

**SWIMBA**

Southwest Idaho Mountain Biking Association

**REQUEST FOR PROPOSAL (RFP)**

**Project Inclusive Trail Design and Construction**

Avimor Accessible Mountain Biking Trails

PROPOSAL DUE DATE: January 17, 2025

**CONTACTS:**

Susan Kolbay [skolbay@swimba.org](mailto:skolbay@swimba.org)

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## SECTION 1: INTRODUCTION AND BACKGROUND

### **1.1 Project Overview**

Project Inclusive is dedicated to developing an accessible trail system designed to adaptive mountain bike standards, with the goal of increasing inclusive trail options in and around the Treasure Valley. The trail system will be located in Avimor, a development in Eagle, Idaho, and will serve as a welcoming space for all trail users, regardless of ability or socioeconomic status.

This initiative seeks to create purpose-built adaptive trails that cater to individuals using adaptive mountain bikes while offering opportunities for recreational and competitive mountain biking. The trails will also support a range of activities, providing access for hiking, running, and other outdoor uses.

The long-term vision for the project includes not only the construction of the Accessible Trail System but also the establishment of Pavlis Park. This park, named in memory of Kevin A. Pavlis, a key figure in the adaptive sports community, will feature a trailhead that serves as a gathering location for all mountain bikers and community members. In addition, it will be designed to accommodate mountain biking events, helping to foster a strong and inclusive outdoor community.

Through a combination of sustainable trail design and inclusive event space, Project Inclusive will transform the Avimor area into a destination for athletes using adaptive equipment and outdoor enthusiasts, encouraging community engagement, improved public health, and outdoor recreation opportunities for all.

### **1.2 About Southwest Idaho Mountain Biking Association**

The Southwest Idaho Mountain Biking Association (SWIMBA), is a dedicated 501(c)(3) nonprofit organization. With over three decades of experience advocating for and maintaining a world-class, multi-use trail network in Southwest Idaho, SWIMBA brings invaluable expertise, resources, and community engagement to this project.

SWIMBA is committed to creating, protecting, and sustaining a trail network that embodies inclusivity and enhances the outdoor experience for all. The mission aligns perfectly with Project Inclusive's goals of fostering accessible trails for athletes using adaptive equipment and diverse outdoor enthusiasts.

### **1.3 Location**

Project Inclusive is located within the Avimor community in Eagle, ID, in the foothills of the Boise Mountains. The area is characterized by rolling hills, rugged slopes, and small canyons, typical of the Boise Foothills. The intended trail area is moderately to steeply sloped, with drainages and rocky outcrops framing a central ridgeline. The landscape also features areas of flat or gently sloping land, providing a variety of terrain for trail users.

The soils in this area are well-drained and often rocky, particularly at higher elevations. In lower, valley-like areas, deeper soils composed of loam and clay may be found. The region experiences a semi-arid climate, with hot, dry summers and cold, snowy winters. Annual precipitation is relatively low, mostly falling as rain or snow during the cooler months. Vegetation in the area is primarily composed of sagebrush, juniper, and native grasses, though it is sparse in the trail area due to active cattle grazing.

#### **1.4 Purpose of this RFP**

The purpose of this Request for Proposal (RFP) is to identify and engage qualified contractors to design and construct the Accessible Trail System in Avimor, Idaho. This trail system is being developed to enhance outdoor recreation opportunities in the Treasure Valley, with a focus on inclusivity and accessibility for all trail users.

The primary objectives of this RFP are to:

1. Develop an adaptive trail network that meets the highest standards for safety, sustainability, and accessibility, ensuring the trails are usable by individuals on adaptive bikes as well as traditional mountain bikers, hikers, and runners.
2. Construct approximately 5 miles of purpose-built trails.
3. Ensure long-term trail sustainability by incorporating sustainable trail-building techniques and design features that will minimize environmental impact while providing a high-quality outdoor experience for users.

Contractors are expected to provide a comprehensive solution that includes trail design, construction, and sustainable development practices. Contractors should demonstrate expertise in adaptive trail design, mountain biking trail construction, and experience with multi-use trail networks.

This project will significantly improve public access to outdoor recreation, promote community health, and offer a venue for inclusive mountain biking and adaptive sports in the Treasure Valley.

#### **1.5 Additions and Deletions**

No additional work or extras will be allowed or paid for unless such work or extras are ordered in writing by SWIMBA, and the price is fixed and agreed upon before such work is performed. SWIMBA will not accept any overruns nor will it pay any quantities beyond those specified.

#### **1.6 Discrepancies**

Should discrepancies be discovered in this document, the matter shall be brought to the attention of SWIMBA and the discrepancies corrected before proceeding further.

### **SECTION 2: SCOPE OF WORK**

#### **2.1 Trail Design and Specifications**

The Contractor will be responsible for designing and constructing three accessible trail loops and two connecting trails, as well as completing any necessary fence modifications during construction. All trails shall be designed to meet the Adaptive Mountain Biking Trail Standards (aMTB) from the Kootenay Adaptive Sport Association. The trail design and construction shall also incorporate the Trail Construction Best Practices as outlined below. The trails will be multi-use, open to both biking and hiking. Specifications for each trail segment are as follows:

#### **Loop A: Beginner aMTB Trail**

- Length: 1.25 miles
- Standards: Built to meet Beginner (Green) Adaptive Mountain Bike (aMTB) standards
- Specifications:
  - Minimum trail width: 60 inches
  - Tread: Firm and stable
  - Maximum trail grade: 15%
  - Minimum flat corner radius: 20 feet

#### **Loop B: Intermediate aMTB Trail**

- Length: 1.75 miles
- Standards: Built to meet Intermediate (Blue) aMTB standards
- Specifications:
  - Minimum trail width: 48 inches (average 60 inches)
  - Tread: Mostly stable
  - Maximum trail grade: 20%
  - Minimum flat corner radius: 20 feet
  - Bermed corners may be included
  - Minimal exposure required

#### **Loop C: Advanced aMTB Trail**

- Length: 2 miles
- Standards: Built to meet Advanced (Black) aMTB standards
- Specifications:
  - Minimum trail width: 40 inches (average 48 inches)
  - Tread: Mostly stable
  - Maximum trail grade: 20%
  - Minimum flat corner radius: 20 feet
  - Bermed corners may be included
  - May include sections with exposure

#### **Trailhead Connections**

- Main Trailhead Connection: 0.3-mile connection from Loop A to the main trailhead (adjacent to the parking lot)

- Kirsten Road Connection: 0.05-mile connection from the trail system to Kirsten Road, near existing cattle corrals
- Standards: Both connections shall meet Beginner (Green) aMTB standards for accessibility

The Contractor shall use the conceptual trail design developed by SWIMBA and provided in Appendix A as the basis for the trail design. Loop C shall connect at the end to the existing two-track which runs through the area to allow for access to existing trails and ranch roads in the area.

### **Fence Modifications**

- Modifications: During construction, sections of barbed wire fencing may be cut as needed for access.
- Repair: Fencing must be immediately repaired with wire to maintain structural integrity.

The Contractor must ensure that all trails meet the specified adaptive standards and that fence modifications are completed to ensure both construction access and safety.

The final design shall limit fence crossings. The Contractor shall identify the needed fence crossings and SWIMBA will provide and install rollover cattle guards and gates at each crossing.

All trail and trailhead signage will be the responsibility of SWIMBA.

### **2.2 Working Conditions**

The construction site is located on an active cattle ranch, and the Contractor must be prepared to work in proximity to livestock during trail construction. Contractors are expected to implement safety protocols to ensure the safety of both workers and cattle. This includes coordinating with ranch management to establish access routes and times that minimize disruption to cattle operations. Care should be taken to avoid disturbing herds and to secure any open areas to prevent cattle from exiting grazing areas.

Additionally, the area is closed from December 1st through March 31st to protect wintering wildlife. All trail construction activities must occur outside of these months to comply with wildlife protection regulations. Proper planning and scheduling are essential to ensure that construction is completed within the allowable timeframe while minimizing impacts on local wildlife.

Maintaining a respectful and safe environment for all parties involved is essential.

### **2.3 Coordination with the Video Team**

The Contractor will be required to coordinate with the video production team documenting Project Inclusive. This includes:

- **Advance Notification:** The contractor must inform SWIMBA of important upcoming milestones, activities, or events that may be of interest to the production team. Timely communication will help ensure that significant moments are captured effectively.
- **Interviews and Storytelling:** The contractor should be open to participating in interviews with the production team. This is an opportunity to share insights about the trail-building process, discuss challenges faced, and highlight the project's impact on the community and accessibility for adaptive mountain bikers.
- **Site Access and Collaboration:** The contractor should facilitate access for the video team to key work areas while maintaining safety protocols. This may involve coordinating schedules to ensure minimal disruption to construction activities while allowing for adequate filming opportunities.
- **Visual Documentation:** The contractor is encouraged to allow the video team to capture various stages of the trail construction, including planning, equipment use, and community engagement. These visuals will help illustrate the project's progress and promote awareness of the initiative.

## **2.4 Trail Testing by Riders Using Adaptive Equipment**

As part of the project's commitment to inclusivity, the Contractor will facilitate a trail testing session involving riders using adaptive mountain biking equipment. This process is crucial for ensuring that the trails meet the intended standards for accessibility and usability. Key components of this section include:

- **Testing Session:** The Contractor will coordinate with SWIMBA to organize a testing session with riders using adaptive bikes. This session shall be scheduled when the project is nearing completion.
- **Feedback Collection:** During the testing session, the Contractor will gather feedback from riders using adaptive bikes regarding trail conditions, features, and overall usability. This input is essential for making any necessary adjustments to the trails to enhance accessibility and rider experience.
- **Adaptive Equipment Compatibility:** The contractor should ensure that the trails are constructed with features that accommodate various types of adaptive equipment. This includes evaluating trail width, surface stability, and trail gradients during the testing phase.
- **Final Adjustments:** Based on feedback received from riders, the Contractor may be required to make final adjustments to the trails before project completion. This collaborative approach aims to ensure that the trails are truly accessible and enjoyable for all users.

By prioritizing trail testing with riders using adaptive bikes, the project will reinforce its commitment to creating an inclusive outdoor environment and enhance the experience for the mountain biking community.

## **SECTION 3: TRAIL CONSTRUCTION BEST PRACTICES**

### **3.1 Trail Alignment and Slope Management**

Position trails on stable soils and avoid steep slopes wherever possible. Aim to follow natural contours to minimize water runoff and reduce the risk of erosion.

Design trails with gradual grades and avoid long, straight paths where water can accelerate. Where steeper grades are necessary, incorporate grade reversals (short ups and downs) to slow water flow.

### **3.2 Water Diversion Features**

Integrate water bars, rolling dips, and grade breaks at regular intervals to direct water off the trail and prevent erosion. These features help disperse water and keep it from pooling on or eroding trail surfaces.

Construct trails with a slight outslope to allow water to flow naturally off the trail rather than down its center. This approach reduces the risk of ruts and sediment accumulation.

### **3.3 Minimize Soil Disturbance**

Wherever possible, limit soil excavation and clear only the width necessary for the trail. This practice minimizes disturbed soil and reduces sediment movement during rainfall or runoff.

Restrict heavy equipment usage to designated routes and minimize traffic in sensitive areas to prevent compaction and soil disturbance.

### **3.4 Spoils Stabilization**

All excavated materials that are not used in the trail tread or other trail structures must be stabilized to prevent erosion. Spoils shall not be placed in drainages, swales, ephemeral streams, wetlands, or any areas known to convey water during wet weather events.

### **3.5 Invasive Species Distribution Prevention**

All machinery, vehicles, and tools must be cleaned before entering the trail site and between areas with known invasive species to avoid accidental distribution.

## **SECTION 4: CONTRACTOR QUALIFICATIONS, REQUIREMENTS, AND RESPONSIBILITIES**

### **4.1 Insurance**

A Contractor involved in work on Project Inclusive shall carry \$1,000,000 in Commercial General/Umbrella Liability insurance and shall furnish a certificate listing SWIMBA as an additional insured and showing the type, amount, class of operation covered, effective dates, and dates of expiration of policies.

### **4.2 Tools**

The Contractor shall perform the required work using hand tools and/or small mechanized equipment. Contractor shall not permanently modify or impact any areas outside of the scope of work unless specifically given permission by SWIMBA.

#### **4.3 Mechanized Equipment**

All mechanized equipment shall be in good working order, free from any fluid leaks, be equipped with spark arrestors if applicable, and have charged fire extinguishers mounted in an accessible location.

All equipment shall be clean and free of debris before being introduced to the work location. Tracks, undercarriage, and digging implements shall be free of any soil that may contain non-native plant material.

#### **4.4 What the Contractor Provides**

The Contractor shall provide the necessary supervision, equipment, and tools to perform the trail construction, including fuel for any mechanized equipment or tools and all personal protection and safety equipment required.

#### **4.5 Public Safety**

The Contractor shall ensure that reasonable safety precautions are taken to protect the public while work is being performed.

#### **4.6 Use of Subcontractors**

The Contractor shall be able to use subcontractors to complete the work provided the subcontractors are included in the proposal and written permission is obtained from SWIMBA.

#### **4.7 Indemnity**

The Contractor shall indemnify, save, and hold harmless SWIMBA and the landowner, against any and all claims, damages, liability, and court awards including costs, expenses, and attorney fees, incurred as a result of any act or omission by the Contractor.

### **SECTION 5: PROPOSAL REQUIREMENTS**

Proposals must be submitted via email to [info@swimba.org](mailto:info@swimba.org) by the deadline established in this document.

The proposal must include the following:

- **Project Overview:** Provide a summary of your understanding of the project's goals, the importance of inclusivity in trail design, and the unique requirements of adaptive mountain biking trails.
- **Approach to Design and Construction:** Describe your proposed approach to developing a sustainable, accessible, and multi-use trail system. Highlight any adaptive design standards, environmental sustainability practices, and trail-building techniques you will apply.
- **Construction Methodology:** Explain your approach to construction, including techniques to ensure durability and minimize environmental impact. Include details on equipment, materials, and any special considerations for working in the Avimor location.



- **Project Timeline:** Provide a detailed timeline for the project, from initial design through construction and completion. Include estimated start and end dates, along with key milestones.
- **Milestone Deliverables:** Outline major project milestones, such as design approval, construction phases, trail inspections, and final completion. Specify any anticipated review periods or approvals required at each stage.
- **Total Project Cost:** Provide a single, comprehensive cost for the design and construction of the entire trail system, including labor, materials, equipment, permitting, and any additional expenses. The cost should represent the total cost to complete the project as outlined in the proposal requirements.
- **Payment Schedule:** Propose a payment schedule based on milestone completions, including any upfront costs or deposits.
- **Relevant Experience:** Provide examples of past projects that demonstrate your expertise in adaptive or multi-use trail design and construction. Highlight any work completed in similar geographic or environmental conditions.
- **References:** Submit at least three references from clients or partners for similar projects, including contact information.

## SECTION 6: EVALUATION CRITERIA

The proposals will be reviewed by SWIMBA's board of directors, who will consider each submission based on how well it meets the goals and needs of Project Inclusive. Key areas for evaluation include:

1. Project Understanding and Approach
2. Trail Design and Construction Plan
3. Timeline and Milestones
4. Total Cost Estimate
5. Relevant Experience and Team Qualifications

### **Evaluation Process**

The board of directors will review each proposal, looking for a well-rounded approach that demonstrates expertise, thoughtful design, and alignment with the project's mission. SWIMBA may reach out to ask for additional information or clarifications before making a final selection.

## SECTION 7: PROJECT TIMELINE

Proposals due January 17, 2025.

Anticipated award announcement January 31, 2025

Contract signed February 15, 2025

Start Work April 1, 2025

## SECTION 8: CONTACT INFORMATION

### **8.1 Point of Contact**

Questions concerning this project should be directed to Susan Kolbay and Sam Blaine, via email [info@swimba.org](mailto:info@swimba.org).

### **8.2 Requests for Clarifications**

All requests for clarification shall be submitted to [info@swimba.org](mailto:info@swimba.org). Responses will be distributed to all who were invited to submit a proposal and posted to the SWIMBA website.

<https://swimba.org/project-inclusive-rfp/>

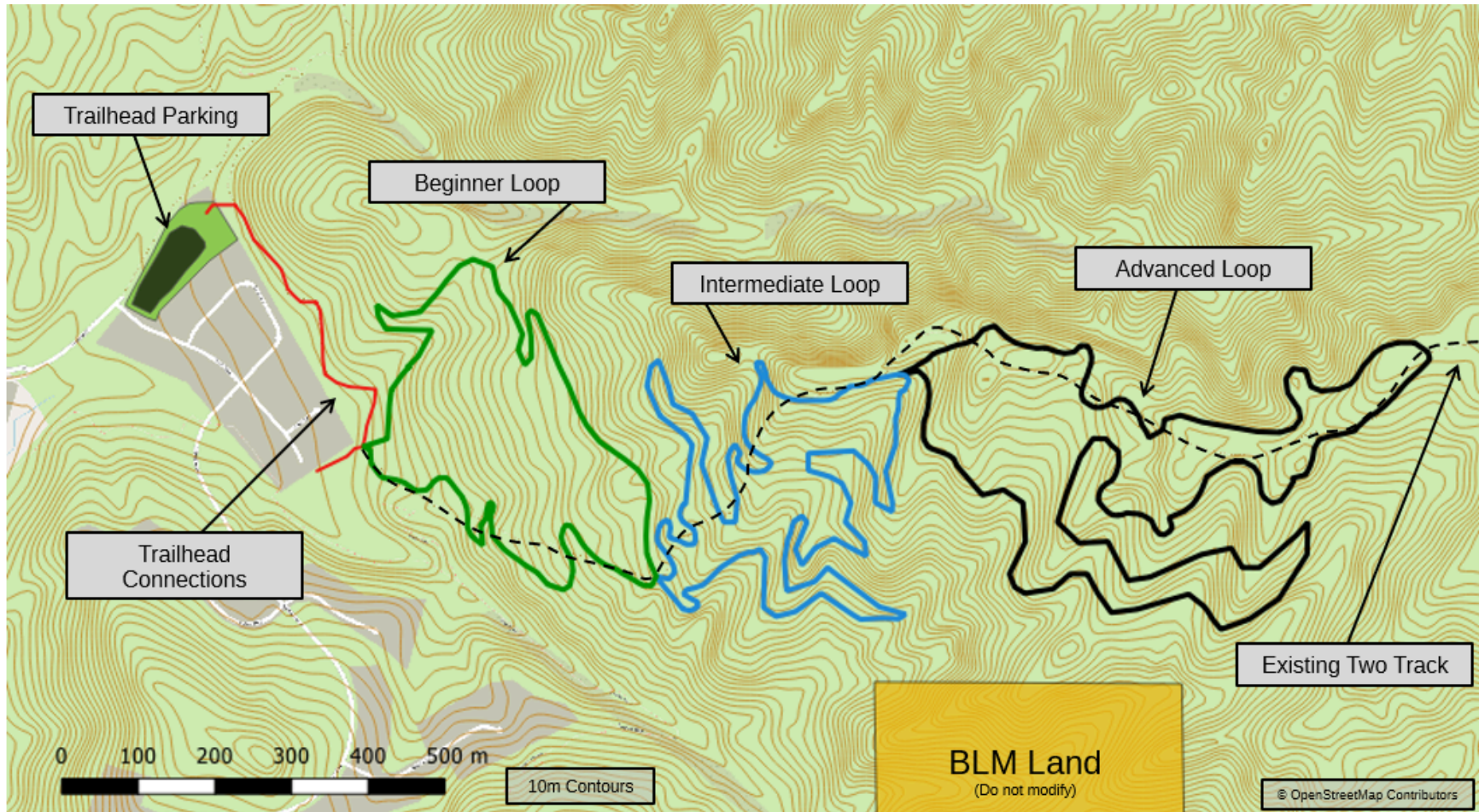
APPENDICES

Appendix A: Conceptual design plan

Appendix B: Photos of area

Appendix C: KOOTENAY ADAPTIVE SPORT ASSOCIATION ADAPTIVE TRAIL STANDARDS -  
2020

**Appendix A: Conceptual Design Plan**



**Appendix B: Photos of the area**



Project Inclusive - Avimor Accessible Trail System



**Appendix C: [KOOTENAY ADAPTIVE SPORT ASSOCIATION ADAPTIVE TRAIL STANDARDS - 2020](#)**



# KOOTENAY ADAPTIVE SPORT ASSOCIATION

ADAPTIVE TRAIL STANDARDS - 2020



KOOTENAY ADAPTIVE SPORT ASSOCIATION

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# ACKNOWLEDGMENTS

**KASA MANDATE:** To promote physical literacy and elevate the human spirit through facilitated learning experiences in a barrier free environment. To advocate and educate in support of adaptive sport and recreation by providing resources, organizing events and programs, and building a safe and inclusive community.

The Kootenay Adaptive Sport Association would like to thank the following organizations and individuals for their contributions to the assembly of these Adaptive Trail Standards:

## KOOTENAY ADAPTIVE SPORT ASSOCIATION

Janis Neufeld - Senior Project Manager  
Mike Riediger - Executive Director  
Kimberly Joines - 2020 Accessibility Supervisor  
Wynn Holmberg - 2020 Accessibility Coordinator

## ADAPTIVE RIDERS

Kimberly Joines - Athlete  
Tara Llanes - Tara Llanes Industries , Athlete  
Ethan Krueger - Athlete

## LARCH LANDSCAPE ARCHITECTURE

Jason Jones - Landscape Architect, Trail Designer

## STARR TRAIL SOLUTIONS

Brady Starr - Trail Designer, Trail Builder

## TRAIL HOLISTICS

Mark Wood - Trail Designer

## LIFETIME OUTDOORS

Jeff Cook - Trail Designer, Trail Builder



The logo for the Government of Canada, featuring the word "Canada" in a serif font with a small Canadian flag above the letter "a".



BRITISH  
COLUMBIA

This program is funded by the Government of Canada  
and the Province of British Columbia.

# ADAPTIVE MOUNTAIN BIKES AND DIFFERENTIATING FACTORS

Adaptive Mountain Bikes (aMTB): Adaptive Mountain bikes are three and four wheeled cycles that provide a broad range of riders who may not otherwise ride a standard mountain bike due to physical, intellectual, neurological and sensory abilities. The Kootenay Adaptive Sport Association (KASA) has developed a comprehensive set of trail standards to assist in the planning, design, and construction of safe and fun adaptive mountain bike trails based on the following:

- Adaptive mountain bikes accelerate slower, decelerate faster, are wider, longer and heavier than two wheeled bikes;
- Some models require the rider to take their hand(s) off the handlebars in order to pedal with the hand cranks. As such, a aMTB rider cannot easily pedal while navigating a turn, and requires appropriate (trail specific) entry speed to corners, berms and features to allow enough momentum to carry the bike through;
- Sight lines for adaptive riders are approximately 1.0m (3 ft) above the tread surface. This requires consideration in trail sections of significant undulation, high vegetation, intersections, etc.; and
- Adaptive mountain bikes are primarily 3-wheeled in nature, and prone to tipping when off-camber at low speeds. aMTB riders will be strapped into their equipment, so any tipping of the bike will also tip the rider, which can be dangerous.

Hazards + Ride Arouns: The most pressing consequence for aMTB is tipping over in areas of exposure, which could result in aMTB (and rider) rolling down an embankment. This also is applicable to raised, off-camber features. It is recommended to provide a less consequential fall zone below any such feature and aMTB tread width ride arounds for any feature requiring a specific skill set or momentum to clear (i.e. gap jumps, non-rollable jumps with large lips), narrow wooden stunts, or off-camber raised features.

## RECOMMENDED TRAIL WIDTH

The majority of aMTB equipment require a minimum 1.0m (40") width for chokes, pinches and a minimum 1.2m (48") tread width required for general riding performance. [Figure 1](#) and [Figure 2](#) indicate general aMTB trail width recommendations based on difficulty rating. Refer to [Appendix A: Trail Difficulty Rating System](#).

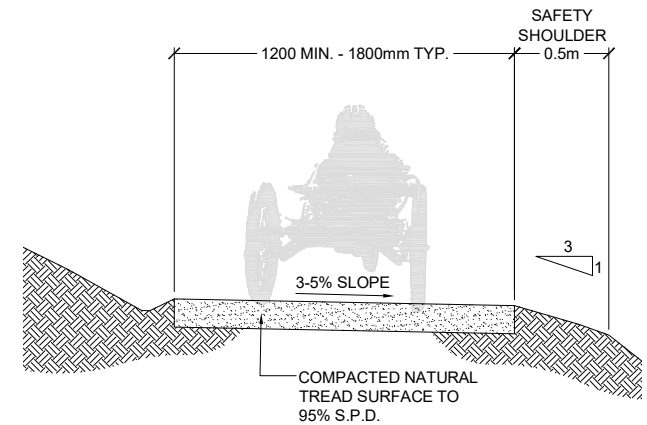


Figure 1 - Typical aMTB Trail Section

RECOMMENDED aMTB TRAIL WIDTH		
GREEN	BLUE	BLACK
1.80 m   6 ft   72 in	1.50 m   5 ft   60 in	1.20 m   4 ft   48 in

Figure 2 - Recommended aMTB Trail Width

## CAMBER

Traversing off-camber terrain can be difficult on aMTB. The following guidelines pertain to off-camber trail construction:

- Bench cut trail should be firm and compacted to full trail tread width with out-sloping at minimal angle as required for drainage (3-5% slope, 1.25-2.85 degrees). Less out-sloping is preferred;
- Confirm there will be adequate speed to carry aMTB through off-camber trail section exceeding 8% slope (5 degrees) \*Momentum reduces tipping hazard;
- Eliminate off-camber or one-sided TTF/obstacles exceeding 12% Slope (8 degree camber angle), or provide full aMTB tread width ride-around
- (Refer to [Figure 3](#) and [Appendix A: aMTB Trail Difficulty Rating System](#) - Obstacles to match spec to trail difficulty); and
- Gradually transition off-camber trail features (returning to minimum cross slope), to allow pedal stroke before onset of next feature or trail section.

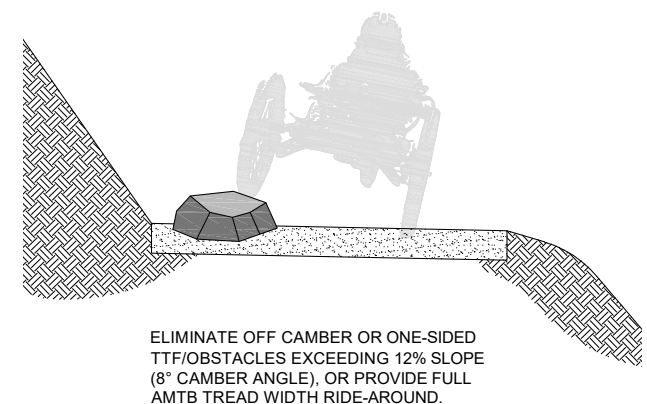


Figure 3 - Off-Camber Hazard

# CORNERS | BANKS | BERMS

## Speed:

- If entry speed is too slow in relation to the bank gradient, the rider will be drawn into the drainage/low point of berm, and risk tipping inward;
- Corners need to accommodate the physical aspects of the aMTB bike (rolling resistance, weight) throughout the radius to ensure acceleration through the corner; centrifugal force maintains the aMTB's position on the bank; and
- aMTB cannot easily be pedaled mid turn; berm exit needs to be lower than the entry (Refer to [Figure 4](#)).

## Radius:

- The ideal radius range for aMTB corners is 6-7.5m (20-25 ft) as berm size and trail speed increases, tighter radii can be achieved; and
- Any radius less than 4.6m (15ft) will require higher level of rider ability, and/or result in 2-point turns (Refer to [Figure 4](#)).

## Shape:

- A linear banked berm shape is preferred over "Concave" or "Scooped" berm design. Linear berms present less risk of tipping. Applicable to full width/large berms. Ensure that aMTB is able to achieve support on all wheels throughout the banked turn;
- The bank height and angle need to accommodate the ride speed, increasing with the rider's momentum throughout the radius of the corner, to a maximum slope of 60% slope (30 degree slope angle); and
- Due to the limited riding dynamics and turn radius of aMTB equipment, flat and outsloping corners should be avoided when possible during ascending and descending. Banked corners allow physics to help the aMTB complete the turn faster when descending. Small berms and extra material on the outside of climbing turns (even to partial thread width) can help aMTB achieve tighter turning radius, reducing the need for 2-point turns on switchbacks (Refer to [Figure 5](#)).

## Grade Reversals:

- Drainage Deflection - Any grade reversal at the entry/exit points of a berm must be symmetrical within the trail tread (uniformly span the entire trail width at the same height) and set back far enough that the rider has adequate time to "set up" when entering/exiting the berm; and
- Grade reversals should not slow the aMTB rider enough to necessitate additional pedaling before exiting the corner.

## Rollers:

- Roller spacing and height to be determined onsite based on anticipated rider speed. aMTB are longer than standard bikes, requiring longer spacing of rollers to ensure rear wheel and front wheels of the bike are not being forced in opposing directions simultaneously;
- Ensure rollers are gradual rather than abrupt, in profile; and
- Use cascading rollers to ensure rider can obtain momentum to carry over the flat and uphill portion of roller without pedaling (Refer to [Figure 6](#)).

