## Risk Assessment and Management Strategies: Mountain Biking

This document has been prepared for the: Auckland Schools Mountain Biking Championships

By J. B. Hasler TIC AGSMTB Health and Safety Manager Auckland Schools Mountain Biking

Notes:

1. This Risk assessment and mitigation document is generic to Mountain Biking - i.e. applicable to all races.

- 2. There will be separate documents for each specific event specific to the venue and the trails used. i.e. (i) Course Map and (ii) Course Description (that details specific hazards). [Marshall notes will be available from Race Managers at the event]
- 3. Before individual riders sign a waiver for each event riders, team managers, and parents must read through and discuss the above documents so they understand the risks involved. For example riders and their caregivers should read and initial EACH page of this document as read, and sign the final page.

## Risk Assessment and Management Strategies: Mountain Biking

RISK	Risk factor	
Key		1 low 2 possible 3 likely 4 will happen

General				
Activity	Undesired Event (s)	Number	Causal Factors	Strategy
Communication	Lack of communication	1	Lack of appropriate communication Cell phone tower coverage patchy in forest areas or on some networks	<ul> <li>Supply cell phone numbers of staff, parents students.</li> <li>Agreed on meeting times (usually Friday) and give clear boundaries for venues in advance.</li> <li>Pre ride and pre race briefings (organized by provider) will identify trails, potential hazards and how to mitigate them – these are often available on websites before event.</li> <li>Communication for events is via email to schools and/or riders directly and reinforced with verbal briefings and with written information provided in race booklets and online as well as visual maps and instructions available at the race</li> <li>Where cell coverage is an issue, eg at Hunua, this is pre-empted with the organisation of radio contact between marshalls for events</li> <li>Marshalls are stationed where they are able to have cell phone and/or radio coverage to ensure communication can be reliable.</li> </ul>
	Lost student	1	Student not following instructions	<ul> <li>Clear expectations of students staying with group during activity. Assign parent(s) or more capable rider(s) to each group.</li> <li>Notify students of details around activities. Students should carry phone and have contacts stored of others in group (e.g. leader)</li> <li>Have student contact numbers (e.g. store emergency contacts and medical notes on smart phone)</li> <li>MTB training and events have parent riders who can act as 'tail-end-charlies' and look after riders; groups wait at intersections for all riders to catch up; briefed on what trails will be used that day.</li> <li>Races also have Marshalls – often in radio and phone contact with HQ • Parents</li> </ul>

			and most riders have cell phone for emergencies (reception usually OK otherwise move to higher ground)
Loss of communication	1	Radio or phone batteries flat or damaged	<ul> <li>Mobile phone and radio batteries will be charged every evening and are specified to last several days (depending on talk time).</li> </ul>

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Behaviour				
Activity	Undesired Event (s)		Causal Factors	Strategy
MTB Training or event (race) Or on Trip	Negative student behaviour	2	Student, situation, group	<ul> <li>TIC to outline expectations.</li> <li>Headmaster and / or Mr Morton to outline behavior and expectations prior to leaving.</li> <li>School rules apply</li> </ul>

Break of fundament School Rules	tal 2	Student, group, inadequate adult supervision	<ul> <li>Prevention of issues is first strategy. As part of the EOTC forms, students are parents are asked to sign their acceptance of school policies and procedures and state they will uphold them</li> <li>Students reminded of expectations and consequences from the outset. Any parents and caregivers involved briefed on expectations and asked to uphold them</li> <li>In the event of a breach of rules students will be dealt with according to the school behaviour policy and if appropriate sent home or stood down from events. Parents/caregivers will be notified and may be asked to collect students if away from Auckland</li> <li>Notify DP/Headmaster. Student/s return to Auckland to meet with Headmaster when notified.</li> </ul>
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Student Safety,	Security & Health		
Activity	Undesired Event (s)	Causal Factors	Strategy

