to achieve great mtb ride standards
8	Bush Creek	5,000	Benched track <u>formed</u> in 2013	Intermediate mtb riders and walkers	The track is fully formed and it is accepted that while some sections of the alignment are quite steep these are short and realignment would require major rework that is not justified. The track is mostly ridden downhill. It is suitable for walking in both directions.	Vegetation control every 3 years to ensure 1.5m wide clearance to each side of the track.	Benched track completed. Some alignment issues esp. steep sections that are not worth fixing
9	Sawpit Gully	3,500	<u>Formed</u> walking track	Walking	Based on a recent survey of track users, there is very strong support for retaining the existing formation without change. The formation is appropriate for a back country adventure standard. We recommend that invasive weeds are controlled to achieve clearance 5m either side of the track by spraying with 1m either side mechanically remove	Vegetation control every 3 years to ensure 1.5m wide clearance to each side of the track.	historic walking track with some steep sections. Alignment fit for purpose
13	Saddle Exit track	2,300	Not formed	Experienced mtb riders and walkers	As per Track 4 & 5. The terrain is quite steep with significant elevation change. This trail is gifted by SPL and it may be more appropriate to form to only walking track standards	weed spraying of surface (600mm) every 3 yrs. & mechanical removal of vegetation every 3-5yrs over 30% of track	New track alignment found that would provide for good walking for fitter people
14	Water Race or Coronet Faces Track	6,200	Not formed	Intermediate mtb riders and walkers	As per Track 4 & 5	weed spraying of surface (600mm) every 3 yrs. & mechanical removal of vegetation every 3-5yrs over 30% of track	New track - Alignment found to achieve great mtb ride standards
15	New Chum Track	3,700	<u>Formed</u> walking/tramping track	Walking - more experienced	The track is currently a back country adventure standard. We recommend that invasive weeds are controlled to achieve clearance 5m either side of the track by spraying with 1m either side mechanically removed.	Vegetation control every 3 years to ensure 1.5m wide clearance to each side of the track.	New walking track with many steep sections. Suits more experienced walkers
16	Tobin's link Track	1,000	<u>Formed</u> walking/tramping track	Walking - more experienced	The track is currently a back country adventure standard. We recommend that invasive weeds are controlled to achieve clearance 5m either side of the track by spraying with 1m either side mechanically removed.	Vegetation control every 3 years to ensure 1.5m wide clearance to each side of the track.	Steep walking track that suits experienced walkers and riders only
17	Brackens Gully Track	2,500	<u>Formed</u> historic pack track/4wd	Walking - easy	The track is currently well formed and crosses mostly open grasslands. Invasive weeds do not appear to be an issue. We recommend no additional formation or vegetation control	Periodic weed spraying every 3-5 yrs.	Easy walking track with gentle grades suitable for most users
21	New Chum ridge track	5,000	<u>Formed</u> 4wd track	Intermediate mtb riders and walkers	The track is an existing 4wd road. We recommend that invasive weeds within 1m of the edge of the track are sprayed and removed. No other formation works are recommended	Periodic weed spraying every 3-5 yrs.	Steep 4wd road from Macetown Road to New chum Gully. Steepness limits use to fit walkers and riders


Appendix B

NZCT Design Guide Grading System (Note DOC now use the 1-5 grading system)

Intermediate

<p>3.</p> 	<p>Description: Narrow trail, there will be some hills to climb, obstacles may be encountered on the trail, and there may be exposure on the edge of the trail. Suitable for riders with intermediate level skills.</p> <p>Gradient: 0-5 degrees for 90% of the trail, maximum 9 degrees (up to 12 degrees for stretches up to 20 m long, if a straight, flatter section follows)</p> <p>Width: 0.9 m for 90% of the trail, 0.6 m minimum with adequate clearances. Horizontal clearances as in Section 3.5.</p> <p>Radius of turn: 2 m minimum, with at least 3 m desirable.</p> <p>Surface: Generally firm, but may have some muddy or loose sections.</p> <p>Watercourses: Watercourses bridged, except for fords with less than 200 mm of water in normal flow, which can be easily ridden.</p> <p>Bridge Width: 1.2 m with minimum width 0.9 m.</p> <p>Obstacles: Occasional rocks/roots and ruts may be up to 100 mm high/deep and may be unavoidable.</p> <p>Length: 4-6 hours/day (30-50 km/day for an intermediate cyclist).</p> <p>Barriers/Guard rails: Areas such as bluffs or bridges where a fall would result in death or significant harm require hand rails.</p>
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Advanced

