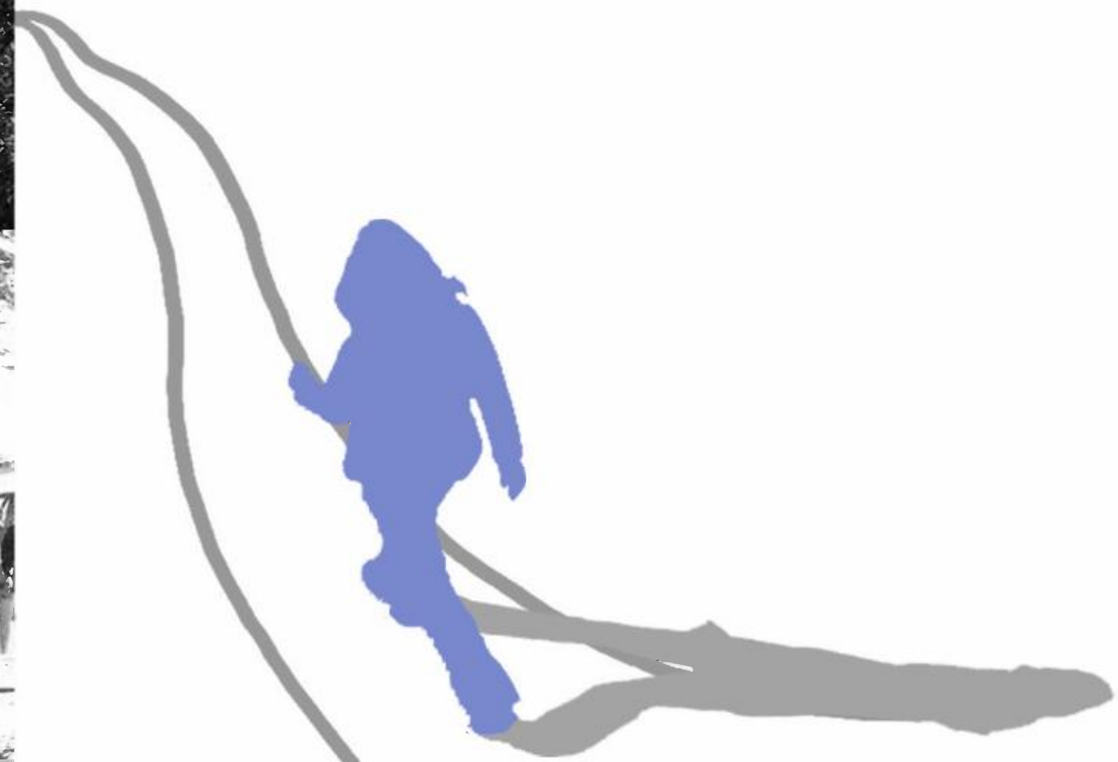

CLEAR CREEK GREENWAY PLAN

NOVEMBER 2005

THE CLEAR CREEEK GREENEWAY IS A MAJOR DEVELOPMENT RECOMMENDATION OF THE 2030 CLEAR CREEK COUNTY MASTER PLAN.

CLEAR CREEK GREENWAY
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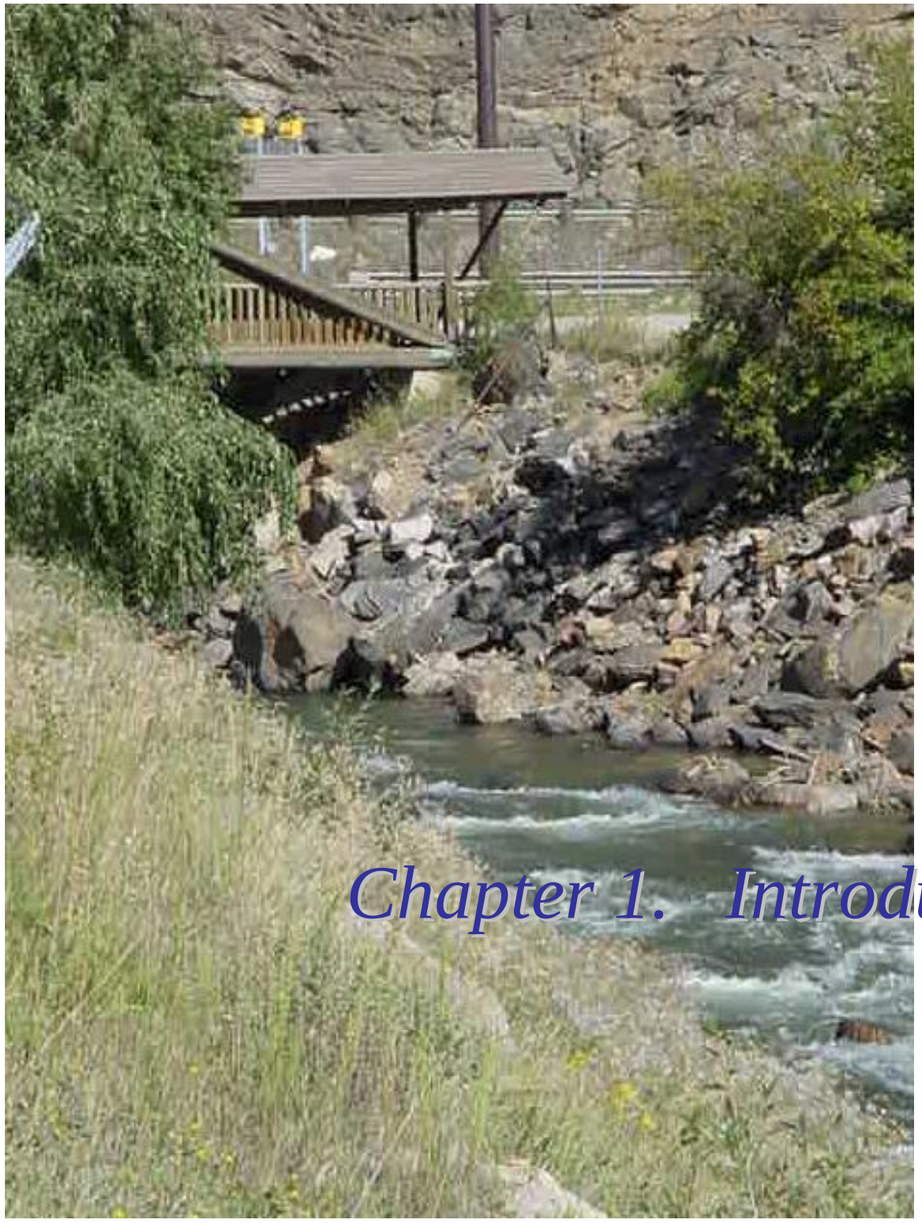