Student Health	Sickness, Accident, Injury (minor see Environment) (major – see also below)	3	Students and Environment	<ul> <li>1st Aid kit available e.g. (in back packs of adult rider)</li> <li>Initial assessment – by following rider, and/or tail-end-charlie, and/or marshall to see if rider can be moved from trail (speak to downed rider, concussion test, etc). If injury to back, neck or possible internal do not move until someone qualified arrives; stop next rider and position further back on track to warn other riders of 'rider down'; phone for help and/or send another rider to marshall with radio to contact medics and HQ (if injury is serious and on say DH trial organizer will need to close trail by communication to start and finish lines.</li> <li>Racing to stop during DH if a DH rider cannot leave the track • Rider, volunteers (e.g. marshall and tail-end-charlie), and spectator briefings at events cover the above (what to do with a 'rider down')</li> <li>Seek further professional medical assistance if necessary (St Johns or similar organization like Triple One Care, phone 111, Medic on site at some venues (e.g. 440 and Woodhill)</li> <li>Students health profile details (have spreadsheet on smart phone and hard copy) and told to bring relevant medication with them.</li> <li>At races / events there will be either St Johns or similar service</li> <li>Races also have Marshalls – often in radio contact with HQ</li> <li>MTB often have parent riders who can act as 'tail end Charlies' (i.e. look out for problems)</li> <li>Parents and most riders have cell phone for emergencies (reception usually OK otherwise move to higher ground)</li> <li>Strategies for marshalls, sweepers and tail end charlies similar: communication with HQ and assistance to be sought from riders or spectators if required.</li> </ul>
	Injury	3	Inadequate warm up	<ul> <li>Boys routinely warm up and know requirements of training</li> <li>Staff familiar with above strategy and also warm up</li> <li>All students supervised during training by staff/parents</li> </ul>
	Dehydration	2	Not drinking right amount of fluids during race	<ul> <li>Riders to carry either bottle or hydration pack which can refill at event HQ or at the feed zone at HQ</li> <li>Riders told to have at least 1 litre per hour riding and preferably with electrolytes to help with hydration</li> <li>Marshalls provided with water to ensure they do not become dehydrated</li> </ul>

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Physical exhaustion	3	Length of event	<ul> <li>Fitness needed, hence training at similar or greater distance. If becomes issue rider can withdraw (dnf) from race; if training rest or go back to base (with 'buddy')</li> <li>Riders will be advised to carry and consume both drink and high energy food for the duration of the ride. Refreshments will be available at base.</li> <li>Riders will be seen by medical staff on site at races or advised to seek it after the training session where St Johns are not in attendance.</li> <li>Parents and caregivers to be notified to monitor rider</li> </ul>
Lack of nutrition - food	3	Students forgetting food	<ul> <li>Food / nutrition / drinks will be made available during event</li> <li>Students briefed to take adequate food</li> <li>Possible to share some food /or buy on way to venue or at venue</li> </ul>
Risk of major accident requiring evacuation (broken bones, etc)	2	Possible causes: rider fault, equipment failure, track design,	<ul> <li>Bike Check / mechanics available at event HQ – and all riders told to ensure bike is on sound working order before riding (e.g. regular service, 'drop test', etc.</li> <li>St Johns or other Medics personnel available throughout course</li> <li>4WD access available to most parts of the trails</li> <li>Radio and phone communication available</li> <li>Short localised track (i.e. small loops of approximately 30-40 minutes to distance from HQ is minimized</li> <li>Guides, parent riders, tail enders, marshalls etc carry phones or radios to aid in reaching outside assistance (require line of site to office)</li> <li>A vehicle and driver are available from Base (HQ) to help render assistance.</li> <li>Marhsalls and parents fully briefed about actions to take/not take in the event of an accident to prevent a minor accident escalating</li> </ul>
Rider inexperience (see also Environment – 'trails new to riders')	3	New to sport or little riding	<ul> <li>Race Event Route is usually aimed at Junior level</li> <li>Obstacles will be taped off and are signposted along the route • Trails chosen to suit the ability of the different riding groups (e.g. training groups split into smaller groups of similar ability (novice, intermediate, advanced)</li> </ul>

