

**(Draft 10/21/11)**

# **COTA Trail Standards**

## **AUTHOR'S NOTES**

As land managers, trail planners, builders and stewards we must not lose sight of the fact that visitors come here to have a good time, avoid injury and not get lost. The evolution of mountain bike trails, recreational equipment, and environmental issues require that this document be amendable, this is a work in progress. Thanks to the United States Forest Service (USFS), North Shore Mountain Bike Association, International Mountain Bike Association (IMBA), the Whistler Off-Road Cycling Association and all the individuals whom helped composed the Whistler Trail Standards (WTS). Special thanks to Woody Starr, Chris Kratsch and Paul Thomasberg for the initial work in editing and rewriting the standards to adapt to Central Oregon's unique trails and character.

## **INTRODUCTION**

Riding a mountain bike on trails involves challenging oneself and with challenge comes risk of injury. Risk is always relative to a rider's skill level in relation to the difficulty of the trail. Therefore, Central Oregon Trail Alliance (COTA) an IMBA affiliated non-profit organization has employed portions of the USFS-Tahoe Basin and National Trails Drawings and specifications, WTS and IMBA standards as foundations for the COTA Trail Standard (CTS) to accurately and consistently define trail types and difficulty levels system wide. This standard insures the trail user can make an informed decision as to the level of difficulty and risk. The COTA board of directors believes the CTS a necessary evolution to help indemnify our organization and land managers. The CTS is essential as the USFS and Bureau of Land Management (BLM) trail standards do not provide sufficient guidelines for: difficulty ratings, designations, inspections, fall zones or signs for trails or trail features typical in our local area. COTA is greatly indebted to local USFS and BLM officials for their nation leading foresight and flexibility in the development of the world renowned Central Oregon Trail Systems. The COTA board of directors feels implementation of these standards is incumbent upon us to fulfill our mission.

# TRAIL CLASS

Trail Types are a description of non-motorized trail characteristics. Trail Type IV has the highest amount of traffic and the most impact on the environment of the trail types. Conversely, Trail Type I has little traffic and the trail tread is minimal. These types define a wide range of trails within the Recreation Opportunity Spectrum as it relates to non-motorized trails.

## CLASS I

- remote, historic and primitive trails
- maintain as low-impact trail or lightly used wilderness like trail
- no minimum tread or corridor width, avoid tread grubbing, sections of very rough terrain
- corridor height 6'

## CLASS II

- plan and maintain as native surface single-track trail
- corridor width 3' minimum
- corridor height 7' - 8'
- provide 12" – 18" width tread on native soil, sometimes rough terrain

## CLASS III

- plan and maintain primarily as native surface single-track trail
- may be machine built
- corridor width 4' - 6'
- corridor height 7' - 8'
- provide 16" – 30" tread width on native soil
- adaptation for equestrian as appropriate

## CLASS IV

- plan and maintain as native or improved surface double-track or single-track trail
- machine built
- remove all embedded trail obstacles
- possible use of crushed gravel with fines, well-compacted gravel, or existing old roadbeds
- corridor width 16' for double-track and 6' for single-track trails
- corridor height 8'
- provide 6'-10' tread width for double-track trails, 3' for single-track trails
- adaptation for equestrian as appropriate

## CLASS V

- plan and maintain as improved surface double-track or road like trail
- machine built
- remove all embedded trail obstacles
- possible use of crushed gravel with fines, well-compacted gravel, or existing old roadbeds
- corridor width to 40'
- corridor height 8'
- provide 10'-20' tread width for double-track trails, frequent passing lanes for single-track trails

# TRAIL DIFFICULTY LEVELS

The following section describes levels of trail technical difficulty as they apply to mountain bikes, starting with Easy and moving up to Expert Unlimited. Included are general and detailed descriptions: of trails, Native Trail Features (NTFs) which are native earth, log and rock formed trail features, Technical Trail Features (TTFs) which are generally fastened wooden construction and include use of non-native materials. CTS quantifies only the technical trail difficulty for mountain bikes it does not necessarily relate to aerobic exertion.

