

# BAKERS PARK PHASE 1 TRAIL DESIGN BRIEF

SILVERTON, COLORADO

SUMMER 2021





Prepared for:

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## ABOUT IMBA TRAIL SOLUTIONS

IMBA Trail Solutions (TS) is the international leader in developing trails, with experience in over 500 projects in North America, Europe, and Asia. Our staff excels at planning, design, and construction of trail systems that provide high-quality experiences for local riders and destination visitors while simultaneously minimizing environmental impacts.

Trail Solutions is a fee-for-service based arm of the International Mountain Bicycling Association (IMBA), a 501(c)(3) nonprofit organization. IMBA's mission is to create, enhance, and protect great places to ride mountain bikes. Based in Boulder, Colorado, and with staff distributed across the country and the world, IMBA meets its goal to create great mountain bike experiences through its Trail Solutions program. Trail Solutions employs approximately twenty professional trail planners and builders. In addition to being industry professionals and exceptional mountain bike riders, Trail Solutions staff hold a broad base of applicable skills and knowledge from planning, landscape architecture, and environmental sciences to GIS systems, CAD, and graphic design.

Our wealth of experience has allowed us to develop the gold standard guidelines for the creation of both sustainable and enjoyable singletrack trails. These guidelines have influenced all major federal land management agencies and a large number of state and local parks departments. We pride ourselves on the positive experiences Trail Solutions has provided to the millions of active trail users around the world and on the economic independence that communities have achieved through the development of destination trail systems.





## PROJECT BACKGROUND

This document summarizes the efforts of Trail Solutions staff to design and flag 10 miles of trail in Silverton Colorado. This effort is the first phase in the larger Bakers Park Trail Concept Plan that was created by IMBA Trail Solutions in 2018. The plan was approved in September of 2020. The Bakers Park Concept Plan intends to establish Silverton as a world class mountain biking destination. Introducing nearly 30 miles of singletrack offering experiences for all skill levels, preserving open space, and bolstering the local economy.

### Existing Conditions

#### *Silverton*

Silverton sits at 9,318 feet above sea level in the heart of Colorado's rugged San Juan Mountains, Silverton is a former mining town that is transition into a world class destination for adventure outdoor recreation. San Juan County encompasses 389 square miles, 89% of which is public land, and enjoys easy access to the recreational amenities of the Four Corners Region and desert Southwest.

The rugged terrain and complications with land ownership associated with mining history make trail development and planning difficult despite the abundant public lands. BLM lands in San Juan County currently have fewer than 10 miles of trails that are open to mountain bikes. The routes that do exist are mostly unmaintained mining roads and historic pack mule trails which are steep, highly technical, and prone to washouts. These trails can only be accessed and used by advanced and expert mountain bikers so the development of Bakers Park will unlock countless opportunities for a diversity of trail users.

#### *Focus Area*

The focus area for this project is the south and southeastern facing slopes of the peak at the town of Silverton's northern edge. The elevation drop from tree line to base of the mountain is approximately 2500', providing for challenging climbs and rewarding descents. The study area is largely owned

and managed by the Bureau of Land Management (BLM). A big factor in the selection of this location for the Overall Bakers Park concept plan was the relatively few private mining claims in the focus area. The few mining claims present are strategically avoided in the design of the phase one trails.

A large portion of this focus area is highly visible from town and coveted for its unscared aspen face. West of the Aspen face, grades get steeper and a significant amount of blow-down is present.





# PROJECT GOALS

The focus for the design of phase 1 is to build the introduction to the rest of the Bakers Park system. These trails will be progressive and engaging for a variety of trail users and skill levels while catering foremost to the mountain bike community. Creating the proposed trail network of shared-use and mountain bike-optimized trails will guarantee a unique destination, drawing visitors from surrounding areas and giving residents access to mountain biking terrain close to home. Future conceptual connections into other local trails as well as community park within town are intended to promote accessibility to the trail network.

- Flag the critical component of phase one: the traverse, climb and descent.
- Design trail that can be built to provide specific trail user experiences - especially for mountain bikers.
- Field verify conceptual connections into later phases of design.







