

Proposed Mountain Bike Tracks at Knapsack Reserve August 2010

This report will attempt to outline the current usage of Knapsack Reserve by mountain bikers whilst proposing possible trail options for proposed track networks that will satisfy current rider requirements along with sustainable trail design principles that meet IMBA standards as well general bushcare objectives.

As this is an early stage in the design process there is no intention to overstate requirements, but is an honest attempt at documenting current local knowledge and information to produce the best outcome for riders, other trail users, and the bushland that we all come to enjoy and appreciate





Trail Network At Knapsack Reserve

Knapsack has one existing Downhill (DH) trail and a series of interconnecting Cross Country (XC) trails using the existing fire trails and narrower trails called single track. The trails are all shared usage with walkers (particularly dog walkers) and occasional service vehicles.

Map 1 shows the current DH track and the main trails used by XC riders.

We can see that there is already a vague loop being used by trail users in both directions. The area marked on the map as **A** is an area where there are a network of single track trails that allow various sequences of trail to be ridden, adding variety to the trails.

Some of these trails are also used for access by riders to the main Knapsack area, either from Emu Plains **B**, Lapstone **C** or the playing fields **D** where there is easy parking.

The DH track is currently not extensively utilised as it is relatively short in its current layout. The track appears to utilise an old walking trail that traverses the slope and does not effectively use the available gradient or terrain for DH purposes. This sudden loss of gradient and the straight nature of the track also increases its unsustainability. Further the "Uplift" required to bring the rider back to the start is relatively long when using a motor vehicle, or steep and arduous if pushing back up. Therefore, current usage rates are very low compared to Old Bathurst road, prior to its closure.

In Summary:

- The existing DH track is short
- Does not fully utilise the available gradient, losing its height very quickly over a short distance
- It is currently unsustainable and would require substantial effort and raw materials to convert it to a sustainable footing plus require more frequent maintenance efforts.
- Has a long turn around for motor vehicle uplift and or a steep difficult push up.
- Therefore rider enjoyment is short versus the effort required to ride the track, leading to low usage rates.



Proposed Realignment of Downhill Track

By adopting the principals of sustainable trail design as detailed by the International Mountain Bike Association (IMBA) as well as looking at topographical and environmental constraint maps of the area a proposed new route has been mapped. This proposed route both increases the overall length of the track by using a gentler and more sustainable gradient ratio, whilst also better using the natural features for improved sediment retention and rider challenge. This route can be seen in *Map 2* and "*DH Track Stringline.gpx*".

The proposed route incorporates the more sustainable aspects of the existing track, and removes the steeper, straighter and ultimately less sustainable sections of the track. We believe that the proposed closed sections will readily accept rehabilitation via brush matting, or can be retained as a bushwalkers access track with diversion away from the downhill track.

The new track alignment is a definite compromise over a typical downhill track descent profile. As the track has a shallower gradient it will allow for a track that is negotiable for other types of bikes, not just downhill bikes. This will provide an interesting and definitely challenging descent for the experienced cross country rider as well as the dedicated downhiller.

Further, as the track can be negotiated on bikes that are not necessarily downhill bikes there is the option for riders to ride up Mitchell's Pass rather than shuttling, pulling off at the bridge and climbing some existing fire trail to the main Knapsack Reserve trail network or the proposed extension to the mushroom tunnels or to use the Zig Zag and return around the RAAF base.

In Summary

- The new DH track is more sustainable and utilises the existing gradient and terrain to both extend the trail length, reduce the construction of the track to a sustainable footing, reduce future maintenance efforts, whilst also allowing none DH riders to also use the track.
- Almost doubles the length of the track,
- Caters for riders with varying skill levels (ie, the more effort you put in the more you will get out of the track,
- Provides other track and trail network options for the more adventurous riders.



Proposed Primary Cross Country Trail

A primary XC trail was determined using several constraints, whilst attempting to use as many of the preferred routes identified by local riders of the area. The attached *Map 3* and "*XC Primary.gpx*" covers many of these ideas.

Some of these constraints were

1) Maximising Trail Length

Taking advantage of the existing trails and joining them together as per the attached *Map 3* creates a trail that is approximately 6km long. This is considered a short XC trail with the ideal trail being approximately 9kms or longer. Some of these trails take in existing, old largely forgotten vehicle access tracks that with partial rehabilitation via brush matting, could be reverted to single track which is the more preferable riding environment. It also allows for the closure of some of the more eroded trails that lead nowhere and are considered uninteresting (eg. trails to the SE of **16** in *Map 3*).

2) Bi-directional In Nature

It was planned with the idea of being able to be ridden in both directions so as to add variety to riders seeking to extend track length via multiple laps. Given the nature of the bushland flora in the area, visibility is good, which supports the bi-directional nature of the proposal, and also lends to increased multi-use tracks, with education of both walkers and riders as appropriate to the terrain (eg, in some sections riders would have right of way, whilst in the majority of other areas, walkers would be given right of way to reduce potential user conflicts).

Note: Riders and walkers at Knapsack Reserve have a good relationship at present and conflict is very rare.

3) Shared With Other Users

Shared use with walkers will primarily require awareness by both parties with adequate signage. Some areas will run parallel and can be dedicated rider or walking sections.

Bringing the trails together in the area around **5-15** allows for creating a section that is winding and interesting for riders, yet allows for a more direct route for walkers along its perimeter.

4) Allowing for access to and from the park

Many riders ride into the area from surrounding suburbs and need various access ways in and out. The most important one of these is the one marked as **36-38** that leads round the old water works.



5) Easy to Follow Ride for Tourists

With the large number of tourist riders who visit Glenbrook every weekend due to the popularity of the Oaks Fire trail, there is an opportunity for them to extend their day and additionally ride Knapsack Reserve. To do this however they would need a distinct trail that is enjoyable and easy to follow.

Sections **17**, **19** and **33** marked in yellow were areas where currently there are areas we view as unsustainable from the readings of IMBA's handbooks. The options for these, is to create small alternate lines with lower gradients that can be built in a sustainable manner. These will also add to the flow of the trail and therefore the enjoyment of the rider.

Other sections marked in yellow **10**, **11**, **14**, **18** and **27** are ideas for ways of linking various sections of single track together to extend length with small sections of new trail. These also allow for closure of other areas. Essentially the way trails are routed between **5** and **16** is only to be used as a guide and is only one possibility of many that could be determined.

A trail like this can be created over time, and in a phased approach, working on sections that most need attention and maintenance. Slowly unused sections can be rehabilitated as new sustainable sections replace them. Lessons can also be learned as the project progresses.

Proposed Secondary Cross Country Trails

Means of access to the primary trail from outside the reserve as well as allowing for more advanced trails was also addressed.

The need for some trails that meet the requirements of more advanced riders is important for adding depth to the trail network as well as preventing any subversive alterations to make lines more challenging.

The existing trail that is shown on *Map 3* and in "*XC Secondary.gpx*" in sections **36** and **37** covers some of these needs and is also a very popular and distinctive signature of "Knapsack" riding. It is quite short and technical and would require some work to improve sustainability at its start (eg breezeblock armouring technique).

This trail also allows access to Glenbrook via **39**, Lapstone by **38** and down the Zig Zag to Emu Plains. With discussion in council of the possibility of opening up the Lapstone Railway tunnel to cycling this would provide an essential link.

With the addition of sections of asphalt road, this could also allow the connection of loops back to the start of the primary loop. There are also options to create variations of this return in the future, some of which are marked on the map.



Some other issues

BMORC have laid a basic plan of these proposed trails over the council's environmental maps to loosely determine their impact see *Map 4*.

The majority of trail corridors do not appear to cross into many critical areas. We understand however that some areas will need to be looked at in more detail to accurately assess their real impact. We feel that most of these can be addressed by responsible building to IMBA sustainability rules, however this must be left to the discretion of BMCC Staff as the relevant subject matter experts.

An important track is around **8** on *Map 3* which is the Cave area. This is a very important trail in the area as it provides an important link to the primary XC trail and also the link to the secondary trail discussed above at **36**. Its current state and level of erosion over previous years has been very minimal and we feel with appropriate sustainability measures, rider impact can be eliminated on that area all together.

I have attached a text report on each labelled section of this map to explain the thinking behind certain sections and provide further descriptions.



In Conclusion

BMORC feel that the re-routed downhill track will alleviate the pressure being felt by downhill riders in the area, especially the younger ones without the transport to travel to other DH trails that are far away. Also it will provide a track that is vastly better than what currently exists. This meets sustainability objectives, and reduces the effort associated with maintenance allowing riders to ride more. Take up of the track is crucial as this will reduce the need to build unapproved tracks elsewhere, as BMORC and Council have effectively delivered a high quality, sustainable and more importantly legitimate trail riders can focus on.