Environment				
Activity	Undesired Event (s)		Causal Factors	Strategy
MTB race or training	Cold	2	Possible Rain / low temperatures	<ul> <li>Adequate riding clothes / warm clothing when not riding / shelter for riders when not riding</li> <li>A waterproof raincoat and thermals are advised to be carried on days forecast for bad weather.</li> </ul>
	Heat	3	High temperatures / humidity	<ul> <li>Adequate fluids and food to overcome exhaustion;</li> <li>Not racing / training in heat of day where possible (e.g. Sunday – morning training)</li> </ul>
	Risk of minor accident (sprain, scrape)	3	Possible causes: slippery track, fences, trees, banks, rocks, blackberry gorse	<ul> <li>At events Comprehensive 1<sup>st</sup> aid will be available (see medical section) or parent riders carry first aid kits</li> <li>Where possible these hazards have been minimised through track design and maintenance.</li> </ul>
	Fire	1	<ul> <li>Dry season</li> <li>Sparks, BBQ or cigarette starting fire</li> </ul>	<ul> <li>Smoking is forbidden always.</li> <li>Cell phones can be used to alert outside help in the event of a fire</li> <li>Riders and spectators told no smoking policy</li> <li>Fires extinguisher usually available at HQ</li> <li>Event briefing covers evacuation procedures</li> </ul>
	Large scale disaster e.g. Flooding	1	<ul> <li>Poor weather – heavy rain</li> <li>Dam breach (e.g. Hunua)</li> </ul>	<ul> <li>Event briefing covers evacuation procedures (e.g. to high ground and where it is and best routes to evacuate the Forest)</li> <li>Ride course to check for stragglers – use phones and radio to Marshalls to clear course.</li> <li>If there is risk of flooding (due to several days of heavy rain) then an alternative or shortened ride will be used.</li> <li>Weather forecast watch, participants informed if event/ride to be cancelled if severe storm expected</li> </ul>

	Track becomes unpassable	2	<ul> <li>Due to slip or tree</li> <li>The possibility for changeable trail and structure/obstacle conditions exists at all times due to weather, forestry debris (including protruding branches, pine cones and stumps) and terrain erosion;</li> </ul>	<ul> <li>Event organisers staff to check trail and advise of any maintenance issues.</li> <li>Event course marked the day before, checked, and maintenance carried out if needed</li> <li>Venue (e.g. 440 or Woodhill) regularly check trails and maintain • factors affect the ridability of a trail or structure/obstacle and participants are advised to be aware of changeable conditions</li> </ul>
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Running into Animals	2	<ul> <li>Farm animals escape paddock</li> <li>Wild animal (e.g. deer, pig) in forest</li> </ul>	<ul> <li>Farm animals are docile unless nastily provoked and will usually scatter as riders approach.</li> <li>Wild animals are infrequent and will run.</li> <li>Riders briefed about actions to take</li> </ul>
Meeting oncoming traffic or other riders on the trails	2	<ul> <li>Cars on road</li> <li>Other riders on trails</li> <li>Pedestrians, runners, recreational walkers and domestic</li> </ul>	<ul> <li>Trails do not usually cross roads – if they do at a venue and event they are marked with signs and tape for riders and vehicles</li> <li>Traffic management plans are a requirement for the events where this is more likely to be an issue</li> <li>Events have Marshalls at intersections</li> <li>Trails are one way and unusual to have rider going the wrong way – cover in rider briefing. At event notice/signs at venue on what trails are being used and in what direction.</li> <li>Participants should be aware of other riders at all times and be informed that both inexperienced and advanced riders may appear without warning, and at speed. Briefings include 'rider etiquette' on passing other riders etc. Marshalls (e.g. DH) given whistles to alert of approaching rider; tail-end-charlies (with high viz vests will help identify slower riders in front)</li> <li>Spectator briefing (e.g. at events) to include information similar rider briefing and marshall briefing)</li> <li>At event – whole forest is booked and general public informed that venue is</li> </ul>

