



*Anaconda - Deer Lodge County*

# Parks and Trails Master Plan

Prepared by:



*Our Community Our Future*

## **Anaconda-Deer Lodge County Parks and Trails Master Plan**

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- Appendix F – Trail Cost Estimates

# Executive Summary

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## Overview

A large portion of the eastern half of Anaconda-Deer Lodge County (ADLC) that includes the communities of Anaconda, Opportunity and Warm Springs has been designated as a Superfund Site by the EPA due to previous mining activities by the Anaconda Mining Company. Mining activities dominated this area for nearly a century before this area was designated as a Superfund Site and cleanup activities began to occur. Today, cleanup activities, under the direction of the EPA, are occurring throughout the impacted area. As these cleanup efforts progress, the citizens and government officials of ADLC have begun to realize the importance of recreational non-motorized activities as the overall focus and use of the community has changed.

The benefits of being a mining community included the generous donation of several parks and several miles of a paved trail system. However, ADLC has limited funds to maintain these facilities that are now starting to degrade due to limited maintenance. The existing parks and trails system is used extensively by citizens within the area but provides limited trail access and increasing safety concerns due to the deteriorating facilities.

In 2005, Congressman Max Baucus initiated a five million dollar Congressional appropriation that targeted ADLC and Missoula County for parks and trails improvements in areas that were impacted by past activities of the Anaconda Mining Company. ADLC negotiated half of this Congressional appropriation to be used for improvements within the area impacted by the historic Washoe Smelter. The negotiated portion of the appropriation is being administered by the Montana Department of Transportation Community Transportation Enhancement Program (CTEP). Once the funding became available, ADLC contracted with WWC Engineering to conduct parks and trails planning, design and construction administration.

The ADLC Parks and Trails Master Plan presents improvements to the existing trail network in the area surrounding Anaconda and Opportunity as well as an integral connection to the proposed Greenway Trail System. As part of the plan, a new park is being planned at the location of the former Beaver Dam School within the community of Opportunity. Residents who partake in walking/jogging, bicycling, horseback riding, and motorized ATV use will be the main focus groups in considering trail upgrades and new trail development. The new park at the Opportunity Beaver Dam School will serve as a trailhead for the proposed trail system and will have multiple recreational facilities incorporated into the park.

## **Public Involvement**

Public involvement has been crucial in the development of the Master Plan. Multiple public meetings were held with residents of the surrounding area and meetings were held with various interest groups that provided input on the routes and amenities that would best suit their needs. These groups included walkers/joggers, bicyclists, horseback riders, and ATV users.

## Key Components of the Plan

Chapter One introduces the overall goals of the Master Plan and provides a detailed look at the public involvement process. In Chapter Two the site and environmental characteristics are discussed, from terrain and geology to points of interest in the area. Chapters Three and Four evaluate existing trail, bicycle and park facilities. Chapter Five includes the technical specifications for the facility design including trail, on-road bike lane and sidewalk design. Trail and park maintenance is also included in Chapter Five. Chapter Six addresses the multitude of different users in the area and how multi-use trails can be implemented. Chapter Seven consists of the Master Plan that discusses how existing trails will be improved, where new trails will be built and how the Opportunity Park will be configured. The implementation and phasing of construction is presented in Chapter Eight. To determine the most appropriate phasing plan several key issues were addressed, including costs, benefits and location. Finally, Chapter Nine concludes with a presentation of the overall trail network and park layout.

### Key Components

- ◆ Goals
- ◆ Environmental Characteristics
- ◆ Existing Trails, Bicycle, and Park Facilities
- ◆ Technical Specifications
- ◆ Park and Trail Maintenance
- ◆ Multi-use Trails
- ◆ Improving Existing Trails
- ◆ Building New Trails
- ◆ Opportunity Park
- ◆ Construction Phasing
- ◆ Overall Trail Network and Park Layout

## Intent of the Plan

The intent of the ADLC Parks and Trails Master Plan is to provide the community with an improved multi-use trail and park system that caters to the broadest range of users possible. This will give residents alternative transportation options, improve quality of life and exercise regimens, increase safety for pedestrians and bicyclists and provide more recreation-based tourism that supports local businesses. This Master Plan identifies the locations and construction periods for each trail and park segment, along with proposed maintenance schedules.

# Chapter I - Master Plan Overview

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## 1.1 Introduction

The Anaconda-Deer Lodge County (ADLC) Parks and Trails Master Plan is a product of the collaboration of ADLC personnel, local residents, local clubs and WWC Engineering. A multi-use trail network, on-road bike lanes, sidewalks and park facilities are the main focus points of this Master Plan. The benefits enjoyed by users will consist of more outdoor recreational choices, increased exercise opportunities, safer routes, alternative transportation options and more recreation-based tourism. Primary funding for the initial portion of the parks and trails project was appropriated by a Congressional earmark (Baucus Grant) administered under the Montana Department of Transportation Community Transportation Enhancement Program (CTEP) guidelines. The main objective of the funding was to develop a trailhead park facility within the community of Opportunity, along with a trail network to connect the communities of Anaconda, Opportunity and Fairmont to the proposed Greenway Trail System. Implementation and construction of the initial portion of the park and trail system will take place over a three to five year span.

### **1.1.1 Project Location**

The proposed park and trail system is located in Anaconda-Deer Lodge County approximately 25 miles northwest of the City of Butte next to Interstate 90, along Montana Highway 1. The majority of the project will be located in Townships 4 N. and 5 N., Range 10 W. and 11 W.



## 1.2 Project Goals

ADLC's citizens have identified the following project goals:

- 1) Design and construction of a new trailhead park at the existing Beaver Dam School site within the community of Opportunity.
- 2) Design and construction of a multi-use trail system that will connect the communities of Anaconda, Opportunity and Fairmont.
- 3) Provide a connection for the new trailhead park and interconnecting multi-use trail system to the proposed Greenway Trail System.
- 4) Provide for maintenance of the park and trail system components.

### **1.2.1 Variety of Uses**

Meeting the needs of a broad range of inhabitants of the area was the general concern of the planning process. This feat was accomplished by incorporating the input from the public meetings and user specific group meetings into the design. Multi-use trails will generate a broader range of use while reducing the costs associated with building user-specific trails.

### **1.2.2 Improved Transportation Alternatives**

A new trail network will provide residents with alternative transportation methods to travel to work, school or local businesses. By taking more motorized vehicles off the road and replacing them with foot and bicycle traffic, roads will see less congestion, infrastructure may see the need for less use-related maintenance and the environment will see a reduction in vehicle emissions.



### **1.2.3 Health Benefits**

The availability of fast food, the phasing out of gym classes in schools, the popularity of video games and the overall lack of physical activity in society has led to an increase in heart disease, obesity, diabetes, asthma and depression for all age groups (CDC July 2009). The Centers for Disease Control (Atlanta) recommends that individuals exercise at a moderate intensity for at least 30 minutes five or more times per week. A trail network and park facility will promote physical activity and give residents an alternative to existing exercise opportunities.

### **1.2.4 Connectivity to Other Trail Networks**

Connection to existing trails and other proposed trails are important to providing an enjoyable experience and practical application for users. If users can get from point A to point B entirely on the trail system, they will feel more inclined to utilize it. Integration of the proposed Greenway Trails system, Warm Springs Ponds and the Opportunity Ponds area into the ADLC trail network is part of this Master Plan.

### **1.2.5 Safety**

Safety is always one of the most crucial aspects of design and implementation. Bicyclists and pedestrians that currently use existing roads for recreation or commuting must share the road with motorized vehicles. This often provides for an unsafe environment and deters many users from walking or biking. The proposed trail system will promote safe on-road use and provide trails that are independent of the roads altogether.

## **[1.3 Public Consultation Process](#)**

The input of local residents and clubs was helpful in the planning and design process of the parks and trails system. A public meeting for the trails network was held at the Deer Lodge County Court House on January 21<sup>st</sup>, 2009. Public meetings for the Opportunity Park facility were held at the Opportunity Community Center on January 22<sup>nd</sup>, March 19<sup>th</sup>, and May 7<sup>th</sup> 2009. At these meetings ADLC, WWC and WWC Subcontractor personnel were available to take input and address questions and concerns. Along with residents, representatives of the local mountain biking and equestrian organizations were present. Public input included comments from residents, ADLC government and a variety of user-specific organizations.

# Chapter 2 - Site and Environmental Characteristics

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## 2.1 Terrain

The ADLC Parks and Trails Master Plan area sits at the gateway to the Pintler Scenic Loop and is within 7 miles of the Continental Divide. The Deer Lodge National Forest is in close proximity to the planning area. Mount Haggins, standing at 10,607 ft, overlooks the area from the south. Drainage features within the area include Warm Springs Creek and Mill Creek. Warm Springs Creek runs from west to east along the northern city limits of Anaconda and then flows north, parallel to Montana Highway 48 until it reaches the community of Warm Springs. Glover, Fifer and Sheep Gulch are tributaries to Warm Springs Creek located to the south of Anaconda. Mill Creek flows northeast, out of the mountains south of Anaconda, along the northern limits of Opportunity and then into the Warm Springs Ponds.

## 2.2 Geology

Surficial geology of the Anaconda and Opportunity area consists mainly of a heterogeneous mixture of gravel, sand, silt, and clay. Small deposits of shale and siltstone are present southwest of Anaconda. The site is located within Seismic Zone 2B with no faults identified (Uniform Building Code, 1988 Edition). The Seismic Zone presents a moderate hazard for damage from an earthquake.

## 2.3 Soils

According to information provided by the Natural Resources Conservation Service (NRCS) the site for the Opportunity Park consists of about 60% Mannixlee Clay loam with 0 to 2 percent slopes and moderately erosive, and about 40% Saypo loam with 0 to 4 percent slopes. The area surrounding Anaconda is comprised of many different soil types including Beaverell cobbly loam with 1 to 4 percent slopes and severely erosive, Elve gravelly loam with 35 to 60 percent slopes and moderately erosive, Caramon ashy loam with 15 to 35 percent slopes and moderately erosive, and Work-Julius-Arlen complex with 15 to 35 percent slopes and severely erosive. With the majority of soils having moderate to severe erosion characteristics, Best Management Practice (BMPs) will be used during and after construction to help prevent contamination of surrounding soils. Soil remediation will be performed as necessary based on environmental recommendations as presented in Section 2.6.6.

## 2.4 Plants and Wildlife

A search was performed on the Montana Natural Heritage Program Website for plant and animal species of concern in the study area. The results of the search for plant and animal species of concern are presented in Table 1.

**Table I. Plant/Animal Species of Concern**

<b>Plant/Animal Species</b>	<b>Risk Factor*</b>
Wedge-leaved Saltbush	S1
Annual Indian Paintbrush	S2
Tapered Rush	S1
Mealy Primrose	S2
Alpine Meadowrue	S2
Gray Wolf	S3
Wolverine	S3
Canada Lynx	S3
Fisher	S3
Dwarf Shrew	S2-S3
Peregrine Falcon	S2
Westslope Cutthroat	S2
Bull Trout	S2
Agapetus Caddisfly	S3

\*S1: At high risk because of extremely limited and/or rapidly declining numbers, range, and/or habitat, making it highly vulnerable to extirpation in the state.

\*S2: At risk because of very limited and/or declining numbers, range, and/or habitat, making it vulnerable to extirpation in the state.

\*S3: Potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though may be abundant in some areas of the state.

## **2.5 Points of Interest**

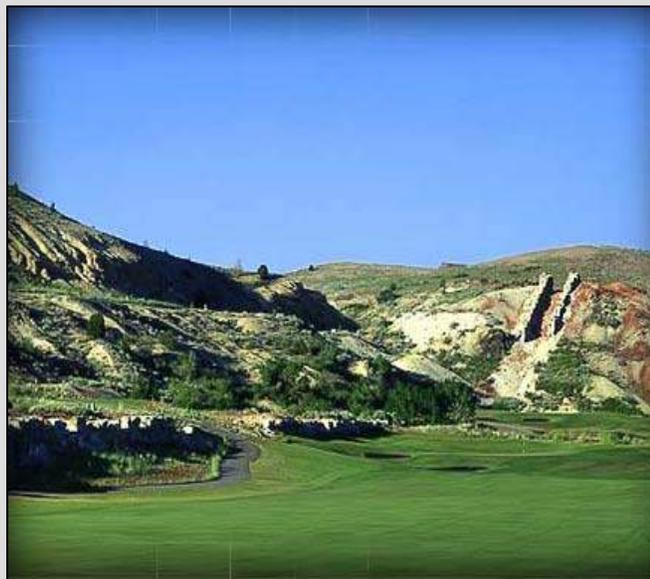
The ADLC planning area provides many outdoor recreational facilities such as school playgrounds, parks and streams that would benefit from access to a trail network.

### **2.5.1 Fairmont Hot Springs**

Fairmont Hot Springs is a popular resort located 8 miles south of Opportunity. The resort offers multiple water slides and an 18-hole championship golf course.

### **2.5.2 Old Works Golf Course**

Located just north of Anaconda is the Old Works Golf Course that is a signature Jack Nicklaus course. The Old Works Trail borders the southern and western part of the golf course and provides magnificent views of the greater Anaconda area. The Old Works Course was the first course ever built on a Federal EPA Superfund site and sports an 18-hole championship golf course.



### **2.5.3 Anaconda Country Club**

The Anaconda Country Club is located just north of the community of

Opportunity and the proposed Beaver Dam Park. The Country Club was built in 1918 and offers a 9-hole regulation length golf course.

#### **2.5.4 Parks and Schools**

Schools located in Anaconda include Dwyer Elementary School, Fred Moody Middle School, Anaconda Senior High and Lincoln School. Washoe Park is located on West Pennsylvania Street in Anaconda. This park provides a historic cabin playground, duck pond, swimming pool, tennis courts, workout area and the oldest fish hatchery in Montana. The Old Works Trail winds through Washoe Park running east to west. Kennedy Commons is a city park located in the center of downtown Anaconda. Activities include a summer band stand, winter skating rink and community Christmas tree. Goodman Park is a city park located near the eastern city limits. This park is home to the Smelter City Skate Pit and is a popular destination for skateboard enthusiasts, in-line skaters and BMX users. Lost Creek State Park is located 5.5 miles northwest of Anaconda. From this park, multiple forest service access trails can be utilized and overnight camping is available.

#### **2.5.5 Copper Village Museum and Arts Center**

The Copper Village Museum and Arts Center is located in the Anaconda City Hall Cultural Center on East Commercial Street. This is a free museum and is currently on the National Register of Historic Places.

### **2.6 Environmental Characteristics**

Numerous environmental concerns have arisen in the area due to the past use of the Anaconda Company smelter stack (Washoe Smelter), owned by the Anaconda Mining Company (AMC). The Washoe Smelter was in operation from 1884 to 1980. The site has since been declared a Superfund Site and cleanup is ongoing. The Atlantic Richfield Company (ARCO) merged with AMC in 1977 and is the primary Potentially Responsible Party of the site.



#### **2.6.1 Superfund Site Description**

In September 1983, the EPA placed the area surrounding the Washoe Smelter on the Superfund National Priorities List (NPL). The site surrounds the Anaconda Company smelter stack and encompasses approximately 300 square miles. At 585-ft tall, the stack is a local landmark and is the largest freestanding brick chimney in the world (EPA February 2009). The site footprint includes the communities of Anaconda and Opportunity.

#### **2.6.2 Site Risks**

The processing facilities at the site were developed to remove copper from ore mined in Butte. Milling and smelting at this location produced wastes with high concentrations of arsenic, copper, cadmium, lead and zinc. Millions of cubic yards of tailings, furnace slag

and flue dust are distributed throughout the area. The primary concern for the remediation of the area is the removal of arsenic.

### **2.6.3 Community Involvement**

The Arrowhead Foundation in Anaconda has been an integral part of the cleanup process. The EPA awarded the foundation a Technical Assistance Grant which was used to hire the Anaconda Environmental Education Institute to review EPA studies, cleanup work and provide technical assistance.

### **2.6.4 Redevelopment**

Cleanups performed in the area must be performed according to EPA guidelines, while still allowing for redevelopment. One of the best examples of such redevelopment is the construction of the Old Works Golf Course. This is the first golf course ever built on a Federal EPA Superfund site. It is one of the premiere golf courses in the Northwest region and was designed by professional golfer Jack Nicklaus. One unique feature of the course is the use of ground black smelter slag in place of sand in the sand traps.

### **2.6.5 Opportunity and Warm Springs Ponds**

An existing network of trails and haul roads surrounds the Opportunity and Warm Springs Ponds. Warm Springs Ponds consist of three man-made ponds covering 2,500 acres at the head of the Clark Fork River. The ponds serve as a treatment facility for water from Silver Bow Creek. Waterfowl ponds and wetlands were constructed throughout the pond and bypass system to facilitate wildlife activity. Water quality and biological monitoring over the past ten years show that water leaving the pond system generally meets all EPA's Gold Book water quality criteria for protection of aquatic life. The wetlands area has been classified as a Wildlife Management Area by the Montana Fish, Wildlife and Parks.

The Opportunity Ponds are in the process of being overlain with material excavated from the Milltown Dam, near Missoula. This sediment will be spread about two feet deep over the extent of the ponds. It will act as a cap for toxic mine wastes that currently contaminate the soils. The Milltown sediment is rich in organic material and will allow natural vegetation to grow. Currently the ponds do not support plant life and arsenic dust has been an issue for residents. The new sediment cap will help reduce and/or eliminate the arsenic dust problem and provide an environmentally friendly containment solution.

### **2.6.6 Remediation**

Before construction occurs for the Opportunity Trailhead Park and the proposed trail network in the surrounding area, soil sampling will need to be performed. In 1996, as part of the Community Soils Operable Unit, the EPA selected a final remedy for all remaining residential and commercial/industrial soils. All current soils in residential areas may not exceed a soil arsenic concentration of 250 parts per million (ppm). All soils in commercial use areas may not exceed a soil arsenic concentration of 500 ppm. The Opportunity Trailhead Park will be classified for residential use and will be remediated appropriately. Remediation for the proposed trail system will consist of either 6" of D-1 gravel or 2" of asphalt for the extent of the trail.

# Chapter 3 - Existing Trails and Bicycle Facilities

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## 3.1 Existing Trails

The following is a brief overview of the locations and conditions of trail/sidewalk/bike path facilities within the project area. Current trail facilities include on-street bike routes within the city of Anaconda, improved trail networks within the city and county that have been constructed by ARCO, and unimproved bike trails that extend to undeveloped trails within the Deer Lodge National Forest. Please refer to the Existing Trail Network in Exhibit 1, Appendix A.

### **3.1.1 City of Anaconda**

Pedestrian and bicycle traffic is routed through and within the City of Anaconda via off-street sidewalks and on-street bicycle routes within the local street network. The on-street bicycle routes currently coexist with vehicle parking and travel lanes and are not designed with signage or striping. Although pedestrian traffic is typically safe due to an extensive sidewalk system, bicyclists that travel through the city must share the road with motorized and parked vehicles. This condition presents a hazardous situation for bicyclists.

### **3.1.2 Community of Opportunity**

In Opportunity, trails and sidewalks are non-existent. Roads are constructed with narrow or no shoulders and lack curb and gutter systems. Pedestrians and bicyclists must share the road with motor vehicles.



**Figure 1 Hauser Street Facing South**

### **3.1.3 Improved County Trails**

Existing improved trails are primarily the product of the ongoing ARCO remediation process. These trails include the Old Works Trail, Upper Works Trail and Warm Springs Ponds Trails. The Warm Springs Ponds trail network is located directly east of the Town of Warm Springs and Interstate 90. A local dirt road runs around the exterior of the ponds. There are several areas located along the exterior road that provide parking and access to the interior trail network. The interior trail network consists of approximately 14-ft wide gravel trails. The length of the Warm Springs Ponds trail network is approximately 14.5 miles. Frequent users include equestrian and pedestrian users.

The Old Works Trail begins at Montana Highway 237 and runs west towards the City of Anaconda. The trail is approximately 10-ft wide and graveled for 1.8 mile until it reaches the Old Works Golf Course. The trail then becomes a 10-ft paved trail that continues west for another 1.8 mile along the southern border of the Old Works Golf Course and then along Pizzini Way to its intersection with Pennsylvania Street. The trail becomes a sidewalk for 400-ft as it runs west along Pennsylvania Street. The trail then continues north for 600-ft on Cedar Street where it remains a sidewalk until it intersects with Washoe Park Road. At this point the users may go west on the Old Works Trail along Washoe Park Road or they may continue north along Cedar Street and use the Upper Old Works Trail. The Old Works Trail becomes an independent 6-ft to 7-ft paved trail running west along Washoe Park Road for 0.5 mile until it reaches Washoe Park. The trail winds through Washoe Park for 0.6 mile and ends on the west side of the park at Sycamore Street. A sheltered rest area that includes a picnic table and trash receptacle is located along the gravel section of the trail. Frequent users include pedestrian and bicycle users.

The Upper Works Trail begins at the north end of Cedar Street where there is a parking area and informational sign for the trail. The trail is paved and has a 10-ft surfacing width. It runs north for approximately 0.4 mile before turning east and running along the northern border of the Old Works Golf Course for another 0.4 mile to its terminus. Sheltered rest areas that include picnic tables and trash receptacles are located at the beginning of the trail and along the last 0.4 mile of the trail. Frequent users include pedestrian and bicycle users.

Many of the existing paved trails in the area were constructed such that the surfacing inslope was built to the bottom edge of the asphalt, leaving the bottom of the asphalt at ground level and the vertical side edge of the asphalt sticking up above the ground. This method of construction leads to the trails having a raised appearance and unstable asphalt edges. Without soil support, the asphalt crumbles into pieces along the edge of the trail. Asphalt trails also show normal cracking, which is a result of Montana's freeze/thaw cycle during normal winter months. Without the advantage of a successful maintenance program, this has led to further degradation of the asphalt surface.

### **3.1.4 Unimproved Mountain Bike Trails**

Unimproved mountain biking trails exist within 1 mile of the City of Anaconda and extend into the Deer Lodge National Forest. These trails connect to local on-street bike routes south of Anaconda and connect to the improved Old Works Trail to the north of Anaconda. The mountain biking trails are fairly wide, drivable widths of 18-ft where they connect to city routes and gradually become narrow single track trails as they get farther into the mountainous areas. The trails exist on the natural mountainous terrain and crossing features have been constructed where drainage obstacles are present.