# TRAIL DESIGN

## BAKERS PARK PHASE 1 DESIGN SILVERTON, COLORADO

### TRAIL CHART

Segment	Status	STYLE	SKILL	USER	DIRECTION	TREAD WIDTH	Length (FT)	Length (MI)
100	FLAGGED: BLUE	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	48"	1373	0.26
101	FLAGGED	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	48"	437	0.08
102	CONCEPTUAL	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	48"	1007	0.19
103	FLAGGED: BLUE	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	48"	1883	0.36
104	FLAGGED: BLUE	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	48"	4889	0.93
200	FLAGGED: PINK	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	36"	7264	1.38
201	FLAGGED: PINK	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	36"	8796	1.67
202	FLAGGED: RED W/ BLACK DOT	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	24"	206	0.04
203	FLAGGED: PINK	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	36"	2631	0.50
300	FLAGGED: RED	MOUNTAIN BIKE OPTIMIZED	BLUE	HIKE/BIKE	BIDIRECTIONAL	36"	10740	2.03
301	FLAGGED: RED	MOUNTAIN BIKE OPTIMIZED	BLUE	HIKE/BIKE	BIDIRECTIONAL	36"	11886	2.25
302	FLAGGED: RED	MOUNTAIN BIKE OPTIMIZED	BLUE	HIKE/BIKE	BIDIRECTIONAL	36"	651	0.12
400	FLAGGED: RED W/ BLACK DOT	SKILLS	GREEN	BIKE	TBD	48"	243	0.05
401	FLAGGED: RED W/ BLACK DOT	SKILLS	GREEN	BIKE	TBD	48"	748	0.14
<b>Total Flagged Length:</b>							<b>52,755 FT</b>	<b>10.0 MI</b>

### LEGEND

#### CONTEXT

- ROADS
- BLM PARCEL BOUNDARIES
- PRIVATE PARCEL BOUNDARIES
- VIEW POINT

#### PROPOSED

- SKILLS DEVELOPMENT TRAIL
- MORE DIFFICULT MOUNTAIN BIKE OPTIMIZED TRAIL
- MORE DIFFICULT TRADITIONAL TRAIL
- EASIER TRADITIONAL TRAILS
- CONCEPTUAL TRAIL ALIGNMENTS
- PARKING AREA

Prepared by: \_\_\_\_\_ Prepared for: \_\_\_\_\_



Note: This map is intended for planning purposes only. Property boundaries are Approximate. Do not use for design development or construction estimates.

SUMMER 2021



## Flagging

During the Summer of 2021 Trail Solutions Staff alongside members of the Silverton Single Track Society flagged 10 miles of trail corridor. The design includes 3 main segments: The 100 series (100,101,102,103,104) flagged in blue tape. The 200 series (200,201,202,203) flagged in pink except for 202 which is flagged with red with black dot tape. And the 300 series (300,301,302) flagged in red tape. There are also 2 progressive skills loops flagged in red with black dot tape. These trails are shared use and bidirectional while also hosting mountain bike optimized features to enhance the experience and sustainability of the trail. Though not formally directional trails, the terrain as well as the design favor counterclockwise navigation of the trails.

The 100 series is the access trail from the proposed parking lot for all users. The trail traverses the slope, gaining in grade appropriate for a green trail through a pristine aspen grove until the trail meets the large gully on the northeastern slope. At this point the trail begins a more difficult blue climb that will traverse back towards town. This is the start of the 200 series. Conceptual alignments are shown to illustrate realistic and ground-truthed trail to act as bailouts for hikers and other trail users not wanting to do a larger system loop into Dolores LaChapelle Park and CO Rd 34A.

The 200 series is a climbing trail with average grades appropriate for mountain bikers and hikers on a blue trail. Turns will be constructed with wider diameters to be optimized for mountain bikers. Segment 200 will bring riders to the first of many unbelievable views into town before traversing and connecting with 300 series. This mid mountain connection affectively creates two stacked loops, one approximately 5 miles long and the full loop approximately 10 miles long. This provides the opportunity for local riders to enjoy a quick after work lap, or more inexperienced riders to sample the terrain without biting off more than they can chew. This connection was strategically places on a grade bench that makes it invisible from town. So despite cutting across the aspen face, there will be no visual impact to the face from town. From Here the 200 series continues to climb, traversing the east face 4 more times before ending around 11,000' in elevation. This is where future phases of Bakers Park will connect into this phase, and also where the 300 series begins.