			closed during racing.
Trails new to riders – possible accidents	3	• Inexperience on trail • Trails contain obstacles and terrain variations that can appear quickly when travelling at speed	<ul> <li>Participants are advised to ride unexplored trails slowly and to do so several times in order to gain a good understanding of the conditions presented (at events opportunity is there to pre ride trails (e.g. at DH events the minimum of two practice runs, then usually a seeding (timed) run, before the final race run.)</li> </ul>
Man made structures on trails could lead to injury, damage	2	• Some mountain bike parks contain man made structures that present risk due to their requirement for speed, bike and rider elevation or jumping ability	<ul> <li>These hazards will be covered in pre ride and race briefings.</li> <li>Riders usually given chance to pre ride the course (otherwise see 'new trails' section)</li> <li>Participants are reminded to ride within their limitations and choose which structures they attempt carefully</li> <li>Placement of marshalls at these points is a strategy to ensure rider and spectator safety</li> </ul>

Equipment				
Activity	Undesired Event (s)		Causal Factors	Strategy
Mountain Bike (XC or DH)	Bicycle mechanical failure	2	<ul> <li>Failure to regularly service and check</li> <li>Damage during riding</li> <li>Not using type of bike that suits the trails (e.g. DH bike for DH level trails etc)</li> </ul>	<ul> <li>Bikes are checked at the start of the ride for trail worthiness - good brakes, tyres, lubed and running smoothly</li> <li>Riders told to service bike prior to rides, and perform 'drop test' before riding Looks for loose parts)</li> <li>Riders are advised to have a spare tube, chain link, pump (or CO2), multi tool, hydration (2L in summer) and gloves.</li> </ul>

Other Hazards					
Activity	Undesired Ev	rent (s)		Causal Factors	Strategy
Gazebos	Injuries due to secured gazek conditions		3	<ul><li> Poor securing of gazebos.</li><li> Failure to identify risk.</li></ul>	<ul> <li>Gazebos to be installed using leg weights and/or ropes and pegs</li> <li>Where gazebos are grouped, legs will be tied together to provide additional support.</li> <li>Monitor weather conditions and take gazebos down if wind speeds exceed 25 km/hr</li> </ul>
Using LPG on site	Fire, explosion, public	' injury to	2	• Use of LPG gas results in a fire or explosion due to a gas leak	<ul> <li>Gas bottles have a current certification test date.</li> <li>Bottles are visually checked for damage before being brought onto the site.</li> <li>Check that connections are the right type for the cylinder.</li> <li>All hoses and connections are checked for gas leaks using a soapy water mix.</li> <li>If spare gas bottles are being brought to the site, they will be stored in an upright position in a secure well-ventilated location away from flammable substances until required.</li> <li>Stand away from the flame when turning on an LPG appliance.</li> <li>A dry fire extinguisher or fire blanket will be held on site.</li> </ul>

BBQ	Hot surfaces or oils result in burns, scalds or damage to ground	2	• Using a BBQ on the site results in a burn to someone	<ul> <li>Check that BBQ's are in good condition before using.</li> <li>BBQ positioned so that hot surfaces are not accessible by children.</li> <li>BBQ placed on matting or cardboard to prevent hot oil damage to ground.</li> <li>No cooking vessels to be placed at front of stalls.</li> <li>BBQ supervised by adults at all times.</li> <li>If the BBQ is set up and operating under a gazebo it will be positioned a minimum of 150mm from any sides.</li> </ul>
Fats and oils	Injuries such as burns from using cooking oils or damage to the environment from leaks or spills of oils, or from pouring down drains on site	2	• Using a BBQ on the site results in damage to the ground.	<ul> <li>Metal drum or other container on site to store used, cooled, cooking oils for disposal.</li> <li>BBQ cooks briefed on processes around dealing with used cooking oils and fat.</li> <li>Appropriate class fire extinguisher held on site for oil/fat fires.</li> <li>People to wear appropriate clothing to prevent hot oil burns, e.g. long sleeve shirts, closed toe shoes.</li> <li>Wait until oil or fat has cooled before handling.</li> <li>Clean up spills or leaks of oils and fats immediately using absorbent materials.</li> <li>Burns to be treated promptly with first aid.</li> </ul>
Coffee Van	Injuries from being struck by a food truck on site or coming into contact with food truck equipment	2	• Someone on site is hit by the coffee van when it is being positioned on site	<ul> <li>Truck will be managed onto site by a marshall in high vis.</li> <li>Driver will use hazard flashers while moving and drive no faster than 10 km/hr.</li> <li>The vehicle will be parked on flat and stable ground or wheel chocks used.</li> <li>Once the vehicle is in position and hand brake will be applied to prevent rolling movement.</li> <li>Check will be made to ensure that if a generator is being used that it vents into open space and is not accessible by members of the public.</li> </ul>
Hot beverages	Burns or scalds from spilt hot beverages	2	• Hot liquids and poor securing of lids on containers results in burns	<ul> <li>Use single use compostable cups with a lid.</li> <li>Vendors to check that lids are firmly in place before handing hot beverages over.</li> <li>Do not overfill hot beverage containers.</li> <li>First aid treatment available.</li> </ul>