### **3.2 Existing Opportunity Ponds Haul Roads**

A network of haul roads is located within the Opportunity Ponds area. The haul roads were developed by ARCO for construction and maintenance purposes. The majority of these roads were constructed with a 40-ft wide graveled surface. Please refer to the Existing Trail Network in Exhibit 1, Appendix A, for the location and layout of these haul roads. A DEQ haul road was constructed along the southern boundary of the Opportunity Ponds area that is 60-ft wide with a graveled surface. Currently these haul roads are being used for the remediation work in the Opportunity Ponds area and will be designated for public use once remediation work is complete.



**Figure 2 Existing DEQ Haul Road Facing West**

### 3.3 Local Parks

A small number of parks are located within the city of Anaconda. These parks include Washoe Park, the Kennedy Commons and Goodman Park. Washoe Park is the largest and most heavily used park that is connected to the existing Old Works Trail. The Kennedy Commons and Goodman Park are connected to the local sidewalk network of Anaconda. The existing parks are shown in Exhibit 2, Appendix A. A description of each of these facilities follows:

Goodman Park is located south of E. Park Ave., east of Monroe Street and north of E. 4<sup>th</sup> Street. Park amenities include:

- Playground with a swing set, slide, jungle gym, spring rocking seats, sandbox and log play fort
- Asphalt basketball court
- Baseball field with backstop
- Skateboard park
- Circular building with rest rooms and storage



Figure 3 Goodman Park Skatepark



Figure 4 Goodman Park Playground



Figure 5 Goodman Park Baseball Field

The Kennedy Commons is located northwest of the intersection of Main Street and E. 4<sup>th</sup> Street. Park facilities include:

- Centrally located tree with metal cage around it for placing decorative lights
- Ice skating rink in winter and grassy area in summer surrounding tree
- Circular concrete trail
- Multiple benches and luminaries located along circular trail



Figure 6 Kennedy Commons Ice Skate Rink



Figure 7 Kennedy Commons Benches

Washoe Park is located north of W. Pennsylvania Street and N. Cable Road and south of Washoe Park Road. Park amenities include:

- Multiple playgrounds with swings, slides, merry-go-round, sandbox and jungle gym
- Historic cabin playground
- Duck pond
- Overnight camping and picnic area
- Baseball field, home of the Anaconda A's
- Montana's oldest fish hatchery
- Kiddie swimming pool
- Tennis courts
- Basketball court



Figure 8 Washoe Park Duck Pond



Figure 9 Washoe Park Playground



Figure 10 Washoe Park Baseball Field



Figure 11 Washoe Park Camping and Picnic Area

### **3.4 Existing Beaver Dam School Site**

Within the community of Opportunity is the existing Beaver Dam School that has been utilized as a community park since its closing. The school was constructed in 1914 by the Anaconda Mining Company and opened its doors upon completion with two classrooms. Two more classrooms were later added and the school accommodated eight grades with four teachers.

The school building sits on a lot approximately 10 acres in size owned by ADLC. Also located on the lot is a 300-ft by 100-ft concrete pad with three basketball hoops and a tetherball pole. Playground equipment including swing sets, tractor tires and jungle gyms are scattered around the lot. The concrete pad is severely cracked with vegetation growing through. The basketball hoops and playground equipment are weathered and have not been maintained. The remaining unpaved portion of the lot contains native grass vegetation.



Figure 12 Existing Beaver Dam School

### **3.5 Existing Snowmobile Routes**

Designated snowmobile routes that are within the closest proximity to the City of Anaconda are located roughly 15 miles west along Montana Highway 1. These designated routes are located on Exhibit 3, Appendix A. Route locations have been identified from the Snowmobile Routes map for the Beaverhead – Deer Lodge National Forest, revised in 2004, produced by United States Forest Service and Montana Fish Wildlife and Parks. Because these existing routes are located a significant distance from the project location, it will not be feasible to propose trails connecting these existing routes with the City of Anaconda.

# Chapter 4 - Facility Design

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## 4.1 Overview

This ADLC Parks and Trails Master Plan will provide guidelines for the design of all parks and trails. These design guidelines will cover materials, dimensions, construction and maintenance for all trails.

## 4.2 Trail Design

Proposed trails for the area include mountain biking/equestrian trails, on-street bike routes, multi-use pedestrian/biking/equestrian trails, ATV trails and surfacing for improved ARCO constructed trails. All trails will interconnect to existing and proposed trails.

### **4.2.1 Asphalt**

Typical asphalt design for multi-use trails should be based upon the specific loading and soil conditions for each project. Due to ongoing remediation work in the area, the minimum acceptable thickness of asphalt to be used on recreational trails is 2" Grade B Plant Mix Surfacing. This asphalt, along with a layer of gravel as a subbase, serves as a barrier between the user and underlying, potentially contaminated soils. (See Typical Section No. 1, Appendix B)

### **4.2.2 Gravel Surfacing and Subbase**

Gravel trails may serve as mountain biking trails, trails for horseback riders and pedestrians. A gravel thickness of 6" will be implemented for all gravel trails, as required for recreational trails as part of the remediation process. For asphalt trails, a subbase of 4" of gravel material will be placed directly under the asphalt. (See Typical Section No. 2, Appendix B)

### **4.2.3 Subgrade**

The subgrade serves as the foundation of the trail and consists of undisturbed earth or compacted fill. Topsoil is the top layer of undisturbed earth that contains a higher percentage of organic materials. The topsoil layer varies in thickness and must be removed prior to placing compacted fill or gravel. If the layer of topsoil is 6" or less, the gravel may be placed directly on virgin soil after 6" of soil has been excavated. If the topsoil layer is greater than 6", then excavation must occur to remove the entire topsoil layer and compacted fill will need to be placed so as to raise the top of the subgrade to an elevation that is below existing ground.

### **4.2.4 Geotextile Fabrics**

Geotextiles are woven or non-woven fabric mats used to strengthen the subgrade, subbase and surface of a trail, especially in areas where soft are present. If soft soils are encountered, a geotechnical engineer should be consulted to assist in choosing the right geotextile product to use.

#### 4.2.5 Trash Receptacles

Trash receptacles are an important part of any outdoor facility as they reduce the amount of litter on the ground. At a minimum, 22 gallon or 32 gallon containers should be located at each entranceway and at each bench seating area. They should be set back three feet from the edge of the trail.

#### 4.2.6 Benches

By placing benches at strategic locations, users are allowed to rest and enjoy the scenic beauty of the surrounding area. Besides scenic overlooks, benches should be placed at the entryways to trail segments and should be set back three feet from the trail edge. Trail benches should comfortably accommodate the average adult.

#### 4.2.7 Signage

Signage provides users with information to use the facility effectively and safely. Signage will be crucial to the proposed on-street bike routes located within the City of Anaconda. The bicycle and pedestrian facility design section of the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD) should be consulted when selecting regulatory signs to be placed along the routes. Informational signs should be placed at the start of each trail and should include a diagram showing trail length and the user's location relative to points of interest and other trails in the area.

#### 4.2.8 ADA Requirements

As required by the Montana Department of Transportation, detectable warning devices, also known as truncated domes, must be installed on all trails that cross public roads or approaches that provide access to more than one resident. The truncated dome must be installed on each side of the crossing for the full width of the trail. Several trails have been identified that will need truncated domes where they cross public roadways.

### 4.3 Trail Classification

Trail standards will be classified based on their proposed location and type of use. Standards such as widths, surfaces and uses are discussed in this section.

#### 4.3.1 Multi-Use Asphalt Trails

Proposed multi-use asphalt trails will be designed to allow for use by pedestrians, bicyclists and equestrian users. A 10-ft paved width, as recommended by the American Association of State Highway and Transportation Officials (AASHTO), will be utilized by pedestrians and bicyclists. The paved width shall be 2" thick using Type-B plant mix surfacing.



A gravel thickness of 4" of crushed based course will be provided under the paved section and 6" of crushed based course will be constructed for the shoulders. Fill slopes of 3H:1V shall extend from the edge of gravel until intersection with the existing ground. Trails shall be cleared of vegetation and obstacles 1-ft outside of the

construction limits and a minimum of 10-ft high measured vertically from the top of surfacing.

#### **4.3.2 Paving ARCO Improved Trails**

Several proposed trails will be constructed by ARCO that will have compacted gravel surfacing. Part of this Master Plan will be adding a paved surface to these gravel trails. A 10-ft paved surface with a thickness of 2" of Type-B plant mix surfacing will be constructed. Uses of these trails will be reserved for pedestrians and bicyclists.

#### **4.3.3 On-Street Bike Lanes**

With sufficient existing road widths within the City of Anaconda, dual on-street bike lanes with parking may be utilized. Based on the AASHTO "Guide for the Development of Bicycle Facilities" a 5-ft bike lane located between the travel lane and parking area is sufficient. An 8" white epoxy stripe shall be placed between the travel lane and bike lane. Symbols should be installed at regular intervals, immediately after intersections, and at areas where bicycle lanes begin. For roads without sufficient widths to accommodate a bike lane, "Share the Road" signs will be placed at regular intervals along the proposed route.

#### **4.3.4 Mountain Biking/Equestrian Trails**

Information provided by "Recreational Trail Design and Construction" recommends a tread width of 4-ft to be used for this designated trail use. Compacted native material will be used as the base for these trails. Trails shall be cleared of vegetation and obstacles 1.5-ft horizontally from the edge of trail and a minimum of 10-ft high measured vertically from the top of surfacing. The natural terrain should be followed whenever possible and drainage crossings will be constructed as necessary.

#### **4.3.5 ATV Gravel Trails**

Proposed ATV gravel trails will use a 10-ft top width with a gravel thickness of 6" of crushed base course. Fill slopes shall extend from the edge of gravel until intersection with existing ground. Trails shall be cleared of vegetation and obstacles 1-ft outside of the construction limits and a minimum of 10-ft high measured vertically from the top of surfacing.

#### **4.3.6 Separated Equestrian Trails**

Separated equestrian trails can be used in conjunction with paved asphalt trails or with existing haul roads. The separated trail will be 2-ft wide for a single horse to use. When equestrian riders encounter other riders, one rider will have to move to the side of the trail and let the other rider pass. A 2" gravel layer of crushed base course will be used for the surfacing material. The buffer zone between the paved trails or haul roads will vary depending on existing right-of-way widths and the natural terrain. A buffer of 10-ft will be desirable when conditions are ideal. Trails shall be cleared 2-ft horizontally from the edge of trail and a minimum of 10-ft high measured vertically from the top of surfacing.

### **4.4 Trail Maintenance**

Trail maintenance is an important part of maintaining an aesthetically pleasing trail for users and extending the design life of the trail. Regular maintenance inspections and

physical cleanup schedules need to be established for the entire trail network. The objectives behind routine maintenance are to:

- Ensure user safety,
- Maintain a high standard of quality,
- Preserve the aesthetic character of features to ensure user satisfaction.

#### 4.4.1 Timing and Frequency

Scheduled inspections should occur three (3) times a year for all trails: spring, mid-summer and fall. Other inspections will occur following a report of damage or a major event such as a flood or intense thunderstorm.

#### 4.4.2 Procedure

Carrying an inspection form, the inspector shall walk or travel the entire route, inspecting every feature along the trail. Maintenance inspectors will consider issues of safety and trail aesthetics while performing inspections. Inspectors shall record the following information at the beginning of each inspection on the inspection form:

- The trail name,
- The date and time,
- The type of inspection (scheduled vs. other).

If damage is identified and repairs are required:

- Note the damage type and location,
- If potentially hazardous to users, mark it with spray paint or flagging tape,
- Indicated the appropriate recommendations.

If a minor problem is encountered and can be remedied at the time of inspection, the inspector should take the appropriate actions to resolve the issue.

#### 4.4.3 Trail Infrastructure Items

Table 2 lists specific conditions inspectors should look for while inspecting each type of trail and feature.

**Table 2. Trail Infrastructure Items**

Item	Description
Hard Surfaces	For all paved surfaces identify cracking along edges and uneven surfaces that may create tripping hazards such as cracks, humps, ruts, or heaving
Gravel Surfaces	Identify uneven surfaces and erosion prone areas that could wash out
Drainage Structures	Remove debris from culverts and other drainage features to ensure proper functioning
Garbage Bins	Make sure they are being emptied regularly and are in proper structural condition
Signage	Record faded or damaged signs and any signs of vandalism or graffiti
Benches and Picnic Tables	Inspect for splinters and sharp edges and for loose or rusted screws and bolts

## Chapter 5 - Master Plan

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This section of the report outlines the locations of proposed trails and routes. Attached Exhibit 4, Appendix C, shows the proposed trail layout along with existing trails. All proposed trails have been given a letter designation. The layout of amenities for the Opportunity Trailhead Park will also be discussed.

### 5.1 Opportunity Trailhead Park

The proposed Opportunity Trailhead Park will be located within the community of Opportunity at the existing Beaver Dam School. The existing Beaver Dam School is located at the intersection of Hauser Street and Rickards Street. Conceptual Designs for this park have been created by architects at Peaks to Plains Design. The proposed Beaver Dam Park plans provide provisions for a new picnic shelter modeled after the old Beaver Dam School, a vault toilet system, maintenance building, a new playground, a circular bike path, trailhead amenities (signage, explanation and location information) for the overall trail system and connection to the proposed Greenway Trail System, lighting system throughout the park, parking area, a multi-purpose basketball court, new grass turf installation throughout the park, an integrated irrigation system and extensive landscaping. Conceptual design drawings are attached in Appendix D.



Figure 13 Opportunity Trailhead Park

## **5.2 Opportunity Trails**

Proposed trails within the community of Opportunity will connect to the new Beaver Dam Park, proposed Greenway and ARCO trails, as well as the existing Opportunity Ponds haul road trails. See Exhibit 10, Appendix C for layout of Routes N, O, Q and Trails P, R, S and T. These trails provide a wide range of uses including pedestrian, bicycle and equestrian.

### **5.2.1 Route N**

Route N begins at the intersection of Hauser Street and Stewart Street within the City of Opportunity. The route will run north on Hauser Street for 0.49 mile until the intersection of Hauser Street and County Club Lane where it terminates. This route provides access to the proposed Route O, Greenway Trail, Opportunity Park Trailhead, Trail P and Route Q.

The existing road width for Hauser Street is 30-ft. To provide a safe on-street route, Hauser Street will be widened by 7-ft extending from the west shoulder. The widening will allow for a striped 10-ft wide bike/pedestrian on-street route on the west side of the street. Along with an 8" white epoxy stripe, the bike/pedestrian lane will also be delineated with a rumble strip. The widening will be performed for the entire length of the route except for a short section where there is a bridge over Mill Creek. The bridge is 22-ft wide from face of guardrail to face of guardrail and users will have to share the road with traffic as they traverse the bridge. Bicyclists may be required to get off their bikes and walk them across the bridge for safety purposes.



**Figure 14 Existing Hauser Street Facing South**



**Figure 15 Proposed Route N**

### 5.2.2 Route O

Route O begins at the intersection of Montana Highway 1 and Stewart Street within the community of Opportunity. The route runs east for 1.00 mile before ending at the intersection of Stewart Street and Hauser Street. The route provides access to proposed Trail R, Trail S, Route N, and the Greenway Trail System.

The existing road width for Stewart Street is 36-ft. This existing width is sufficient to provide (2) 12-ft travel lanes and (2) 6-ft bike/pedestrian lanes. The bike/pedestrian lanes will be delineated with an 8" white epoxy stripe.



Figure 16 Existing Stewart Street Facing West



Figure 17 Proposed Route O

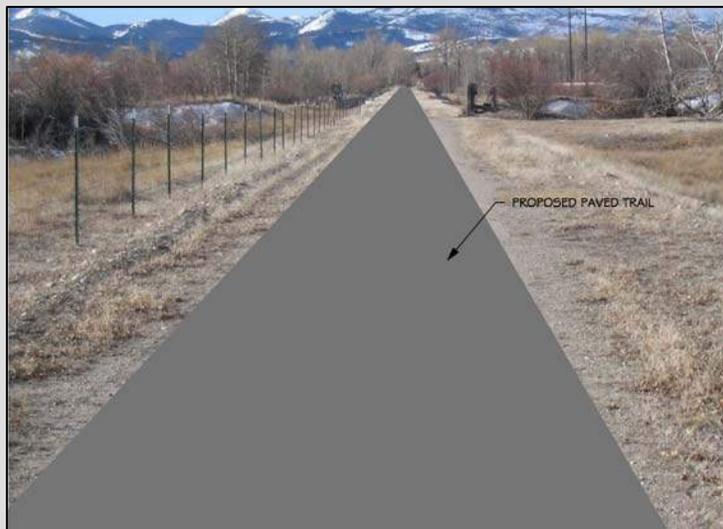
### 5.2.3 Trail P

Trail P begins at the intersection of Hauser Street and County Club Lane within the community of Opportunity. The trail runs northeast for 0.50 mile before ending at the intersection of an existing DEQ haul road and a proposed Greenway Trail Connector. The route provides access to proposed Route N, Route Q, the Greenway Trail System and an existing DEQ haul road.

The existing trail is 14-ft wide and has a gravel surface. A 10-ft paved surface will be constructed on top of the existing gravel (See Typ. No. 1, Appendix B).



**Figure 18 Existing Gravel Road**



**Figure 19 Proposed Trail P**

### 5.2.4 Route Q

Route Q begins at the intersection of Hauser Street and County Club Lane within the community of Opportunity. The trail runs west for 1.54 miles before ending at Highway 1 where it intersects Trail R. The route provides access to proposed Route N, Trail P and Trail R.

The existing road width for County Club Lane is 20-ft. Due to very low traffic volumes along this road a “Share the Route” on-street route with the proper signage will be more cost effective than a separated paved trail.



Figure 20 Existing Country Club Lane



Figure 21 Proposed Route Q

### 5.2.5 Trail R

Trail R begins at the intersection of Trail Q and Montana Highway 1, west of the City of Anaconda. The trail runs southeast for 0.63 mile before ending at the intersection of Stewart Street and Highway 1. The trail provides access to proposed Trail Q, Route O and Trail S.

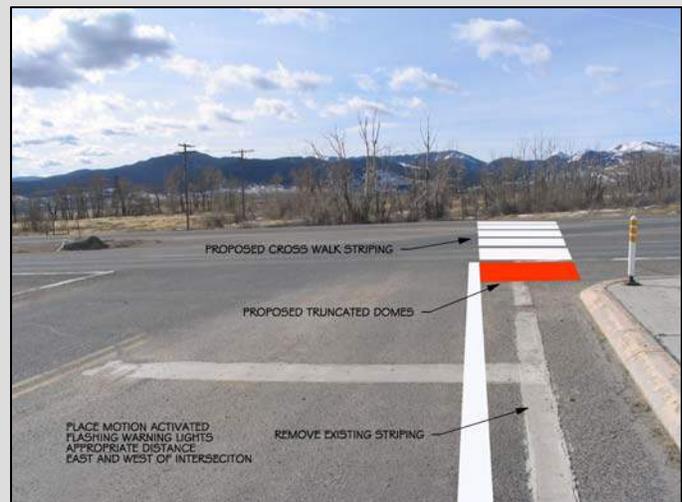
A separate 10-ft paved trail (See Typ. No. 1, Appendix B) will be constructed on the north side of Highway 1. A separate trail in this area will be safer than an on-street route on Highway 1 where the traffic speed limit is 70 mph. A bridge will be placed over Mill Creek, and will be constructed from bank to bank. The bridge will overtop when major flood events occur and will need to be designed for this overtopping. By constructing the bridge from bank to bank, rather than for the extent of major flooding events, the span length and overall cost will be reduced.

### 5.2.6 Trail S

Trail S begins at the intersection of Stewart Street and Highway 1 on the west end of the community of Opportunity. The trail runs west for 0.17 mile, crossing Highway 1 and ending where it intersects with a proposed ARCO trail. This trail provides a connection with proposed ARCO Trail U and proposed Opportunity trails. This trail will be constructed upon completion of proposed ARCO Trail U. Completion of this trail segment will require the installation of truncated domes on each side of Highway 1.



**Figure 22 Existing Intersection of Stewart Street with Highway 1**



**Figure 23 Proposed Trail S**

### 5.2.7 Trail T

Trail T is located in the northwest corner of the Opportunity Ponds area. This trail will be constructed on a reclaimed haul road. This reclaimed haul road will make an ideal trail as it is built on a berm with a good view of the surrounding area and will provide a connection between two existing haul roads. The proposed trail runs northeast for 0.43 mile between the existing haul roads. The new trail will have a 10-ft wide paved surface with a 2-ft separated equestrian trail and 5-ft separated ATV trail (See Typ. No. 8, Appendix B).



Figure 24 Existing Reclaimed Haul Road

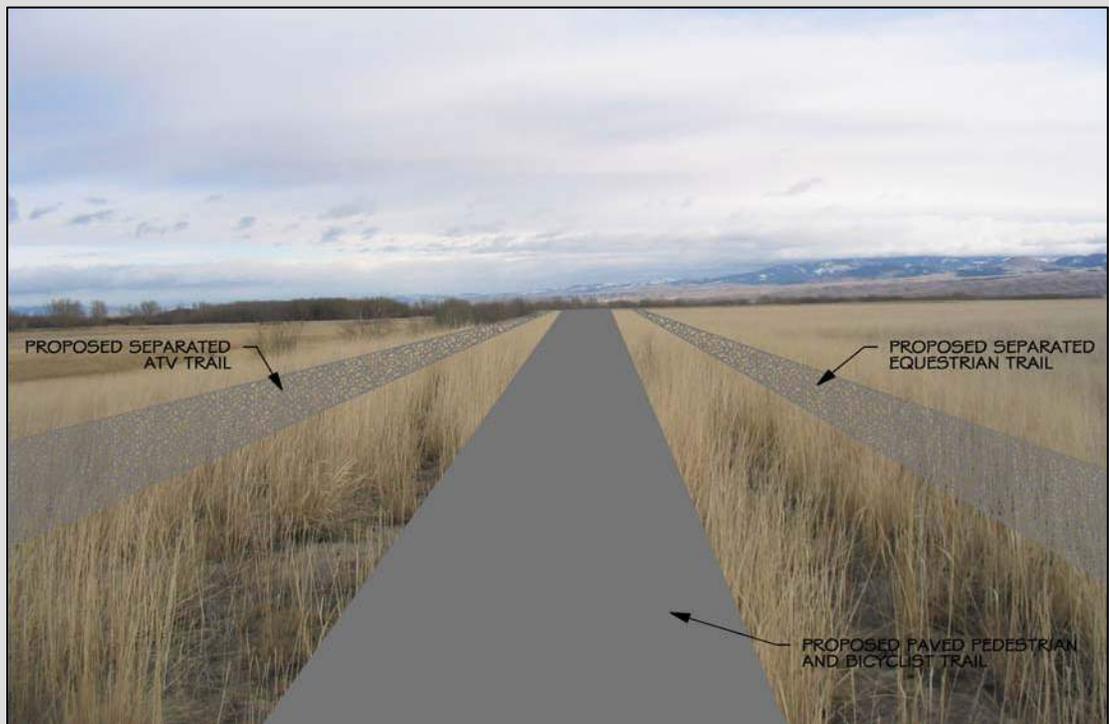


Figure 25 Proposed Trail T

### 5.3 Multi-Use Trails

The existing haul roads that run throughout the Opportunity Ponds area will be left in place and will be classified as multi-use. All multi-use trails may be utilized by pedestrians, mountain bikers, horse back riders and limited ATV use.

#### **5.3.1 Existing Haul Road Trails**

All existing gravel haul roads that will be left in place will serve as multi-use trails for pedestrians, bicyclists, horse back riders and limited ATV use (See Exhibit 10, Appendix C). The haul roads will be left in place to serve as maintenance roads for minor maintenance activities that need to be performed by ARCO. Most of these haul roads have a width of over 40-ft which will provide ample room for all users. All haul roads will maintain an adequate separation distance or equestrian use.



**Figure 26 Existing Haul Road**



**Figure 27 Proposed Haul Road**

## 5.4 On-Street Bike Lanes

By adding designated bikes lanes with striping and signage, bicyclists will be able to commute more effectively and safely along city streets. When existing road widths prevent bicycle lanes from being added, “Share the Road” signage will be provided along these routes. See Exhibit 9, Appendix C, for all proposed on-street bike routes.

### **5.4.1 Route G**

Route G is located within the City of Anaconda and begins at the intersection of W. 4<sup>th</sup> Street and Sycamore Street. The route follows 4<sup>th</sup> Street east for 24 city blocks all the way through the City of Anaconda. 4<sup>th</sup> Street becomes Anaconda Smelter Road at the city limits and the route follows this road for 0.5 mile until it intersects with the proposed ARCO Trail U.

The route will be designated as dual bike lanes (See Typ. No. 4, Appendix B) with striping and signage from the intersection of W. 4<sup>th</sup> Street and Sycamore to where E. 4<sup>th</sup> Street becomes Anaconda Smelter Road. The route along Anaconda Smelter Road to the proposed ARCO Trail U will be designated with “Share the Road” signage only.

This route will have connections, in order from beginning to end, with Routes H, I, J, M, I and ARCO Trail U. The route is 2.14 miles long and will have access to the Kennedy Commons and Goodman Park.



**Figure 28 Existing 4<sup>th</sup> St./Sycamore St. Intersection Facing West**



**Figure 29 Proposed Route G**

### 5.4.2 Route H

Route H is located within the City of Anaconda and begins at the intersection of Sunnyside Road and an existing mountain biking trail. The route runs north along Sunnyside Road until the intersection with W. 5<sup>th</sup> Street then one block east on W. 5<sup>th</sup> Street, then north along Sycamore Street until intersecting with Deer Park Rd and Washoe Park Road where the route ends.

The route will be designated with “Share the Road” signage only from the intersection of the existing mountain bike trail and Sunnyside Road to the intersection of W. 5<sup>th</sup> Street and Sycamore Street. The route from W. 5<sup>th</sup> Street to N. Cable Road along Sycamore Street will be designated as dual bike lanes (See Typ. No. 4, Appendix B) with striping and signage. The remaining portion of the route north of N. Cable Road will be designated with “Share the Road” signage only.

The end of the route connects with the Old Works Trail that runs along Washoe Park Road. The route will have connections, in order from beginning to end, with an existing mountain biking trail, Route G, an existing mountain biking trail, Route L, a proposed ARCO trail and the Old Works Trail. The route is 0.66 mile long and provides access to Washoe Park. One major street will need to be crossed at the intersection of W. Park Avenue and Sycamore Street.



Figure 30 Existing Sycamore St. Facing South



Figure 31 Proposed Route H

### 5.4.3 Route I

Route I is located within the City of Anaconda and begins at the intersection of Willow Street and W. 4<sup>th</sup> Street. The route runs south on Willow Street to W. 7<sup>th</sup> Street, east on 7<sup>th</sup> Street to Ash Street, north on Ash Street to E. 6<sup>th</sup> Street, east on E. 6<sup>th</sup> Street to Monroe Street and north on Monroe Street to E. 4<sup>th</sup> Street

The route will be designated as dual bike lanes (See Typ. No. 4, Appendix B) with striping and signage from the intersection of W. 4<sup>th</sup> Street and Willow Street to the intersection of E. 6<sup>th</sup> Street and Adams Street. The remainder of the route from the intersection of E. 6<sup>th</sup> Street and Adams Street to the intersection of Monroe Street and E. 4<sup>th</sup> Street will be designated with “Share the Road” signage only.

The route will have connections, in order from beginning to end, with Route G, Route J, an existing mountain biking trail and Route G. The route is 1.86 miles long and crosses a major street at the intersection of Main Street and 7<sup>th</sup> Street.



Figure 32 Existing Ash St. Facing South



Figure 33 Proposed Route I

#### 5.4.4 Route J

Route J is located within the City of Anaconda and begins at the intersection of Main Street and 7<sup>th</sup> Street. The route then runs north along Main Street until it intersects with W. Pennsylvania Avenue.

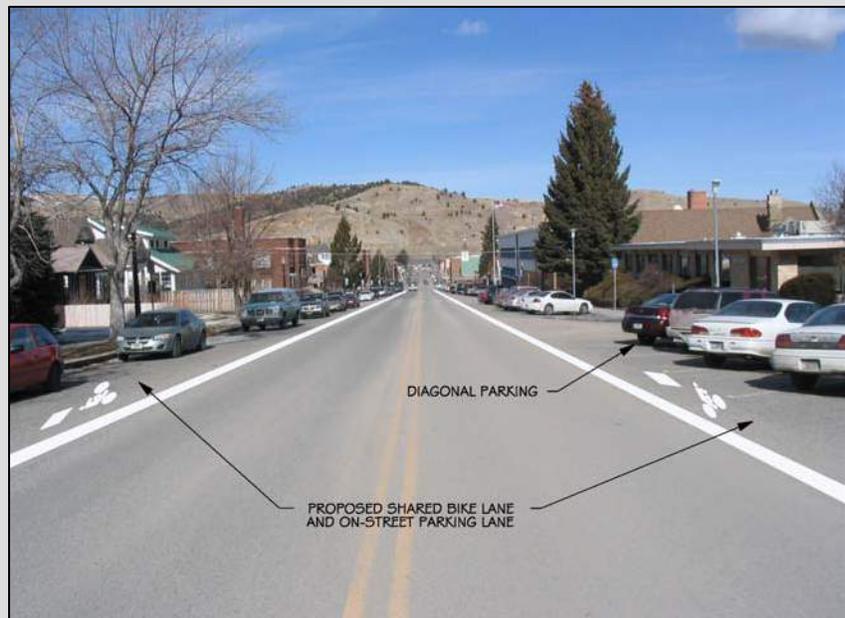
The route will be designated as dual bike lanes (See Typ. No. 4, Appendix B) with striping and signage for its entire length. Diagonal parking is currently present along the east side of Main Street from the intersection of E. 7<sup>th</sup> Street and Main Street for approximately one and half blocks north. This portion of the route will have a slightly different dual bike lane configuration (See Typ. No. 5, Appendix B).

The route will have connections, in order from beginning to end, with an existing mountain biking trail, and Routes I, G, K and L. The Kennedy Commons will have access to this route. The route is 0.67 mile long and will cross major streets where Main Street intersects W. Park Avenue and W. Commercial Avenue.



Figure 34 Existing Main St. Facing North

Figure 35 Proposed Route J



### 5.4.5 Route K

Route K is located within the City of Anaconda and begins at the intersection of Front Street and Main Street. The route runs east on Front Street until the intersection of Birch Street, then north on Birch Street for one block until the intersection of Pizzini Way (Old Works Trail).

The route will be designated with “Share the Road” signage only due to a very narrow Front Street road width. The route will have connections, in order from beginning to end, to Route J, Route M and the Old Works Trail. The route is 0.4 mile long and provides access to Washoe Park.



Figure 36 Existing Front St./Cedar St. Intersection Facing West



Figure 37 Proposed Route K

### 5.4.6 Route L

Route L is located within the City of Anaconda and begins at the intersection of N. Cable Road and Sycamore Street. The route runs east along N. Cable Road until it intersects Pennsylvania Avenue, east along Pennsylvania Avenue until the intersection of Cedar Street and the Old Works Trail.

The route will be designated with “Share the Road” signage only from the intersection of Front Street and Sycamore Street to the intersection of Front Street and Pennsylvania Avenue. The route will then become dual bike lanes (See Typ. No. 4, Appendix B) with striping and signage until the intersection of Pennsylvania Avenue and Cedar Street

The route will have connections, in order from beginning to end, to Route H, Old Works Trail, Route J, Route M and Old Works Trail. The route is 1.06 miles long and provides access to Washoe Park.



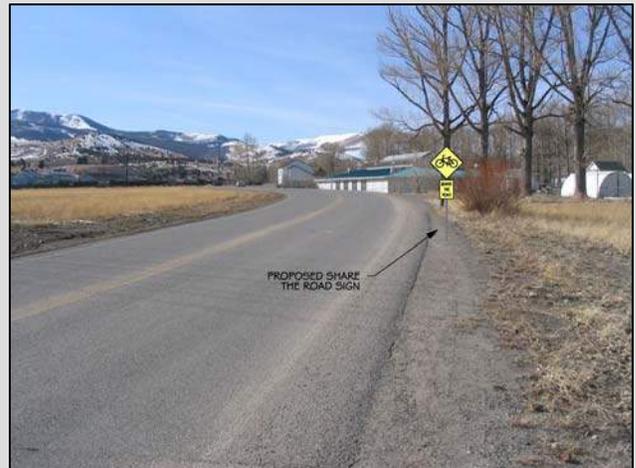
**Figure 39 Existing Pennsylvania Ave./Cedar St. Intersection Facing West**



**Figure 38 Proposed Route L**



**Figure 40 Existing N. Cable Rd. Facing West**



**Figure 41 Proposed Route L**

### 5.4.7 Route M

Route M is located within the City of Anaconda and begins at the intersection of Cedar Street and E. 4<sup>th</sup> Street. The route runs north along Cedar Street until the intersection of Pennsylvania Avenue and Cedar Street

The route will be designated as dual bike lanes (See Typ. No. 4, Appendix B) with striping and signage for the entire extent of the route. The route will have connections, in order from beginning to end, to Route G, Route K, Route L and the Old Works Trail. The route is 0.38 mile long and crosses major streets where Cedar Street intersects E. Park Avenue and E. Commercial Avenue.



Figure 42 Route M Cedar St./ 4<sup>th</sup> St. Intersection Facing North



Figure 43 Proposed Route M

## **5.5 Paved Trails**

As part of the remediation process ARCO has proposed developing gravel trails throughout the area. This Master Plan will propose paving some of these gravel trails to facilitate use by pedestrian and bicycle users.

### **5.5.1 Trail U**

Trail U is located within T. 3 N., R. 10 W., Section 1, T. 4 N., R. 10 W., Sections 5, 6, 8, 9, 16, 21, 26, 27, 34, 35, 36 and T. 4 N., R. 11 W., Sections 1 and 2. The trail begins from a proposed Greenway trail near Fairmont Hot Springs and Interstate 90. The trail runs northwest for 7.4 miles along the Yellow Ditch drainage where it intersects proposed Opportunity Trail S. It then runs northwest for 4.1 miles along Montana Highway 1 before ending at the intersection with On-Street Bike Route G on Anaconda Smelter Road (See Exhibit 11, Appendix C).

### **5.5.2 Trail V**

Trail V is located within T. 4 N., R. 10 W., Sections 5, 6 and T. 5 N., R. 10 W., Sections 13, 23, 24, 26, 27, 32, 33 and 34. The trail connects to Trail U at the intersection of Montana Highway 1 and Montana Highway 48. The trail runs northeast for 0.2 mile along Highway 48 before turning north to follow Glen Road. The trail runs north for 0.4 mile along Glen Road until it intersects with the terminus of the Old Works Trail. It then turns back to Highway 48 where it runs northeast for 6.6 miles along the highway until it reaches the City of Warm Springs and the connection to the Warm Springs Ponds trail network (See Exhibit 12, Appendix C). Improvements to Trail V include paving the existing gravel trail and adding a separated equestrian trail. Truncated domes will be provided where the trail crosses Montana Highway 48.

### **5.5.3 Trail W**

Trail W is located within T. 4 N., R. 11 W., Section 4, T. 5 N., R. 11 W., Sections 30, 31, 32, 33, 34 and T. 5 N., R. 12 W., Section 25. The trail begins at the intersection of N. Cable Rd and Deer Park Road. The route runs northwest for 4.1 miles along the old railroad lines which parallel Montana Highway 1 (See Exhibit 13, Appendix C). Truncated domes will be provided at all locations where the trail crosses public approaches. Trail W will not be constructed as part of the ARCO remediation process, as the trail will be reclaimed from an existing railroad bed. A separated equestrian trail will also be constructed adjacent to the main trail.

### **5.5.4 Trail F**

Trail F is located within T. 4 N., R. 10 W., Sections 4, 5, 6, 9 and 10. The trail begins by tying into Trail V at the intersection of Montana Highway 48 and Galen Road. The route runs east for 4.0 miles, crossing Montana Highway 48 and following existing ARCO haul roads until it connects with proposed Trail P and a proposed Greenway Trail Connector (See Exhibit 8, Appendix C). A 10-ft wide asphalt trail will be constructed on one side of the existing haul road and a separated equestrian trail will be constructed on the opposite side of the haul road (See Typ. No. 7, Appendix B). Truncated domes will be provided where the trail crosses Montana Highway 48.

### **5.5.5 Old Works Trail**

The Old Works Trail from its terminus at Glen Road to the eastern most edge of the Old Works Golf Course currently has a gravel surface. This Master Plan proposes paving this section of the Old Works Trail to make the currently paved portion of the Old Works Trail contiguous with proposed paved ARCO Trail V (See Exhibit 14, Appendix C). A separated equestrian trail will be constructed adjacent to the Old Works Trail from the location of the proposed trailhead (See Section 5.7), to the east until it meets its terminus with Trail V.

## **5.6 Mountain Biking/Equestrian Trails**

Mountain biking/equestrian trails are proposed to connect with existing mountain biking trails south of the City of Anaconda. Proposed trail locations are the result of the Mountain Biking Organization providing their input at public meetings and user-specific outreach meetings (See Typ. No. 3, Appendix B).

### **5.6.1 Trail A**

Trail A is located within T. 4 N., R. 11 W., Sections 10 and 15 and is south of the City of Anaconda. The proposed trail starts after a series of switchbacks on an existing mountain biking trail. The end of the trail is at the top of a peak where it then connects to another existing mountain biking trail (See Exhibit 5, Appendix C). The trail is 2.91 miles in length and has an elevation gain of 1,400-ft. Two drainage crossings will need to be constructed for this trail.

### **5.6.2 Trail B**

Trail B is located within T. 4 N., R. 11 W., Section 10 and is south of the City of Anaconda. The trail starts at a connection with an existing mountain biking trail that runs along the drainage in Sheep Gulch. The trail runs along an existing drainage for 0.63 mile with an elevation gain of 320-ft until it connects with proposed Trail A (See Exhibit 5, Appendix C). One or two drainage crossings will need to be constructed for this trail.

### **5.6.3 Trail C**

Trail C is located within T. 4 N., R. 11 W., Sections 7, 8, 16 and 17 and is south of the City of Anaconda. The trail starts at the connection with an existing mountain biking trail that runs along a ridge between Ice House Gulch and Fifer Gulch. The trail runs southeast for 2.98 miles, then crosses Fifer and Glover Gulches before connecting with an existing mountain biking trail that runs up Sheep Gulch (See Exhibit 6, Appendix C). Overall the trail experiences very little elevation change from beginning to end but some valleys and hills will be present as four drainages will be crossed.

### **5.6.4 Trail D**

Trail D is located within T. 4 N., R. 11 W., Section 16 and is south of the City of Anaconda. The trail starts at the connection with an existing mountain biking trail that runs along the drainage in Sheep Gulch. The proposed trail then continues south up the Sheep Gulch drainage, turns east and crosses the Sheep Gulch drainage and an existing mountain biking trail, and then turns south and connects back into the original mountain biking trail from Sheep Gulch (See Exhibit 6, Appendix C). The trail is 0.69 mile long and has 200-ft of elevation gain.

## 5.7 ATV Trails

Trail E will be designated as an ATV trail only while the existing haul road trails will be classified as limited ATV use with a separated ATV trail.

### **5.7.1 Trail E Loop**

Trail E is located within T. 5 N., R. 11 W., Sections 31, 35 and 36 and T. 5 N., R. 11 W., Section 26 and is north of the City of Anaconda. The trail begins at the north end of Arbiter Plant Lane which is near an existing ATV use area. The trail forms a 6.22 mile loop which crosses two existing mountain biking trails (See Exhibit 7, Appendix C).

## 5.8 Trailhead

A trailhead will be provided in location that will provide use for both ATV and equestrian users. A location that meets both of these criteria is located 0.3 mile north of the end of Arbiter Plant Lane just east of Anaconda. The existing gravel portion of the Old Works Trail runs along Arbiter Plant Lane for approximately 400 ft. The land is owned by Anaconda – Deer Lodge County. See Exhibit 7, Appendix C for trailhead location.

The trailhead shall provide parking for both cars and trailers. Adequate shade, watering troughs, mount/dismount blocks and hitching posts shall be provided within close proximity to trailer parking. Informational signs that show where the nearest ATV trails and nearest equestrian trails shall be posted at appropriate locations.



# Chapter 6 - Implementation

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## 6.1 Overview

Residents of Anaconda and Opportunity, along with seasonal tourists will benefit from this proposed parks and trails system. The parks and trails system will improve access to outdoor resources, provide access to popular destinations and help shape community growth. This will all be possible as the parks and trails system is developed during the coming years. A successful implementation plan is the key to the overall success of the project.

## 6.2 Construction Phasing

Each trail will be prioritized for construction as determined by public input and ADLC. Items considered in the phasing process were cost, location, safety and community impact. Detailed costs estimates for each trail can be found in Appendix F. The overall phasing plan is as follows:

### 1) Opportunity Trailhead Park

The Congressional earmark, the funding source for this project, was intended to construct a park facility at the existing Beaver Dam School site. With this in mind, the Opportunity Trailhead Park will be the priority of this master plan, with all proposed trails as secondary concerns.

Preliminary Costs	
<b>Opportunity Trailhead Park</b>	<b>\$1.3 Million</b>

### 2) Route N and Trail P

These trails will provide access to the proposed Greenway Trail and Opportunity Trailhead Park. Trail P will also provide access to Trail F and the existing haul road trails. This trail would be dedicated for bicyclists and pedestrians.

Preliminary Costs	
<b>Route N</b>	<b>\$46,300</b>
<b>Trail P</b>	<b>\$33,000</b>

### 3) On-Street Bike Routes within the City of Anaconda

Providing bicyclists that commute within the City of Anaconda with a marked bike network will be safer not only for bicyclists, but also for pedestrians and drivers. The overall cost to construct these bike routes is relatively low as they only need to be striped and signed.

Preliminary Costs	
<b>Route G</b>	<b>\$20,800</b>
<b>Route H</b>	<b>\$10,500</b>
<b>Route I</b>	<b>\$20,400</b>
<b>Route J</b>	<b>\$8,600</b>

Preliminary Costs	
Route K	\$5,600
Route L	\$8,900
Route M	\$6,500

**4) Trail U – From Opportunity to Anaconda, Trail S and Route O**

The combination of these three trails will provide a connection between the communities of Anaconda and Opportunity. This trail would be dedicated for bicyclists and pedestrians.

Preliminary Costs for Paving	
Trail U from Opportunity to Anaconda	\$286,000
Trail S	\$19,200
Route O	\$7,500

**5) Paving Remaining Portion of the Old Works Trail**

Paving the remaining portion of the Old Works Trail will provide a contiguous paved surface from the existing paved portion of the Old Works Trail to proposed paved ARCO Trail V. The paving of the trail would benefit pedestrians and bicyclists.

Preliminary Costs Remaining Graveled Portion	
Old Works Trail	\$134,400

**6) Trail E and Trailhead**

Trail E would provide a 6.2 mile loop that would be available for ATV riders. The trail is located next to an existing ATV use area and would provide spectacular views of the Old Works Golf Course. By providing ATV riders with a designated route they will be less likely ride on local streets, prohibited routes or high erosion areas. The trailhead would be built concurrently with Trail E in order to provide ATV riders and equestrian riders with an area to load and unload their ATVs and horses.

Preliminary Costs	
Trail E	\$360,200
Trailhead	\$27,600

**7) Trail W**

Trail W runs along the abandoned railroad line that parallels Highway 1. The trail will provide a connection for residents that live along Highway 1 with the City of Anaconda. This trail would be dedicated for bicyclists and pedestrians.

Preliminary Costs	
Trail W	\$564,000

**8) Trail T**

Trail T is located on a vegetated berm that serves as an excellent vantage point for the surrounding area. This trail would be available for ATV riders, bicyclists, horseback riders and pedestrians. The trail would connect two existing haul road trails and create a continuous outer trail loop around the Opportunity Ponds area.

Preliminary Costs	
Trail T	\$72,100

**9) Trails A through D**

Trails A through D would be dedicated for mountain bikers and horseback riders. Connections to existing mountain biking trails are provided.

Preliminary Costs	
Trail A	\$19,100
Trail B	\$4,100
Trail C	\$19,500
Trail D	\$4,500

**10) Trail V**

Trail V will provide a connection from the City of Anaconda to the town of Warm Springs along with access to the Opportunity Ponds haul road trails. This trail would be dedicated for bicyclists, pedestrians and equestrian users.

Preliminary Costs	
Trail V	\$604,600

**11) Trail U from Opportunity to Fairmont**

Trail U would provide a connection from the community of Opportunity to the Fairmont Hot Springs resort along the Yellow Ditch drainage. A connection with the proposed Greenway Trail would also be provided. This trail would be dedicated for bicyclists and pedestrians.

Preliminary Costs	
Trail U from Opportunity to Fairmont	\$509,000

**6.3 Operations, Maintenance and Management**

Operating, maintaining and managing the proposed parks and trails within and surrounding the communities of Anaconda and Opportunity will require a joint effort

between Anaconda-Deer Lodge County officials, private organizations and local residents.

### 6.3.1 Adopt-a-Trail Policy

An Adopt-a-Trail Program should be established by ADLC officials to encourage community groups, families, businesses, school groups and other organizations to join in managing the parks and trails system. Adopt-a-Trail entities will be assigned to clean up a specified portion of the trail or park. Individuals involved in the cleanup process must obey all posted trail rules and act in a safe manner.

### 6.3.2 Trail Maintenance

Trail facilities should be maintained to promote safe use. Trail maintenance should include the removal of debris, trash, litter, obnoxious and unsafe man-made structures, and other foreign matter so as to be safe for public use. Whenever noxious weeds are encountered along the trail, remove the weed along with the entire root and dispose of properly. Trails should be repaired immediately whenever rough edges, severe heaves or depressions, cracked or uneven pavement and washed out surfaces are encountered.

**Table 3. Trail Maintenance Costs**

Trail Type	Annual Maintenance Cost per Year (Per Mile)	Minor Rehabilitation Costs <sup>1</sup> (Per Mile)	Major Rehabilitation Costs <sup>2</sup> (Per Mile)
10' Multi-use Asphalt Trails	\$1,500	\$6,000	\$14,000
10' Multi-use Gravel Trails	\$1,000	\$3,000	\$10,000
2' Gravel Equestrian Trails	\$400	\$600	\$2,000
Mountain Biking Trails	\$400	-	-
ATV Trails	\$1,000	\$3,000	\$10,000
On-Street Bike Lanes	\$200	\$1,000	-

1. Minor rehabilitation for asphalt trails should occur every 5 years or on an as needed basis and should consist of an oil seal coat. Gravel trails should be regraded every 3 years or as needed. On-Street Bike Lanes should be restriped every 5 years or as needed.  
 2. Major Rehabilitation for asphalt trails should occur every 20 years or on an as needed basis and should consist of a 1" asphalt overlay. Gravel trails should be resurfaced every 5 years or as needed.

### 6.3.3 Trail Ordinance and Etiquette

With a large majority of the proposed trails for this project being multi-use trails there will be the potential for conflicts to occur. See Appendix E for user specific etiquette that will be posted on brochures and informational signs throughout the trail system in order to maintain the safety of all trail users.

## Chapter 7 - Funding Options

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Described below are the allocated government funding and grants received for this project that will be used to facilitate the design and construction of the parks and trails in this Master Plan. As future grants become available, they will be considered for application and applied for if deemed advantageous by ADLC.

### 7.1 CTEP Funding

The development of a parks and trails system for the city of Anaconda and community of Opportunity originated from a Congressional earmark proposed by Max Baucus. This will serve as the primary funding source for the project and falls under the Montana Department of Transportation Community Transportation Enhancement Program (CTEP) guidelines. The amount of the earmark was \$5 million which will be split between the communities of Anaconda and Opportunity for the proposed parks and trails system and with the Milltown Reservoir rehabilitation.

### 7.2 DNRC Planning Grant

A planning grant given by the Montana Department of Natural Resources and Conservation (DNRC) for the amount of \$50,000 was obtained for this project. WWC Engineering prepared and submitted the planning grant application on behalf of ADLC. This money will be allocated toward the design of trails V and W and for the development of a grant application for a future construction and development grant that will be awarded in 2010 by the DNRC. The amount of this construction and development grant can be up to \$300,000 and can be applied for every other year.



### 7.3 MFWP Recreational Trails Program Grant

A Recreational Trails Program grant put out by Montana Fish Wildlife and Parks was also applied for by WWC Engineering on behalf of ADLC. This grant will be awarded at the end of 2009. If awarded the full amount of \$70,000, this funding will go toward the construction of paving the existing gravel portion of the Old Works Trail, paving a portion of Trail V to connect the Old Works Trail to the existing Opportunity Ponds haul roads, and constructing Trail P. Paving these trails will provide connectivity between the city of Anaconda and Opportunity. Trail P also provides access to the proposed Beaver Dam Park and Playground Facility. This grant can be applied for every calendar year.

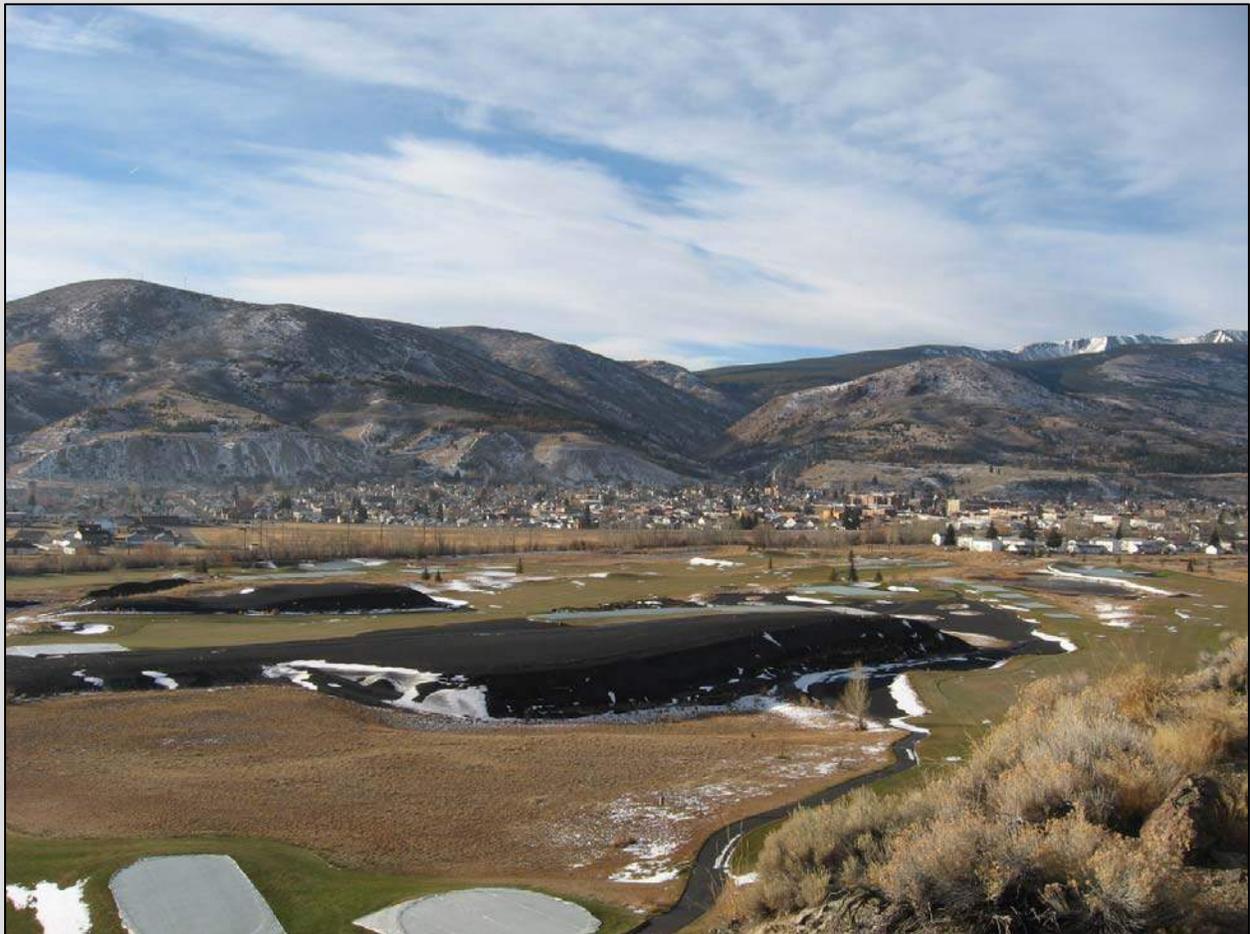


## Chapter 8 - Conclusion

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Following the design guidelines and implementation strategy outlined in this Master Plan, a safe and successful park facility and trail network will be developed for the communities of Opportunity and Anaconda. The trails are designed to be enjoyed by a multitude of users including pedestrians, bicyclists, horseback riders and ATV riders. The new park and trails will provide transportation alternatives, health benefits, connectivity to existing trails and improved safety. A new park facility and trail network, combined with the ongoing ARCO remediation work, will help transform the communities of Opportunity and Anaconda from a Superfund site to a more desirable destination to work, play and live.

This document serves as a guideline for park and trail construction and the implementation strategy may be altered depending on the construction sequence of ARCO's trail network.



# References

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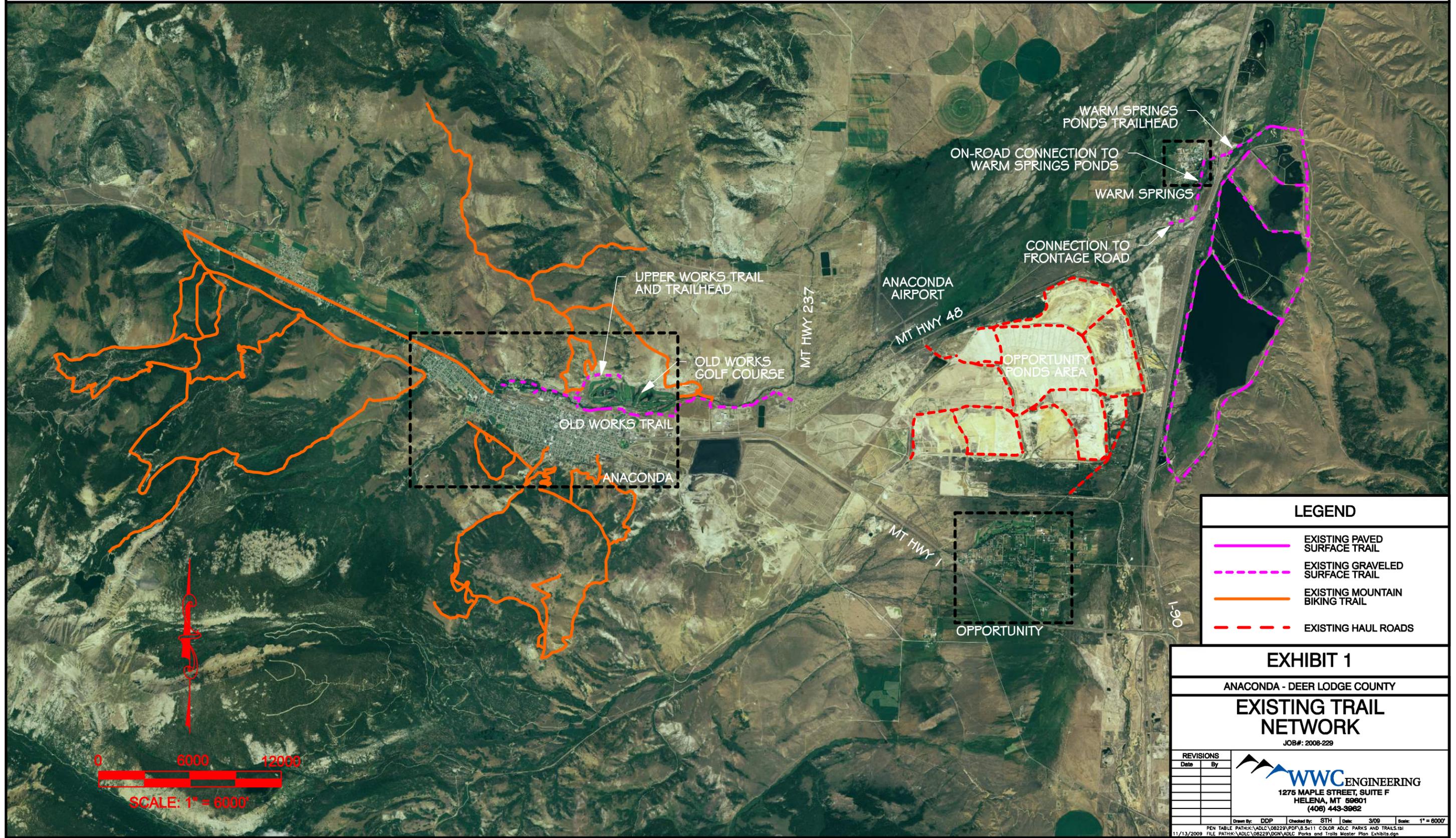
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# **Appendix A**

## **Existing Trail Exhibits**

# ADLC EXISTING TRAIL NETWORK

LOCATED IN  
DEER LODGE COUNTY, MONTANA



LEGEND	
	EXISTING PAVED SURFACE TRAIL
	EXISTING GRAVELED SURFACE TRAIL
	EXISTING MOUNTAIN BIKING TRAIL
	EXISTING HAUL ROADS

**EXHIBIT 1**  
ANACONDA - DEER LODGE COUNTY  
**EXISTING TRAIL NETWORK**  
JOB#: 2008-229

REVISIONS	
Date	By

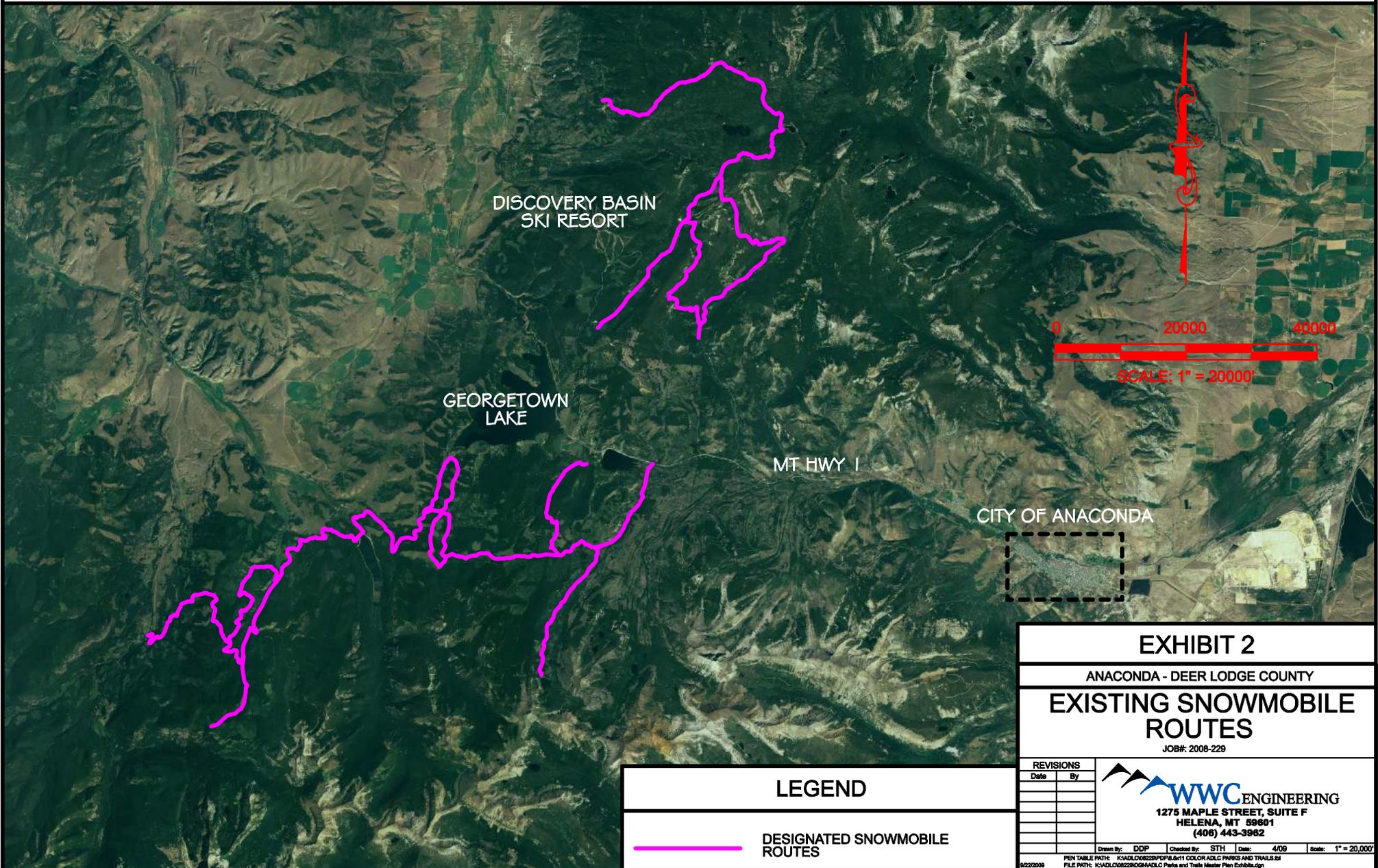
**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3962

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# DESIGNATED SNOWMOBILE ROUTES

LOCATED IN  
DEER LODGE COUNTY, MONTANA



**EXHIBIT 2**  
ANACONDA - DEER LODGE COUNTY  
**EXISTING SNOWMOBILE ROUTES**  
JOB#: 2008-229

REVISIONS	
Date	By

**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3962

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## LEGEND

DESIGNATED SNOWMOBILE ROUTES

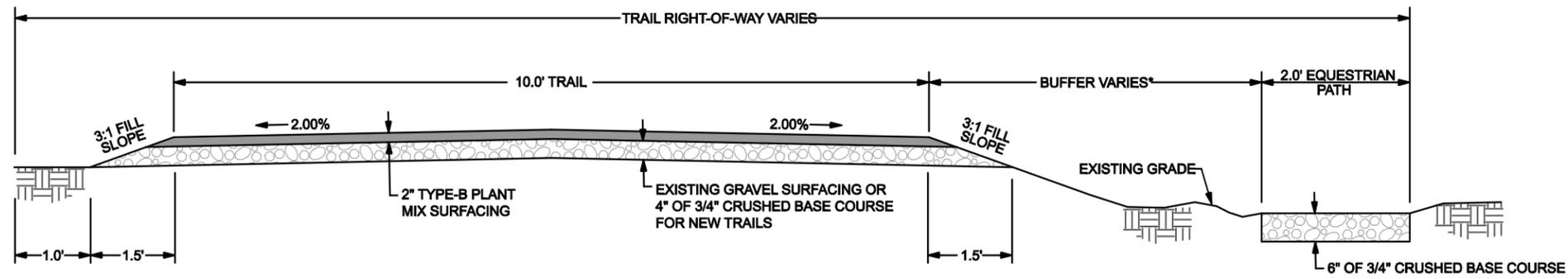


# **Appendix B**

## **Typical Sections**







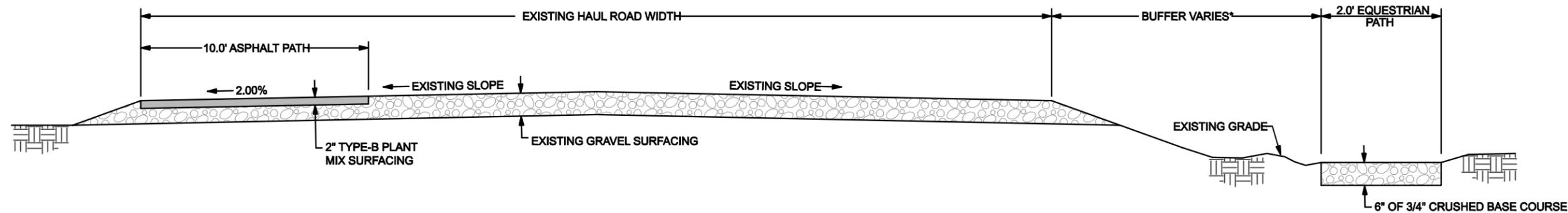
**TYPICAL #6 EQUESTRIAN TRAIL**

NOT TO SCALE

**NOTES:**

\* BUFFER WIDTH VARIES DEPENDING ON EXISTING RIGHT-OF-WAY AVAILABLE AND NATURAL TERRAIN FEATURES AND OBSTACLES.

EQUESTRIAN TRAIL TYPICAL SHOWN WITH 10.0' ASPHALT TRAIL BUT MAY BE USED IN CONJUNCTION WITH EXISTING HAUL ROADS WHERE SPECIFIED.

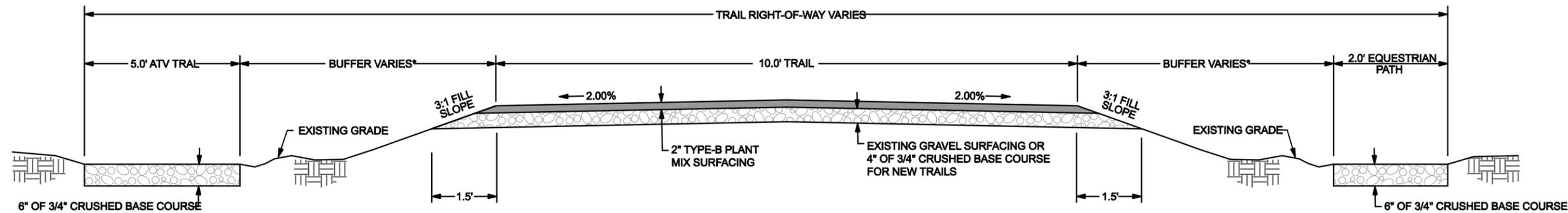


**TYPICAL #7 PAVED ASPHALT TRAIL ON HAUL ROAD WITH EQUESTRIAN TRAIL**

NOT TO SCALE

**NOTES:**

\* BUFFER WIDTH VARIES DEPENDING ON EXISTING RIGHT-OF-WAY AVAILABLE AND NATURAL TERRAIN FEATURES AND OBSTACLES.



**TYPICAL #8 PAVED ASPHALT TRAIL WITH SEPARATED EQUESTRIAN TRAIL AND ATV TRAIL**

NOT TO SCALE

**NOTES:**

\* BUFFER WIDTH VARIES DEPENDING ON EXISTING RIGHT-OF-WAY AVAILABLE AND NATURAL TERRAIN FEATURES AND OBSTACLES.

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**ANACONDA-DEER LODGE COUNTY**  
 800 South Main  
 Anaconda, MT 59711  
 (406) 563-4010

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DDP	09/09	STH
REV	DATE	CKD

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**ADLC MASTER PLAN**  
 Trail Typical Section Sheet

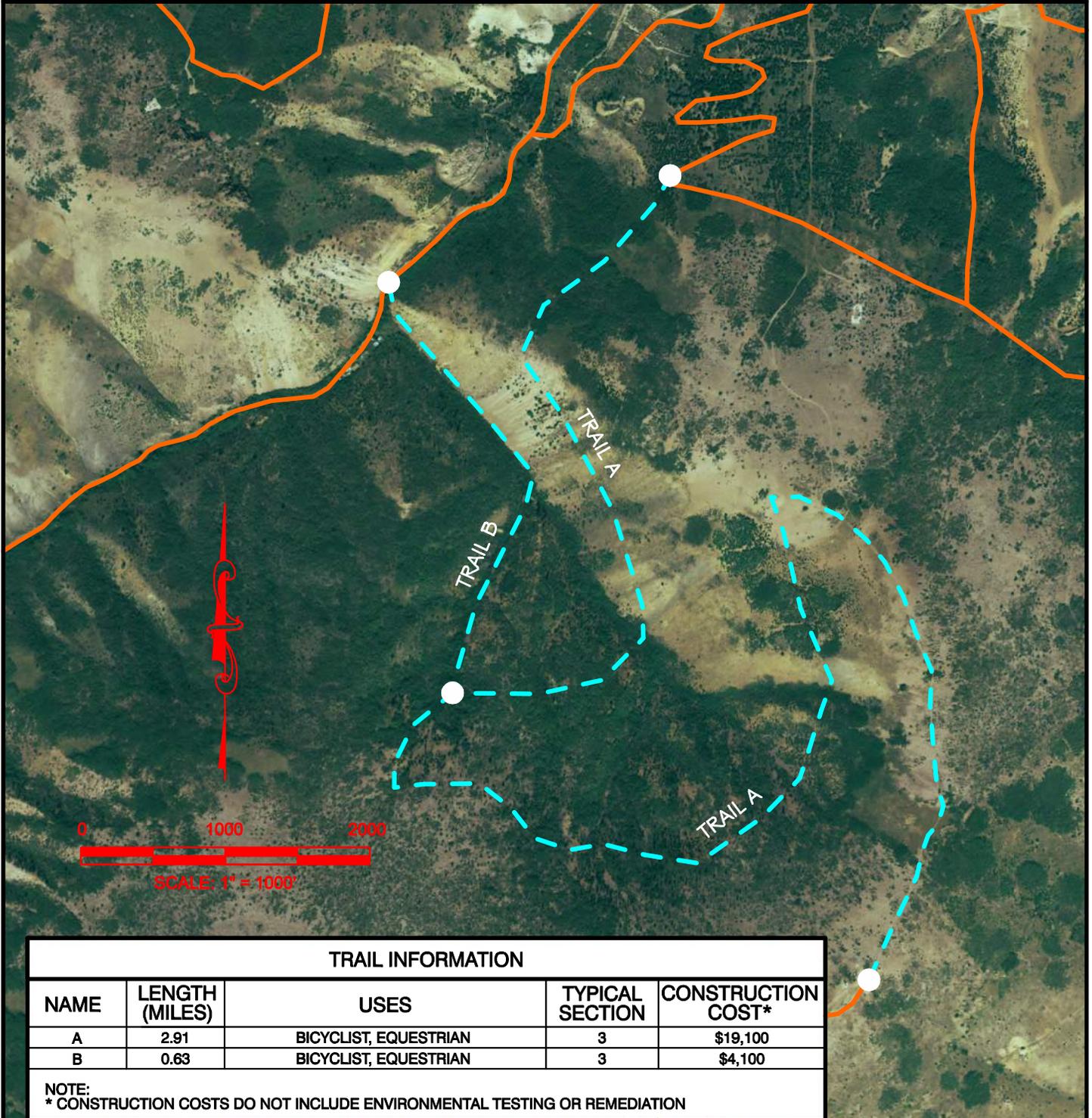
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# **Appendix C**

## **Proposed Trail Exhibits**

# ADLC PROPOSED TRAILS A & B

LOCATED IN  
DEER LODGE COUNTY, MONTANA



TRAIL INFORMATION				
NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
A	2.91	BICYCLIST, EQUESTRIAN	3	\$19,100
B	0.63	BICYCLIST, EQUESTRIAN	3	\$4,100

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION

LEGEND	
	EXISTING MOUNTAIN BIKING TRAIL
	PROPOSED MOUNTAIN BIKING TRAIL (ADLC)

## EXHIBIT 5

ANACONDA - DEER LODGE COUNTY

## PROPOSED TRAILS A & B

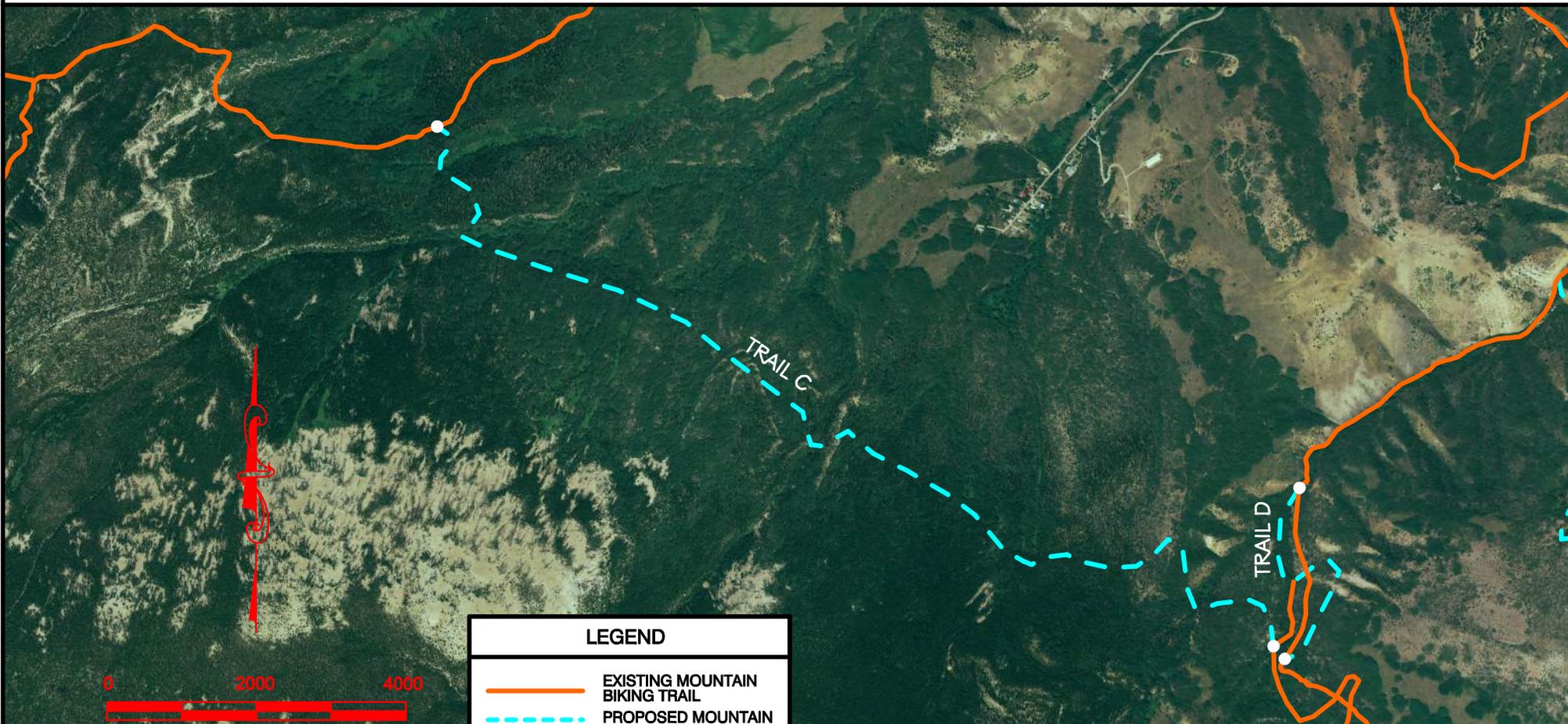
JOB#: 2008-229

REVISIONS	
Date	By

**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3982

# ADLC PROPOSED TRAILS C & D

LOCATED IN  
DEER LODGE COUNTY, MONTANA



LEGEND	
	EXISTING MOUNTAIN BIKING TRAIL
	PROPOSED MOUNTAIN BIKING TRAIL

TRAIL INFORMATION				
NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
C	2.98	BICYCLIST, EQUESTRIAN	3	\$19,500
D	0.69	BICYCLIST, EQUESTRIAN	3	\$4,500

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.

## EXHIBIT 6 ANACONDA - DEER LODGE COUNTY

### PROPOSED TRAILS C & D

JOB#: 2008-229

REVISIONS	
Date	By

**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3962

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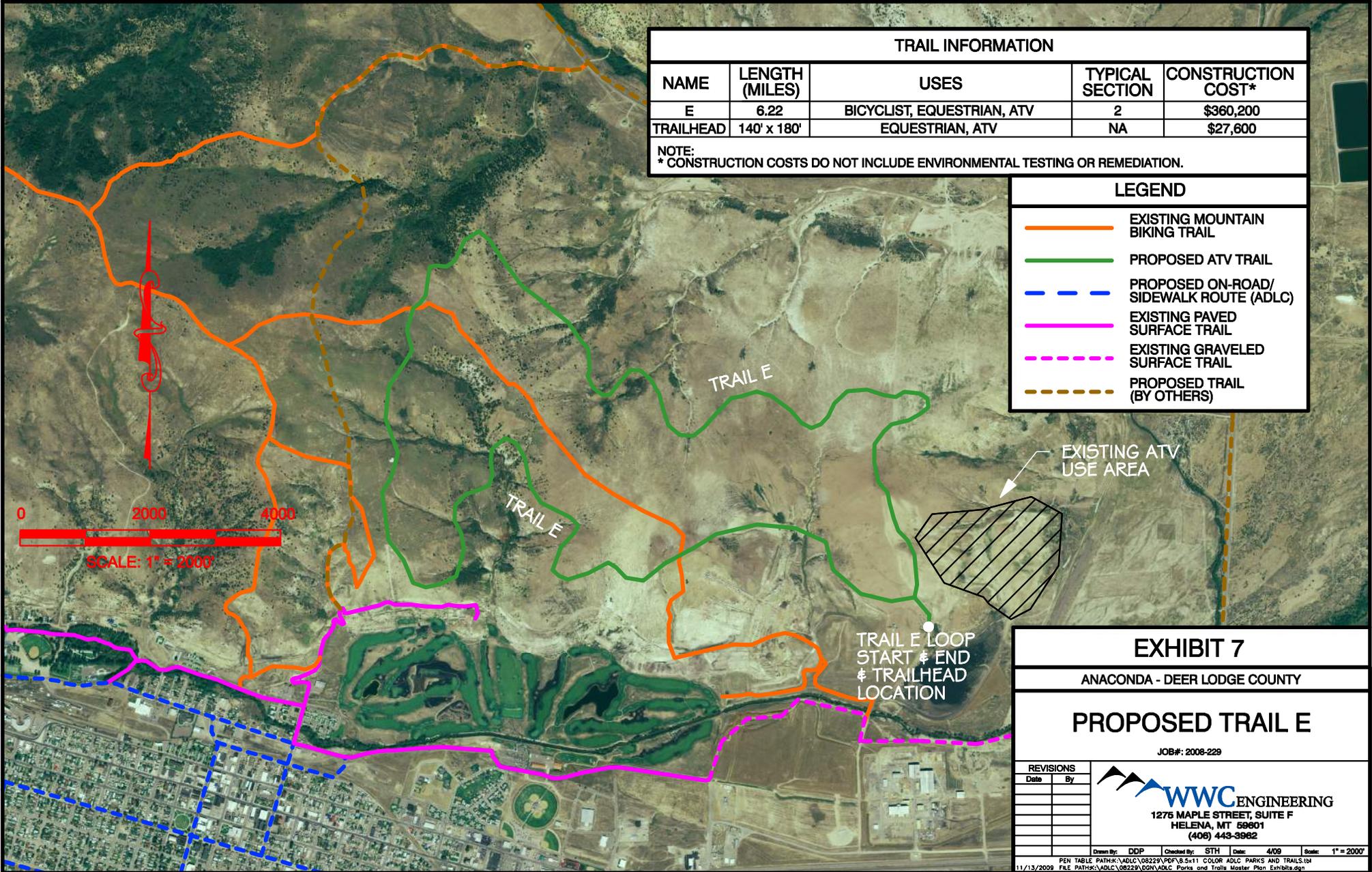
# ADLC PROPOSED TRAIL E

LOCATED IN  
DEER LODGE COUNTY, MONTANA

TRAIL INFORMATION				
NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
E	6.22	BICYCLIST, EQUESTRIAN, ATV	2	\$360,200
TRAILHEAD	140' x 180'	EQUESTRIAN, ATV	NA	\$27,600

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.

LEGEND	
	EXISTING MOUNTAIN BIKING TRAIL
	PROPOSED ATV TRAIL
	PROPOSED ON-ROAD/ SIDEWALK ROUTE (ADLC)
	EXISTING PAVED SURFACE TRAIL
	EXISTING GRAVELED SURFACE TRAIL
	PROPOSED TRAIL (BY OTHERS)



**EXHIBIT 7**  
ANACONDA - DEER LODGE COUNTY  
**PROPOSED TRAIL E**  
JOB#: 2008-229

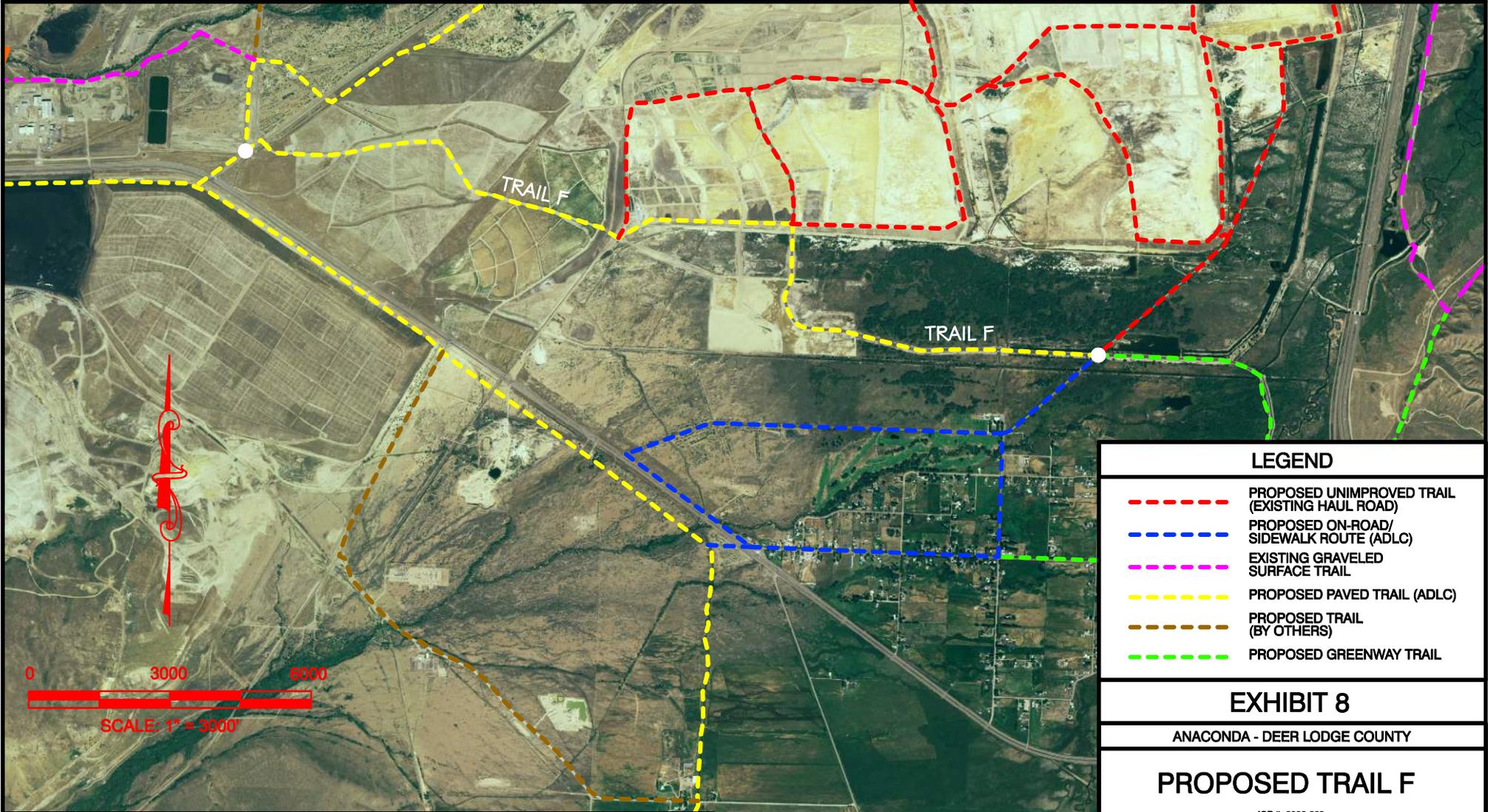
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**WWC ENGINEERING**  
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 (406) 443-3982

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# ADLC PROPOSED TRAIL F

LOCATED IN  
DEER LODGE COUNTY, MONTANA



## LEGEND

- - - - - PROPOSED UNIMPROVED TRAIL (EXISTING HAUL ROAD)
- - - - - PROPOSED ON-ROAD/ SIDEWALK ROUTE (ADLC)
- - - - - EXISTING GRAVELED SURFACE TRAIL
- - - - - PROPOSED PAVED TRAIL (ADLC)
- - - - - PROPOSED TRAIL (BY OTHERS)
- - - - - PROPOSED GREENWAY TRAIL

## EXHIBIT 8

ANACONDA - DEER LODGE COUNTY

## PROPOSED TRAIL F

JOB#: 2008-229

### TRAIL INFORMATION

NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
F	4.04	BICYCLIST, PEDESTRIAN, EQUESTRIAN, ATV	7	\$336,900

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.

### REVISIONS

Date	By

**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3962

Drawn By: DDP    Checked By: STH    Date: 9/09    Scale: 1" = 3000'

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FILE PATH: K:\ADLC\0229\CON\ADLC Parks and Trails Master Plan Exhibit8.dwg

# ADLC PROPOSED ROUTES G THROUGH M

LOCATED IN  
DEER LODGE COUNTY, MONTANA



TRAIL INFORMATION				
NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
G	2.14	BICYCLIST	4	\$20,800
H	0.69	BICYCLIST	4	\$10,500
I	1.85	BICYCLIST	4	\$20,400
J	0.58	BICYCLIST	4, 5	\$8,600
K	0.43	BICYCLIST	SEE NOTE 1	\$5,600
L	1.06	BICYCLIST	4	\$8,900
M	0.34	BICYCLIST	4	\$6,500

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.  
1) SHARE THE ROAD SIGNAGE ONLY.

LEGEND	
	EXISTING MOUNTAIN BIKING TRAIL
	PROPOSED MOUNTAIN BIKING TRAIL (ADLC)
	PROPOSED ON-ROAD/SIDEWALK ROUTE (ADLC)
	EXISTING PAVED SURFACE TRAIL
	PROPOSED PAVED TRAIL (ADLC)
	PROPOSED TRAIL (BY OTHERS)
	PROPOSED ATV TRAIL

**EXHIBIT 9**  
ANACONDA - DEER LODGE COUNTY  
**PROPOSED ROUTES G THROUGH M**  
JOB#: 2008-228

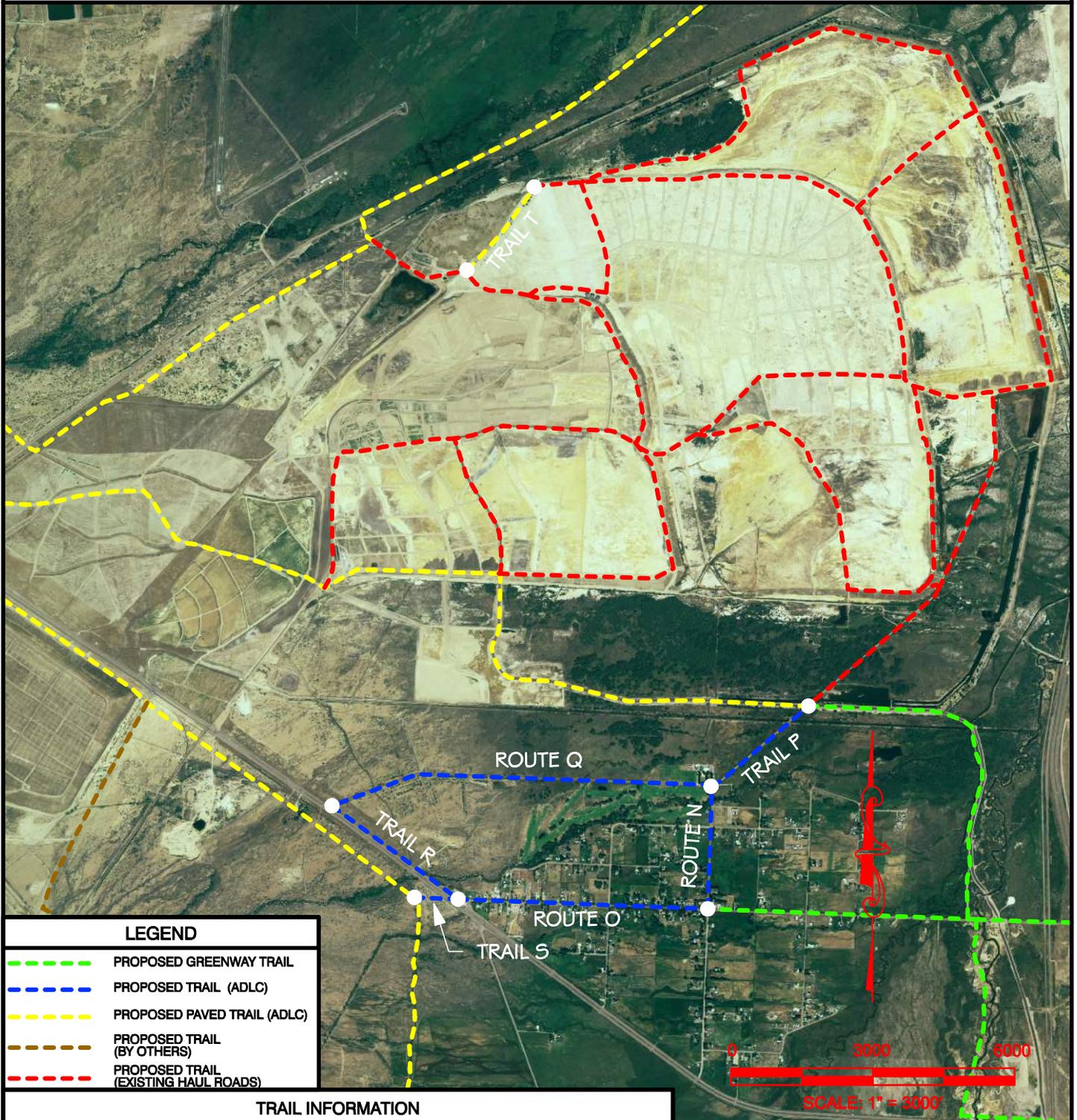
REVISIONS	
Date	By

**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3962

Drawn By: DDP    Checked By: STH    Date: 2/09    Scale: 1" = 1000'  
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# ADLC PROPOSED TRAILS N THROUGH T

LOCATED IN  
DEER LODGE COUNTY, MONTANA



LEGEND	
<span style="color: green;">---</span>	PROPOSED GREENWAY TRAIL
<span style="color: blue;">---</span>	PROPOSED TRAIL (ADLC)
<span style="color: yellow;">---</span>	PROPOSED PAVED TRAIL (ADLC)
<span style="color: brown;">---</span>	PROPOSED TRAIL (BY OTHERS)
<span style="color: red;">---</span>	PROPOSED TRAIL (EXISTING HAUL ROADS)

### TRAIL INFORMATION

NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
N	0.49	PEDESTRIAN, BICYCLIST	SEE NOTE 2	\$46,300
O	1.00	PEDESTRIAN, BICYCLIST	SEE NOTE 2	\$7,500
P	0.50	PEDESTRIAN, BICYCLIST	1	\$33,000
Q	1.54	PEDESTRIAN, BICYCLIST	SEE NOTE 1	\$4,200
R	0.63	PEDESTRIAN, BICYCLIST	1	\$140,900
S	0.17	PEDESTRIAN, BICYCLIST	1	\$19,200
T	0.43	PEDESTRIAN, BICYCLIST, EQUESTRIAN, ATV	8	\$72,100
HAUL RD. EQ. TRAIL	17.37	EQUESTRIAN	7	\$235,700

NOTE:  
 \* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.  
 1) SHARE THE ROAD SIGNAGE ONLY.  
 2) 7' SHLD WIDENING ON WEST SIDE OF HAUSER STREET W/ STRIPED 10' ON-STREET ROUTE ON WEST SIDE.  
 3) 6' STRIPED ON-STREET ROUTE ON EACH SIDE OF STEWART STREET.

## EXHIBIT 10

ANACONDA - DEER LODGE COUNTY

# PROPOSED TRAILS N THROUGH T

JOB#: 2008-229

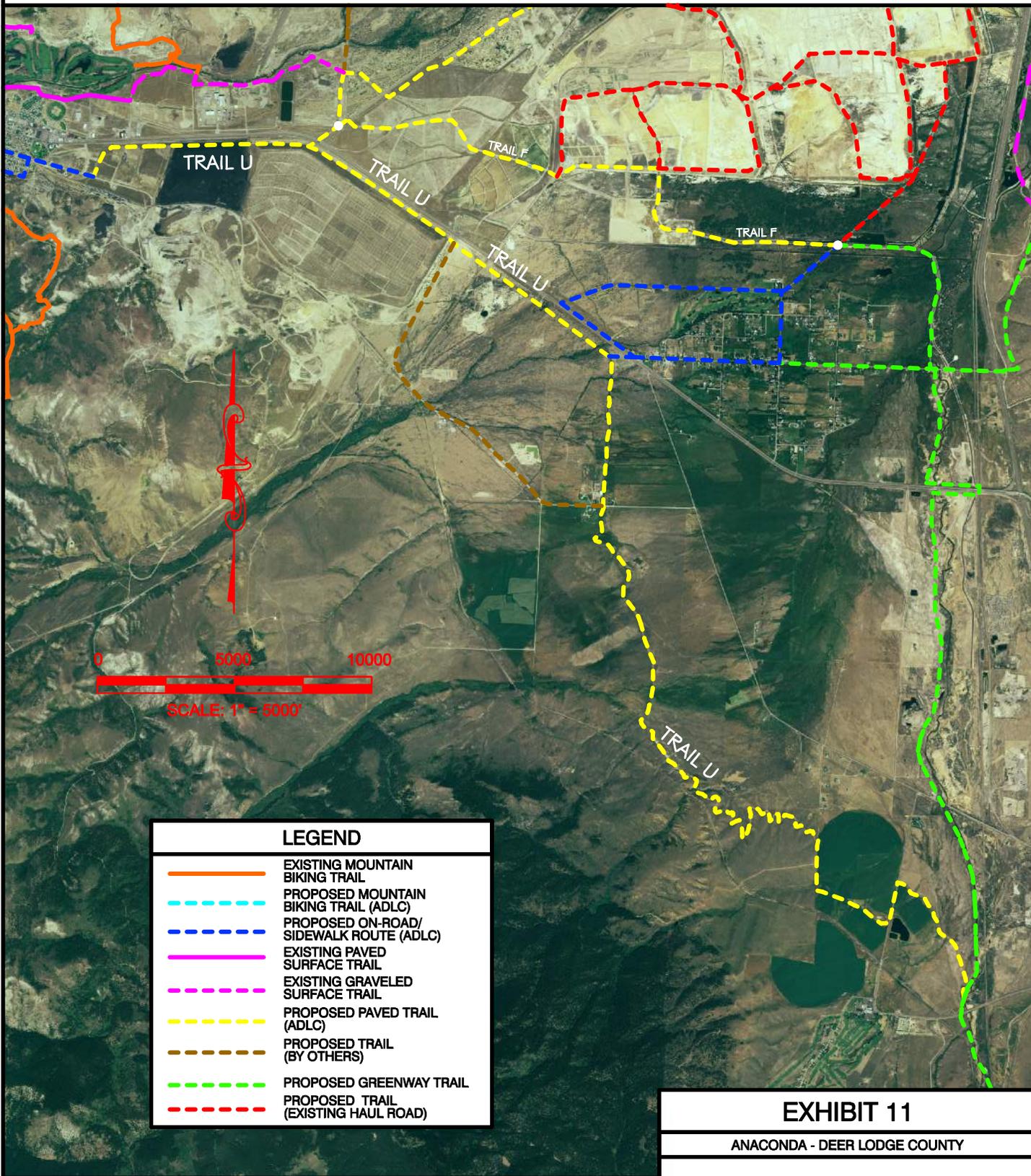
REVISIONS	
Date	By

**WWC ENGINEERING**  
 1275 MAPLE STREET, SUITE F  
 HELENA, MT 59601  
 (406) 443-3982

Drawn By: DDP    Checked By: STH    Date: 4/09    Scale: 1" = 1000'  
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# ADLC PROPOSED TRAIL U

LOCATED IN  
DEER LODGE COUNTY, MONTANA



LEGEND	
	EXISTING MOUNTAIN BIKING TRAIL
	PROPOSED MOUNTAIN BIKING TRAIL (ADLC)
	PROPOSED ON-ROAD/SIDEWALK ROUTE (ADLC)
	EXISTING PAVED SURFACE TRAIL
	EXISTING GRAVELED SURFACE TRAIL
	PROPOSED PAVED TRAIL (ADLC)
	PROPOSED TRAIL (BY OTHERS)
	PROPOSED GREENWAY TRAIL
	PROPOSED TRAIL (EXISTING HAUL ROAD)

### TRAIL INFORMATION

NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
U**	4.13	PEDESTRIAN, BICYCLIST	1	\$286,000
U***	7.35	PEDESTRIAN, BICYCLIST	1	\$509,000

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.  
\*\* TRAIL U FROM ANACONDA TO OPPORTUNITY.  
\*\*\* TRAIL U FROM OPPORTUNITY TO FAIRMONT.

## EXHIBIT 11

ANACONDA - DEER LODGE COUNTY

## PROPOSED TRAIL U

JOB#: 2008-229

### REVISIONS

Date	By



Drawn By: DDP Checked By: STH Date: 4/09 Scale: 1" = 5000'

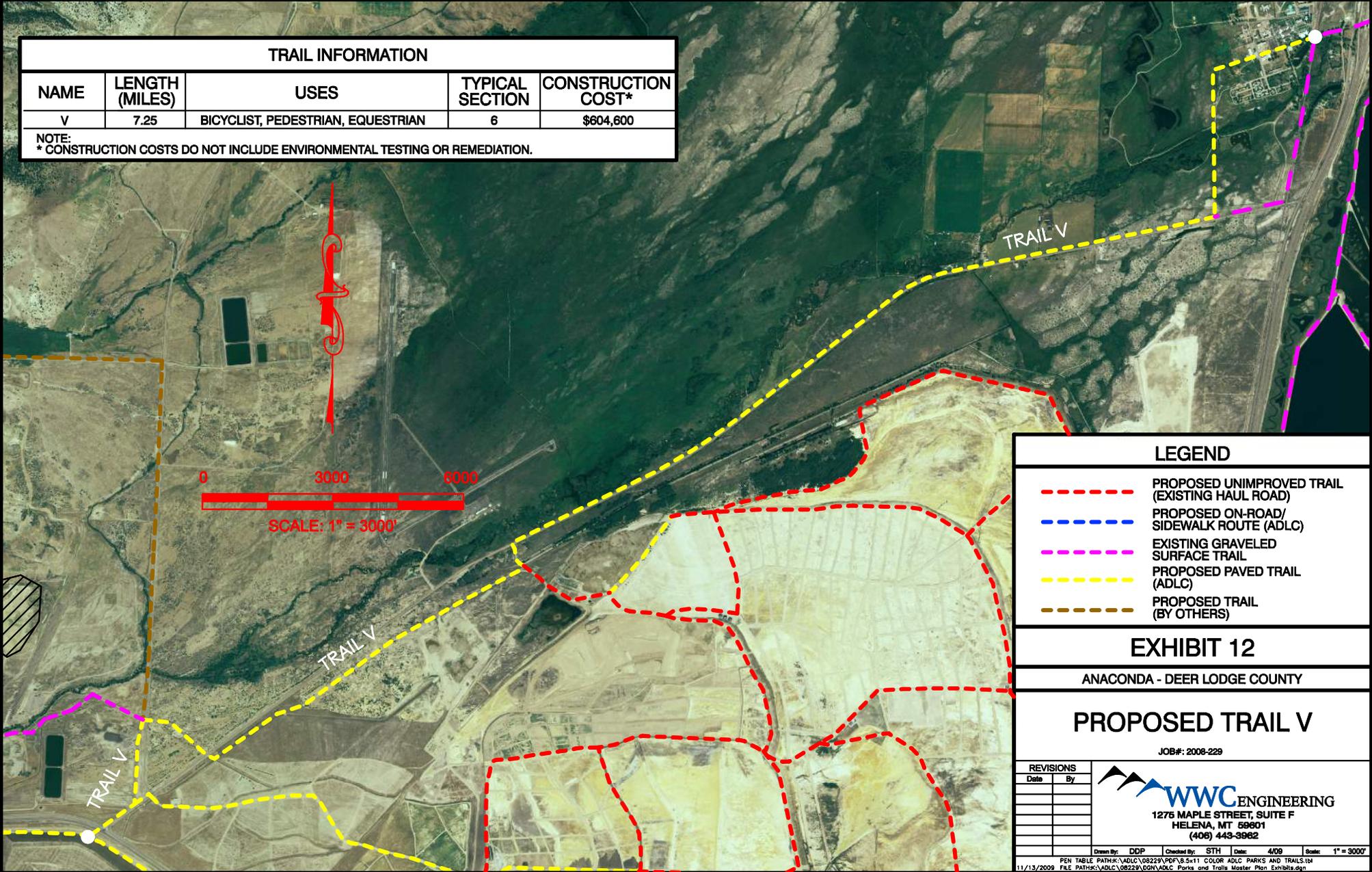
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# ADLC PROPOSED TRAIL V

LOCATED IN  
DEER LODGE COUNTY, MONTANA

TRAIL INFORMATION				
NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
V	7.25	BICYCLIST, PEDESTRIAN, EQUESTRIAN	6	\$604,600

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.



LEGEND	
	PROPOSED UNIMPROVED TRAIL (EXISTING HAUL ROAD)
	PROPOSED ON-ROAD/ SIDEWALK ROUTE (ADLC)
	EXISTING GRAVELLED SURFACE TRAIL
	PROPOSED PAVED TRAIL (ADLC)
	PROPOSED TRAIL (BY OTHERS)

**EXHIBIT 12**  
ANACONDA - DEER LODGE COUNTY

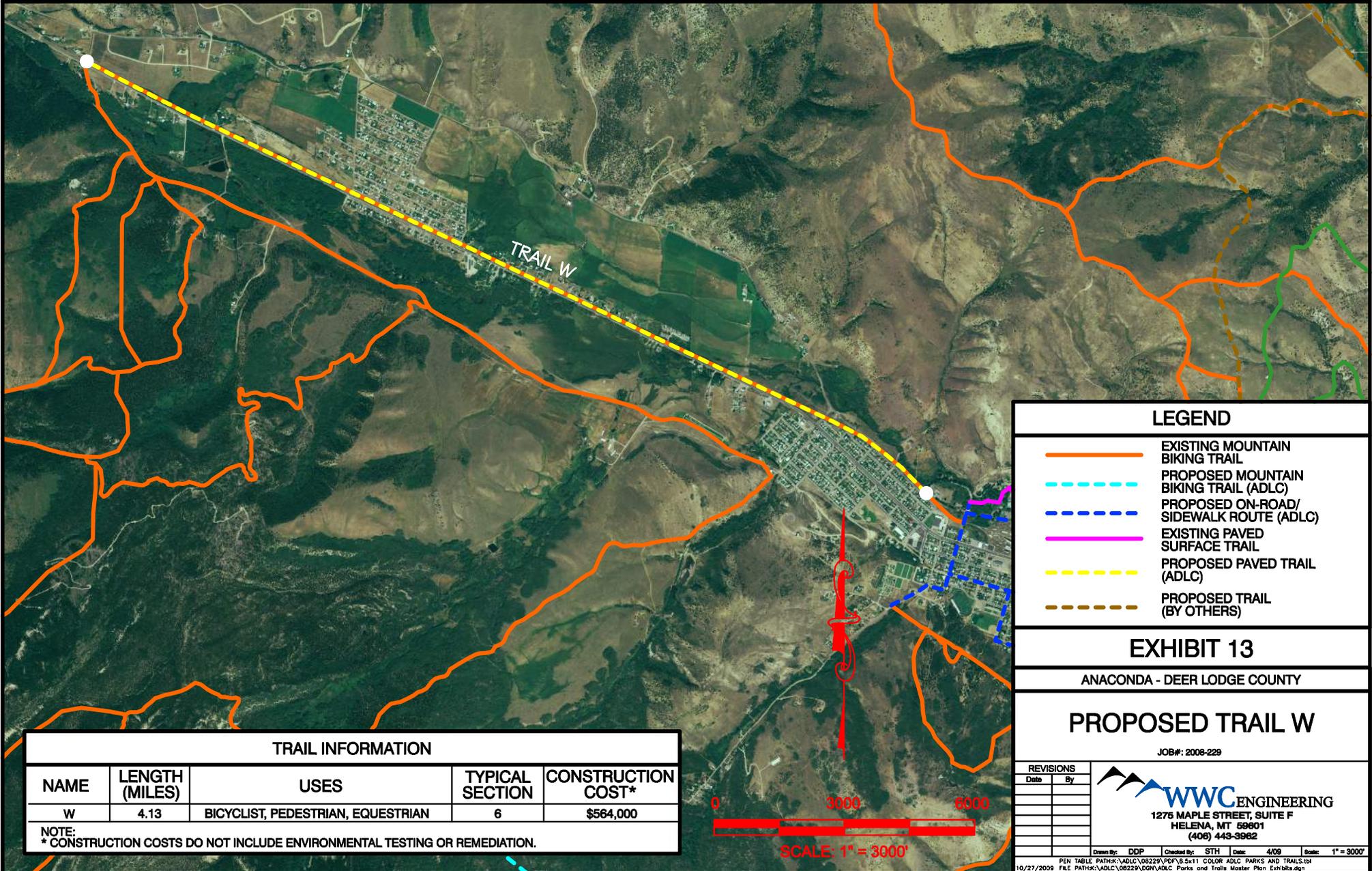
**PROPOSED TRAIL V**  
JOB#: 2008-229

REVISIONS	
Date	By

**WWC ENGINEERING**  
1276 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3962

# ADLC PROPOSED TRAIL W

LOCATED IN  
DEER LODGE COUNTY, MONTANA



## LEGEND

- EXISTING MOUNTAIN BIKING TRAIL
- - - PROPOSED MOUNTAIN BIKING TRAIL (ADLC)
- - - PROPOSED ON-ROAD/SIDEWALK ROUTE (ADLC)
- EXISTING PAVED SURFACE TRAIL
- - - PROPOSED PAVED TRAIL (ADLC)
- - - PROPOSED TRAIL (BY OTHERS)

## EXHIBIT 13

ANACONDA - DEER LODGE COUNTY

## PROPOSED TRAIL W

JOB#: 2008-229

### REVISIONS

Date	By

**WWC ENGINEERING**  
1275 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3982

Drawn By: DDP    Checked By: STH    Date: 4/09    Scale: 1" = 3000'

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### TRAIL INFORMATION

NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
W	4.13	BICYCLIST, PEDESTRIAN, EQUESTRIAN	6	\$564,000

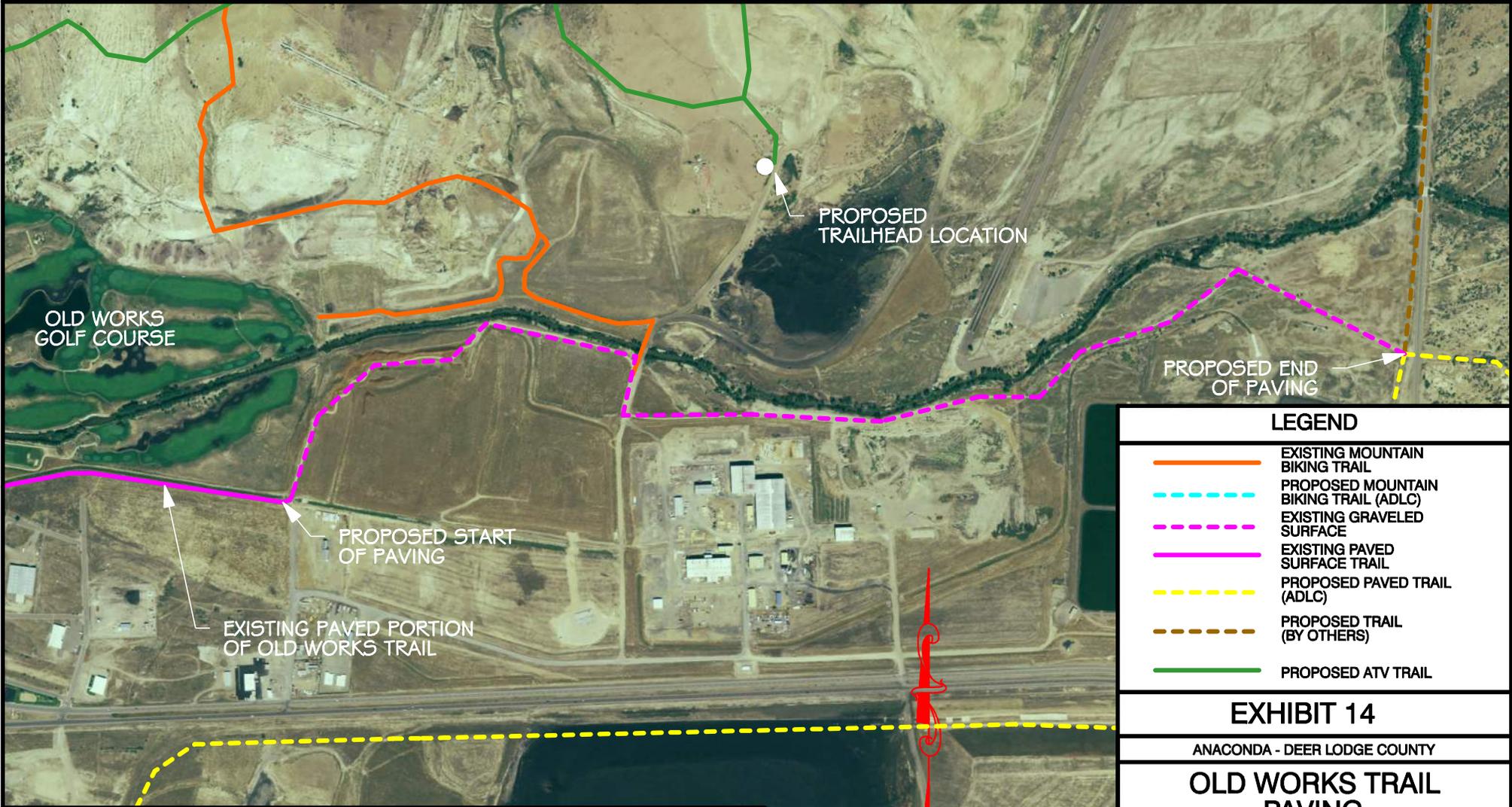
NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.



SCALE: 1" = 3000'

# ADLC PROPOSED OLD WORKS TRAIL PAVING

LOCATED IN  
DEER LODGE COUNTY, MONTANA



LEGEND	
	EXISTING MOUNTAIN BIKING TRAIL
	PROPOSED MOUNTAIN BIKING TRAIL (ADLC)
	EXISTING GRAVELED SURFACE
	EXISTING PAVED SURFACE TRAIL
	PROPOSED PAVED TRAIL (ADLC)
	PROPOSED TRAIL (BY OTHERS)
	PROPOSED ATV TRAIL

## EXHIBIT 14

ANACONDA - DEER LODGE COUNTY

## OLD WORKS TRAIL PAVING

JOB#: 2008-229

### TRAIL INFORMATION

NAME	LENGTH (MILES)	USES	TYPICAL SECTION	CONSTRUCTION COST*
OLD WORKS	1.79	PEDESTRIAN, BICYCLIST, EQUESTRIAN	1 & 6	\$134,400

NOTE:  
\* CONSTRUCTION COSTS DO NOT INCLUDE ENVIRONMENTAL TESTING OR REMEDIATION.



REVISIONS	
Date	By

**WWC ENGINEERING**  
1276 MAPLE STREET, SUITE F  
HELENA, MT 59601  
(406) 443-3982

Drawn By: DDP    Checked By: STH    Date: 4/09    Scale: 1" = 1000'

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**Appendix D**  
**Conceptual Opportunity Trailhead**  
**Park Design**

## Playground Items



NEOS Electronic Game



School Age Play Equipment



Tot Play Equipment



Sky Surfer

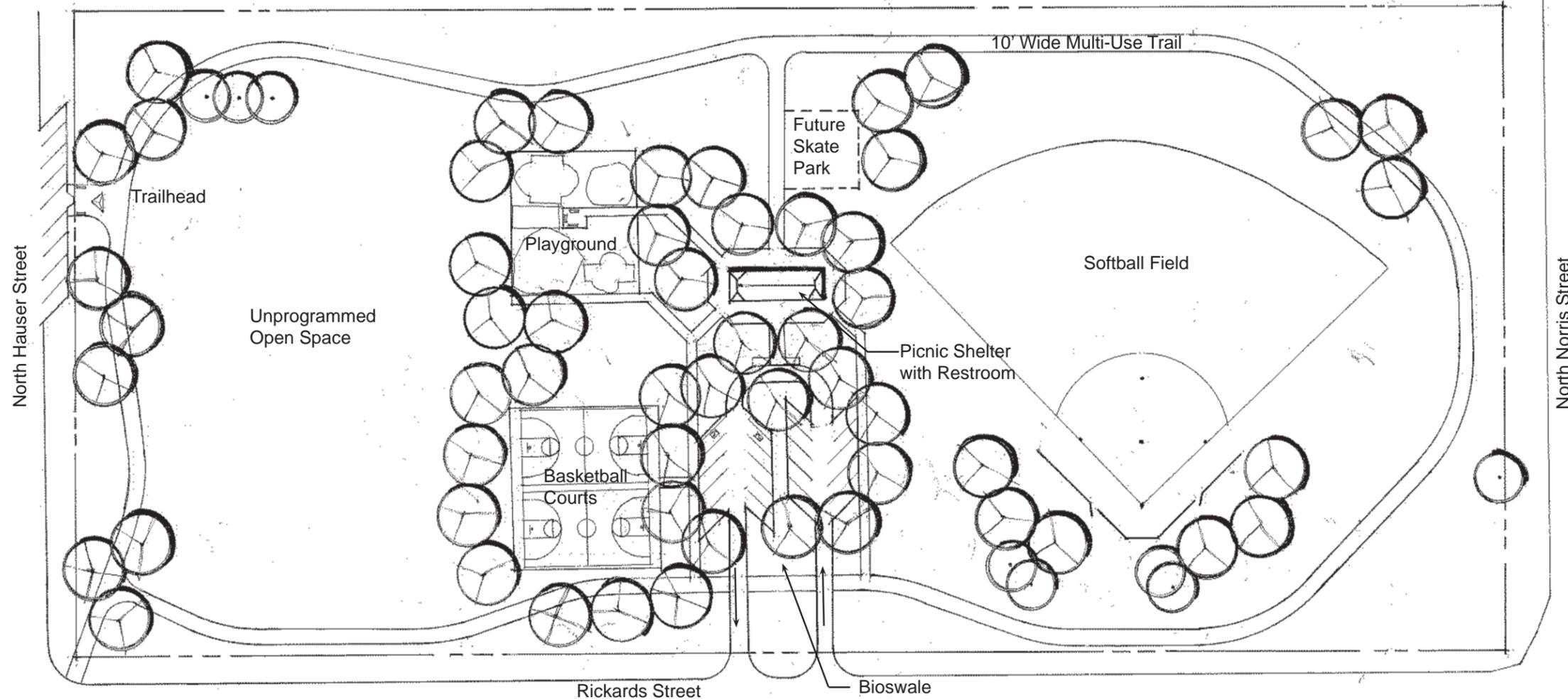


Monorail

## Bioswale



## Trailhead Kiosk



Concept A eliminates the existing road on the north side of the property. By eliminating this road, it allows for the future expansion of the park towards the north. In addition to street parking, an internal parking lot is centered on the property that has twenty parking spaces, typical for a neighborhood park. A bioswale is centered between the parking lot and will collect the surface drainage and treat the water before it is directed off site.

Two regulation sized basketball courts, playground, softball field, and picnic shelter with a restroom are the main features of the park. The picnic shelter will mimic the look of the existing school building and if possible, reuse the brick from the building. The size of the shelter will support events for both family and neighborhood attendees. Open spaces are provided near the shelter for overflow uses.

A skate park was indicated as a desirable element in the park. Due to budget constraints, it is not recommend building it at this time. This plan does, however, provide an area for the skate park as funding becomes available. The softball field is centered where an old field existed. This special use facility was indicated as highly desirable in the community feedback.

A trailhead is located on the west side of the site and consists of a kiosk for information about the greenway system and two benches. An internal looped trail provides for walking and bicycling for users of the park. A large portion of the park is retained as open lawn, or unprogrammed open space.



Perspective looking at S.E. Corner of Shelter



# Concept A Beaver Dam Park and Playground

## Playground Items



NEOS Electronic Game



School Age Modular Playground Equipment



Tire Swing

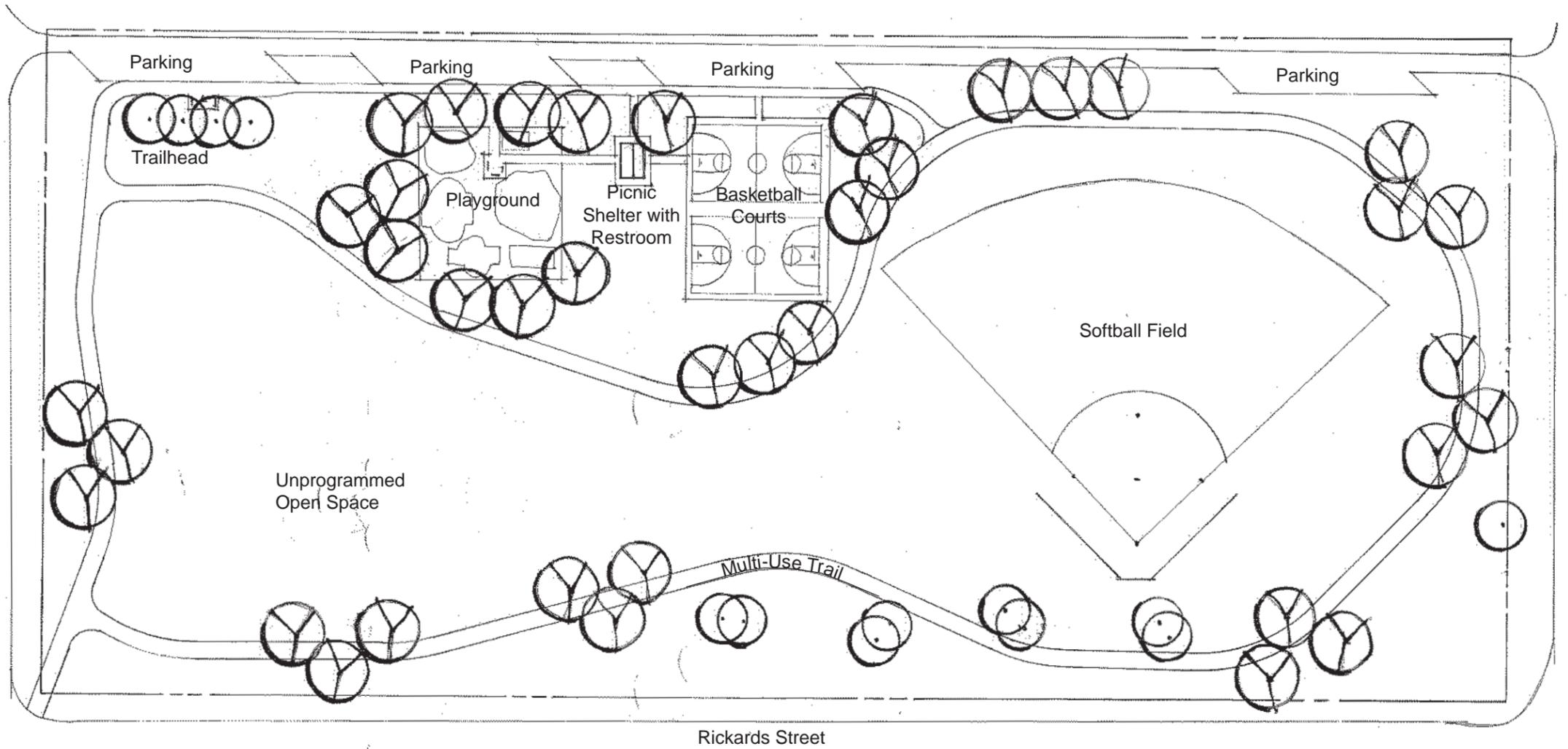


Fun-Semble



Standing See-Saw

## Trailhead Kiosk



North Hauser Street

North Norris Street

Rickards Street

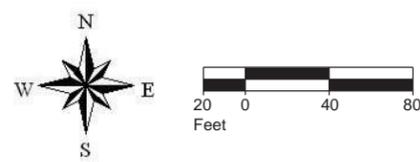
Concept B changes the existing north road into a one-way roadway with angled parking. This spreads the parking along one full edge of the park. The main elements of the park are arranged in a more linear placement as well.

The picnic shelter is centered between the playground and basketball courts. A small seating area is incorporated within the playground for parents. A trail head would be placed on the northwest corner of the property with a kiosk for trail information and two benches.

A softball field is located on the eastern half of the park. Unprogrammed open space is in the west half of the park. Both elements are bordered by a 10 foot wide multi-use trail.



Perspective from Basketball Court to Playground



# Concept B Beaver Dam Park and Playground



## Playground Items



Mineshaft and Wall Climb



Balance Beams



Skysurfer

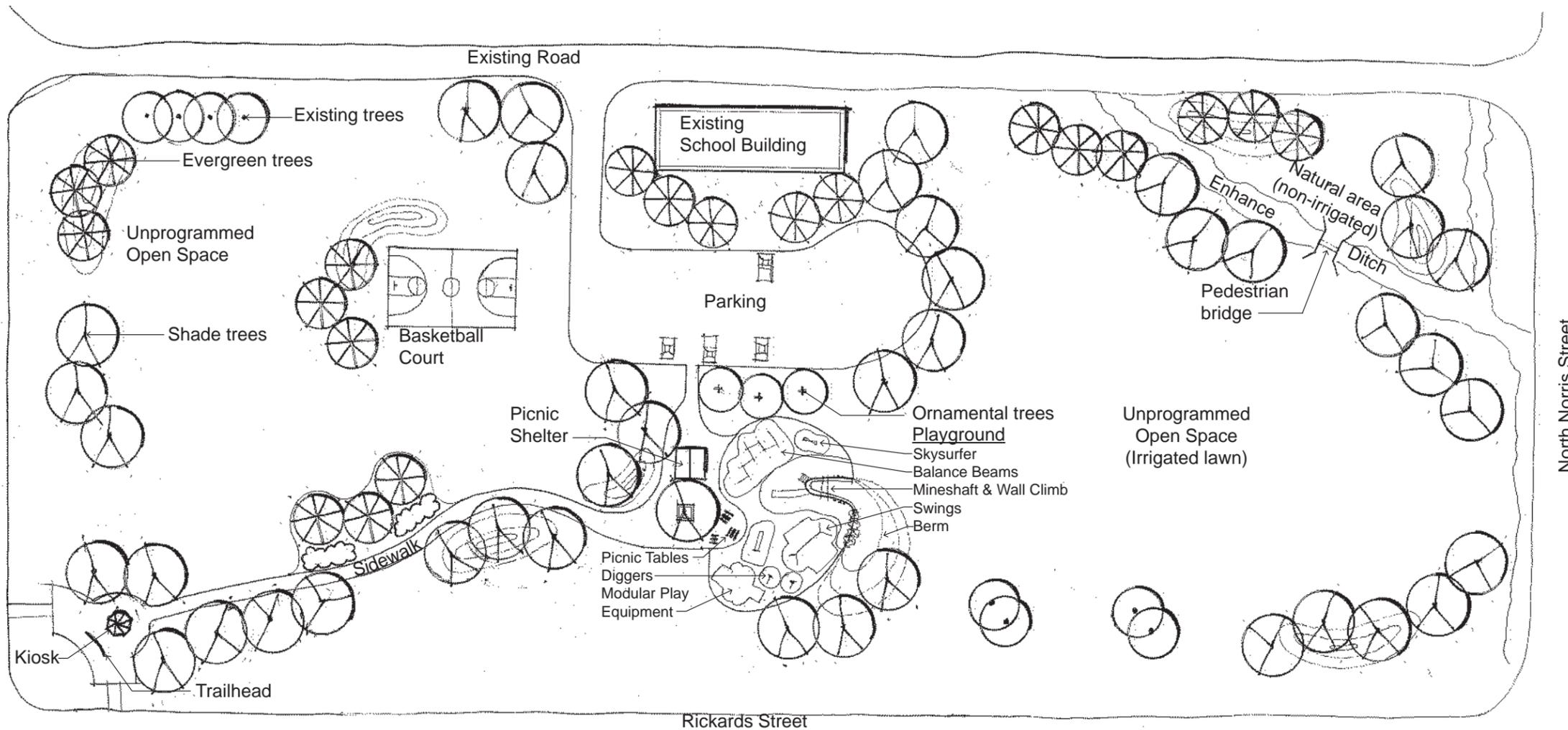


Swings



EZ-Digger

## Trailhead Kiosk



Concept C retains the main structure of the existing school building and includes the demolition of the addition.

The picnic shelter is centered on the site and is located adjacent to the playground. The playground has some unique play elements for children of all age groups.

A single, full regulation basketball court is located west of the parking lot which gives it some separation from the picnic and children play areas. A berm is located adjacent provides seating for spectators.

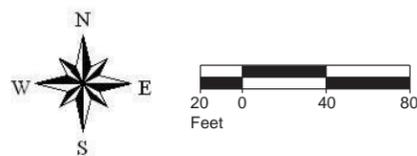
Several areas of unprogrammed open space allow for a variety of events for many sized groups.

In the northeast corner of the park, the existing ditch would be enhanced with native woody plants and can be used for interpretative opportunities.

A large parking lot may be paved or left as gravel, providing flexibility for its use.



Perspective look at Trailhead from N. Hauser St.



# Concept C Beaver Dam Park and Playground

**Appendix E**  
**Trail Etiquette Brochure**

## All Users

1. Treat all trail users with respect and courtesy regardless of their sport, speed, or skill level.
2. Protect our environment. Stay on the trail. Do not cut switchbacks or use shortcuts.
3. Stay to the right and pass on the left. Always look before changing positions on the trail.
4. Share the trail, watch and listen for others.
5. Learn and use appropriate hand signals. Motorized users often cannot hear voice signals.
6. Respect trail closures; use only trails posted open. Obey posted signs.
7. Carry out all litter, including your pet's waste.
8. All users yield to horseback riders.
9. When encountering a horse, speak in a calm, pleasant tone so the horse hears a human voice. Do not hide.
10. The rider knows the horse the best. Expect the rider to advise you, not as a lack of courtesy, but rather with knowledge of the horse's temperament.
11. Downhill traffic yields to uphill traffic and faster users yield to slower users.
12. Do not approach, scare, harass, or feed wildlife or livestock.
13. Respect private property and the privacy of people living along the trail.
14. Leave flowers and plants for others to enjoy. Do not pull bark off of, cut or otherwise damage live trees.
15. Practice low-impact trail use. Wet and muddy trails are more vulnerable to damage. When trail is soft, consider other options.
16. Travel at a safe and controlled speed. Be especially careful when visibility is limited.

## Walkers and Runners

1. Do not climb fences – use stiles
2. Always yield to equestrians. When a horse approaches, stop, and ask the rider for instructions.
3. Warn people when you are about to pass. Use your voice to warn equestrians.

## Bicyclists

1. Ride single file. You can ride two or more abreast if you will not block other traffic. On curving or hilly trails, ride single file.
2. Control your speed. Trails are not an appropriate place for high speed riding.
3. Obey traffic signs and signals. Use hand signals to indicate left or right turns, slowing or stopping.
4. When passing, go slow and give an audible signal.
5. At night, use a headlight, taillight and reflectors.

## Mountain Bikers

1. Yield right-of-way to all other users. Always yield to uphill users.
2. Never pass a horse from behind. Calmly call out that you want to pass, so the rider can turn the horse around to face your bike. Then you can pass safely.
3. If there is a horse coming towards you, it is best to just stop your bike and allow the horse to pass you.
4. Control your bike; be ready and able to stop. Obey all bicycle speed regulations and recommendations. Riding a corner cleanly, without sliding, preserves the trail.
5. Slow down and use caution when approaching another user. Use your voice to make your presence known well in advance.

## Equestrians

1. Make sure your horse has the temperament and training for riding on congested trails.
2. Advise other trail users of your horse's temperament, e.g., a horse with a tendency to kick should always wear a red ribbon on the tail. Assume that not everyone will know what the ribbon means, so be prepared to explain or take the necessary precautions to avoid trouble.
3. Obey posted speed/gait limits. Avoid cantering or galloping on busy trails.
4. Know your horse's limitations.
5. Leave gates as you find them. Obey gate closures and regulatory signs.
6. Let other trail users know when it is safe to pass your horse.
7. Announce your intention to pass others. Come to a walk and pass on the left.
8. Always pick up after your horse. Keep the trail head clear of manure and trash. Try to keep the trail clean of manure.

## ATV Riders

1. Ride quietly when around houses, campgrounds and other non-riders. Keep the rpm's and speed low and steady. ATVs must have U.S. Forest Service approved spark arrestors.
2. Do not exceed 10 mph when traveling with 100' of a non-motorized user or 150' or a dwelling.
3. Do not operate vehicle in a careless way that may endanger people or property.
4. When approaching an oncoming horseback rider, stop your vehicle. Shut off your engine. Take off your helmet and avoid sudden movements. Let the horse pass.
5. When passing a horseback rider, alert the rider to your presence by calmly calling out that you wish to pass. The horseback rider should pull the horse over. If the rider has the horse under control, proceed on. If not, allow the rider to move the horse to a safe spot on the trail and then proceed.
6. Avoid riding after heavy rains.
7. Park your ATV and walk to sensitive, historic, scenic and cultural areas.
8. Stay on the trail and stay away from areas posted closed.
9. Yield the right-of-way to hikers, bikers and horses.