The overall character of the 300 series is a shared use dual direction trail with bike optimized flow turns to enhance the trail experience for users on bike navigating the loop in the preferred counterclockwise direction. Slopes are steep through dense evergreen forest where soils support the development of steeper trail. Terrain traps and other landscape features necessitate many turns in order to maintain sustainable grade down to the parking area. Trail segment 302 is the loan bike only trail in the design. Segment 302 intersects with segment 100 and skills loop 401 at which point an abundance of signage will guide trail users down a user specific final descent to the parking lot. This will strategically mitigate user conflict and provide a fun and flowy final descent for bikers. A taste for what is to come in later phases.





## Interpreting Flagging



The direction of the knot generally marks the edge of the trail tread. Waypoints and turns are identified by sequential numbering. Turn flags also identify the turn radius and side slopes.



Double flags mark a turn platform area.



Triple flags mark the junction point and end points of the trail.



# Trail Descriptions

Trail Chart														
Segment #	Status	TYPE	SKILL	USER	DIRECTION	AVERAGE GRADE	TREAD WIDTH	CROSS SLOPE	TURNS QUANTITY	TURN TYPE	Length [FT]	Length [MI]	BUILD TYPE	NOTES
100	FLAGGED: BLUE	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	7%	48"	MODERATE	2	ELEVATED TURN 16'-18'	1373	0.26	MECHANICAL - Kubota U17 mini-X class and or Sutter 500-300 Trail Dozer class	<p><b>Location:</b> From Quarry TH/Neighboring Property Line to above LaChapelle Park</p> <p><b>Experience/Purpose:</b> Main access for Hikers and Bikers, gentle climb for MTBs (west to east). It could also be starting leg of potential beginner loop if paired with LaChapelle Concept Trails. This climb also provides access to proposed MTB Skills Zones</p> <p><b>Terrain:</b> open mature aspen forest with gentle slopes to the west but as trail continues east terrain steepens to moderate 30% to 50%. The forest becomes denser with more mature firs and spruce. There are multiple dry gullies that could require armoring though no sign of running water during time of flagging.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders midway across trail corridor, will need to manage rockfall as the Headgate Road and LaChapelle Park are open to public</p>
101	FLAGGED	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	9%	48"	MODERATE	2	ELEVATED TURN 16'-18'	437	0.08	MECHANICAL - Kubota U17 mini-X class and or Sutter 500-300 Trail Dozer class	<p><b>Location:</b> Crosses corner of Brian Bellaeu's property to BLM Land NE.</p> <p><b>Experience/Purpose:</b> Reason for crossing private property is for ease of build, to minimize turns on steep loose slopes and to negate need to cross underneath powerlines.</p> <p><b>Special Notes:</b> Private Property, edge of former rock quarry, with many tiers/terraces with scree-like base, in some cases trail traverses across steeper loose scree. IMBA TS and Silverton Singletrack Society met w/prop owner, SSS will need to follow up on legal paperwork, permission, agreement, etc. Available rock should be arranged to dissuade users from trespassing further east onto private lands. Consider signage and fencing too.</p>
102	CONCEPTUAL	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	8%	48"	STEEP	4	ELEVATED TURN 16'-18'	1007	0.19	MECHANICAL - Kubota U17 mini-X class and or Sutter 500-300 Trail Dozer class	<p><b>Location:</b> From concept jct above LaChapelle Park to jct w/Aspen Face Climb.</p> <p><b>Experience/Purpose:</b> Main climbing traverse for Hikers and Bikers, gentle climb for MTBs (west to east). Shouldnt be too fast/flowy for descending riders as there may be good deal of hikers/bikers this low.</p> <p><b>Terrain:</b> open mature aspen forest with gentle slopes to the west but as trail continues east terrain steepens from 40% to 60%. The forest becomes denser with more mature firs and spruce. There are multiple dry gullies that could require armoring though no sign of running water during time of flagging.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders midway across trail corridor, will need to manage rockfall as the Headgate Road and LaChapelle Park are open to public.</p>
103	FLAGGED: BLUE	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	7%	48"	MODERATE	1	ELEVATED TURN 16'-18'	1883	0.36	MECHANICAL - Kubota U17 mini-X class and or Sutter 500-300 Trail Dozer class	<p><b>Location:</b> From Quarry TH/Neighboring Property Line to above LaChapelle Park</p> <p><b>Experience/Purpose:</b> Main access for Hikers and Bikers, gentle climb for MTBs (west to east). It could also be starting leg of potential beginner loop if paired with LaChapelle Concept Trails. This climb also provides access to proposed MTB Skills Zones</p> <p><b>Terrain:</b> open mature aspen forest with gentle slopes to the west but as trail continues east terrain steepens to moderate 30% to 50%. The forest becomes denser with more mature firs and spruce. There are multiple dry gullies that could require armoring though no sign of running water during time of flagging.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders midway across trail corridor, will need to manage rockfall as the Headgate Road and LaChapelle Park are open to public.</p>