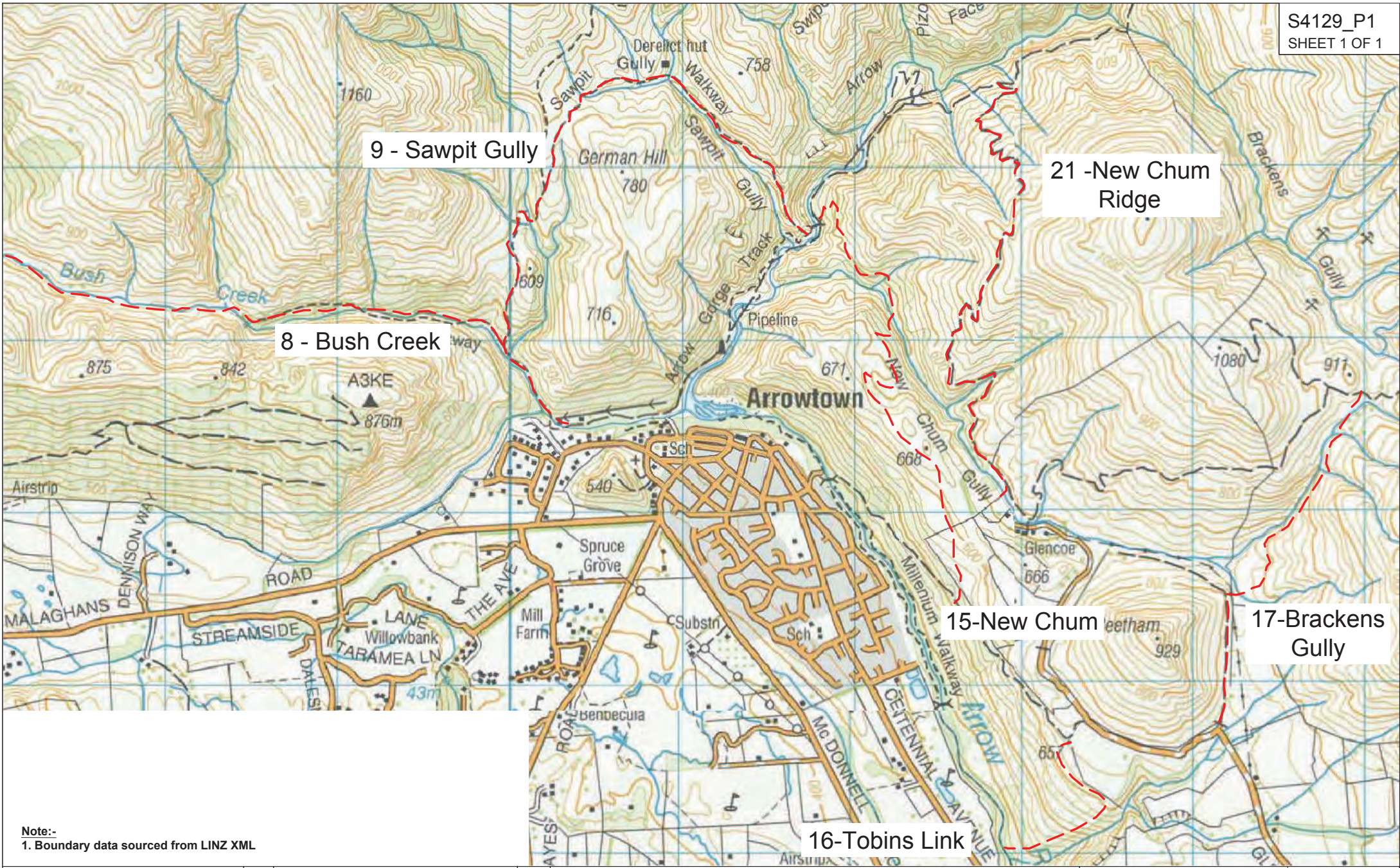
<p>4.</p> 	<p>Description: Steep climbs, with unavoidable obstacles on a narrow trail, and there will be poor traction in places. Possibly some walking sections. Suitable for intermediate and advanced riders.</p> <p>Gradient: 0-7 degrees for 90% of trail, maximum 12 degrees (may be steeper if a straight, flatter section follows).</p> <p>Width: 0.6 m average, 0.4 m minimum. Horizontal clearances as in Section 3.5.</p> <p>Radius of turn: 1-2 m minimum.</p> <p>Surface: Firm and loose.</p> <p>Watercourses: Watercourses bridged, except for fords with less than 300 mm of water in normal flow, which can be easily ridden.</p> <p>Bridge Width: 1.2 m with minimum width 0.9 m.</p> <p>Obstacles: Many rocks/roots and ruts up to 200 mm high/deep. Also some purpose built obstacles to liven things up, such as sea-saws and jumps.</p> <p>Length: 4-8 hours/day for advanced cyclists.</p> <p>Barriers/Guard rails: Areas such as bluffs or bridges where a fall would result in death or significant harm require hand rails.</p>
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Appendix C

Detail maps of the proposed tracks

Map COROMTB courtesy of QTMBC / Aurum Survey Consultants Ltd

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Note:-
1. Boundary data sourced from LINZ XML





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Appendix D – Coronet Loop Track Images – (Track shown dashed)



Climbing to Green Gates Saddle on existing track (realignment shown dashed)



Looking up Deep Creek



Middle Section, Deep Creek looking downstream



Middle section, Deep Creek looking downstream



Upper section, Deep Creek looking upstream



Upper section, Deep Creek looking downstream



Upper section of Coronet Creek



Upper section of Coronet Creek