**NAME: Easy    SYMBOL: Green circle O**

## GENERAL

- Minimum rider skill required.
- Gentle climbs and easily avoidable obstacles such as rocks, roots and potholes.
- NTF/TTF shall be alternate to the main tread excepting designated Technical Trails

## DETAILED TRAIL SPECIFICATION

- Maximum grade: 15% not to exceed 200'
- Maximum sustained climbing grade: 10%
- Maximum descending grade: 35% not to exceed 100'
- Curve radius: 6' minimum
- Embedded trail obstacles: up to 4" vertical, obstructions up to 8"
- Logs and roots perpendicular to direction of travel ( $\pm 25^\circ$ )
- Usually associated with Trail Class 3,4 or 5

## EXPECTED TRAIL FEATURES GENERAL

- NTF/TTF width to height ratio of 1:1.33
- Wide, flat, low, rollable features
- No drops or jumps

## DETAILED NTFs

- Log features less than 2' high. Minimum width of flat tread is three-quarters the height. For connected sections, the bisecting angle between each connected section must be large enough to allow the bicycle to complete the turn without requiring any wheel lifting techniques.

## DETAILED TTFs

- Features less than 2' high. Minimum width of flat decking is three-quarters the height. Features below 16" in height shall be considered "puncheon" and constructed as per National Trails Drawings and Specifications. For connected sections, the bisecting angle between each connected section must be large enough to allow the bicycle to complete the turn without requiring any wheel lifting techniques.

## **NAME: More Difficult    SYMBOL: Blue Square [ ]**

### **GENERAL**

- Intermediate rider skills required.
- Challenging riding with moderate slopes and or obstacles, possibly on a narrow trail with mixed traction.
- NTF/TTF shall be alternate to the main tread excepting designated Technical Trails

### **DETAILED TRAIL SPECIFICATION**

- Maximum climbing grade 20% not to exceed 200'
- Maximum sustained climbing grade: 15%
- Maximum descending grade: 70% not to exceed 100'
- Curve radius: 4' minimum
- Embedded trail obstacles: up to 6" vertical, obstructions up to 12"
- Usually associated with Trail Class II or III

### **EXPECTED TRAIL FEATURES GENERAL**

- NTF/TTF width to height ratio of 1:2
- Small features wide and rollable
- Small rollable drops
- Small jumps

### **DETAILED NTFs**

- Log features less than 4' high. Minimum width of flat tread is one-half the height. For connected sections, the bisecting angle between each connected section must be large enough to allow the bicycle to complete the turn without requiring any wheel lifting techniques.
- Drop-offs not exceeding 16" high with exit cleared of all obstacles
- Rock or dirt ramps not to exceed 100% and less than 50'
- Jumps: table top jumps maximum height 3', no double jumps
- No jumps with consequences for lack of speed

### **DETAILED TTFs**

- Features less than 4' high. Minimum width of flat decking is one-half the height. For connected sections, the bisecting angle between each connected section must be large enough to allow the bicycle to complete the turn without requiring any wheel lifting techniques.
- Drop-offs not exceeding 16" high with exit cleared of all obstacles

**NAME: Most Difficult      SYMBOL: Black Diamond **

**GENERAL**

- Advanced rider skills required.
- Could include a mixture of steep climbs and descents, loose trail surfaces, numerous difficult obstacles to avoid or jump over, drop-offs and sharp corners. Some sections may be easier to walk.
- NTF/TTF shall be alternate to the main tread excepting designated Technical Trails

**DETAILED TRAIL SPECIFICATION**

- Maximum climbing grade: 30% not to exceed 100'
- Maximum sustained climbing grade: 20%
- Maximum descending grade: 100% not to exceed 100'
- Curve radius: 2' minimum
- Embedded trail obstacles: up to 12" vertical, obstructions up to 24"
- Usually associated with Trail Type I, II or III
- No minimum curve radius

**EXPECTED TRAIL FEATURES GENERAL**

- NTF/TTF width to height ratio of 1:4
- Elevated features
- Connected features may require wheel lifting techniques
- Drop offs not exceeding 5' vertical
- Large double jumps
- Steep descents with sharp transitions

**DETAILED NTFs**

- Log features less than 6' high. Minimum width of flat tread is one-quarter the height.
- Drop-offs not exceeding 5' vertical (similar to Tahoe Basin spec.)
- Jumps: Table tops, no maximum height. Double jumps no maximum height. Jumps rollable no mandatory air
- Steep Rock or dirt ramps, no grade limit, less than 50', must be rollable

**DETAILED TTFs**

- Feature less than 6' high. Minimum width of flat decking is one-quarter the height.
- Drop-offs not exceeding 5' vertical

# **NAME: Expert Unlimited SYMBOL: Double Black Diamond**

## **GENERAL**

- Exceptional rider skills and balance are essential to clear challenging obstacles or jumps. Expert Unlimited trail will not be found on open USFS trails accepting special use permitted areas or events.