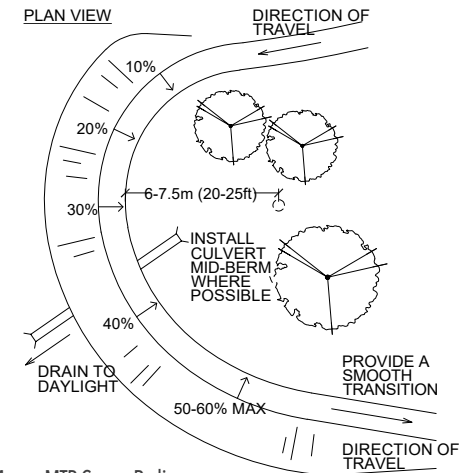


Figure 4 - aMTB Corner Radius

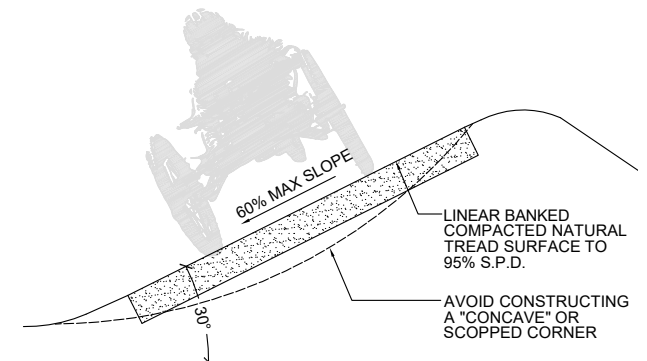


Figure 5 - aMTB Berm

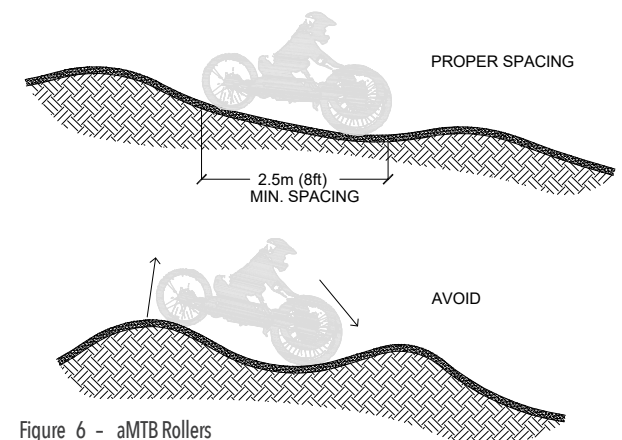


Figure 6 - aMTB Rollers

# APPENDIX A - ADAPTIVE MOUNTAIN BIKING (AMTB) TRAIL DIFFICULTY RATING SYSTEM

	aMTB WHITE	aMTB GREEN	aMTB GREEN SQUARE	aMTB BLUE	aMTB BLACK	aMTB DBL BLK	aMTB DBL. BLK
<b>TRAIL WIDTH: (ave/min)</b>	1.8m+ (72"+)	1.8m/1.5m (72"/60")	1.7m/1.4m (66"/54")	1.5m/1.2/ (60"/48"+)	1.2m/1m (48"/40")	1.1m/0.98 m (44"/38.5")	<0.98m (<38.5")
<b>TREAD SURFACE:</b>	hardened or surfaced	firm and stable	mostly stable some variability	mostly stable some variability	widely variable	widely variable and unpredictable	widely variable and unpredictable
<b>OBSTACLES (TTF):</b>	no obstacles	obstacles full width 2" or less / no asymmetrical tread areas	obstacles full width 5" or less / partial width 2" or less	obstacles full width 8" or less / partial width 3" or less	obstacles full width 12" or less / partial width 6" or less	obstacles full width 12" or less / partial width 10" or less / assistance recommended	impassable obstacles / assistance required
<b>UNAVOIDABLE BRIDGES: (wider if not straight)</b>	1.8m+ (72"+)	1.5m+ (60"+)	1.5m+ (60"+)	1.4m+ (54"+)	1.2m+ (48"+)	1m+ (40"+)	<0.98m (<38.5") possible
<b>MAX TRAIL GRADE:</b>	10% (6 deg)	15% (8.5 deg)	20%+ (11 deg)	20%+ (11 deg)	20%+ (11 deg)	25%+ (14 deg)	25%+ (14 deg)
<b>CAMBER: TURNS, BERM &amp; TTF</b>	level	only enough to drain	Some off camber possible: max 36.5% (20 deg)	Some off camber possible: max 36.5% (20 deg)	Some off camber likely: max 58% (30 deg)	Off camber certain: 58%+ possible (>30 deg)	Off camber certain: 58%+ possible (>30 deg)
<b>CAMBER: TRAIL STRAIGHTAWAYS</b>	level	only enough to drain	max outslope 5-8% (3-5 deg)	max outslope 5-8% (3-5 deg)	max outslope 8-14% (5-8 deg)	max outslope 8-14 % (5-8 deg)	14%+ (> 8 deg) outsloping possible
<b>MIN FLAT CORNER RADIUS:</b>	7.5m (24.5 ft)	6m (20 ft)	6m (20 ft)	6m (20 ft)	6m (20 ft)	4.5m (15 ft)	4m (13 ft)
<b>MIN BERM CORNER RADUS:</b>	n/a	n/a	6m (20 ft)	4.5m (15 ft)	4.5m (15 ft)	<4m (13 ft)	< 3m (10 ft)
<b>EXPOSURE:</b>	no exposure	no exposure	no exposure	minimal exposure	exposure likely	exposure likely	exposure likely
<b>RECOMMENDED EQUIPMENT:</b>							
*Riders may choose to take equipment on trails falling outside of recommended trail difficulty at their own risk, but in this case support rider always recommended. !							

## RECOMMENDED EQUIPMENT / CATEGORY DESCRIPTIONS (LEGEND)

### WHEELCHAIR:

- Manual wheelchair (with or without front wheel attachment)
- Powerchair
- Scooter
- Any other mobility related device



### CROSS-COUNTRY (RECUMBENT / COMBINED CRANK & STEERING):

- **One wheel in the front** and two in the back
- Front wheel drive
- Seating – recumbent type seating with legs straight ahead
- Full or no suspension depending on brand



### ALL-MOUNTAIN (RECUMBENT / COMBINED CRANK & STEERING):

- **Two wheels in the front** and one wheel in the back
- Rear wheel drive
- Seating – recumbent type seating with legs straight ahead
- Full suspension or rear suspension only depending on brand



### ALL-MOUNTAIN (KNEELING / HANDLEBARS W/ SEPARATE CRANK):

- Two wheels in the front and one wheel in the back
- Rear wheel drive
- Seating – kneeling with cranks below you and handlebar above
- Full suspension or rear suspension only depending on brand



### BOWHEAD ALL ELECTRIC

- Two wheels in the front and one wheel in the back
- Articulating front end
- Full electric with hand twist throttle; no crank; Rear wheel drive
- Seating – recumbent type seating with legs straight ahead
- Full Suspension