# BAKERS PARK PHASE 1 TRAIL DESIGN BRIEF



Trail Chart														
Segment #	Status	TYPE	SKILL	USER	DIRECTION	AVERAGE GRADE	TREAD WIDTH	CROSS SLOPE	TURNS QUANTITY	TURN TYPE	Length (FT)	Length (MI)	BUILD TYPE	NOTES
104	FLAGGED: BLUE	TRADITIONAL	GREEN	HIKE/BIKE	BIDIRECTIONAL	8%	48"	MODERATE	0	ELEVATED TURN 16'-18'	4889	0.93	MECHANICAL - Kubota U17 mini-X class and or Sutter 500-300 Trail Dozer class	<p><b>Location:</b> From concept jct above LaChapelle Park to jct w/Aspen Face Climb.</p> <p><b>Experience/Purpose:</b> Main climbing traverse for Hikers and Bikers, gentle climb for MTBs (west to east). Shouldnt be too fast/flowy for descending riders as there may be good deal of hikers/bikers this low.</p> <p><b>Terrain:</b> open mature aspen forest with gentle slopes to the west but as trail continues east terrain steepens from 40% to 60%. The forest becomes denser with more mature firs and spruce. There are multiple dry gullies that could require armoring though no sign of running water during time of flagging.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders midway across trail corridor, will need to manage rockfall as the Headgate Road and LaChapelle Park are open to public</p>
200	FLAGGED: PINK	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	8%	36"	MODERATE	11	ELEVATED TURN 16'-18'	7264	1.38	MECHANICAL - Kubota U17 mini-X class	<p><b>Location:</b> From jct w/east Base Traverse east side of Boulder Mtn/Aspen Face to the Crown</p> <p><b>Experience/Purpose:</b> Gentle Intermediate climb for MTBs. Provides next level of looped outing paired with Lower Aspen Descent. Though designated as BI direction for MTB's, it will be Preferred Climb and so turns and overall flow should be more traditional singletrack to minimize speed and user conflict. Minimal jumps, TTF's (except for rocky chokes, rock panels, traffic calming, etc).</p> <p><b>Concerns:</b> Steep rocky slopes, larger trees, deadfall, springs. From the "Crown" on up, terrain gets significantly more difficult, rock outcrops, springs, windfall and avalanche downfall, large trees.</p> <p>Final design/construction should try to minimize visual impact seen from town, screen turns if possible. East end crosses several slide major avalanche paths, littered with snags and downed trees. West end has a pocket of deadfall/windfall trees, in both cases extra sawyer work will be needed. Consider calling in a BLM Wildland Firefighting Crew for saw training/swamping.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders, will need to manage rockfall as the Headgate Road and LaChapelle Park are open to the public.</p>
201	FLAGGED: PINK	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	8%	36"	MODERATE	6	ELEVATED TURN 16'-18'	8796	1.67	MECHANICAL - Kubota U17 mini-X class	<p><b>Location:</b> From the Crown/ Base Traverse to the Top of Phase 1</p> <p><b>Experience/Purpose:</b> Intermediate climb for MTBs. Provides upper level of looped outing paired with Upper/ Lower Aspen Descent. Though designated as BI direction for MTB's, it will be Preferred Climb and so turns and overall flow should be more traditional singletrack to minimize speed and user conflict. This upper level of the Aspen Climb can be more difficult than the segment below.</p> <p><b>Concerns:</b> Steep rocky slopes, larger trees, deadfall, springs. From the "Crown" on up, terrain gets significantly more difficult, rock outcrops, springs, windfall and avalanche downfall, large trees.</p> <p>Final design/construction should try to minimize visual impact seen from town, screen turns if possible. East end crosses several slide major avalanche paths, littered with snags and downed trees. West end has a pocket of deadfall/windfall trees, in both cases extra sawyer work will be needed. Consider calling in a BLM Wildland Firefighting Crew for saw training/swamping.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders, will need to manage rockfall as the Headgate Road and LaChapelle Park are open to the public</p>
202	FLAGGED: RED W/ BLACK DOT	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	10%	24"	MODERATE	0	ELEVATED TURN 16'-18'	206	0.04	HAND	<p><b>Location:</b> From the eastern end of Mid Climb to landing for overlook of Venture Snowboards shop</p> <p><b>Experience/Purpose:</b> Intermediate alt for MTBs to Venture Overlook for view/rest.</p>
203	FLAGGED: PINK	TRADITIONAL	BLUE	HIKE/BIKE	BIDIRECTIONAL	8%	36"	MODERATE	3	ELEVATED TURN 16'-18'	2631	0.50	MECHANICAL - Kubota U17 mini-X class	<p><b>Location:</b> From the Lower Scree Field to the Top of Phase 1</p> <p><b>Experience/Purpose:</b> Intermediate climb for MTBs. Provides upper level of looped outing paired with Upper/ Lower Aspen Descents. This segment is more indicative of high alpine trail in the region, intentionally utilizes natural rock fields, features and landings.</p> <p><b>Concerns:</b> This segment is significantly rockier than segments below. There is atleast one rockfield that will require intermediate-level rockwork, the lower rockfield is not an issue as the trail traverses along an adjacent lower bench. This segment is more indicative of high alpine trail in the region.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders, will need to manage rockfall as the Headgate Road and other roads below are open to the public.</p>



Trail Chart														
Segment #	Status	TYPE	SKILL	USER	DIRECTION	AVERAGE GRADE	TREAD WIDTH	CROSS SLOPE	TURNS QUANTITY	TURN TYPE	Length (FT)	Length (MI)	BUILD TYPE	NOTES
300	FLAGGED: RED	MOUNTAIN BIKE OPTIMIZED	BLUE	HIKE/BIKE	BIDIRECTIONAL	12%	36"	MODERATE	21	ELEVATED BERM TURN 16'-18'	10740	2.03	MECHANICAL - Kubota U17 mini-X class	<p><b>Location:</b> From jct w/Upper Climb down to Quarry TH</p> <p><b>Experience/Purpose:</b> Intermediate descent w/potential for alt advanced rock features for MTBs. Provides next level of looped outing paired with Upper Aspen Climb. Though designated as BI direction and Dual Use, its intended as primary descent for MTB's, turns and overall flow can be more bike optimized. With potential for alt drops or TTF's</p> <p><b>Concerns:</b> Steep rocky slopes, larger trees, deadfall, springs. From the "Crown" on up, terrain gets significantly more difficult, rock outcrops, springs, windfall and avalanche downfall, large trees.</p> <p>Final design/construction should try to minimize visual impact seen from town, screen turns if possible. East end has pockets of deadfall/windfall trees.</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders, will need to manage rockfall as Cement Creek Road and LaChapelle Park are open to the public</p>
301	FLAGGED: RED	MOUNTAIN BIKE OPTIMIZED	BLUE	HIKE/BIKE	BIDIRECTIONAL	10%	36"	STEEP	21	ELEVATED BERM TURN 16'-18'	11886	2.25	MECHANICAL - Kubota U17 mini-X class	<p><b>Location:</b> From jct w/Upper Climb down to Crown</p> <p><b>Experience/Purpose:</b> Intermediate descent w/potential for alt advanced rock features for MTBs. Provides next level of looped outing paired with Upper Aspen Climb. Though designated as BI direction and Dual Use, its intended as primary descent for MTB's, turns and overall flow can be more bike optimized. Since this is the upper descent, there should be less people, hence it can be more of a bike optimized descent.</p> <p><b>Concerns:</b> Final design/construction should try to minimize visual impact seen from town, screen turns if possible. East end has pockets of deadfall/windfall trees</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders, will need to manage rockfall as Cement Creek Road and LaChapelle Park are open to the public.</p>
302	FLAGGED: RED	MOUNTAIN BIKE OPTIMIZED	BLUE	BIKE	BIDIRECTIONAL	12%	36"	MODERATE	4	ELEVATED BERM TURN 16'-18'	651	0.12	MECHANICAL - Kubota U17 mini-X class	<p><b>Location:</b> From jct w/Crown/Cutoff down to Lower Aspen Descent</p> <p><b>Experience/Purpose:</b> Intermediate descent w/potential for alt advanced rock features for MTBs. Expect more hikers on this segment</p> <p><b>Concerns:</b> Many turns on steep slopes and gully crossings</p> <p><b>Hazards:</b> Expect some bedrock or buried boulders, will need to manage rockfall as Cement Creek Road and LaChapelle Park are open to the public.</p>
400	FLAGGED: RED W/ BLACK DOT	SKILLS	GREEN	BIKE	TBD	TBD	48"	GENTLE	NA	ELEVATED TURN 16'-18'	243	0.05	TBD	<p><b>Location:</b> Above segment 100 connecting in at the separated use trail junction with 301,302, and 100</p> <p><b>Experience/Purpose:</b> provide a progressive skills building loop for riders to develop their abilities and get comfortable before hitting the trails.</p>
401	FLAGGED: RED W/ BLACK DOT	SKILLS	GREEN	BIKE	TBD	TBD	48"	GENTLE	NA	ELEVATED TURN 16'-18'	748	0.14	TBD	<p><b>Location:</b> Above the parking area</p> <p><b>Experience/Purpose:</b> provide a progressive skills building loop for riders to develop their abilities and get comfortable before hitting the trails.</p>