## **DETAILED TRAIL SPECIFICATION**

- Exceeding Most Difficult
- Maximum grades: none

## **EXPECTED TRAIL FEATURES GENERAL**

- NTF/TTF width to height ratio of 1:5 for structures over 6' high.
- Elevated features
- Connected features
- Mandatory air - gap jumps
- Steep descents with sharp transitions
- Risk exceeds Most Difficult due to height, widths and exposure

## **DETAILED NTFs**

- Log features less than 10' high. Minimum width of flat tread is one-fifth the height.
- Drop-offs not exceeding 8' vertical
- Steep Rock or dirt ramps, no grade limit

## **DETAILED TTFs**

- Features less than 10' high. Minimum width of flat tread is one-fifth the height for structures.
- Gap Jumps and rhythm sections
- Drop-offs not exceeding 8' vertical

## **OPEN TRAIL DESIGNATION**

As defined in this document unless restricted below, NTFs and TTFs shall be alternate to the main tread.

## **CLASSIC TRAIL DESIGNATION**

Other than the below limitations Classic Trails are categorized by the same difficulty ratings as all other trails.

- Classic trails are generally all natural terrain and conform to Class 1 or 2.
- There may be some grandfathered NTFs.
- No further proliferation of NTFs will take place on these trails.
- No use of dirt working machines for routine maintenance. A new trail or section built by machine can there after be maintained as “classic”. Machines may be used for creating drainage where handwork is not effective.
- No constructed structures except bridges crossing water bodies or as needed for proper drainage or soil erosion mitigation. Natural deadfall may be incorporated into the trail if it is not moved from where it fell naturally. Other than bridges, drainage and signs, there will be no use of fasteners.
- All dirt work will be minimal and be primarily for drainage, keeping the tread narrow or other wise keeping users on the trail. No obvious jumps or burms will be constructed however enhancements that are consistent with the natural terrain or historic trail building techniques are acceptable.

## **TECHNICAL TRAIL DESIGNATION**

Technical Trails are categorized by the same difficulty ratings as all other trails except that NTFs and TTFs are allowed in the main tread of the trail and are not restricted to being an alternate line. I.E., Lair, Slalom play loop, Whoops etc.

## **SUPPORTING GUIDELINES AND STANDARDS**

This section Contains guidelines and standards about the placement of trails, construction of Native Trail Features, construction and strength of technical trail features and signage.

### **ENVIRONMENTAL GUIDELINES**

The benefits of a trail for recreational purposes must be balanced with the desire to protect the environment. All intrusions into the environment have some degree of impact. However, these impacts can be minimized to balance the objective of a recreational experience with minimal impact on the surrounding environment. Trails that adversely impact the environment will deteriorate in time, have a low aesthetic value and incur a high maintenance cost. Therefore, construction should minimize the trails impact and be designed for the specific environment and the intended trail use.

## **TRAIL DESIGN GUIDELINES**

- Trail placement should avoid hazard areas such as unstable slopes, soil prone to erosion, cliffs, embankments and undercut stream banks, etc.
- To avoid routes that impact wildlife species, critical habitat of rare or fragile plant species and sensitive or fragile archaeological or historic sites COTA adheres to the approved Forest Service / BLM NEPA or other approved processes.
- Avoid trail routing that encourages users to take shortcuts where an easier route or interesting feature is visible. If an interesting feature exists, locate the trail to provide the desired access to the trail user. Use landforms or vegetation to block potential shortcut routes.
- Avoid routing a trail too close to another trail section to prevent trail proliferation or shortcuts between the two trails.
- Use rock armoring in sensitive areas and steep descents to minimize trail erosion.
- Supporting documents IMBA's Principals of Sustainable Trails [Trail Solutions](#), Whistler trail Standards, USFS: National Trails Drawings and Specifications, Tahoe Basin Standards, Trail Construction and Maintenance Book.

## **AQUATIC ENVIRONMENTS**

- Trail construction and maintenance near or in riparian areas per approved Forest Service / BLM NEPA or other approved processes.
- Puncheon in direct contact with water should be inert (for example, natural untreated wood, pre-cast concrete or steel) to avoid water quality impacts associated with chemical leaching from treated wood.
- Single stringer log bridges are the preferred method for crossing streams. Pile supported structures
- are preferred over slabs or floats for bridges requiring supports in contact with streams.
- Locate bridge crossings to minimize disturbance to streambeds and banks. Sections of the waterway that are straight and where banks are stable are preferred for crossing.
- Construct bridges across streams to top-of-the-bank. This minimizes erosion of stream banks and sedimentation of streams.

## **DRY FRAGILE SOILS**

Users and water both cause erosion in Central Oregon soils therefore:

- Avoid turns or obstacle that cause riders to abruptly brake.
- Keep sight lines open to help prevent skidding.
- Trails should be built and maintained to withstand expected erosive forces, for slopes over 25% consider utilizing rock as armoring.
- Trail design should encourage the users to stay on the tread to avoid braiding and damage of fragile flora.
- One-way designation should be considered when excessive erosion or widening of a trail, caused by two-way traffic, occurs.
- Puncheon may be used where other techniques have failed to allow drainage or slow erosion.

## **TRAIL CORRIDOR AND TREAD CLEARING**

- Tread width is from ground level to 18" high. Above 18" is corridor width.
- Definition of the tread width by clearing downed logs is acceptable only when logs are touching the ground. Any logs suspended in the air must be cleared to 5' from the trail or to where they touch the ground.
- Tree branches must be cut at the bole, both longer or shorter are likely to cause infection to the tree or potential hazards.
- KILL healthy snow brush (ceanothus) never trim. Other brush can be pruned as necessary.
- Never leave "stobs" "pungies" or stumps that could cause injury in the fall zone.

## **USE OF MACHINERY**

- Limited access trails that penetrate sensitive areas should be constructed manually with materials and equipment that can be easily transported by small work crews.
- If machinery is required, Low impact construction techniques should be employed.
- Machine use is acceptable for building classic trails, however machine use for maintenance of classic trail is limited to special projects.

# **NTF CONSTRUCTION AND INSPECTION PRACTICES**

## **SAFETY, STRENGTH AND STABILITY**

- Strength of log spans will be based on the capability of each span of the NTF carrying a centered vertical load of 500 lbs. (approximately two times the heaviest rider/bike and gear).
- All rocks shall be placed in manner where they are solidly fixed to the ground and or adjacent rocks.
- Where necessary logs may be pinned to the ground with #2 rebar. Rebar shall be buried in log members a minimum of 2”

## **NTF DESIGN PHILOSOPHY**

- Similar to USFS Tahoe Basin standard however also includes earthen jumps typical of Central Oregon
- NTFs can utilize native dirt, rocks and logs to create challenging features or trails
- No imported materials or fasteners shall be used excepting rebar for pinning logs to the ground.
- All joining log members shall be connected fastener free and preferably in an interlocking fashion.
- NTFs shall be alternative to the main tread excepting designated Technical Trails (I.E., Whoops, Funner, Tiddly Winks etc.
- Lair, Slalom Play loop, Cline Buttes etc.) NTFs may be the main tread on designated jump trails.
- Qualifiers: By placing a narrow section or difficult turn early while the NTF is still close to the ground (known as a qualifier), inexperienced riders may dismount prior to the NTF getting too high above the ground where the rider is more likely to be injured should a fall occur.
- Make the highest difficulty section visible from the entry: By placing the difficult section in view, the rider can make an informed decision before they may get into trouble with a TTF that may be beyond their ability. Avoid wide, easy entrances leading to high, narrow exposed features. Features should appear to be as challenging as they actually are.

## **NTF HEIGHT AND WIDTH**

Maximum height and minimum width are dependent on the NTFs difficulty rating. Height is measured vertically to the lowest point within 3’ adjacent to the NTF. Tread width is the amount of flat deck.

- Easy: less than 2’ high, minimum tread width of flat decking is three-quarters the height
- More Difficult: less than 4’ high, minimum width of flat decking is one-half the height.
- Most Difficult: less than 6’ high, minimum width of flat decking is one-quarter the height.
- Expert Unlimited: less than 10’ high, minimum width of flat tread is one-fifth the height.

## **INSPECTION**

COTA will inspect NTFs during routine maintenance. NTFs will be inspected to ensure serviceable condition until the next scheduled inspection. Inspections will be recorded on TTF/NTF inspection sheets, which will be available to land managers and other interested parties for review upon request. NTFs that do not pass inspection will be immediately closed until repaired, replaced or destructed.

# **TTF CONSTRUCTION AND INSPECTION PRACTICES**

## **SAFETY, STRENGTH AND STABILITY**

- TTFs over 16” in height will be engineered when required by land managers. For the purpose of constructing TTFs less than 16” in height, they shall be considered puncheon and follow USFS National Trails Drawings and Specifications and shall not require further engineering.
- Basic engineering specifications, if required, will be based on the capability of each span of the TTF carrying a centered vertical load of 500 lbs. (approximately two times the heaviest rider/bike and gear).
- Every individual rung should be capable of holding 250 lbs (approximately one rider/bike and gear).
- TTFs will not be mounted to living trees.
- The finish must be such that if a rider were to fall, the structure or other protrusions would not increase the degree of the injury.

## **TTF DESIGN PHILOSOPHY**

- Qualifiers: By placing a narrow section or difficult turn early while the TTF is still close to the ground (known as a qualifier), inexperienced riders may dismount prior to the TTF getting too high above the ground where the rider is more likely to be injured should a fall occur.
- Make the highest difficulty section visible from the entry: By placing the difficult section in view, the rider can make an informed decision before they may get into trouble with a TTF that may be beyond their ability. Avoid wide, easy entrances leading to high, narrow exposed features. Features should appear to be as challenging as they actually are.

## **TTF HEIGHT AND WIDTH**

Maximum height and minimum width are dependent on the TTFs difficulty rating. Height is measured vertically to the lowest point within 3’ adjacent to the TTF. Tread width is the amount of flat decking.

- Easy: less than 2’ high, minimum tread width of flat decking is three-quarters the height.
- More Difficult: less than 4’ high, minimum width of flat decking is one-half the height.
- Most Difficult: less than 6’ high, minimum width of flat decking is one-quarter the height.
- Expert Unlimited: less than 10’ high, minimum width of flat tread is one-fifth the height.

## **BRIDGE RUNG SPACING**

Deck rungs must be placed tightly so that children will not catch their feet between rungs, arms will not fit between rungs and all users including dogs will use bridges as opposed to walking adjacent to the bridge, potentially compromising a sensitive area the bridge was intended to protect. An appropriate spacing between rungs is 1” to 1.5” to promote drainage of water and mud. Rungs should not overhang stringers by more than two inches.

## **BRIDGE SURFACING**

It is recommended that wood surfaces with a slope exceeding 20%, will have rough cut / split wood having a rough surface.

## **INSPECTION**

COTA will inspect TTFs once every five years. TTFs will be inspected to ensure serviceable condition until the next scheduled inspection. Inspections will be recorded on TTF inspection sheets, which will be available to land managers and other interested parties for review upon request. TTFs that do not pass inspection will be immediately closed until repaired, replaced or destructed.

# **FALL ZONE GUIDELINES**

## **FALL ZONE**

The fall zone is 5' to each side of the tread of NTF/TTFs and main tread landing zones for jumps and drops. Fall zones should be reviewed for hazards. Hazard mitigation efforts can be limited to those items that can be reasonably expected to be reshaped or removed using hand tools while maintaining the natural characteristics of the terrain.

## **METHODS**

Methods to reduce risk in fall zones include but are not limited to:

- Cutting or digging out any sharp objects
- Trimming tree branches to the bole.
- Covering of hazards is another option if material such as rotten logs, bark, mulch, dirt, etc. is available, some areas may need periodic re-covering.
- Dulling of sharp points or edges of exposed rocks
- The fall zone need not be cleared of all foliage; the purpose of fall zone guidelines is to reduce the chance of injury should a fall occur. Replanting of the fall zone with a durable locally occurring species may be considered.

# TRAIL CONSTRUCTION

For new trails, COTA will use experienced trail builders for the trail alignment and follow the supporting guidelines, standards and necessary regulations.

## TRAIL RATING

Each trail and each NTF/TTF along the trail is reviewed and measured to determine its difficulty. The details and difficulty level of each TTF are to be recorded. The trail will be rated by the hardest non-alternate sections difficulty, bearing in mind all alternate features rated at a higher difficulty than the trail's rating must be individually signed. No alternate trail feature shall be more than one level harder than the main tread.

# TRAIL MAINTENANCE

Trail maintenance is an integral part of managing trails. In general, high use trails require a greater level of maintenance and an expedited response to trail deterioration. Trails with NTFs/TTFs require enhanced maintenance and inspection.

## INSPECTION

- Of the trail to verify difficulty designation, identify areas that need future maintenance.
- Of informational signs for presence and condition.
- Of NTF/TTFs for structural integrity, fall zone compliancy, completion of the NTF/TTF inspection sheet.

## MAINTENANCE PRIORITIES

COTA will inspect COTA maintained trails as cataloged on the Adopt a Trail database. All inspections and maintenance will be documented via NTF/TTF inspection sheets and COTA work log.

- **HIGH PRIORITY TRAILS;** All Class II, III, IV trails and all trails with cataloged NTF/TTFs. Trails will be cleared of windfall and inspected in the spring based on snow level.
- **LOW PRIORITY TRAILS;** Trail will be inspected when volunteers get out to clear the trail, ideally at the start of the trail use season. These include remaining COTA maintained trails. These trails may not get cleared every year.

## **MAINTENANCE TRIGGERS**

- NTF/TTFs deteriorating.
- Short-cutting of climbing turns and/or switchbacks.
- Trail drifting or sliding down the hill.
- Vegetation cover loss.
- Trail proliferation (widening or braiding).
- Trail rutting or soil loss (erosions exceeding 6" depth).
- Sight lines obstructed by branches or brush.

## **GRANDFATHER CLAUSE**

In the case of valued existing trails, when trail deactivation is unlikely to succeed, trail management becomes the preferred option. When considering the Grandfather Clause as an option, evaluate the continuing cost of maintenance to manage the trail. A trail deactivation/closure may not be successful if the trail has been established, is well used, and no alternative route is proposed. The resulting damage may be worse than had the trail remained open and effectively managed.

## **TRAIL DEACTIVATION**

There may be a number of reasons for obliterating an existing trail. When considering obliteration of a trail, take into account;

- Is the trail popular?
- Is the level of impact acceptable or can it be made acceptable by management?
- Can the trail or part of the trail be rerouted to improve the situation?
- Are there suitable alternatives for users if the trail is obliterated?
- Is the trail historically significant?

### **Alternates to trail obliteration:**

- Management of trail use.
- Temporary closures
- Reroute sections of trail
- Exclusion of damaging users
- Education of users with signs or other education initiatives.

### **When considering obliteration of trails, steps must include the following:**

- Consult user groups.
- Public notice.
- Monitoring to ensure trail remains obliterated.

And may include:

- Signs informing users of reasons for closure.
- Fences.

# SIGN GUIDELINES

Signs are a necessary component of trail management. They provide the user with information that will allow them to make an informed and educated choice. The hierarchy of signs will be comprised of three levels: Trail Network Kiosks, Trail Junction Signs and Trail Advisory Signs.

## TRAIL NETWORK KIOSK

Located at a parking lot or similar entrance to a network of trails or trailhead, information for trail network signs may contain a combination of the following: Basic information, Trail etiquette and Safety information.

### Basic information

- Bulletin board
- Topographical map of area
- Trail maps for distribution
- Acceptable trail user groups
- IMBA rules of the trail
- Ride on open trails only
- Leave no trace
- Never spook animals
- COTA web and other contact information for maintenance concerns or how to get involved.
- Background information on the surrounding area and trails

### Trail etiquette

- Keep single track single - Stay on trail
- Do not alter the trail
- Do not skid - Ride don't slide
- Avoid riding in muddy conditions
- Control your bicycle
- Always yield trail to up hill traffic and other users

### Safety

- Wear a helmet
- Ride in 3's
- Know your limits
- Plan ahead
- Carry a flashlight
- Carry an emergency blanket
- Let someone know your route, time of return and carry a two-way communication device.
- Emergency contact phone numbers
- Description of cell phone coverage

## **TRAIL JUNCTION SIGN**

These signs are to be located at the entrance(s) of a particular trail to provide the user with the information necessary to make an informed and educated decision whether to proceed or not.