# **Appendix F**

## **Trail Cost Estimates**

**ADLC Parks and Trails Master Plan  
Proposed Trails**

Prepared 11/09 by WWC Engineering

MDT Item Number	Description	Units	Est. Qty	MDT Avg Bid Price	Unit Price	Cost
<b>PROPOSED TRAIL A (2.91 MILES)</b>						
20113005	CLEARING AND GRUBBING (7' WIDE)	ACRE	2.47	\$2,541.93		\$6,279
203080100	TOPSOIL-SALVAGING AND PLACING (7' WIDE, 6" DEEP)	CUYD	1,992	\$3.69		\$7,350
					<b>Subtotal</b>	<b>\$ 13,629</b>
					<b>Mobilization:</b>	<b>\$ 1,363</b>
					<b>30% Contingency:</b>	<b>\$ 4,089</b>
					<b>Total Construction Cost:</b>	<b>\$ 19,081</b>
<b>PROPOSED TRAIL B (0.63 MILE)</b>						
20113005	CLEARING AND GRUBBING (7' WIDE)	ACRE	0.53	\$2,541.93		\$1,347
203080100	TOPSOIL-SALVAGING AND PLACING (7' WIDE, 6" DEEP)	CUYD	431	\$3.69		\$1,590
					<b>Subtotal</b>	<b>\$ 2,938</b>
					<b>Mobilization:</b>	<b>\$ 294</b>
					<b>30% Contingency:</b>	<b>\$ 881</b>
					<b>Total Construction Cost:</b>	<b>\$ 4,113</b>
<b>PROPOSED TRAIL C (2.98 MILES)</b>						
20113005	CLEARING AND GRUBBING (7' WIDE)	ACRE	2.53	\$2,541.93		\$6,431
203080100	TOPSOIL-SALVAGING AND PLACING (7' WIDE, 6" DEEP)	CUYD	2,040	\$3.69		\$7,528
					<b>Subtotal</b>	<b>\$ 13,959</b>
					<b>Mobilization:</b>	<b>\$ 1,396</b>
					<b>30% Contingency:</b>	<b>\$ 4,188</b>
					<b>Total Construction Cost:</b>	<b>\$ 19,542</b>
<b>PROPOSED TRAIL D (0.69 MILE)</b>						
20113005	CLEARING AND GRUBBING (7' WIDE)	ACRE	0.59	\$2,541.93		\$1,500
203080100	TOPSOIL-SALVAGING AND PLACING (7' WIDE, 6" DEEP)	CUYD	472	\$3.69		\$1,742
					<b>Subtotal</b>	<b>\$ 3,241</b>
					<b>Mobilization:</b>	<b>\$ 324</b>
					<b>30% Contingency:</b>	<b>\$ 972</b>
					<b>Total Construction Cost:</b>	<b>\$ 4,538</b>
<b>PROPOSED TRAILHEAD (140' x 180')</b>						
20113005	CLEARING AND GRUBBING (140' x 180')	ACRE	0.58	\$2,541.93		\$1,474
203080100	TOPSOIL-SALVAGING AND PLACING (140' x 180' x 6")	CUYD	470	\$3.69		\$1,734
301020521	TOP SURF 3/4 IN GR 2A (140' x 180' x 6")	CUYD	500	\$29.05		\$14,525
	Amenities (Mounting blocks, hitching blocks, signs)			\$2,000.00		\$2,000
					<b>Subtotal</b>	<b>\$ 19,734</b>
					<b>Mobilization:</b>	<b>\$ 1,973</b>
					<b>30% Contingency:</b>	<b>\$ 5,920</b>
					<b>Total Construction Cost:</b>	<b>\$ 27,627</b>
<b>PROPOSED TRAIL E (6.22 MILES)</b>						
20113005	CLEARING AND GRUBBING (13' WIDE)	ACRE	9.80	\$2,541.93		\$24,911
203080100	TOPSOIL-SALVAGING AND PLACING (13' WIDE, 6" DEEP)	CUYD	7,906	\$3.69		\$29,173
301020521	TOP SURF 3/4 IN GR 2A (10' WIDE, 6" DEEP)	CUYD	6,994	\$29.05		\$203,176
					<b>Subtotal</b>	<b>\$ 257,260</b>
					<b>Mobilization:</b>	<b>\$ 25,726</b>
					<b>30% Contingency:</b>	<b>\$ 77,178</b>
					<b>Total Construction Cost:</b>	<b>\$ 360,164</b>

PROPOSED ROUTE G (2.14 MILES)						
	SIGNS -POST AND SIGN	EA	18	\$500.00		\$9,000
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 1.75 MILES	GAL	127	\$46.35		\$5,886
					<b>Subtotal</b>	<b>\$ 14,886</b>
					<b>Mobilization:</b>	<b>\$ 1,489</b>
					<b>30% Contingency:</b>	<b>\$ 4,466</b>
					<b>Total Construction Cost:</b>	<b>\$ 20,841</b>
PROPOSED ROUTE H (0.69 MILE)						
	SIGNS -POST AND SIGN	EA	12	\$500.00		\$6,000
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 0.43 MILE	GAL	32	\$46.35		\$1,483
					<b>Subtotal</b>	<b>\$ 7,483</b>
					<b>Mobilization:</b>	<b>\$ 748</b>
					<b>30% Contingency:</b>	<b>\$ 2,245</b>
					<b>Total Construction Cost:</b>	<b>\$ 10,476</b>
PROPOSED ROUTE I (1.85 MILES)						
	SIGNS -POST AND SIGN	EA	19	\$500.00		\$9,500
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 1.49 MILES	GAL	109	\$46.35		\$5,052
					<b>Subtotal</b>	<b>\$ 14,552</b>
					<b>Mobilization:</b>	<b>\$ 1,455</b>
					<b>30% Contingency:</b>	<b>\$ 4,366</b>
					<b>Total Construction Cost:</b>	<b>\$ 20,373</b>
PROPOSED ROUTE J (0.58 MILE)						
	SIGNS -POST AND SIGN	EA	9	\$500.00		\$4,500
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 0.50 MILE	GAL	36	\$46.35		\$1,669
					<b>Subtotal</b>	<b>\$ 6,169</b>
					<b>Mobilization:</b>	<b>\$ 617</b>
					<b>30% Contingency:</b>	<b>\$ 1,851</b>
					<b>Total Construction Cost:</b>	<b>\$ 8,636</b>
PROPOSED ROUTE K (0.43 MILE)						
	SIGNS -POST AND SIGN	EA	8	\$500.00		\$4,000
					<b>Subtotal</b>	<b>\$ 4,000</b>
					<b>Mobilization:</b>	<b>\$ 400</b>
					<b>30% Contingency:</b>	<b>\$ 1,200</b>
					<b>Total Construction Cost:</b>	<b>\$ 5,600</b>
PROPOSED ROUTE L (1.06 MILES)						
	SIGNS -POST AND SIGN	EA	9	\$500.00		\$4,500
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 0.54 MILE	GAL	40	\$46.35		\$1,854
					<b>Subtotal</b>	<b>\$ 6,354</b>
					<b>Mobilization:</b>	<b>\$ 635</b>
					<b>30% Contingency:</b>	<b>\$ 1,906</b>
					<b>Total Construction Cost:</b>	<b>\$ 8,896</b>
PROPOSED ROUTE M (0.34 MILE)						
	SIGNS -POST AND SIGN	EA	7	\$500.00		\$3,500
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 0.34 MILE	GAL	25	\$46.35		\$1,159
					<b>Subtotal</b>	<b>\$ 4,659</b>
					<b>Mobilization:</b>	<b>\$ 466</b>
					<b>30% Contingency:</b>	<b>\$ 1,398</b>
					<b>Total Construction Cost:</b>	<b>\$ 6,522</b>

PROPOSED TRAIL N (0.49 MILE)						
20113005	CLEARING AND GRUBBING (10' WIDE)	ACRE	0.59	\$2,541.93		\$1,500
203080100	TOPSOIL-SALVAGING AND PLACING (10' WIDE, 6" DEEP)	CUYD	480	\$3.69		\$1,771
301020521	TOP SURF 3/4 IN GR 2A	CUYD	371	\$29.05		\$10,778
401020490	PLANT MIX GR B - COMMERCIAL	TON	216	\$75.00		\$16,200
	SIGNS -POST AND SIGN	EA	4	\$500.00		\$2,000
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 0.49 MILE	GAL	18	\$46.35		\$834
					Subtotal	\$ 33,083
					Mobilization:	\$ 3,308
					30% Contingency:	\$ 9,925
					Total Construction Cost:	\$ 46,316
PROPOSED TRAIL O (1.00 MILES)						
	SIGNS -POST AND SIGN	EA	4	\$500.00		\$2,000
620013960	STRIPING - WHITE EPOXY (8" STRIPE) 1.00 MILES	GAL	73	\$46.35		\$3,384
					Subtotal	\$ 5,384
					Mobilization:	\$ 538
					30% Contingency:	\$ 1,615
					Total Construction Cost:	\$ 7,537
PROPOSED TRAIL P (0.50 MILE)						
401020490	PLANT MIX GR B - COMMERCIAL	TON	314	\$75.00		\$23,550
					Subtotal	\$ 23,550
					Mobilization:	\$ 2,355
					30% Contingency:	\$ 7,065
					Total Construction Cost:	\$ 32,970
PROPOSED TRAIL Q (1.54 MILES)						
	SIGNS -POST AND SIGN	EA	6	\$500.00		\$3,000
					Subtotal	\$ 3,000
					Mobilization:	\$ 300
					30% Contingency:	\$ 900
					Total Construction Cost:	\$ 4,200
PROPOSED TRAIL R (0.63 MILE)						
20113005	CLEARING AND GRUBBING (15' WIDE)	ACRE	1.15	\$2,541.93		\$2,923
203080100	TOPSOIL-SALVAGING AND PLACING (15' WIDE, 6" DEEP)	CUYD	924	\$3.69		\$3,410
301020521	TOP SURF 3/4 IN GR 2A	CUYD	503	\$29.05		\$14,612
401020490	PLANT MIX GR B - COMMERCIAL	TON	396	\$75.00		\$29,700
	BRIDGE OVER MILL CREEK	LUMP SUM	1	\$50,000.00		\$50,000
					Subtotal	\$ 100,645
					Mobilization:	\$ 10,064
					30% Contingency:	\$ 30,193
					Total Construction Cost:	\$ 140,903
PROPOSED TRAIL S (0.17 MILE)						
20113005	CLEARING AND GRUBBING (15' WIDE)	ACRE	0.31	\$2,541.93		\$788
203080100	TOPSOIL-SALVAGING AND PLACING (15' WIDE, 6" DEEP)	CUYD	249	\$3.69		\$919
301020521	TOP SURF 3/4 IN GR 2A	CUYD	136	\$29.05		\$3,951
401020490	PLANT MIX GR B - COMMERCIAL	TON	107	\$75.00		\$8,025
					Subtotal	\$ 13,683
					Mobilization:	\$ 1,368
					30% Contingency:	\$ 4,105
					Total Construction Cost:	\$ 19,156

PROPOSED TRAIL T (0.43 MILE)						
20113005	CLEARING AND GRUBBING (15' WIDE)	ACRE	0.78	\$2,541.93		\$1,983
203080100	TOPSOIL-SALVAGING AND PLACING (15' WIDE, 6" DEEP)	CUYD	631	\$3.69		\$2,328
301020521	TOP SURF 3/4 IN GR 2A	CUYD	484	\$29.05		\$14,060
401020490	PLANT MIX GR B - COMMERCIAL	TON	270	\$75.00		\$20,250
20113005	EQ. TRAIL CLEARING AND GRUBBING (6' WIDE)	ACRE	0.31	\$2,541.93		\$788
203080100	EQ. TRAIL TOPSOIL-SALV. & PLACING (6' WIDE, 6" DEEP)	CUYD	252	\$3.69		\$930
301020521	EQ. TRAIL TOP SURF 3/4 IN GR 2A	CUYD	84	\$29.05		\$2,440
20113005	ATV TRAIL CLEARING AND GRUBBING (9' WIDE)	ACRE	0.47	\$2,541.93		\$1,195
203080100	ATV TRAIL TOPSOIL-SALV. & PLACING (9' WIDE, 6" DEEP)	CUYD	378	\$3.69		\$1,395
301020521	ATV TRAIL TOP SURF 3/4 IN GR 2A	CUYD	210	\$29.05		\$6,101
					Subtotal	\$ 51,469
					Mobilization:	\$ 5,147
					30% Contingency:	\$ 15,441
					Total Construction Cost:	\$ 72,057
PROPOSED TRAIL U - ANACONDA TO OPPORTUNITY (4.13 MILES)						
401020490	PLANT MIX GR B - COMMERCIAL	TON	2,724	\$75.00		\$204,300
					Subtotal	\$ 204,300
					Mobilization:	\$ 20,430
					30% Contingency:	\$ 61,290
					Total Construction Cost:	\$ 286,020
PROPOSED TRAIL U - OPPORTUNITY TO FAIRMONT (7.35 MILES)						
401020490	PLANT MIX GR B - COMMERCIAL	TON	4,848	\$75.00		\$363,600
					Subtotal	\$ 363,600
					Mobilization:	\$ 36,360
					30% Contingency:	\$ 109,080
					Total Construction Cost:	\$ 509,040
PROPOSED TRAIL V (7.25 MILES)						
20113005	CLEARING AND GRUBBING (15' WIDE)	ACRE	0.78	\$2,541.93		\$1,983
203080100	TOPSOIL-SALVAGING AND PLACING (15' WIDE, 6" DEEP)	CUYD	631	\$3.69		\$2,328
301020521	TOP SURF 3/4 IN GR 2A	CUYD	484	\$29.05		\$14,060
401020490	PLANT MIX GR B - COMMERCIAL	TON	4,555	\$75.00		\$341,625
20113005	EQ. TRAIL CLEARING AND GRUBBING (6' WIDE)	ACRE	5.27	\$2,541.93		\$13,396
203080100	EQ. TRAIL TOPSOIL-SALV. & PLACING (6' WIDE, 6" DEEP)	CUYD	4,253	\$3.69		\$15,694
301020521	EQ. TRAIL TOP SURF 3/4 IN GR 2A	CUYD	1,418	\$29.05		\$41,193
608010125	DETECTABLE WARNING DEVICES - TRUNCATED DOMES	EACH	2	\$800.00		\$1,600
					Subtotal	\$ 431,879
					Mobilization:	\$ 43,188
					30% Contingency:	\$ 129,564
					Total Construction Cost:	\$ 604,630
PROPOSED TRAIL W (4.13 MILES)						
20113005	CLEARING AND GRUBBING (15' WIDE)	ACRE	7.51	\$2,541.93		\$19,090
203080100	TOPSOIL-SALVAGING AND PLACING (15' WIDE, 6" DEEP)	CUYD	6,057	\$3.69		\$22,350
301020521	TOP SURF 3/4 IN GR 2A	CUYD	3,231	\$29.05		\$93,861
401020490	PLANT MIX GR B - COMMERCIAL	TON	2,724	\$75.00		\$204,300
20113005	EQ. TRAIL CLEARING AND GRUBBING (6' WIDE)	ACRE	3.00	\$2,541.93		\$7,626
203080100	EQ. TRAIL TOPSOIL-SALV. & PLACING (6' WIDE, 6" DEEP)	CUYD	2,423	\$3.69		\$8,941
301020521	EQ. TRAIL TOP SURF 3/4 IN GR 2A	CUYD	808	\$29.05		\$23,472
608010125	DETECTABLE WARNING DEVICES - TRUNCATED DOMES	EACH	29	\$800.00		\$23,200
					Subtotal	\$ 402,840
					Mobilization:	\$ 40,284
					30% Contingency:	\$ 120,852
					Total Construction Cost:	\$ 563,976
PROPOSED TRAIL F (4.04 MILES)						
401020490	PLANT MIX GR B - COMMERCIAL	TON	2,665	\$75.00		\$199,875
20113005	EQ. TRAIL CLEARING AND GRUBBING (6' WIDE)	ACRE	2.94	\$2,541.93		\$7,473
203080100	EQ. TRAIL TOPSOIL-SALV. & PLACING (6' WIDE, 6" DEEP)	CUYD	2,370	\$3.69		\$8,745
301020521	EQ. TRAIL TOP SURF 3/4 IN GR 2A	CUYD	790	\$29.05		\$22,950
608010125	DETECTABLE WARNING DEVICES - TRUNCATED DOMES	EACH	2	\$800.00		\$1,600
					Subtotal	\$ 240,643
					Mobilization:	\$ 24,064
					30% Contingency:	\$ 72,193
					Total Construction Cost:	\$ 336,900

PAVE EXISTING GRAVEL PORTION OF OLD WORKS TRAIL (1.79 MILES)					
401020490	PLANT MIX GR B - COMMERCIAL	TON	1,125	\$75.00	\$84,375
20113005	EQ. TRAIL CLEARING & GRUBBING (6' WIDE, 1.20 MILES)	ACRE	0.87	\$2,541.93	\$2,211
203080100	EQ. TRAIL TOPSOIL-SALV. & PLACING (6' WIDE, 6" DEEP)	CUYD	704	\$3.69	\$2,598
301020521	EQ. TRAIL TOP SURF 3/4 IN GR 2A	CUYD	235	\$29.05	\$6,827
				<b>Subtotal</b>	<b>\$ 96,011</b>
				<b>Mobilization:</b>	<b>\$ 9,601</b>
				<b>30% Contingency:</b>	<b>\$ 28,803</b>
				<b>Total Construction Cost:</b>	<b>\$ 134,415</b>
EXISTING HAUL ROADS - ADDING SEPARATED EQUESTRIAN TRAIL TO ALL HAUL ROADS (17.37 MILES)					
20113005	EQ. TRAIL CLEARING & GRUBBING (6' WIDE)	ACRE	12.63	\$2,541.93	\$32,105
203080100	EQ. TRAIL TOPSOIL-SALV. & PLACING (6' WIDE, 6" DEEP)	CUYD	10,190	\$3.69	\$37,601
301020521	EQ. TRAIL TOP SURF 3/4 IN GR 2A	CUYD	3,397	\$29.05	\$98,683
				<b>Subtotal</b>	<b>\$ 168,389</b>
				<b>Mobilization:</b>	<b>\$ 16,839</b>
				<b>30% Contingency:</b>	<b>\$ 50,517</b>
				<b>Total Construction Cost:</b>	<b>\$ 235,744</b>

Abbreviations: CUYD=Cubic Yards; EA=Each; SQYD=Square Yards; LS=Lump Sum; AC=Acre; LNFT=Lineal Foot; LB=Pounds  
Assumptions:

**Sample Calcs:**

Trail E Clearing and Grubbing = ((6.22 miles \* 5280 ft/mile) \* 13 ft wide) / (43560 acres/sq ft) = 9.80 acres  
Trail E Topsoil = ((6.22 miles \* 5280 ft/mile) \* (13 ft wide) \* (0.5 ft deep)) / (27 cubic yds/cubic ft) = 7906 cubic yds  
Trail E Gravel = ((6.22 miles \* 5280 ft/mile) \* (5.75 sq ft)) / (27 cubic yds/cubic ft) = 6994 cubic yds

Overall Sign Cost = ((64.5 lbs/sign) \* (\$5.19)) + (3.75 sq ft sign \* \$21.05) = \$414/sign Rnd to \$500/sign  
Trail G 4" Striping = ((2.14 miles \* 5280 ft/mile) / (320.8 ft/gal)) = 35.2 gallons \* 2 for both sides of road = 71 gallons  
Trail G 8" Striping = ((2.14 miles \* 5280 ft/mile) / (160.4 ft/gal)) = 70.4 gallons \* 2 for both sides of road = 141 gallons  
Trail G Paint Symbols = (0.07 gallons/symbol) \* 20 symbols = 1.4 gallons (number of symbols same as number of signs)

Trail P Asphalt = (((0.50 miles \* 5280 ft/mile) \* (10 ft wide) \* (2/12 ft deep)) / (27 cubic yds/cubic ft)) \* (3855/2000 tons/cubic yds) = 314 tons

## CIVIL/WATER RESOURCE ENGINEERING

- ☉ PUMPS AND PIPELINES
- ☉ SURFACE AND GROUNDWATER MODELING
- ☉ EARTH DAM DESIGN AND REHABILITATION
- ☉ WATER SUPPLY, TREATMENT AND DISTRIBUTION
- ☉ WASTEWATER TREATMENT AND DISPOSAL
- ☉ IRRIGATION SYSTEMS
- ☉ GPS AND CONVENTIONAL SURVEYING
- ☉ CIVIL ENGINEERING DESIGN, PLANS AND SPECIFICATIONS
- ☉ CONSTRUCTION ENGINEERING
- ☉ WATER RIGHTS
- ☉ COMPUTER-AIDED DESIGN AND DRAFTING (CADD)
- ☉ STORMWATER MANAGEMENT
- ☉ GEOTECHNICAL DRILLING AND SAMPLING

## MINE SERVICES

- ☉ MINING AND RECLAMATION DESIGN AND PERMITTING
- ☉ RESERVOIR AND DAM DESIGN
- ☉ HAULROADS AND STREAM CROSSINGS
- ☉ HYDROLOGIC CONTROL PLANS
- ☉ ANNUAL REPORTS AND BOND CALCULATIONS
- ☉ NEPA COMPLIANCE DOCUMENTS
- ☉ 404 PERMITS
- ☉ BASELINE STUDIES
- ☉ GPS AND CONVENTIONAL SURVEYING
- ☉ DRILLING AND MONITORING SERVICES
- ☉ BLAST MONITORING AND REPORTING
- ☉ ABANDONED MINE LAND RECLAMATION
- ☉ RECLAIMED STREAM CHANNELS
- ☉ ASSESSMENT OF PROBABLE HYDROLOGIC CONSEQUENCES
- ☉ AVF ASSESSMENTS

## TRANSPORTATION SERVICES

- ☉ RECONNAISSANCE REPORTS
- ☉ SURVEYS (RIGHT OF WAY, GROUND CONTROL, CONSTRUCTION)
- ☉ BRIDGE HYDRAULICS, SCOUR ANALYSIS, STRUCTURE SELECTION
- ☉ DESIGN OF URBAN STREETS, RURAL ROADWAYS AND INTERSTATE RECONSTRUCTION
- ☉ STREETScape ENHANCEMENTS
- ☉ UTILITY REPLACEMENT
- ☉ DRAINAGE DESIGN
- ☉ BICYCLE/PEDESTRIAN PATHWAYS
- ☉ PARKING FACILITIES
- ☉ CONSTRUCTION ADMINISTRATION

## ENVIRONMENTAL SERVICES

- ☉ ENVIRONMENTAL COMPLIANCE AND BEST MANAGEMENT PRACTICES
- ☉ ENVIRONMENTAL IMPACT ANALYSIS AND REGULATORY PERMITTING
- ☉ ENVIRONMENTAL SITE ASSESSMENTS
- ☉ GEOMORPHOLOGIC INVESTIGATIONS
- ☉ HYDROCARBON PRODUCT RECOVERY SYSTEM DESIGN
- ☉ HYDROLOGIC AND WATER QUALITY MONITORING
- ☉ HAZARDOUS AND NON-HAZARDOUS WASTE MANAGEMENT PLANNING
- ☉ SITE REMEDIATION PLANNING AND DESIGN
- ☉ SOIL AND GROUNDWATER CLEANUP PLANS
- ☉ UNDERGROUND STORAGE TANKS INVESTIGATION AND REMOVAL PLANS
- ☉ NEPA COMPLIANCE DOCUMENTS
- ☉ ENVIRONMENTAL AUDITS
- ☉ WETLAND DELINEATION AND MITIGATION
- ☉ DRILLING

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