Signage	Trips and falls resulting in injuries due to poorly placed or secured signage etc.	2	• Poorly placed or secured signage could lead to trips and flls	<ul> <li>Signage not installed in foot traffic areas.</li> <li>Signage secured using weights, pegs or pigtails.</li> <li>Banners secured with cable ties.</li> <li>A-frame signs will have weights installed internally to weight into place.</li> <li>Blade flags will use heavy bases with spring form poles.</li> <li>Check flags and signage throughout the event to ensure they remain secure.</li> </ul>
Generator	Injuries to people or damage to property and equipment from using a generator on site	3	• Poor placement or installation of the generator	<ul> <li>Generators are placed on flat and stable ground and are isolated using temporary barriers to prevent public interference.</li> <li>Checks made to ensure that the generator is properly grounded.</li> <li>Generator placement allows exhaust fumes to vent into open space.</li> <li>Generator is not set up near vegetation or combustible materials.</li> <li>Fire extinguisher held on site.</li> <li>An RCD device will be used on all equipment connected to the generator.</li> </ul>
PA System	Injuries to people or damage to property and equipment	3	• PA system set up on unstable ground	<ul> <li>PA system will be set up on flat and stable ground.</li> <li>Equipment is inspected during installation to ensure it is free from any damage.</li> <li>Equipment is suitable for use in an outdoor environment.</li> <li>Speakers will be weighted down or secured to prevent tip over.</li> <li>Speaker stands will be highlighted using high viz tape to prevent tripping incidents.</li> <li>RCD device used between system and power source.</li> <li>Area around PA system will be isolated with a temporary barrier to prevent access.</li> </ul>
Cables	Tripping hazard, someone could be injured by tripping over a cable, or injured by cables coming into contact with water	2	• Poor placement of cables	<ul> <li>Electrical cables to be covered or laid away from foot traffic areas.</li> <li>All cables to be checked to ensure they are suitable for use in an outdoor environment and have a current test tag attached.</li> <li>Cables to be laid away from any standing water.</li> </ul>