### **SUGGESTED INFORMATION**

- Map locator number
- Trail name
- Difficulty rating
- Trail length (distance to next landmark)
- Accepted users / restricted users

### **DETAILS**

6" X 6" cedar posts

### **OPTIONAL INFORMATION**

- A written explanation of what the user may encounter on the trail
- Alert to and quantity of higher difficulty alternative route NTFs/TTFs if present
- Conditions subject to change
- Inspect NTF/TTFs prior to riding
- Trail profile

## **TRAIL ADVISORY SIGN**

A general category of sign used to alert users to: increasing difficulty, locating continuing segments of trails, road crossings, accepted / restricted users, or specific restriction on an upcoming section of trail.

### **SUGGESTED INFORMATION**

- Difficulty rating
- Directional Arrow
- Restricted / Allowed users
- Direction for one-way trails or features.
- Indicating alternate NTF/TTF's rated higher than the trail rating
- Passing lane delineation for event trail network.
- Consider reflective signs for night use.

### **DETAILS**

Materials vary, may include Carsonite or 4" X 4" posts. It is important for the sign to be highly visible. Place sign approximately 3' - 4' above tread.

# TERMINOLOGY

**A-FRAME**– two ramps (approach and exit) placed together with no level section at the apex. Typically used to bridge deadfall across the trail.

**BERM** – built up bank on the outside of a corner to improve cornering.

**BRIDGE**– a structure that is built above and across a river or other obstacle allowing passage across or over obstacle.

**DROP-OFF**– a drop in the trail, possibly at the end of a log or off a rock; may require a technique depending on the vertical drop and/or the angle of descent.

**EXPOSURE**– placing a rider in the position or location that an error in balance or maneuvering may result in an injury; for example, a narrow bridge above rocks would be exposure and the greater the elevation of the bridge above the rocks, the greater the level of exposure.

**FACE**– the steep exposed side of a rock.

**GAP JUMP**–two ramps placed back to back with a space between them, the rider must travel with enough velocity to cross the space and land on the second ramp.

**GRANDFATHER CLAUSE**– provision exempting certain pre-existing trails from the requirements of a new regulation.

**JUMP**– a wedge shaped feature built with the intention of sending the rider airborne.

**LADDER**– a TTF with rungs attached to sides (stringers) made of metal, wood or rope, used for climbing up or down.

**LOGJAM**–a NTF pile of logs placed near perpendicular to trail to make a ramp, usually placed in front of and behind deadfall to ease passage.

**MACHINE BUILT**– constructed with the use of an excavator.

**MANDATORY AIR**– a NTF/TTF requiring a wheelie drop or other advanced technique to exit due to a steep or undercut exit.

**MANUAL**– technique used to lift the front end of a bike up without the use of a pedal stroke; can be used off mandatory airs, etc.; generally requires more forward momentum than a wheelie drop.

**PUNCHION**- a raised walkway made of boards; used to traverse sensitive areas, similar to bridge.

**QUALIFIER**– a gateway placed before a trail or TTF; for example, a 2x4 placed before an elevated bridge or a difficult corner. If the rider can successfully negotiate the more difficult gateway, then they will likely be able to negotiate the TTF.

**RAMP**– any inclined structure, typically used as an approach to or exit from a TTF. A ramp can also be a

jump.

**RHYTHM SECTION**– series of gap jumps placed end to end. Most technical form of jumping due to skill, timing, technique and failure consequence.

**RIPARIAN ZONE/AREA**– land between the water and the high water mark on the riverbanks. Riparian areas typically exemplify a rich and diverse vegetative mosaic reflecting the influence of water.

**NTF (Native Trail Feature)** This includes structures as identified in the “Tahoe Basin Standards” and other features that that can be adequately defined as an NTF according to the NTF standard

**ROLLABLE** – a section that can be ridden without requiring higher-level rider skills; for example, an elevated bridge intersection/corner that can be ridden without having to hop and rotate.

**TABLETOP**– two jumps back to back with the void between the jumps filled in with dirt, creating the tabletop.

**TONGUE**– a steep ramp on the exit of aNTF/TTF, often as an easier alternative to mandatory air.

**TREAD**– the traveled surface of the trail.

**TTF**– Technical Trail Feature – a wood constructed obstacle on the trail requiring negotiation, such as an elevated bridge.

**WHEELIE DROP** – technique used to pedal off drops-off or logs with the back wheel landing before the front wheel.