<b>Total Flagged Length:</b>	<b>52,755 FT</b>	<b>10.0 MI</b>
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## Trail Types

### **Mountain Bike-Optimized Trails and Preferred Direction Trails**

Mountain bike-optimized singletrack trails are designed and constructed to enhance trail experiences specifically for mountain bikers. Mountain bike-optimized trails might differ from traditional trails in several ways: enhanced tread shaping, directional or one-way travel, and the addition of man-made technical trail features (TTFs). Bicycles move differently along a trail than other modes of transportation. The movement of the wheel, the use of gravity and friction, the transfer of energy from the rider to the wheel – these offer both opportunities and constraints for trails and trail features that may differ from those of other users.

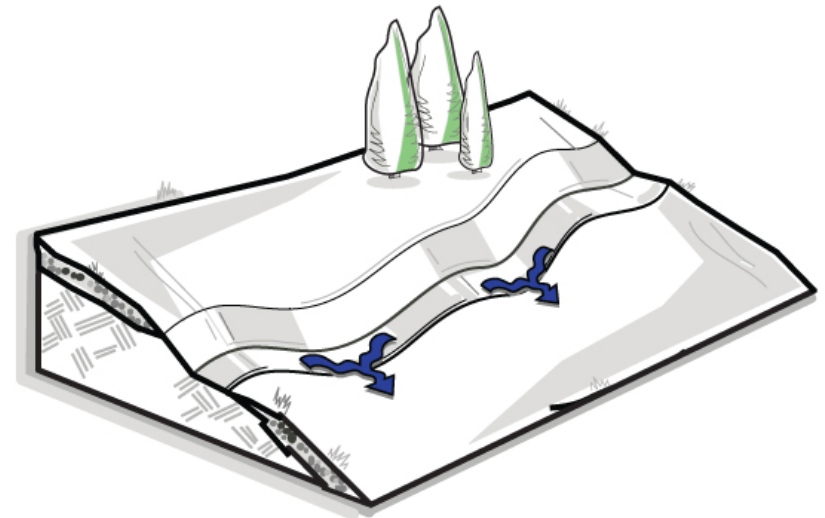
Mountain bike-optimized and one-way trails that harness gravity are a growing area of interest for mountain bikers. These trails can be designed and built at any level, from beginner friendly flow trails to extremely difficult race-oriented downhill trails. Riders cherish the feeling of flight that a bicycle provides while coasting through a succession of bike-optimized features from top to bottom. A consistent trail is not necessarily a boring or easy trail (though it can be), it's one that is designed such that a preceding section of trail prepares users for the subsequent sections. This is a hallmark of flow trails and can be particularly important for beginner trails, as well as for higher speed trails with gravity features, such as jumps and drops.