The XC Network really is a many stage plan to concurrently create a good riding network while fixing the various issues along the way. BMORC envision this would be ongoing works in progress with continual assessment and reassessment as part of an approved trackcare and bushcare program.

Given the time constraints associated with producing an assessment report to Council by October 2010, we have not focused on track design per se, and have instead tried to focus on trail corridors and trail concepts. We recommend, should the proposal be approved via public consultation and at the October 2010 ordinary meeting the actual trail design and subsequent construction be left to BMCC Staff, BMORC and appointed contractors, as part of Staff's day to day land management responsibilities.

BMORC are excited by the opportunity to work with council at Knapsack as a precursor to a long partnership of legitimate and sustainable mountain biking trails in the Blue Mountains.



Appendix 1 – Details of Sections in Map 3 for XC

Discussion follows an anticlockwise direction, though trail is intended to be suitable for riding in either direction.

- 1) Starting point that can be ridden in from the field or the skate park via **41** or **42**. These are fire trail and single track. Parking at these places would minimise impact on local residents and leave **43** for any DH drop offs.
- 2-3) A fire trail section. Possibility to brushmatt to single track?
- 4) Good single track section leading down to the gully.
- 5) After crossing the gully there is a steep gradient. Very eroded and would need some work. Either a line change and closure of the main erosion section with brushmatting and erosion prevention measures.
- 6-7) Wide single track in good condition.
- 8) Cave section. A very good ride and some nice technical sections which would need some armouring. Also an important link to the Secondary Trail at **36**.
- 9-12) Good single track that follows after the “Cave” section. Climbs up with two pinches that may need some realignment. With a few small new sections marked in yellow this area could be extended into a very good single track section.
- 13) The fire trail descent is tending towards becoming single track. Its a good fast water barred descent, but with brushmatting could have some curves put in to make it flow nicely if as it appears, it is a no longer used vehicle access trail.
- 14-15) Cut a small connecting track off the fire trail 15 to 16.
- 17) Back on single track. At the first gully crossing it is very eroded and will probably need some switchbacks to change the gradient and a proper creek crossing as marked in yellow.
- 18) Possibility around this area to extend the track up into the bush if any extra sections are allowed in the future. Good terrain for any track extensions.
- 19) Another very eroded section that will need to be made more robust. Probably some switchbacks required for climbs and descents.
- 20) Good long section of shared single track. Quite technical and interesting and probably the most interesting section of trail at Knapsack from **17-20** inclusively.



21) The section that crosses the DH track. Want to try and only cross this once for safety reasons. Will need some warning signs. Some very small cuts in this area to prevent any section repeats. Wide single track that could easily be improved especially seeing it isn't really a walking track as it goes nowhere.

22-25) Usage of "Lovers Walk" to get to the fire trail climb at **23**. This climb is eroded and needs some work, so a good technical climb/descent could be routed through it at the same time. **24** and **25** are just simple wide single track.

26) Messy technical fire trail descent. Top part could do with some erosion work. Probably make sure there was a super technical line with drops maintained as well as making sure there is a more intermediate riding line for ascending and descending.

27-28) Try and use the line that veers off to the right and then cuts back across the fire trail over onto the large flat rock. This makes the fire trail a little more interesting.

29) The Rock Face where people can climb and descend how they want. A traversing line could be determined and marked with rock cairns to provide continuity. The top part once again has considerable erosion on the fire trail. There is a possibility to brushmatt and make into single track.

30-32) Starts with single track then to a little bit of fire trail and then ride along the rock ridge that is very nice, followed by some overgrown fire trail onto Lovers Walk for a short distance.

33-35) A really nice bowl shape to cut some nice switchbacks to reduce erosion on the existing double track. Vegetation is very much weeds and grass. Into an old, faint double track to keep away from the tracks at **5** near the gully. Some fire trail to link things up.

36-37) Secondary Trail section starting with the "Chute" that will need rock armouring, possibly the breezeblock approach. Crosses a gully on a small bridge and has a steep climb. Some of this area will need to be looked at closely under IMBA guidelines.

38) Single track that provides access beside RAAF base to Zig Zag, the highway or Lapstone.

39-41) End of the Secondary Trail that links on asphalt at **40** and then comes back into the reserve along a fire trail **41** to **1**.

42-43) Links to car parking at Barnet St or at Knapsack Park. **41** also allows access from the skate park area of Glenbrook.

Appendix 2 - Maps

