

Glossary of Terms

The definitions in this section are intended to define terms as they are used in this Trail System Master Plan. Many of the terms defined here have different or broader meanings when used in other contexts.

Access/Egress Point – The most basic type of recreation node. An access/egress point has the same characteristics as a GIC point, but has been formalized so that access there is legal and/or regularly maintained by a public or private entity. The basic elements of an access/egress point should include signage and a clear passageway sufficient to accommodate the intended users. These locations may or may not include low-impact amenities such as a source of drinking water or limited parking.

Activity Centers – specific locations or discrete areas that attract significant levels of human activity or trips (civic buildings, schools, shopping centers, areas of high employment, etc).

At-Grade Crossing – a junction where trail or sidewalk users cross a roadway over the same surface as motor vehicle traffic, as opposed to a grade-separated crossing where users cross over or under the roadway using a bridge or tunnel.

Bicycle Boulevard - Streets designed to limit or prohibit motor vehicle traffic, using barriers or other design elements, in order to enhance bicycle safety and enjoyment.

Bicycle Facilities - A general term used to describe all types of bicycle-related infrastructure including linear bikeways and other provisions to accommodate or encourage bicycling, including bike racks, lockers, and showers at employment destinations.

Bike Lane - A striped lane for one-way bike travel on a street or highway.

Bike Path – See “Multi-Use Path”

Bike Route - A shared roadway specifically identified for use by bicyclists, providing a route based on traffic volumes and speeds, street width, directness, and/or cross-street priority, denoted by signs only.

Bikeway – A generic term for any road, street, path or way that in some manner is specifically designed for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Bollard – Post used to restrict motor vehicle entry onto trails

Bus - Refers to a public transportation vehicle operating on a Town of Mammoth Lakes summer or winter transit route.

Class I Bikeway - See “Bike Path” and “Multi-Use Path”

Class II Bikeway - See “Bike Lane”

Class III Bikeway - See “Bike Route”

Clearance, Lateral – Width required for safe passage of soft-surface trail or paved pathway users as measured on a horizontal plane.

Clearance, Vertical – Height required for safe passage of soft-surface trail or paved pathway users as measured on a vertical plane.

Climbing Turn - A turn used to change direction that does not have a constructed platform or landing. The upper and lower legs of a climbing turn are joined by a short section of trail (the apex) that lies in the fall line. Water is shed to the inside of the trail turn. Climbing turns may be used where sideslopes are moderate and foot traffic will be minimal. Berming of turns may be appropriate on preferred mountain biking trails where there is adequate drainage control prior to the turn.

Concept and Master Planning (CAMP) - An effort led by the non-profit Mammoth Lakes Trails and Public Access (MLTPA) to encourage public participation in the development of the Trail System Master Plan update. MLTPA hosted two major events as part of this effort: “CAMP: Summer” and “CAMP: Winter”.

Contour Trail - A trail designed in a manner where its grade does not exceed half the grade of the surrounding sideslope. This is counter to a fall-line trail (see below).

Curb Extension – Extension of the curb and sidewalk area that narrows the crossing distance for pedestrians and provides standing space for pedestrians waiting to cross the street. Also referred to as a “bulb out”.

Directional Signs – These are typically placed at road and trail junctions (decision points) to guide trail users toward a destination or experience.

Easement - the privilege of using something that is not your own (as using another’s land as a right-of-way to your own land)

Fall-Line Trail - Any trail where the grade of the trail exceeds half the grade of the sideslope of the surrounding terrain (for example, a 25% trail grade on a 30% sideslope). On a fall-line trail water travels the length of the trail instead of sheeting across the tread, accelerating erosion.

Flagstone Paving - Large, flat-faced stones are placed directly on a mineral soil base or an aggregate foundation (a mixture composed of sand, gravel, pebbles, and small rocks, which is devoid of organic material). Each stone's largest and smoothest face is placed up, at-grade, to form the tread surface. This is the most common and simple armoring technique. Rocks may need to be imported from outside the area to make this technique viable.

Forest Trail - A trail wholly or partly within or adjacent to and serving the National Forest System that the U.S. Forest Service deems necessary for protection, administration, and use for the National Forest System and the use and development of its resources. (USFS definition)

Full Bench Cut - Refers to excavating a very steep cross slope. (Never toss excess material down slope. Haul out or disperse on the tread.)

Geographic Information Systems (GIS) - Computerized system of hardware and software used for electronic storage, retrieval, mapping, and analysis of geographic data.

Geometry - The vertical and horizontal characteristics of a transportation facility, typically defined in terms of gradient, degrees, super elevation, and travel speed.

GIC Point –GIS Inventory Contract (contracted by TOML with MLTPA) points provide the basis for selecting recreation nodes and may include any official or unofficial locations where a recreational transition or activities occurs. This transition can include parking a car or disembarking from another mode of transportation in order to engage a recreational activity. The transition may also be between jurisdictional boundaries or between types of experiences (i.e. urban and rural, paved to unpaved). All recreation nodes have at least one associated GIC point, but not all GIC points are recreation nodes.

Global Positioning System (GPS) - A system which enables a mobile receiver to determine its precise geographic location via satellite telemetry.

Grade - The steepness of a trail, measured by rise-over-run.

Grade Reversals - A grade reversal is an undulation within the trail tread: a short dip followed by a rise. This grade change in the tread catches water at the low point and diverts it off the trail. Grade reversals are the preferred erosion prevention technique. They are friendly to all users and require little maintenance once installed. When not incorporated into the original construction of the trail, there are two techniques available to retrofit them into the tread:

Grade Separation - Vertical isolation of travelways through use of a bridge or tunnel so that traffic conflicts are minimized.

Grade-Separated Crossing – a bridge or tunnel allowing trail users to cross over or under a major roadway.

Knick - In soils with a high displacement factor, a grade reversal should be accomplished by removing a wedge of soil to create a dip in the tread, known as a knick.

Level of Service (LOS) - Term for the measurement of how well traffic “flows” on a roadway system or segment, “multi-modal LOS” contains measures for many modes including bicycles, pedestrians, transit, and motor vehicles

Lift - Refers to chair lifts and gondolas associated with the Mammoth Mountain Ski Area.

Loop Detector - A device placed under the pavement at intersections which can detect a vehicle or bicycle and trigger an actuated or semi-actuated signal to turn green.

Medians – Area in the center of the roadway that separates directional traffic, and provides a crossing halfway point for pedestrians (also can be effective traffic calming design). Medians may be level with the surrounding roadway or “raised” using curb and gutter. Medians may include landscaping, concrete, paint/stripping or any combination thereof.

Mode Split - Percentage of trips that use a specific form of transportation. A one percent bicycle mode split indicates that one percent of trips are made by bicycle. Also referred to as mode share.

Multi-Use Path – a paved pathway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Multi-use paths may be used by pedestrians, bicyclists, skaters, wheelchair users, joggers, and other non-motorized users.

National Forest System Trail - A forest trail other than a trail that has been authorized by a legally documented right-of-way held by a state, county, or other local public road authority. (USFS definition)

Natural-Surface Trail - A tread made by clearing, grading, and compacting the native soil with no outside foreign material imported for stabilization.

Near-Term – Refers to projects that are funded, designed and/or under construction.

Off-Highway Vehicle (OHV) - Any motorized vehicle designed for or capable of cross-county travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain.

Off-Road Trail – A trail primarily by mountain bikers, hikers and equestrians that is off of the road and is a non-paved surface.

Outslope – Refers to the down slope part of the tread that helps to shed water from the trail.

Over-Snow Vehicle (OSV) - A motor vehicle designed for use over snow that runs on a track or tracks and/or a ski or skis while in use over snow.

Park - A self-contained recreation facility that generally include the same amenities (parking, restrooms, trash/recycling) as a trailhead. Since all parks operated by the Town of Mammoth Lakes—except Whitmore Park—currently provide access to existing trails, parks essentially serve as trailheads with the additional amenities unique to each individual park.

Partial Bench Cut - Refers to an excavated cross slope. Used on hill sides with a gradual cross slope to help.

Pathway, Paved – A paved pathway is a linear trail facility used primarily for non-motorized transportation or recreation and constructed with a surface comprised of asphalt and/or concrete. Alternative surface materials such as decomposed granite or soil binders may be considered as an alternative to asphalt or concrete pavement.

Paved Shoulder – the outer edge of the roadway beyond the outer stripe edge that provides a good place for cyclists when it is wide enough (4-5 feet), free of debris, and does not contain rumble strips or other obstructions.

Pavement Marking – An assortment of markings on the surface of the pavement that give directions to motorists and other road users in the proper use of the road. (the “Manual on Uniform Traffic Control Devices” determines these standard markings).

Pedestrian Facilities – General term used to describe infrastructure improvement for pedestrians, including—but not limited to—sidewalks, crosswalks, and promenades.

Portal - The most developed form of recreation node. A portal includes all the amenities of a trailhead plus lodging and restaurants.

Promenade – A wide sidewalk facility (min 10 ft) installed in areas of high pedestrian activity. Promenades are designed primarily for pedestrian use, but may be linked to multi-use paths and used by slow moving bicyclists and other trail users.

Quality of Life – “Quality of life” generally refers to the level of overall personal satisfaction (or dissatisfaction) with the physical, cultural or intellectual conditions under which one lives; and the ability to comfortably pursue enjoyable daily activities. The Needs Analysis chapter describes the recreational activities commonly pursued by Mammoth residents and visitors and discusses how their enjoyment of those activities can be enhanced.

Recreationist – a person who seeks recreation especially in the outdoors.

Recreation Node - a general term to describe a geographic location of existing or potential significance for outdoor recreation.

Refuge Islands – corner raised triangles or medians, used by pedestrians at intersections or mid-block for assistance with crossing wide streets, especially with motor vehicle right turn lanes.

Reinforcement of Turns - Mammoth soils are particularly susceptible to erosion in climbing turns. Reinforcement needs are directly associated with the speed of the rider and the displacement factor of the soil. Reinforcing a turn should be done by combining grade reversals and armoring techniques through the turn. In the worst soils armoring should be employed both in the approach and exit of the turn. Using a surfacing technique combined with in-slope berming at the apex of the turn should be utilized to avoid displacement of soils.

Right-of-Way - A privilege or right to cross over or use the land of another party for egress and ingress such as roads, pipelines, irrigation canals, or ditches. The right-of-way may be conveyed by an easement, permit, license, or other instrument. Also, the right of one vehicle, bicycle, or pedestrian to proceed in a lawful manner in preference to another vehicle, bicycle, or pedestrian.

Rolling Grade Dip - This technique uses the soil excavated from the low section of a trail to build up the entrance and exit to the dip. Ideally dips use natural features, such as trees or rocks, as landscape anchors.

Secondary Trail Identification Markers - These are placed at regular intervals along the trails to assure users that they are on the correct trail. International activity symbols would be posted here together with trail access information.

Shared Roadway - A roadway where bicyclists and motor vehicles share the same space with no striped bike lane. Any roadway where bicycles are not prohibited by law (i.e. interstate highways or freeways) is a shared roadway. A bike route (Class III) is a shared roadway which has been identified as favorable to use by bicyclists.

Side Slope Gradient - Cross slope.

Sight Distance - The distance a person can see along an unobstructed line of sight.

Soft-Surface Trails – Trails developed using surface materials that do not include concrete or asphalt pavement. A typical soft-surface trail consists primarily of native soils. However, in some cases, wooden structures, decomposed granite, rock armoring, soil binders and other trail building techniques may be implemented as needed to address issues specific to any given trail or trail segment.

Stabilizing Techniques - Techniques employed to reduce erosion along trail segments where alignment exceeds guidelines; stabilize tread that is routed on unstable pumice soils; provide technical challenge; slow riders before an intersection, technical challenge, or other situations of flow transition.

Stairs - Built of rock or wood, stairs are used to gain elevation quickly or where a contour trail is not possible because of environmental constraints. Stairs should be used only when all users are expected to travel by foot.

Stone Pitching - This is an ancient road-building technique in which medium-sized rocks are set on end, or "pitched" up on their side. The stones are hand-fitted tightly together, with aggregate packed into the gaps to tighten the construction. Think of a book in a bookshelf—only the spine is showing and the rest of the book is hidden. Small rocks for this technique should be locally available, however they may have to be collected and transported from an area away from the project site.

Surfacing - A technique where stabilizing soils or additives are brought in to give a trail better cohesion. Surfacing can be done on a whole trail or on a select part that is more prone to erosion, such as turns and corners. Bringing in heavy clays mixed with stones can help to stabilize Mammoth's pumice soils.

Switchback - A technique for moving a trail up steep sideslopes. The transition is made by way of a flat landing or pad. A correct switchback will shed water off the back of the landing, and there is an immediate separation of trail segments.

Switchbacks - Used for steep grade changes only when terrain or land boundaries dictate. Preferred for hikers. (Never stack switchbacks one on top of the other.)

Technical Trail Feature (TTF) - An obstacle placed on the trail specifically to enhance technical challenge. The feature can be either man-made or natural, such as an elevated bridge or a rock face. Also referred to as "technical features" or "features."

Traffic Calming - Changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through volumes in the interest of street safety, livability, and other public purposes.

Traffic Control Devices - Signs, signals, or other fixtures, whether permanent or temporary, placed on or adjacent to a travelway by authority of a public body having jurisdiction to regulate, warn, or guide traffic.

Traffic Volume - The number of vehicles that pass a specific point for a specific amount of time (hour, day, year).

Trail - A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail. (USFS definition)

Trail Braiding – An advanced stage of trail degradation typically occurring along unsustainable trail alignments where rutting or pooling of water is caused by erosion or the compaction of wet soils. To avoid the degraded segment, trail users take a route around the degraded trail segment. Soon the alternative route becomes worn and the exposed soil eventually succumbs to the same rutting or pooling of water, inducing users to take a third route and so on.

Trail Corridor - An area that is maintained clear of obstacles and debris to allow users to travel freely and safely. Dimensions vary based on the anticipated user. The width includes the tread, the out-slope, the back-slope, and any additional clearance requirements. The height dimension is measured from the ground surface upwards.

Trail Identification Marker - These signs identify the trail. They should be large enough to be visible and readable for drivers, with appropriately sized typography. Information to be displayed could include the name of the portal, a jurisdictional branding element, parking information and whether the trail is accessible for motorized and/or non-motorized users.

Trail Information Kiosks - These provide the universe of information including a trail map, distances to destinations, trail conditions, trail experiences, connection with area amenities, and regulatory and safety information (hours of operation, rules, etc.). The size of these directories (small or large) will depend on the type and popularity of the particular trail.

Trail Management Objectives (TMOs) – Trail Management Objectives (TMOs) are fundamental building blocks for trail management. TMOs tier from and reflect forest plan, travel management and/or trail-specific management direction. TMOs synthesize and document, in one convenient place, the management intention for the trail, and provide basic reference information for subsequent trail planning, management, condition surveys, and reporting.

Trail Vehicle - A vehicle designed for trail use, such as bicycles, snowmobiles, trail bikes, trail scooters, and all-terrain vehicles. (USFS definition)

Trailhead – A developed recreation node which provides—at a minimum—automobile and/or bicycle parking facilities, trash/recycling, restrooms and signage.

Trail-Oriented Development (TrOD) – Development designed to make trails more useful by linking them with jobs and other economic activities. Real estate development and other physical infrastructure oriented toward adjacent trail, providing entrances facing the trail and directional signage leading to trail facilities.

Transportation Demand Management (TDM) - Generally refers to policies, programs, and actions that are directed towards increasing the use of high occupancy vehicles (transit, carpooling, and vanpooling) and the use of bicycling and walking with the express purpose of reducing or limiting vehicle cold starts and miles traveled for congestion and air quality purposes.

Tread - The actual portion of a trail upon which users travel, or the typical width of the dirt footprint.

Utilitarian Trips – Trips that are not for work or recreational purposes, such as running errands.

Water Bars – Technique used to correct erosion problems on a trail that is traveling the fall line. This technique involves labor-intensive installation and maintenance and has the potential to create trail hazards for all users. With proper trail design and the use of grade reversals, this technique should rarely be needed in the Mammoth region.

Waterbar – Technique to prevent erosion in construction of off road trails.

Wide Curb Lane – A 14 foot (or greater) wide outside lane adjacent to the curb of a roadway, that provides space for cyclists to ride next to (to the right of) motor vehicles. Also referred to as a “wide outside lane”.