### **Traditional Single Track**

These natural surface trails are built using sustainable trail construction techniques. Routes are constructed and maintained to minimize user conflict and maximize a natural surface texture and trail corridor. This type of trail should be narrower than 30 inches to reduce speed. All user types use these routes so care should be taken to avoid obstacles that might exclude an allowed user type such as jumps, rollers, or water bars. Turns are constructed sustainably but are not cambered to optimize cornering traction. Keeping trail grades within certain ranges ensures both a positive trail experience for users and proper stormwater drainage with minimized erosion.



*Illustration of a trail built using rolling contour design*



*Illustration of a trail built using rolling contour design*

## Trail Features

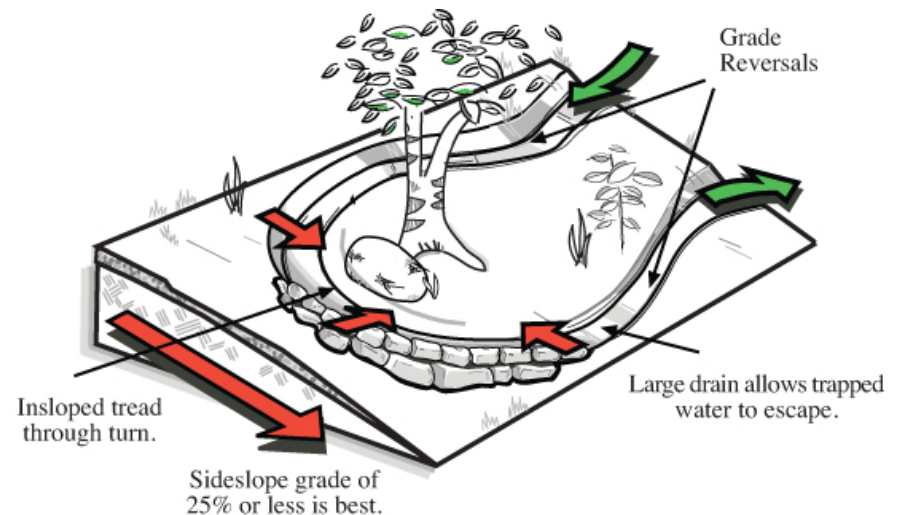
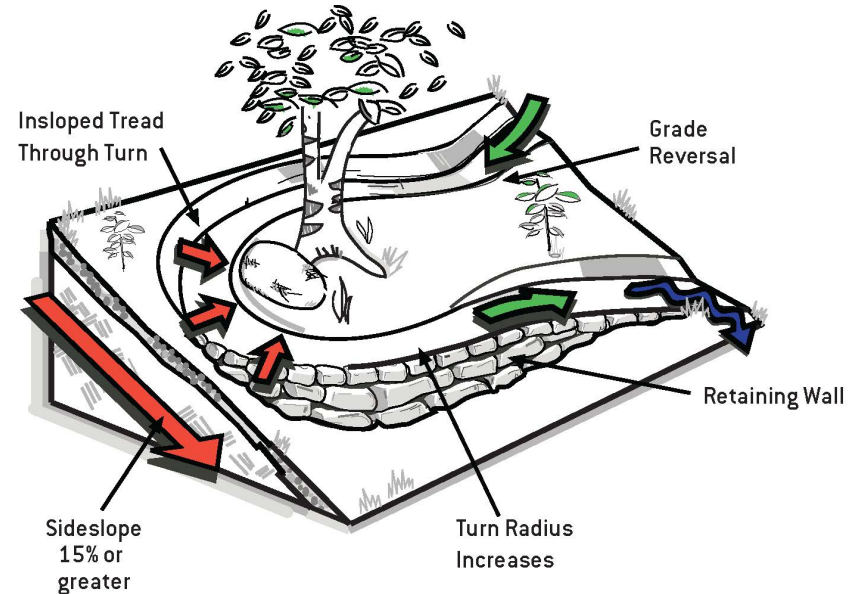
### Turns