Noise	Noise complaints are received from local residents or business owners	2	• Local residents are unhappy with noise levels and duration of noise	<ul> <li>Set up PA system so that noise is directed inwards onto the site away from residences.</li> <li>Keep use of PA system to MC information and music and away from idle chatter.</li> <li>Monitor sound outputs and adjust as required.</li> </ul>
Portable toilets	Chemical leak or spill results in environmental damage	2	• Chemicals from toilets get into water ways and cause damage.	<ul> <li>Portable toilets supplied and installed by a competent contractor.</li> <li>Toilets installed on flat and stable ground.</li> <li>Absorbent materials or a spill kit held on site.</li> <li>If a spill occurs, use absorbent materials or spill kit to contain and clean up.</li> <li>Keep public clear of area until spill has been contained and cleaned up.</li> </ul>
Sharp objects	Cuts, penetrating wounds and abrasions from sharp objects such as rocks, glass or discarded needles on the event site	2	• Sharp objects on site cause injury	<ul> <li>Check event site to ensure that any sharp objects (glass, rocks etc) are identified and dealt with by either removing or isolating with tape and cones.</li> <li>Any broken glass found to be disposed of correctly by wrapping before putting into waste bin.</li> <li>Any discarded needles to be disposed of by putting into an enclosed container before putting into waste bin.</li> <li>Use appropriate PPE (e.g. mask and gloves) when dealing with blood and open surface wound injuries.</li> </ul>
Asset damage	Damage to onsite assets as a result of fixing infrastructure to it, or driving a vehicle onto the site	2	• Moving vehicles around the site or setting up equipment causes damage	<ul> <li>No signage to be affixed to trees, street furniture or rubbish bins.</li> <li>Matting to be used at vehicle entry points to the site if ground is soft following recent rain.</li> <li>No vehicles to be parked under the drip line of trees.</li> </ul>
Unruly members of the public	Member of the public is physically or verbally abusive towards staff, volunteers or other members of the public	2	<ul> <li>Other park users are not happy with activity and inconvenience to them and become angry</li> </ul>	<ul> <li>Try to avoid potential conflict situations with members of the public.</li> <li>If a situation with the public develops into a conflict situation, withdraw from the situation.</li> <li>Use a cell phone to call for Police assistance if the situation continues or escalates.</li> </ul>

Manual handling and lifting/ carrying heavy items	Strains, sprain injuries, pain, discomfort	3	• Using poor lifting techniques or trying to lift a heavy load by one person results in injuries	<ul> <li>Lift with legs and control loads.</li> <li>Getting help when needed and take rest breaks.</li> <li>No rapid movement, twisting, bending or repetitive movement.</li> <li>Using trolleys or reducing or splitting loads to manageable weight and/or size <ul> <li>two person or team lifting.</li> </ul> </li> <li>Arranging vehicle access to the site to reduce carrying distances for equipment.</li> </ul>
Moving Vehicles	Injuries to people or damage to property or assets as a result of being struck by a moving vehicle	3	• Someone on site is hit by an inattentive driver and this results in an injury	<ul> <li>Vehicles driving onto the site to be managed.</li> <li>Drivers to use hazard flashers and drive no faster than 10 km/hr.</li> <li>Spotters in high-viz will be used to assist drivers reversing.</li> <li>Drivers will be asked to drive with window down so they can hear instructions from spotter.</li> </ul>
Biological fluids	Contact with body fluids or animal waste results in illness	2	• Illness or disease from contaminated fluids	<ul> <li>Ensure no-one has direct contact with any body fluids except trained first aiders wearing appropriate PPE.</li> <li>Use barrier gloves and wear a face mask.</li> <li>All items used are disposed of in secure biohazard container/bag and disposed of via the waste system.</li> <li>Any animal waste found on site will be cleaned up immediately and disposed of in an appropriate place.</li> </ul>
COVID-19	A person with COVID attends an event or activity, resulting in possible community transmission of virus	4	• Spread of virus amongst attendees	<ul> <li>Follow current guidelines from the Ministry of Health with respect to gatherings of people.</li> <li>Marketing to include COVID messaging around staying home if feeling unwell.</li> <li>Toilets will have running water and soap or hand sanitiser available for use.</li> <li>High touch surfaces will be regularly wiped down with disinfectant.</li> </ul>
Insect Bites or Stings	Member of the public receives an insect bite or wasp sting and has an allergic reaction	2	• Itching or an allergic reaction occurs to an insect bite or sting	<ul> <li>Visual inspection of site to identify any nests.</li> <li>Eliminate risk or minimise by isolation area.</li> <li>Ensure first aid kit carries cortisone cream.</li> <li>Refer person to nearest medical centre or call an ambulance if breathing difficulties are being experienced.</li> </ul>

## Those involved with Mountain Biking please sign that you have read and understand the previous Risk Management Documents

MTB Rider name:	Parent / Caregiver name:
Signature:	Signature:
Date:	Date: