

**MOUNT JUMBO PRESERVE**  
**MOUNT JUMBO SADDLE - TRAIL MANAGEMENT UNIT**  
***DRAFT* RECREATION TRAILS PLAN**

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# 1. Introduction

## 1.1 Purpose and Need

In 1997, the Missoula community conserved Mount Jumbo as open space. Mount Jumbo has always been recognized for its natural values, visual importance, and recreation potential. The adopted 1999 Mount Jumbo Management Plan identified that “Mount Jumbo’s greatest contributions to Missoula’s open space system consist of its conservation values. For this reason, the overriding objective of the Mount Jumbo Management Plan is to preserve the land’s natural resources. An important secondary management objective is to provide diverse recreational opportunities and to manage the types, amounts, seasons, and locations of those public uses.” This plan identified the extent of the Mount Jumbo recreation trail system at the time of acquisition, as well as the need for thoughtful consideration when planning future expansion to the trail system due to the important natural values present, including critical elk winter range. This plan also established the seasonal elk closures that occur on Mount Jumbo each winter.

In 2010, the City of Missoula adopted the Conservation Lands Management (CLM) Plan which governs management of all lands in the Open Space Conservation Lands System, including Mount Jumbo. This plan identified Mount Jumbo as a Park Preserve, which defines “management priority as preserving and improving native habitats and achieving an appropriate balance between resource protection and public use.” This plan established construction standards and guidelines for recreation trails by use type within the system. This plan also acknowledged that many system trails were never intentionally planned or constructed, and that significant effort would be required to update existing trails to meet standards. Lastly, this plan directs CLM staff to address all known current and future recreational uses when planning for new construction or updates to the existing recreational trail system.

In 2014, the City of Missoula adopted the Mount Jumbo Forest Management Plan on Critical Elk Winter Range. This plan directs forest management on the South Zone of Mount Jumbo to promote elk habitat quality and connectivity. While this plan does not directly address recreation trail planning, it directs CLM staff to “manage public recreation to minimize impacts on elk habitat.”

In 2015, City CLM staff conducted the first comprehensive Inventory and Condition Assessment of Trails within the Missoula Conservation Lands System. This was the first such assessment of trails since the CLM Plan was adopted in 2010 which established trail construction standards and guidelines for building trails that are both enjoyable and sustainable on the landscape. This effort applied the trail standards and guidelines to mapping slope, width, and drainage of all known trails, and subsequently identifying trails or segments that need to be addressed.

Since 2015, CLM staff have periodically addressed trail problems and brought certain trail sections up to standard as time and funding allowed. Despite significant progress in certain areas, major issues still exist, especially in the larger properties (such as Mount Jumbo, the North Hills, and Mt Sentinel) where entire trail networks were inherited from a history of informal trail use, constructed fire line, and old roads built for logging, mining, grazing, and utility access. In these areas, trail routes, trail connections, and trail physical properties were never intentionally designed and largely do not meet trail standards and management goals.

Given the number of needs that still exist in the trail system, limited time, and limited resources, CLM staff developed a process to prioritize areas for recreation trail updates. The process involves

subdividing larger properties into discrete Trail Management Units (TMU) based on intuitive breaks in the trail system or shifts in the recreational user experience. Each TMU is then assigned a priority based on analysis of best available data on existing trail conditions, needs, and resources. While the process does not identify any particular timeline for addressing needs, it does establish a framework upon which to guide and target limited staff resources towards addressing the highest priority needs within the system.

The purpose of this Recreation Trails Plan is to establish a trail system which addresses known issues, meets recreational use needs, and protects natural and cultural resource values for the Jumbo Saddle TMU. The Jumbo Saddle TMU was identified as one of the highest priority units to address within the Mount Jumbo trail system (see Appendix I) due to the prevalence of user-created social trails leading to significant natural resource impacts. The plan will direct the long-term management of recreational trails and infrastructure for the Jumbo Saddle in the context of existing plans and management goals established through the 1999 Mount Jumbo Management Plan, 2010 Conservation Lands Management Plan, and 2014 Mount Jumbo Forest Management Plan on Critical Elk Winter Range, among others. Data used to prioritize trail management needs were generated through the 2015 Inventory and Condition Assessment of Trail Systems on Missoula Conservation Lands report with updated staff observations where they have occurred since then. More specific management goals and objectives are discussed below.

## 1.2 Management Goals and Objectives

This plan has both management goals and objectives. Management Goals identify broad, long-term outcomes derived directly from previously adopted management plans and guiding City policies. Management Objectives identify the specific, measurable outcomes from the plan as guided by Management Goals.

Goals:

1. Decrease impacts to natural values and wildlife habitat quality from social trails and off-trail use in the area and minimize impacts to these values from any new trail construction.
2. Increase overall user enjoyment and decrease user conflict on-trail.
3. Address adjacent private property encroachment and trespass issues where present.

Objectives:

1. Update the current scope and condition of the existing recreational trails within the Jumbo Saddle TMU.
2. Analyze the scope and impact of unauthorized user-created social trails on natural resources.
3. Develop and implement trails plans by Management Unit to address Management Goals stated above.

## 1.3 Terms and Definitions

This plan utilizes a number of terms to refer to various aspects of the plan, management issues, or implementation strategies. Defining these terms to prevent confusion is an important step in assuring that all users are clear on plan issues, strategies, and outcomes. These terms are defined in Table 1 below:

**Table 1. Terms and Definitions for the Lincoln Hills TMU Trails Plan.**

<b>Term</b>	<b>Definition</b>
Trail Management Unit	A discrete area within a larger property for which trails planning will occur. Trail Management Units are delineated based on a combination of types of allowed use, seasonal closures, trail condition, and user experience.
Non-Motorized Use	<p>Non-motorized use means any recreational use that is moved or propelled by means other than an internal combustion engine or electrically powered motor. Non-motorized uses covered under this plan include hiking, running, bicycle riding, and horseback riding.</p> <p><b><i>All modes of transport using an electric or internal combustion motor (e.g. E-bikes, One Wheels, motorized unicycles) are considered motorized and are not allowed on natural-surface trails as per City of Missoula policy (<a href="#">City of Missoula – Mobility Assisting Devices on City Trails Policy</a>). Exceptions to this rule are allowed for “Other Power-Driven Mobility Devices” (OPDMD’s) as defined by the Americans with Disabilities Act (ADA).</i></b></p>
Shared Use Trail	A trail that is open to non-motorized use by pedestrians, bicycles, and horses.
Pedestrian Only Trail	A trail that is only open to use by pedestrians, including hikers and runners.
System Trail	A trail that is officially adopted into the Conservation Lands trail system and open to public use. System trails are managed to meet specific trail construction standards.
Social or User-Created Trail	A trail that has been created by recreationists that is not part of the Conservation Lands Trail System and not managed to meet trail construction standards.
Non-System Trail	Any trail that is not part of the Conservation Lands Trail System and which is not currently actively being managed as a closed trail.
Closed Trail	A trail that is not part of the Conservation Lands Trail System and which is actively managed as closed to public use through signage, slash, or other restoration actions.

## 2. Existing Conditions

The Mount Jumbo trail system currently existing on City-owned property consists of a total of 21.96 miles of trail with a mix of different use designations, seasonal restrictions, trail widths, and connections to adjacent public lands. Management and planning for recreational resources across this system requires taking into account these various constraints and limitations, with the seasonal South and North Zone Elk Closures being the most significant constraint to consider. Given these existing management principles and in an effort to help prioritize trail planning, the Mount Jumbo trail system has been divided into seven separate Trail Management Units (TMU). Trail Management Units were created based on the existing elk closure zone boundaries, on intuitive breaks in trail system, and where the recreational user experience shifts significantly. Each TMU has unique recreational opportunities and challenges as well as different levels of previous trail improvement efforts. Management Unit boundaries along with areas covered under the North and South Elk Management Zone closures are shown in Appendix I.

### 2.1 Jumbo Saddle Trail Management Unit Bounds and Description

The Jumbo Saddle Management Unit includes the Jumbo Saddle Road from Lincoln Hills Drive to the Marshall Canyon property parcel and all trails south, up to and including the Tivoli trail. All trails in this zone are closed from December 1 to March 15<sup>1</sup> of each year. The Tivoli trail is designated as pedestrian only while all other trails are shared use.

System trails in this zone largely meet management standards. A small section on the Tivoli trail exceeds 20% slope and a significant section of the Trailhead Connector trail exceeds 15% slope which does not meet standards for a shared use trail and are leading to some erosion (see Appendix II). Numerous user-created trails exist in this planning unit (Appendix II). Several of these trail pass through important wildlife and plant habitat and/or lead users to trespass on adjacent property. Efforts to close and restore these trails have been met with limited success due to a variety of reasons, including increasing recreational demand and congestion on existing trails, historical use patterns, lack of user knowledge, and deliberate sabotage, among others.

### 2.2 Natural Resource Management Issues

The Jumbo Saddle TMU encompasses a variety of unique natural resource features and values. The Saddle itself holds a vernal pond that does not exist anywhere else in the Mount Jumbo system. The pond provides valuable habitat to wildlife and supports a unique emergent wetland plant community. A small, but significant portion of the ridgeline that runs south from the saddle towards Jumbo's backbone supports a sensitive and unique community of cushion plants including *Douglasia montana*, *Lewisia redivia*, *Erigerion compositus*, *Senecio canus*, and *Eriogonium ovalifolium*. Closer to the Lincoln Hills Trailhead, a perennial spring emerges from the hillside about 100 yards uphill from Lincoln Hills Drive and supports a 2.7-acre trembling aspen (*Populus tremuloides*)/Douglas hawthorn (*Crataegus douglasii*) riparian habitat. Wooded draws on Mount Jumbo are specifically highlighted in the Conservation Lands Management Plan as providing critical habitat for migratory songbirds. Additionally, hawthorn thickets are a key source of natural food for black bears in this area, which help sustain bears at critical times of the year and keep them out of human food sources. In addition to these special habitat features, the

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<sup>1</sup> Mt. Jumbo South Zone reopens March 15 or when weather conditions and elk occurrence allow.

Jumbo Saddle TMU is also characterized by relatively intact rough fescue (*Festuca campestris*) grassland habitat types with a diversity of native grasses and wildflowers.

A proliferation of user-created trails in the Jumbo Saddle area is impacting the natural resource values in this area (see Appendix II). Off-trail use by pedestrians, bicyclists, and dogs tramples native plants, contributes to erosion where trails are steep and not sustainably graded, and disturbs wildlife habitat features. Often, users are unaware that they are not on designated system trails and do not realize the impact their use may be having on the surrounding natural resources. The current extent and use of user-made trails in the Jumbo Saddle Management Unit is inconsistent with the primary management priority on Mount Jumbo of “preserving and improving native habitats and *achieving an appropriate balance between resource protection and public use*” (2010 Conservation Lands Management Plan, emphasis added). Additionally, results from public scoping indicate strong interest in the natural resource values in this area and support for taking actions to mitigate recreational impacts to these resources (see Section 3.5).

### 2.3 Recreation Resource Management Issues

The Lincoln Hills trailhead serves as a very important starting point for recreation in both the North and South Zones of Mount Jumbo, as well as providing connections to Marshall Canyon, the Rattlesnake National Recreation Area, and the Powerline Corridor to Rattlesnake Creek and beyond. Since 2020, anecdotal observation from City staff has indicated that the Lincoln Hills Trailhead has become the highest used trailhead in the Conservation Lands System, surpassing the Waterworks Hill trailhead which has held that position in all former counts. Beyond annual maintenance and minor re-routes, the trail system from the Lincoln Hills Trailhead has largely remained unchanged since Mount Jumbo was acquired in the mid-1990s. A number of persistent and growing issues indicate that the current trail system is not meeting recreational demand nor adequately supporting management goals.

A proliferation of user-created trails to the west of the Backbone trail is leading recreationists to trespass on adjacent private property, use trails that are not designed to proper standards, and to use areas that contain important wildlife and plant habitat. A lack of adequate signage, and deliberate sabotage, contribute to user confusion about which trails are legitimate in this area and which are not. Additionally, public scoping data reveals that users are looking for a variety of on-trail users experiences beyond what the Jumbo Saddle Road and Trailhead Connector trail currently provide. Trail users who are looking for solitude, or seeking varied terrain and features, or are searching for an enjoyable and continuous finish to a bike ride are currently diverting from system trails and are using non-system, user-created trails instead.

Although two thirds of respondents during public scoping reported that they never or very infrequently experience conflict while recreating in this area, over 280 points of conflict were added to the public scoping survey map (see full report [here](#)). The most reported sources of conflict were hiker-biker interaction on shared use trails, issues relating to off-leash dogs and dog waste, and general congestion especially near the trailhead. This congestion and conflict between user groups is also pushing recreationalists to seek out areas that are less frequently used which often leads to non-system, user-created trails and, in some cases, trespassing on adjacent private property.

### 3. Implementation Strategies

This chapter discusses a range of implementation strategies to address known resource issues within the Jumbo Saddle TMU. All strategies originate from guiding management plans for Mount Jumbo and the CLM Program. Not all strategies will be implemented in all locations, and staff discretion will be used when applying strategies to Trails Plan implementation.

#### 3.1 Trail Construction Standards and Allowed Uses

The City adopted trail standards by user type for the Conservation Lands System as part of the 2010 Conservation Lands Management Plan. Table 5-1 from that plan, identifying the system trail construction standards, are copied below (Table 2). These standards guide width, grade, cross-slope, and turning radius by user type, as well as prioritize construction of adequate drainage features to improve required maintenance intervals. All new trail construction should meet adopted standards for types of allowed use. Additionally, many of the existing social trails within the Jumbo Saddle TMU do not meet these standards. Therefore, entire or segments of social trails that are to be adopted into the authorized trail system should be reconstructed and realigned if necessary to properly meet adopted standards.

**Table 2. Adopted trail construction standards by use type from the 2010 Conservation Lands Management Plan (Table 5-1).**

Designed Use	Hiker	Bike	Equestrian
Tread Width	18-48"	24-48"	48-96"
Target Grade Range	Desirable 1-10%, Max 20%	Max 15%	Max 10%
Target Cross-slope Range	3-7%, Max 10%	3-7%, Max 10%	5%, Max 10%
Clearing Width	12-18" outside of tread edge	36-72" outside of tread edge	36-72" outside of tread edge
Clearing Height	8'	8'	10-12'
Minimum Turn Radius	4'	8-12'	10-12'
Surface Type	Native or imported materials	Native or imported materials	Native or imported materials
Surface Obstacles	Smooth with few obstacles. Occasional protrusions 2-3"		

The 2010 CLM plan identified that not all trails should be constructed or authorized for all user types. Designating uses for specific users or restricting use based on the natural resource or topographical considerations is appropriate throughout the system. Additionally, the CLM program strives to provide a range of recreational user experiences throughout the system and within a single property. Trails should be constructed to meet adopted standards only as necessary for the allowed uses of that trail. For example, restricting tread width on a pedestrian-only trail may reduce the impact to adjacent natural resources and provide a more solitary experience; however, this may also restrict users' ability to hike abreast as on other trails within the system. Balancing natural resource impacts with recreational user experience is key to both protecting natural resources and providing valuable recreational user opportunities.



### 3.2 Improving User Experience and Compliance

Staff observations and feedback from recreational users (section 3.5 below) has indicated areas and types of interest and areas of user conflict within the Jumbo Saddle TMU. Feedback from recreational users indicated priorities on nature viewing, a more remote user experience, and accessing specific locations and viewpoints. Efforts should be made to provide a quality recreational user experience that meets as many priorities as possible while also providing resource protection as per guiding management goals. All reasonable efforts should be made to reduce potential user conflict in the proposed Trails Plan through varying allowed uses, improving adopted social trails to meet trail construction standards for grade and width, as well as aligning trails to provide quality sightlines everywhere possible. Reducing the number of intersections where allowed uses change can limit the potential confusion for recreational users, increase compliance, and reduce potential for conflict between users.

Clear trailhead and on-trail signage should be developed to inform users about allowed uses by trail, the adopted trail system and on-trail navigation, areas of natural resource concern, and proper trail etiquette throughout the TMU and Mount Jumbo trail system at large. Where allowed uses change (e.g. shared-use to pedestrian-only) very clear trail signage should be posted to inform users of about allowed uses on each trail segment.

### 3.3 Minimizing Impacts of New Trail Construction

The CLM Program follows best management practices for minimizing impacts to natural resources as well as recreational users during new trail construction. These practices include pre-treating invasive species within the trail corridor, salvaging and transplanting all possible native species, and minimizing the spreading of soils that have an invasive species seed bank. Additionally, trails that are properly constructed to adopted standards minimize impacts on adjacent natural communities by resisting erosion and trail widening, thereby leading to larger impacts. Trail corridors will be regularly monitored for the presence of issues, including presence of invasive species, erosion, and trail widening and appropriate maintenance actions will be implemented to address those issues. Current system trails that will be closed for reconstruction will utilize detour signage to direct users around the active work area. Trails that are permanently closed and restored will utilize trail closure signage to inform users about the reason for trail closure as well as other trail options.

### 3.4 Closing and Restoring Closed Trails

All known trails (current authorized and user-created) that are not adopted into the final Trails Plan should be closed and restored as best as feasible in order to restore habitat quality and environmental function. The CLM program has proven methods for trail closure and restoration, including but not limited to tread decompaction, planting and seeding of native plant species, visual obscurement of trail corridors, and posting of closure signage. In the past, closure of trails in the Jumbo Saddle TMU has seen mixed effectiveness, with users undoing trail closures, removing closure signage, and creating new social trails at times. All reasonable effort should be made to monitor the condition of and compliance with trail closures, and if necessary, pursue legal enforcement of individuals causing impacts (see section 3.4 below).

Due to the ongoing use of trail segments set to be closed and restored, restoration work will not occur prior to construction of new or update of existing trail segments as per the final Trails Plan. This phased approach will limit recreational users from creating additional social trails to navigate around trail

closures for construction or restoration. Trail detour signage will be utilized if current authorized trails are closed on a temporary basis for new trail construction or realignment.

### 3.5 Compliance Monitoring and Enforcement

All reasonable effort should be made to monitor recreational use patterns within the Trails Plan area as well as the condition of and compliance with all authorized and closed trail segments as per the final Trails Plan. Condition monitoring may occur by CLM staff visits and reports from recreational users, while compliance monitoring may occur through both staff visits and the use of high-resolution remote activated cameras. Monitoring data should be utilized to inform future trail maintenance needs as well as inform placement of additional infrastructure such as directional or closure signage. If necessary, CLM staff should pursue legal enforcement of individuals causing impacts to Parks lands through use of closed trail segments or removal of trail closure efforts as per Missoula Municipal Code 12.40.

### 3.6 Public Scoping and Review

Certain proposed changes to the Conservation Lands trail system are significant enough in scope and degree that they require an accompanying public process. Changes in trail use designations, construction of new system trails, and closing of existing system trails are all actions which rise to the level of requiring a public process to review. The public process for this Plan began with publishing an informational page on EngageMissoula.com where the public can find basic information about the planning process and follow along as new information becomes available. From October 15 through November 1, residents and trail users had the opportunity to provide comment through an online and paper Public Scoping Survey. The survey was designed to gather information about how users currently use trails and how they would like to use them in the future.

During the public scoping period, 354 participants submitted responses to the survey, and we received additional comments from 14 others (see full report [here](#)). Results from the Public Scoping Survey were informative about why recreationists chose to recreate on certain trails, about the types of experiences that recreationists are interested in this area, and about some of the conflict that recreators are experiencing. Admiring native wildflowers, seeking scenic views, and having multiple trail options were some of the most common interests people reported. Much of the conflict reported involved interactions between pedestrians and bicyclists and between humans and dogs. A majority of users reported that they would support management actions to re-route trails so that they avoid passing through valuable habitat, create additional trails to provide more opportunities for trail users in this area, and close user-created trails that pass through valuable habitat.

A two-week public comment period will be held for members of the public to provide comments on the draft Trails Plan prior to adoption. A summary of public comments, staff response to those comments, and a list of any changes to the Trails Plan is attached in Appendix III.

## 4. Draft Trails Plan

In this Chapter, we outline the proposed trails plan specific to the Jumbo Saddle Trail Management Unit. This plan updates the adopted trail system in the Jumbo Saddle area, designates the appropriate recreational uses on trail segments, describes the construction standards for each trail, and identifies necessary trail infrastructure to implement the plan. This plan DOES NOT commit the Conservation Lands Program to implement any of the adopted changes on any specific timeline; however, every effort will be made to implement the Trails Plan within a reasonable timeframe. All trail construction, trail improvements, and infrastructure installation is dependent on available resources and favorable environmental conditions.

### 4.1 Draft Trails Plan Description and Impacts

The adopted trails plan was developed through CLM staff input, CLAC member input and review, and public scoping and review. This plan addresses the identified issues of natural resource damage from user-created social trails, improving the recreational user experience through intentional trail layout and construction, and eliminates user trespass onto adjacent private property by closing and restoring the social trail leading off City land. As discussed above, the guiding management documents for the Mount Jumbo Park Preserve dictate prioritizing habitat conservation over recreational development, while the CLM plan dictates accounting for current and future projected use when undertaking any planning effort. As use patterns have changed and overall use has increased on Mount Jumbo, a logical trail system that protects resource values, provides a quality recreational experience, and establishes logical connections between the trailhead and other TMUs needs to be implemented.

The *preferred alternative* both realigns existing trails as well as adopts and upgrades portions of existing user-created social trails (see Figures 1 and 2). All designated trails will be constructed or upgraded to meet adopted trail construction standards, while all closed trails will be restored. This alternative separates the TMU into a shared-use zone and a pedestrian-only zone, as well as minimizes the number of intersections where allowed use changes between the zones. This simplifies the user experience and navigation within the TMU and reduces the potential for user conflict while still providing efficient and enjoyable connections to adjacent TMUs.

This alternative establishes a habitat buffer zone along the western edge of the TMU (Figures 1-3). This buffer zone protects identified natural resources and maintains a large trail-free zone where wildlife habitat quality is prioritized. CLM staff will close and restore all non-designated trails within the buffer zone and will regularly monitor these closures to ensure compliance. CLM staff will seek legal enforcement against any individuals caught utilizing closed trails or creating new social trails within this buffer zone or other areas within the TMU.

**Table 3. Summary of length of trail in miles and feet which will be impacted by this Trails Plan. Trail lengths are organized by the type of action which will occur.**

Action	Miles of Trail (ft)
New trail constructed	0.64 (3,368.7)
Non-system trails improved and adopted as system trails	0.87 (4,610.7)
Non-system trails slashed and closed	0.30 (1,582.2)
Non-system trails closed and fully restored	0.73 (3,874.1)
System trails closed and fully restored	0.73 (3,868.7)



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## Preferred Alternative

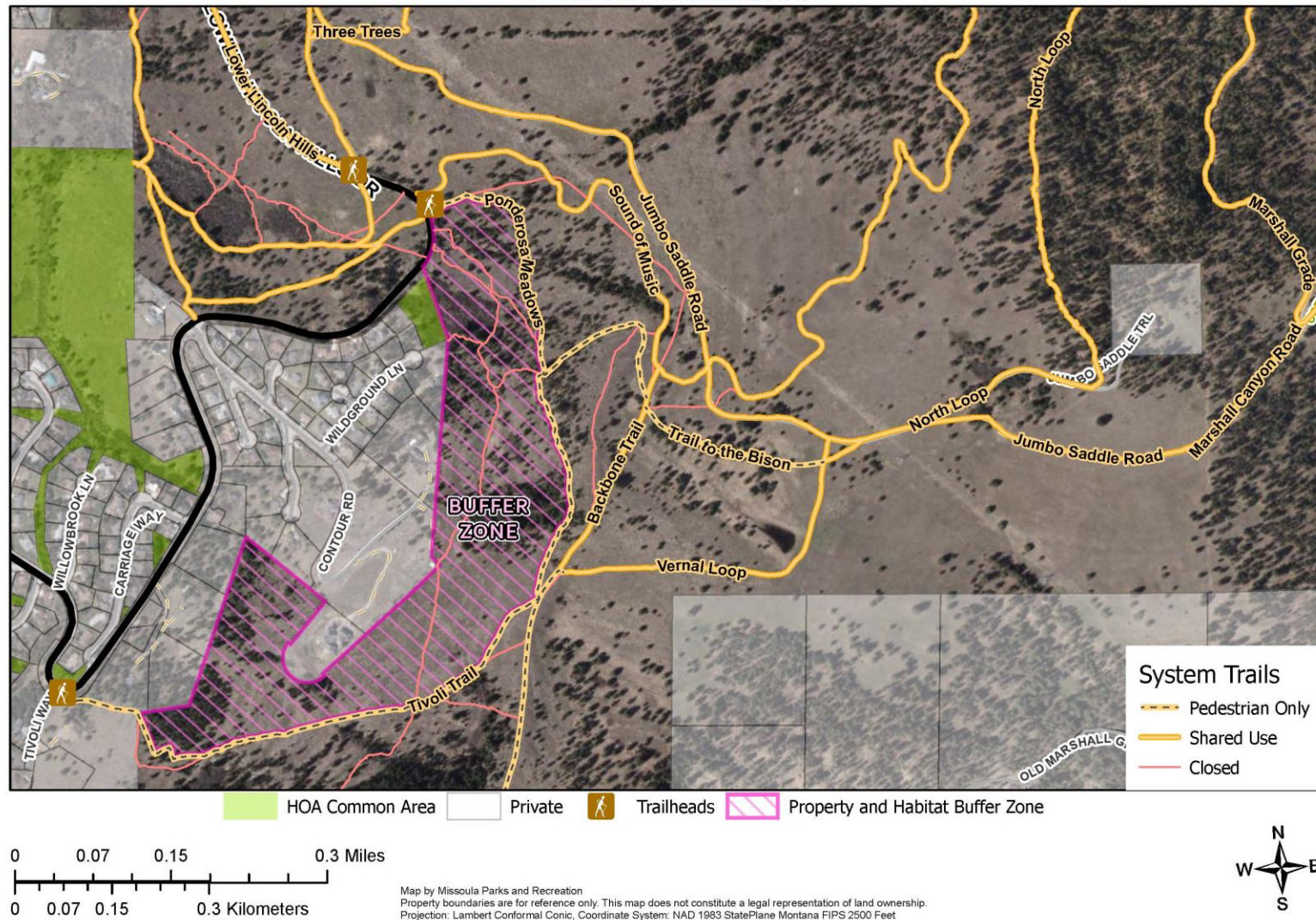


Figure 1. Map of the preferred trails plan for the Jumbo Saddle Trail Management Unit showing trails to be closed and system trails by allowed use type.



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## Preferred Alternative Detail Map

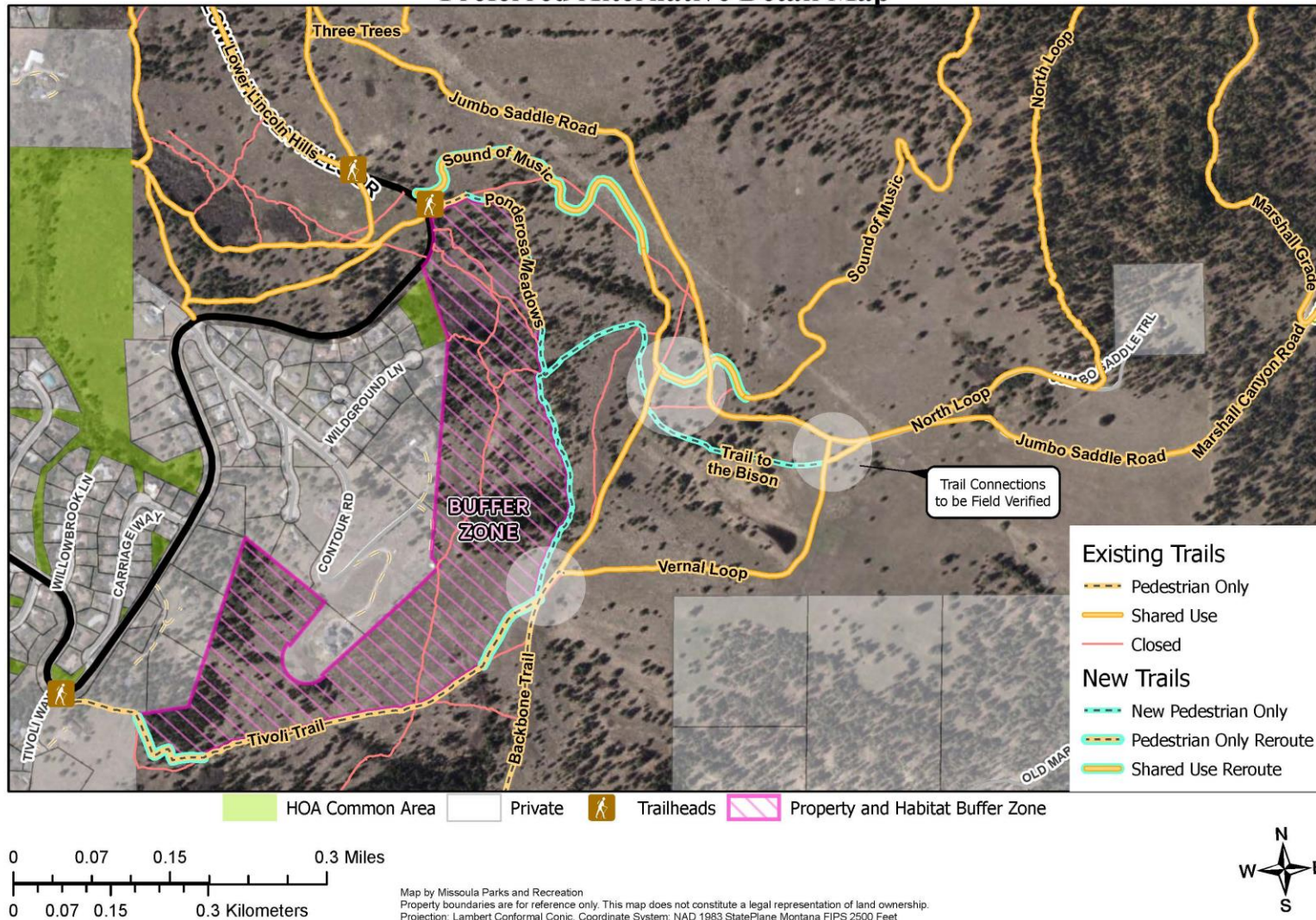
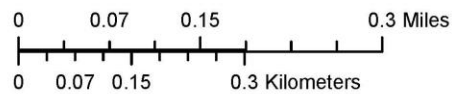
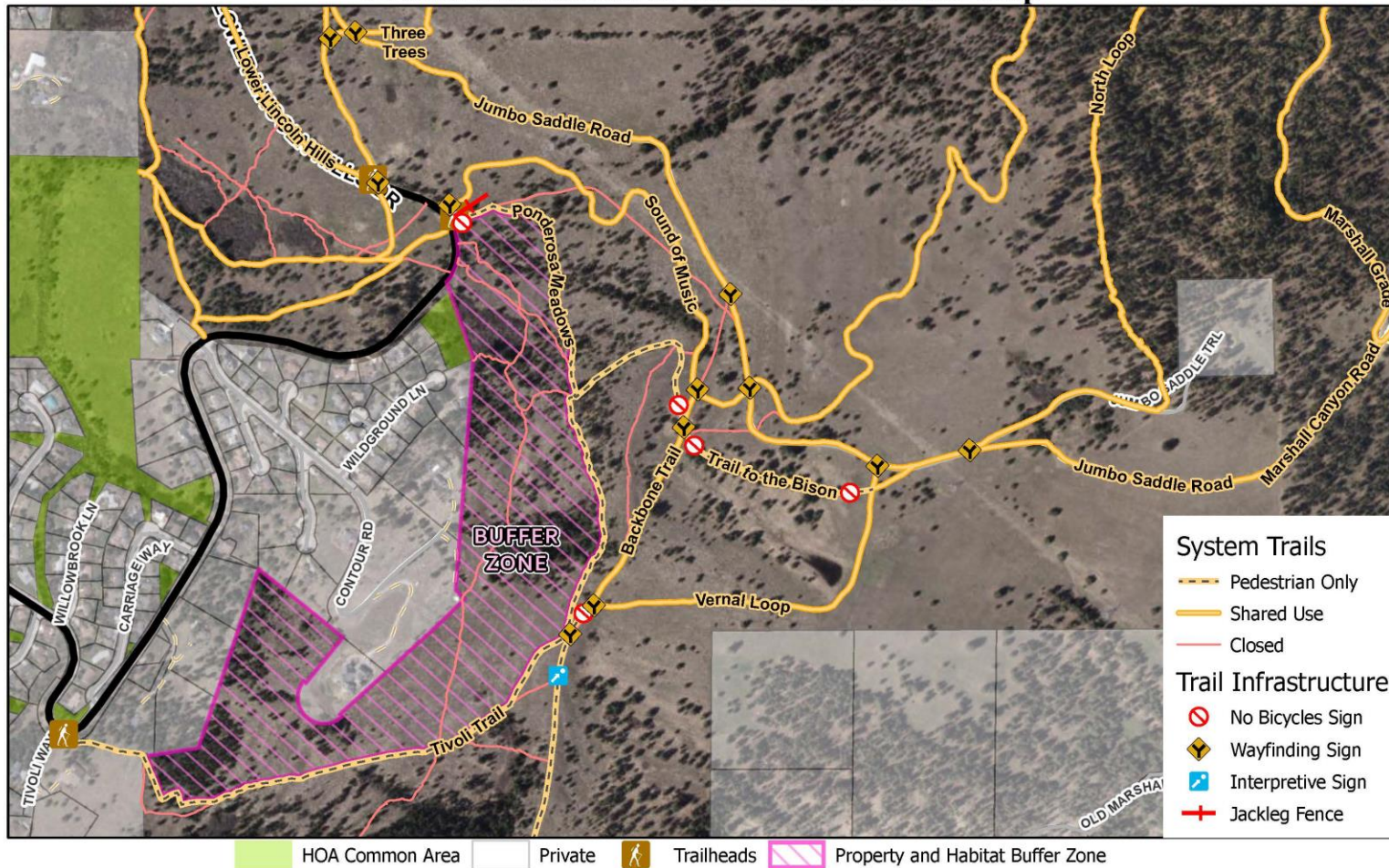


Figure 2. Map of the preferred trail plan, highlighting trails that are existing and unchanged in the plan in yellow shades versus new trails to be adopted or rerouted in blue shades.



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## Preferred Alternative Trail Infrastructure Map



Map by Missoula Parks and Recreation  
 Property boundaries are for reference only. This map does not constitute a legal representation of land ownership.  
 Projection: Lambert Conformal Conic, Coordinate System: NAD 1983 StatePlane Montana FIPS 2500 Feet



Figure 3. Map of the preferred trails plan showing the trail signs and fences to be installed.

## 4.2 Trail Descriptions and Infrastructure

### **Shared Use Trails**

#### ***Sound of Music Trail (extension)***

**Trail Alignment:** This trail extends the existing Sound of Music trail across the Jumbo Saddle Road and connects it to the Lincoln Hills Trailhead. The trail alignment minimizes intersections and only crosses the base of the Backbone Trail between the Saddle Road and trailhead. Additionally, the end of the existing Sound of Music Trail will be realigned to improve user and vehicle sightlines and minimize the potential for user-vehicle conflict when crossing the Saddle Road. The alignment allows for good sightlines, variable width construction, and reasonable grades while avoiding all mapped sensitive natural resources. This alignment will reduce user conflict by explicitly utilizing terrain to slow travel and by providing improved sightlines in areas where we anticipate higher levels of use and congestion.

**Trail Construction Standards:** We anticipate this to be both a popular uphill connection from the trailhead to the saddle as well as a popular mountain biking descent from the existing Sound of Music Trail to the trailhead. To account for this, trail widths will vary from 24-60" to accommodate anticipated use, with wider trail constructed closer to the trailhead and intersection with the Backbone Trail and Saddle Road to address potential congestion. Average grade will be constructed at approximately 8-10% with maximum grades not to exceed 15% at any point.

#### ***Backbone Trail***

**Trail Alignment:** The alignment on the Backbone trail will not change in this trails plan, however, allowed use will change. The Backbone trail will be designated as shared-use from the Sound of Music to the Vernal Loop Trail, and then as pedestrian only from there to the south. This change is in an effort to reduce the number of intersections where allowed use changes and to address the ongoing issue of cyclists using the Tivoli trail. The start of the Backbone trail will move to its intersection with the extended Sound of Music trail. A small 0.09-mile section of the existing trail that connects to the Jumbo Saddle Road will be closed and restored. As a result, the Conservation Lands Management program will no longer have full-sized vehicular access to the Backbone Trail. All terrain and utility-type vehicles will still have access as needed. This change is consistent with a desired primitive and remote character of the Backbone trail while still maintaining some level of necessary maintenance access.

**Trail Construction Standards:** No changes to the trail construction standards will be made to the Backbone trail through the Jumbo Saddle TMU. Minor trail improvement to address erosion issues may be implemented where needed.

#### ***Vernal Loop Trail\*\*\* (final name TBD)***

**Trail Alignment:** This is an existing trail that connects the Backbone Trail to the Jumbo Saddle Road, passing by and around the vernal pool which forms in a shallow valley on the saddle. Its alignment will largely remain unchanged from existing, but its intersections with the Jumbo Saddle Road and the Backbone trail may change somewhat after field verifications determine the logical connection points given the additional trails added to the system.

Trail Construction Standards: No changes to the trail construction standards are planned for this trail. Any changes made to the intersections at each end of the trail will meet adopted trail standards for a shared use trail.

### **Pedestrian Only Trails**

#### ***Ponderosa Meadows Trail\*\*\* (final name TBD)***

Trail Alignment: This trail connects the Lincoln Hills Trailhead to the Backbone and Tivoli Trails. This trail adopts, upgrades, and realigns portions of existing user created social trail to provide a logical connection and more solitary pedestrian experience through an area with current social trail use. The final alignment will avoid all mapped sensitive resources within this area. To establish this as a pedestrian-only trail at the trailhead, a wooden fence pass-through will be constructed. The area to the south and west of the Ponderosa Meadows Trail is designated as a Buffer Zone and use of this area will be regularly monitored and enforced.

Trail Construction Standards: This trail will be constructed at 18-24" width, with wider construction closer to the trailhead and other intersections. Grades will largely be in the <10% range, however maximum grade will not exceed 20%.

#### ***Trail to the Bison (Bison Trail) \*\*\* (final name TBD)***

Trail Alignment: This trail connects the Ponderosa Meadows Trail to the Backbone and eventually to the intersection of the Vernal Loop, North Loop Road, and Jumbo Saddle Road. Besides providing a logical connection within the TMU, this trail provides a moderate grade pedestrian experience

Trail Construction Standards: The western end of this trail is an old roadcut, so this section will be narrowed to 24-36" width by ripping and restoring the outside edge of the old road. Between the Backbone and Vernal Loop trails, this trail follows portions of an existing user created trail that parallels the shallow basin. Through this area, the trail will be upgraded to a 18-24" pathway with mellow <10% grades. The exact location of its most eastern connection to the Vernal Loop and Jumbo Saddle Road will be determined through field verification.

#### ***Tivoli Trail***

Trail Alignment: The Tivoli Trail largely remains the same, with two minor reroutes at the eastern and western end to meet grade and avoid sensitive cushion plant communities respectively. The character of the trail will remain the same as is currently established. The area to the north of the Tivoli Trail is designated as a Buffer Zone and use if this area will be regularly monitored and enforced.

Trail Construction Standards: Tivoli will remain at a 12-18" wide singletrack trail with 10-20% grades. A realignment of the lower section will bring that section which exceeds 20% grade back into standard.

### **Trail Infrastructure**

#### ***On-Trail Signage***

##### ***Allowed Use Signage***

Providing clear signage on allowed uses is key to educating users and achieving compliance with the Trails Plan. Allowed use signage will be installed at any location where change of use shifts from shared-



use to pedestrian-only or back (see Figure 3). This includes trailheads and locations where shared-use and pedestrian-only trails intersect. For intersections where allowed use does not change (e.g. intersection of pedestrian-only trails), allowed use signage will not be installed. For example, a shared use trail will have signage indicating that hiking and biking are both allowed, while a pedestrian-only trail will have signage indicating that hiking is allowed while biking is not allowed. This sign type is indicated on the Trail Infrastructure Map as “No Bikes Sign”.

### *Wayfinding Signage*

Wayfinding signage will be constructed of routed wood and installed at all major trail intersections (Figure 3). Signage will include the name of each trail and a distance to the next intersection or major location. Additionally, trail system maps will be installed at the trailhead and key intersections within the TMU. This sign type is indicated on the Trail Infrastructure Map as “Wayfinding Sign”.

### *Interpretive Signage*

Interpretive signage will be installed along the Backbone Trail discussing the importance of native cushion plant communities, and how to avoid impacting them when recreating on Conservation Lands (Figure 3). Other locations throughout the TMU may be appropriate for interpretive signage at a future date. This sign type is indicated on the Trail Infrastructure Map as “Interpretive Sign”.

## **Fencing**

### *Pass-Through Fencing*

Pass-through fencing will be constructed at the start of the Ponderosa Meadows Trail to indicate that trail is pedestrian-only (see Figure 4). This pass-through fence will be tied into adjacent woody vegetation to improve compliance with allowed use.

### *Jack-Leg Fencing*

Approximately 200 ft of jack-leg fencing (see Figure 5) will be constructed uphill from the Lincoln Hills Trailhead to separate the shared-use Sound of Music Trail and pedestrian-only Ponderosa Meadows Trail. This jack-leg fence will be tied into adjacent woody vegetation to reduce the likelihood for individuals to cut off-trail between the two trails.



*Figure 4. Example of a pedestrian pass-through fencing option.*



*Figure 5. Example of a jackleg fencing option.*

## Citations

Missoula Conservation Lands Management Plan. 2010. Missoula Parks and Recreation.

<https://www.ci.missoula.mt.us/DocumentCenter/View/4499/Conservation-Lands-Management-Plan?bidId=>

Mount Jumbo Forest Management Plan on Critical Elk Winter Range. 2014. Missoula Parks and Recreation. <https://www.ci.missoula.mt.us/DocumentCenter/View/27672/Plan-Mount-Jumbo-Forest-and-Elk-Management-PDF>

The Mount Jumbo Management Plan. 1999. Missoula Parks and Recreation.

<https://www.ci.missoula.mt.us/DocumentCenter/View/1282/2007-11-11mtjumbo1999plan?bidId=>

Lincoln Hills Trails Plan – Summary of Public Scoping Comments. 2021. Missoula Parks and Recreation.

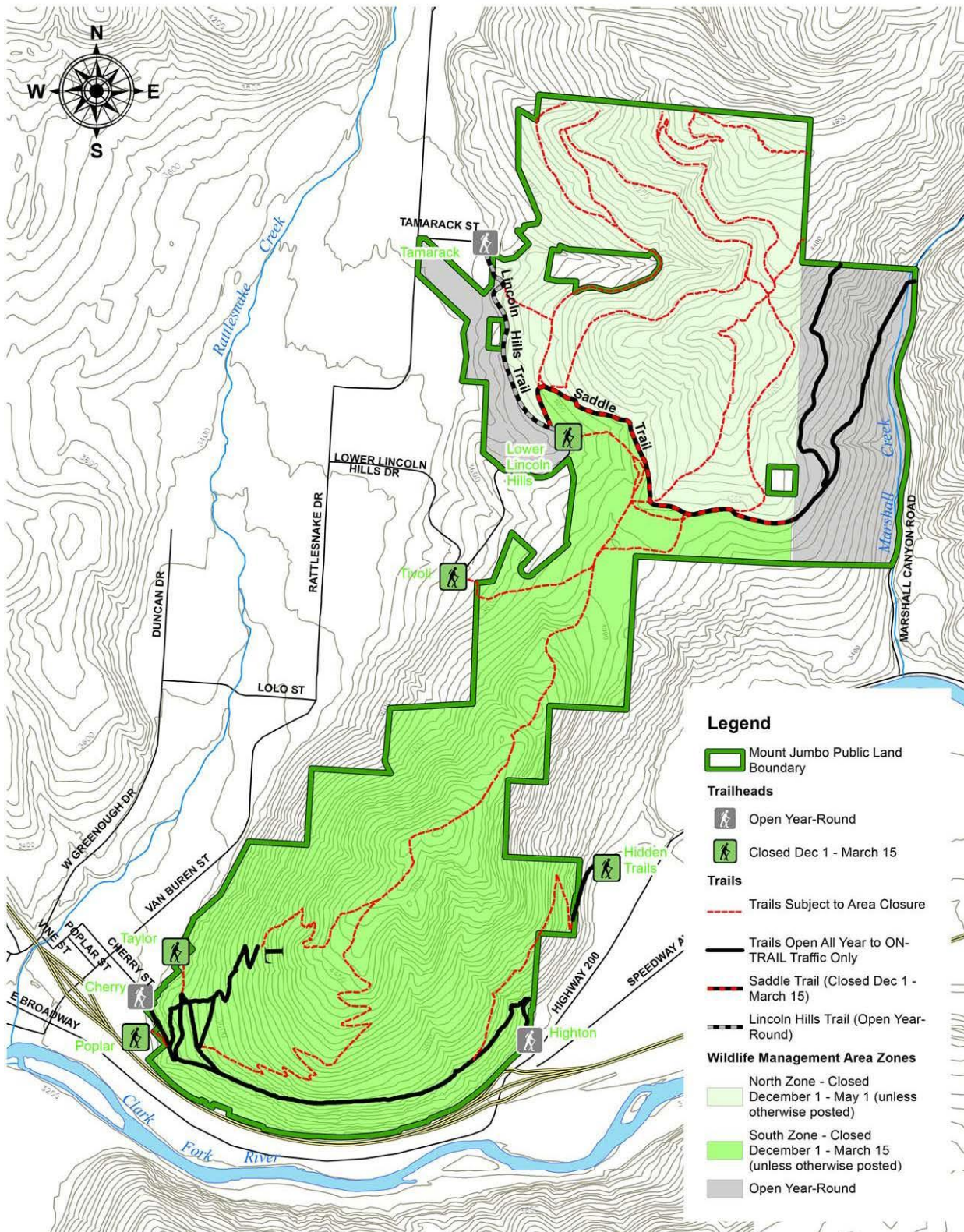
<https://www.engagemissoula.com/13108/widgets/39320/documents/26060>

Inventory and Condition Assessment of Trail Systems on Missoula Conservation Lands. 2015. Missoula Parks and Recreation. <https://www.ci.missoula.mt.us/DocumentCenter/View/33531/2015-Inventory-and-Condition-Assessment-of-Trail-Systems?bidId=>



## Appendix I. Mount Jumbo Trail System Maps

### Mount Jumbo Seasonal Elk Closure Map

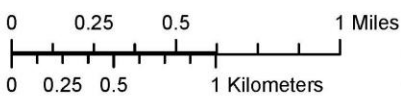
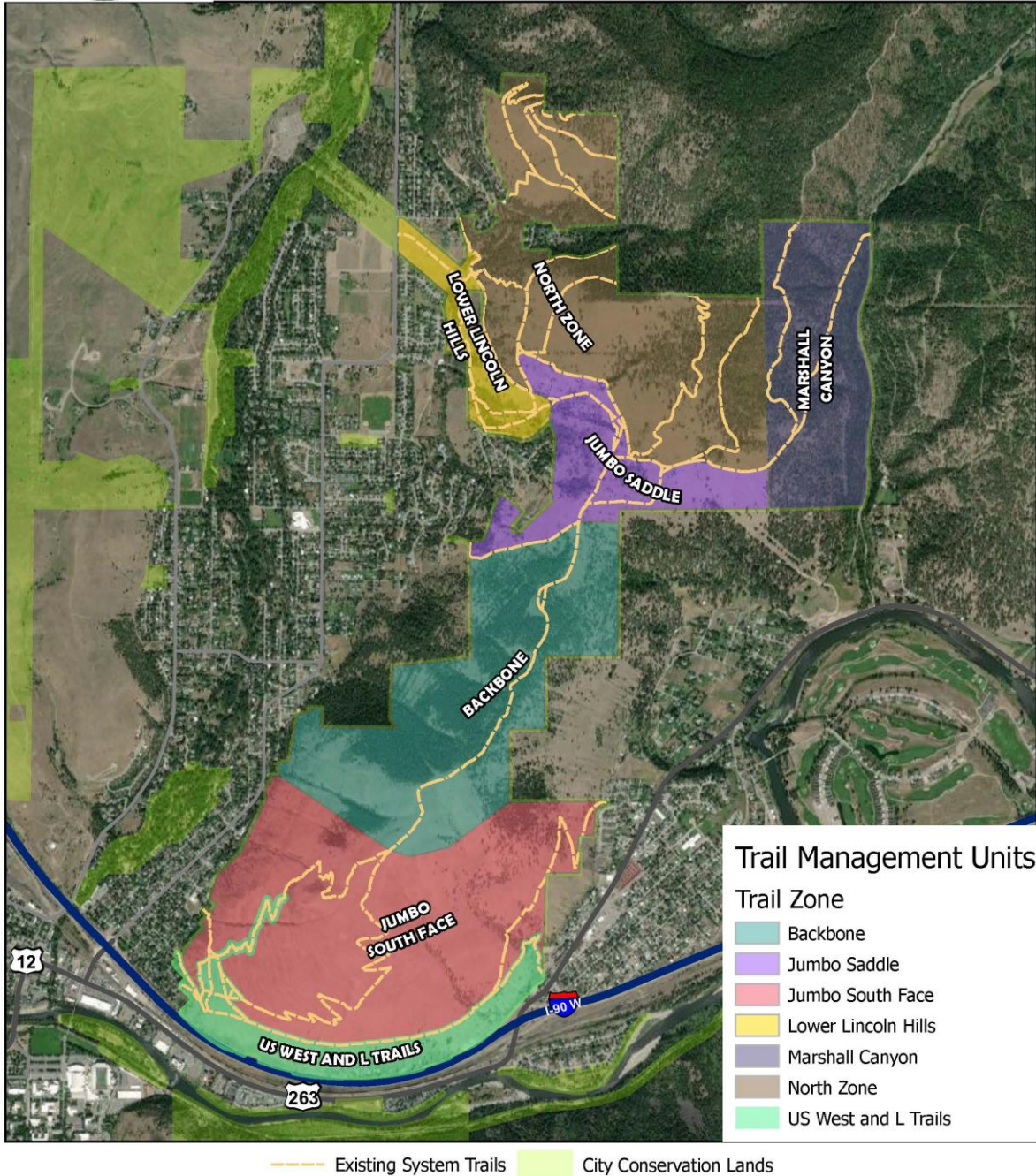




# Mount Jumbo Trail Management Unit Map



## MOUNT JUMBO TRAILS PLAN Trail Management Unit Map



Map by Missoula Parks and Recreation  
Property boundaries are for reference only. This map does not constitute a legal representation of land ownership.  
Projection: Lambert Conformal Conic, Coordinate System: NAD 1983 StatePlane Montana FIPS 2500 Feet

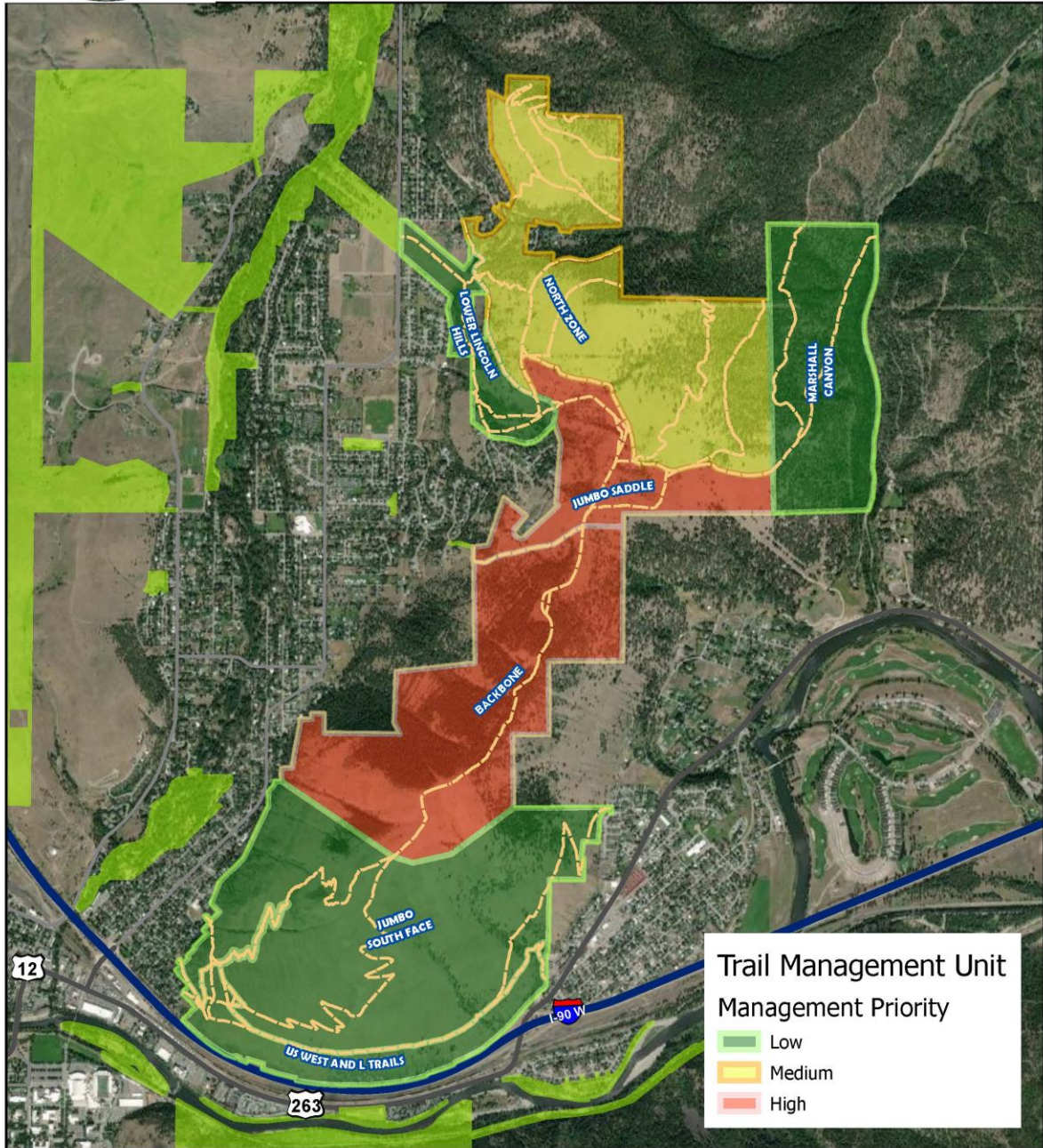




# Mount Jumbo Trail Management Unit Priority Map



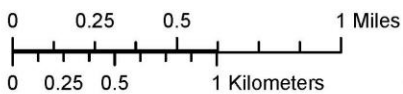
## MOUNT JUMBO TRAILS PLAN Trail Management Unit Map



**Trail Management Unit  
Management Priority**

- Low
- Medium
- High

Existing System Trails City Conservation Lands



Map by Missoula Parks and Recreation  
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Projection: Lambert Conformal Conic, Coordinate System: NAD 1983 StatePlane Montana FIPS 2500 Feet



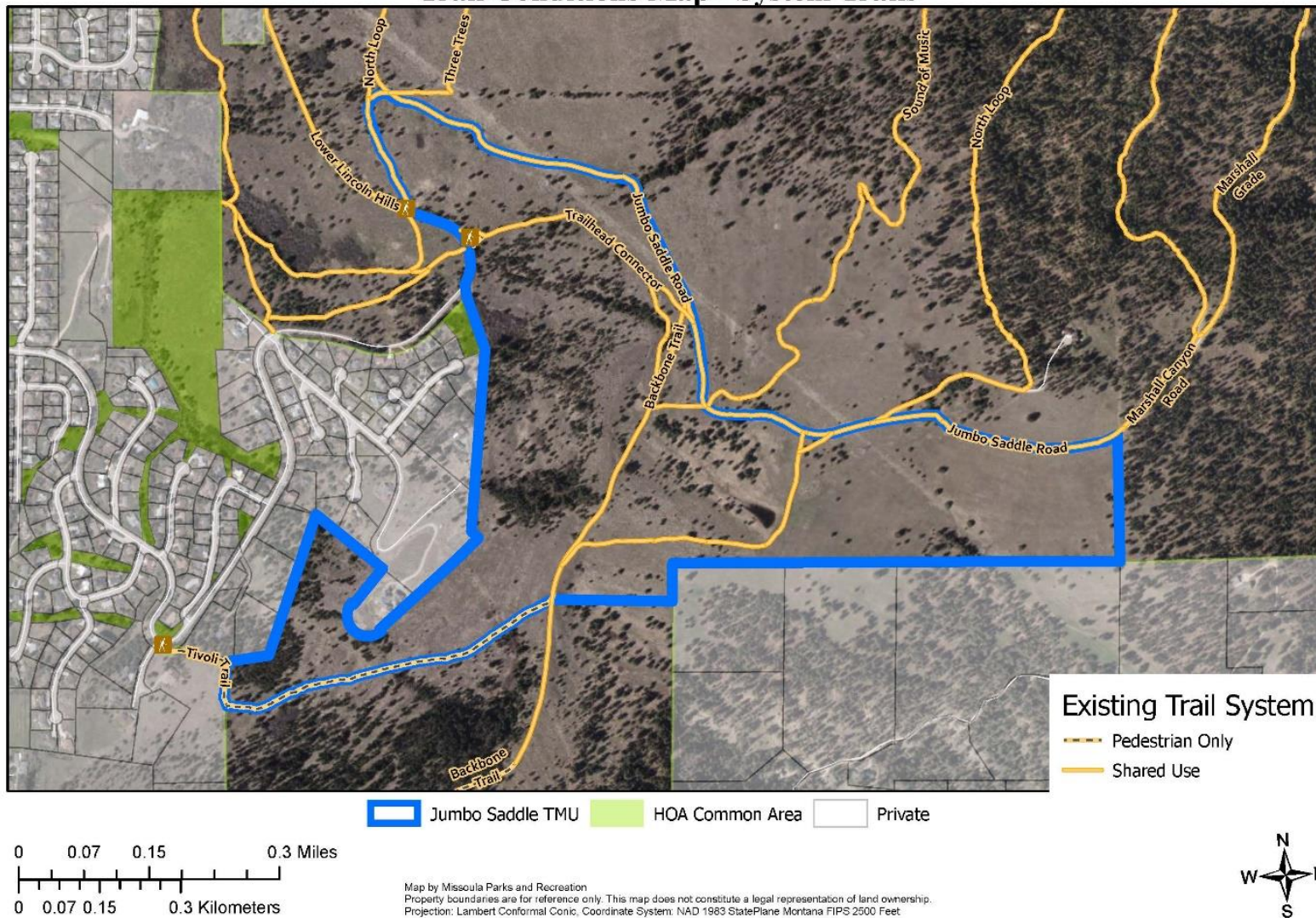


## Appendix II. Trail Condition Maps for the Jumbo Saddle Trail Management Unit

Existing System Trails

### JUMBO SADDLE TRAILS PLAN

#### Trail Conditions Map - System Trails

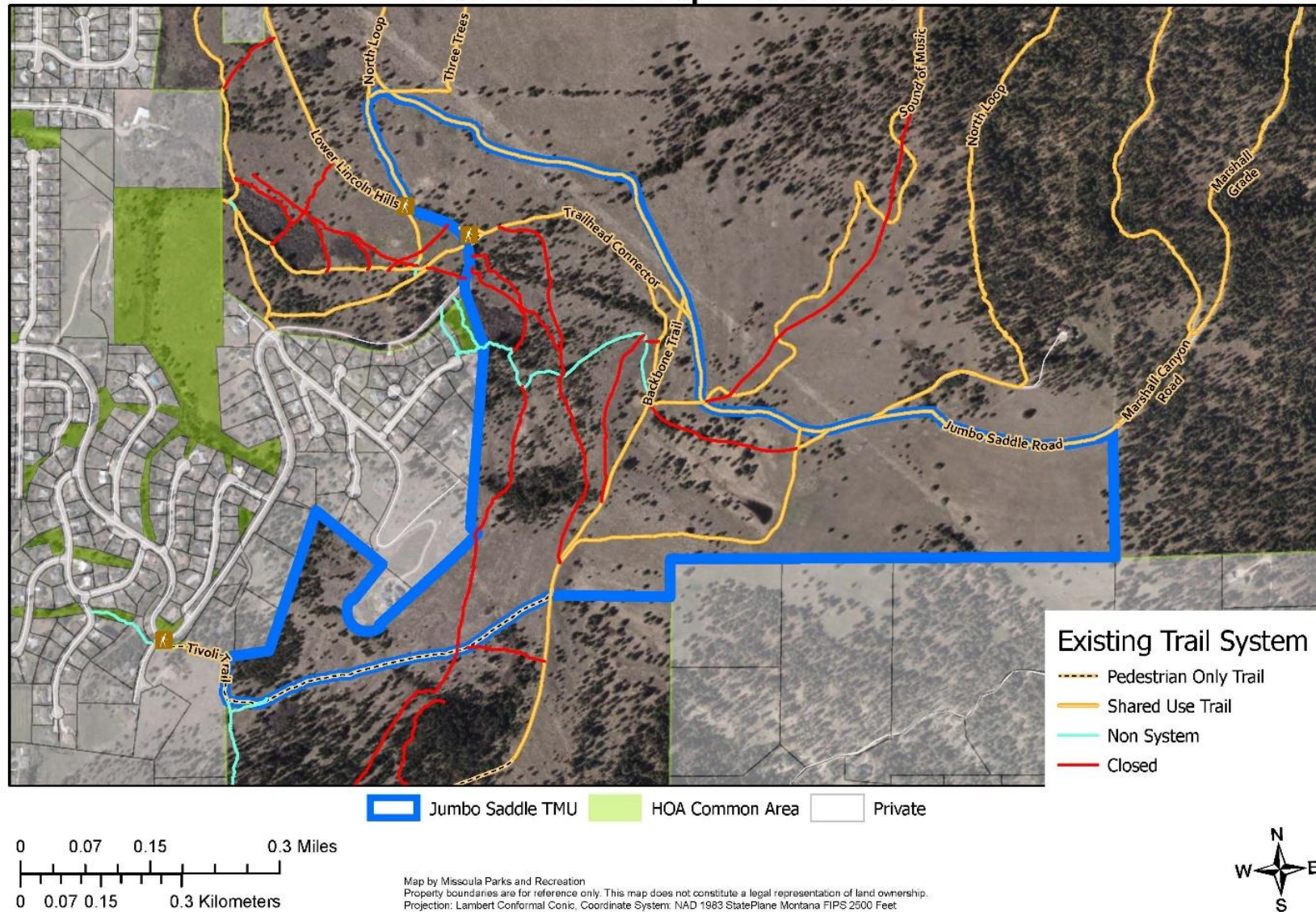




## Existing Social Trails

# JUMBO SADDLE TRAILS PLAN

## Trail Conditions Map - Social Trails

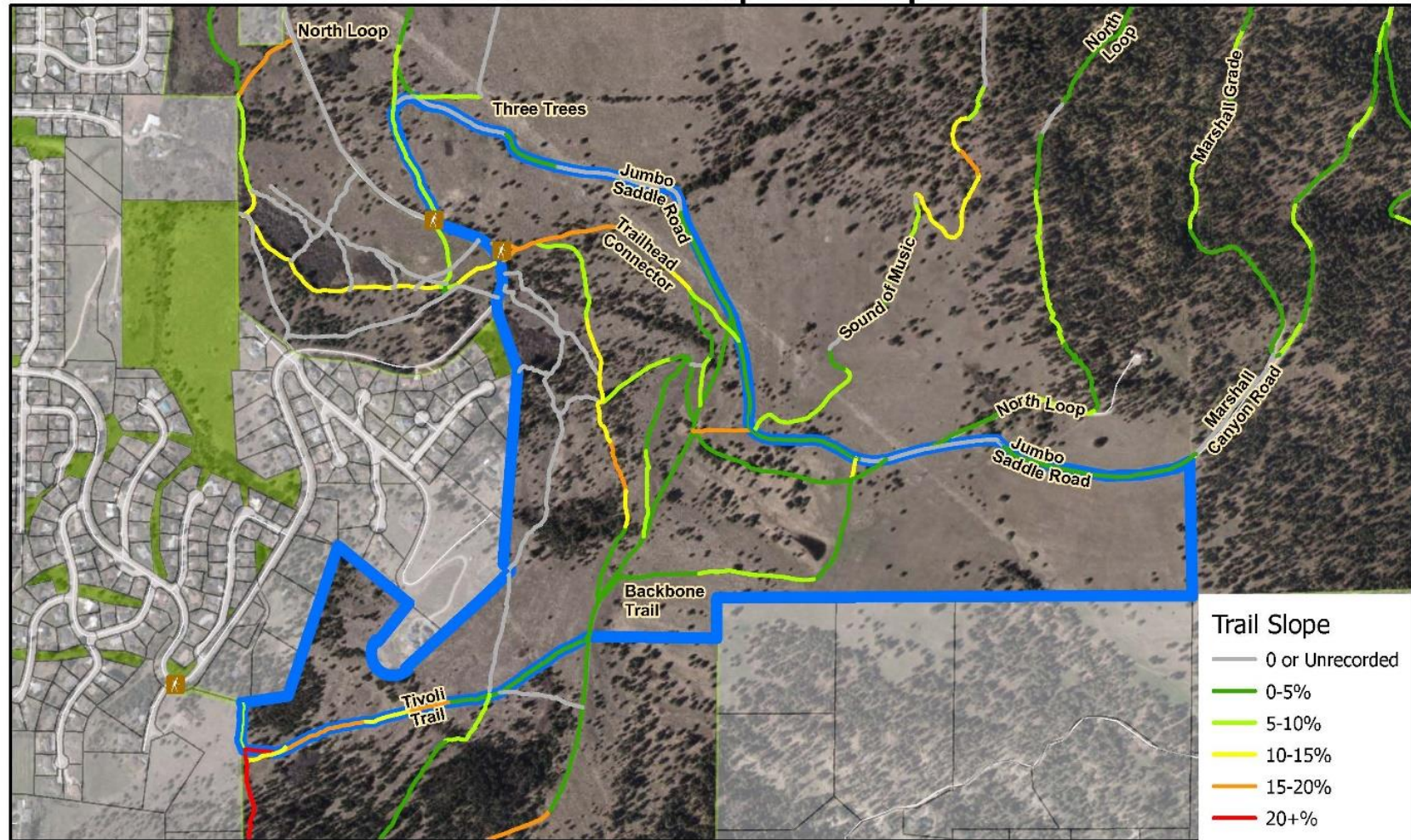




## Trail Slopes

# JUMBO SADDLE TRAILS PLAN

## Trail Conditions Map - Trail Slope



Jumbo Saddle TMU HOA Common Area Private

0 0.07 0.15 0.3 Miles  
0 0.07 0.15 0.3 Kilometers

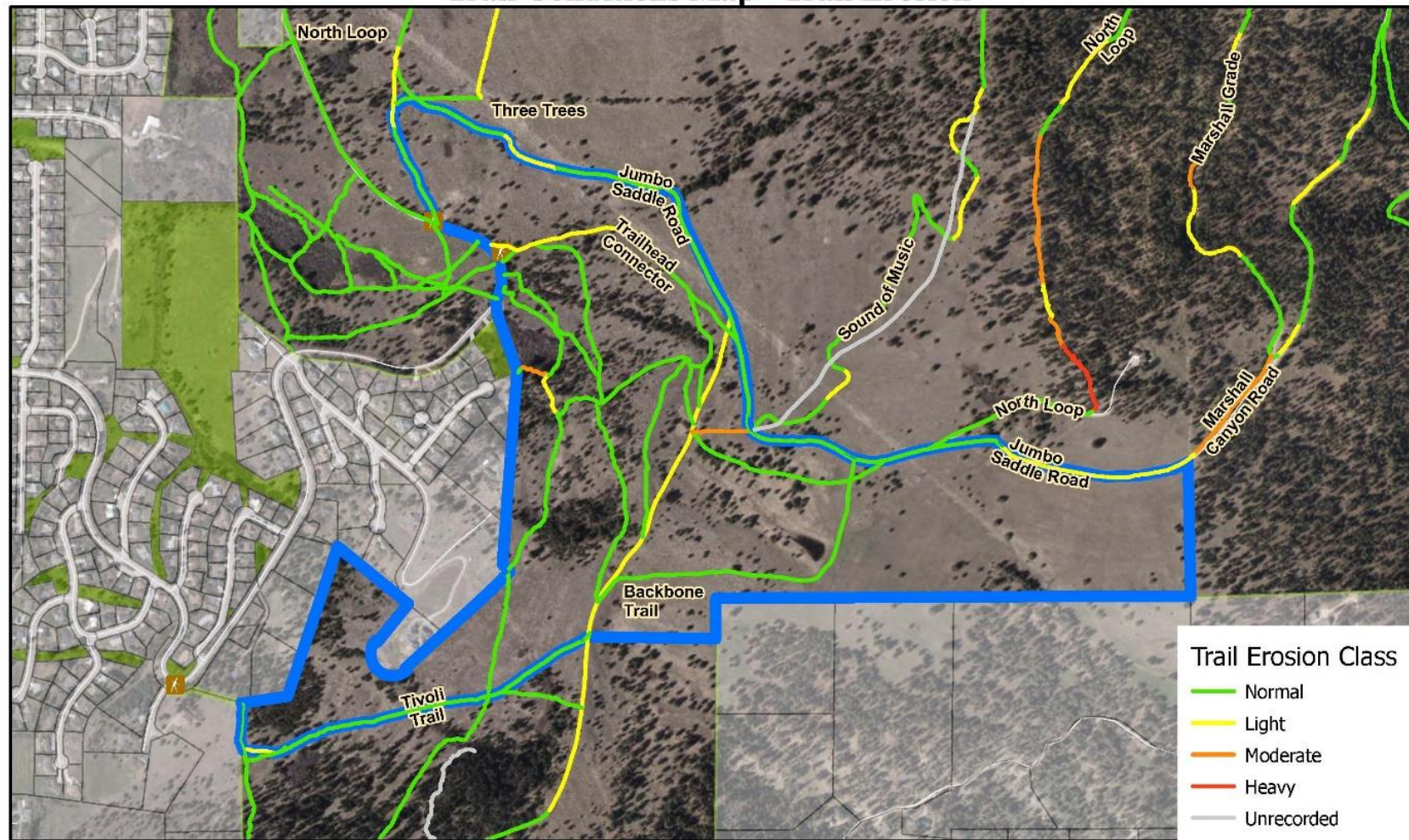
Map by Missoula Parks and Recreation  
Property boundaries are for reference only. This map does not constitute a legal representation of land ownership.  
Projection: Lambert Conformal Conic, Coordinate System: NAD 1983 StatePlane Montana FIPS 2500 Feet





## JUMBO SADDLE TRAILS PLAN

### Trail Conditions Map - Trail Erosion



0 0.07 0.15 0.3 Miles  
0 0.07 0.15 0.3 Kilometers

Map by Missoula Parks and Recreation  
Property boundaries are for reference only. This map does not constitute a legal representation of land ownership.  
Projection: Lambert Conformal Conic, Coordinate System: NAD 1983 StatePlane Montana FIPS 2500 Feet



## Appendix III: Summary of Public Comment on the Draft Plan

**\*\*\* Section intentionally left blank. To be populated after two-week public comment period. \*\*\***

DRAFT