#### Elevated Turn

This turn type is typically constructed on sideslopes above 15%. It is called “Elevated” because the lower leg is built with an elevated tread on top of a platform. This platform is constructed with rock, timber, gabion baskets, or soil to retain fill material on the slope of a hill. The fill material is harvested from the trail tread excavation and the turn platform cutbank. This minimizes the climbing grade and can be adjusted to accommodate the intended skill level of the trail. Elevated turns should be designed to have an increasing radius. This will ensure that the trail tread does not erode from excessive braking due to unexpectedly tight turning.

#### Elevated Berm Turn

This turn type is typically constructed on sideslopes above 15% on mountain bike optimized trails. It is called “Elevated” because the lower leg is built with an elevated tread on top of a platform. This platform is constructed with rock, timber, gabion baskets, or soil to retain fill material on the slope of a hill. The fill material is harvested from the trail tread excavation and the turn platform cutbank. This minimizes the climbing grade and can be adjusted to accommodate the intended skill level of the trail. The turn’s tread surface is insloped or has a banked tread surface known as a berm. This allows mountain bikers to negotiate tighter turns on steeper sideslopes without applying excessive shear forces to the tread surface. Elevated Berm Turns should be designed to have an increasing radius. This will ensure that the trail tread does not erode from excessive braking due to unexpectedly tight turning.





# IMPLEMENTATION

## Trail Building Method

The recommended construction scenario includes mechanized trail construction followed by hand-finishing for detailed features. All trails are recommended to utilize rolling contour construction in which a bench cut is used to create a flattened grade along the contour lines of the slope. A deliberate and sustainable method of trail construction, it often incorporates outloping for tread drainage. This is the proven, historic, traditional trail building method used commonly on shared-use, multi-modality, and dual-direction cross-country trails. The planned bike-optimized trails will utilize full bench construction but will also include berms, rollers, flow turns, and other features that hold the rider on the trail and facilitate a sense of flow on the trail.

During fieldwork, the opportunities and constraints of the landscape were assessed to provide a recommended construction scenario for the planned trails. The trail type (traditional or flow-style), landscape conditions (landscape type, steep sides slopes, terrain type, etc.), and the mobilization of equipment influence the types of machines most that will most effectively craft the desired trail. The “Trail Descriptions” chart includes recommended machine types for each trail segment. Generally, a single mini-excavator is recommended for sensitive environments and where steep sideslopes are present. For the trails at the top of the mountain, TS recommends considering a trail dozer in conjunction with a mini excavator if conditions allow.



## Next Steps:

With the trail design executed and the alignments flagged in the field, momentum to carry the project into implementation and construction is imperative. Members from the Silverton Singletrack Society have acknowledged and demonstrated the initiative it takes see this design through a successful implementation. With the design now flagged in the field, approvals processes from resource specialists through the BLM can commence. Having this flagged alignment may also unlock funding opportunities for the project not previously available. It will be helpful and necessary to pursue all funding avenues to ensure a sufficient budget to contract a high-level trail builder. Given the rugged terrain realities and that these trails are the introductory trails for the entire Bakers Park system, hiring a professional and well qualified trail builder is critical. In summary then next steps are:

- Work with BLM to secure approvals from relevant resource specialists.
- Continue to pursue a variety of funding avenues, such as grants and community resources.
- Hire a professional trail builder with proven experience in building on technical terrain with limited access points.