Chapter 1. Introduction

A. PREFACE

Imagine a major recreational trail corridor linking the Platte River Greenway in Denver to the Continental Divide National Scenic Trail. Along this trail exist unlimited opportunities for recreational fishing, kayaking, rock climbing, hiking and bicycling – to name a few. Traversing through Idaho Springs, the trail showcases the lore of Colorado's storied mining history. In Georgetown, trail users can hitch a ride on the Georgetown Loop Historic Mining Railroad. Before reaching the Continental Divide, this trail links hikers to hundreds of miles of backcountry Forest Service trails and to four Clear Creek County fourteeners (Mount Evans, Grays Peak, Torreys Peak and Mount Bierstadt). It links over 80 miles of greenway trail in Summit and Grand Counties to hundreds of miles of paved trails in the Denver Metro Area and the Front Range area. ***The Clear Creek Greenway is uniquely Colorado, reflecting the lifestyles of past, present and future residents.*** *– Tim Mauck, Clear Creek County*

B. SUMMARY

The development of a greenway for Clear Creek County's residents and visitors has become a priority of the Clear Creek County Open Space Program, and a focal point of its 2003 Open Space Plan. Running alongside Clear Creek between Jefferson County and the Continental Divide, a greenway is envisioned to serve as the backbone of the County. It will tie together communities with a string of parks, recreational facilities, open space and commercial recreational opportunities. It will embrace the County's unique cultural heritage and natural environment and provide an outstanding resource for families, visitors and outdoor enthusiasts to enjoy. See Map 1.1 – Regional Setting.

This Plan represents the Trail Plan and River Access Opportunities recently adopted by the Clear Creek County Open Space Commission that support the development of the Clear Creek Greenway. The concept consists of a main arterial trail and key open space areas to create an interconnecting corridor of parks, trail connections, recreational activities and related amenities. The Greenway will incorporate, enhance and create many types of active and passive recreational opportunities along Clear Creek. Those opportunities include kayaking, rafting, hiking, walking, biking, picnicking, camping and fishing. It will also link existing attractions along Clear Creek, including commercial rafting, historic sites, big horn sheep viewing and the Georgetown Loop railroad. Other possible attractions include a sculpture park, a demonstration garden, accessible fishing areas and interpretive displays highlighting the County's mining heritage and natural environment.

Developing the Greenway as a major recreational corridor will not only provide recreation opportunities and open space, but also enhance economic development opportunities within the County and its municipalities. Joint ventures with commercial recreation providers will be possible. Related commercial uses would be encouraged to locate near the creek. The Greenway will link to commercial tourist attractions in the towns and encourage visitors to shop, rent bikes, purchase fishing equipment and dine. Finally, the Greenway will be a draw for businesses looking to locate in an area that provides such a quality of life resource to their employees.

Because of its easy access and visibility, the Clear Creek Greenway has the potential to become a wonderful community amenity and a significant tourist destination. Through significant assistance from GOCO, the National Park Service, the Colorado Department of Transportation, local municipalities and organizations, the Clear Creek County Open Space developed this plan to foster growth and attract funding. – Tim Mauck, Clear Creek County

C. ACKNOWLEDGEMENTS

Those who made significant contributions to the planning process.

Clear Creek County Open Space Commission

Marion Anderson
Roy Beaton
Sarah Donahue
Fran Enright
Pete Helseth
Sue Howell
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Harold Wahlborg
Frank Young
Candy Decker
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Clear Creek County Open Space Commission/Clear Creek Greenway Plan Project Coordinator

Fran Enright

Clear Creek County Open Space Commission/Clear Creek Greenway Plan Staff Project Coordinator

Tim Mauck

The funding for the preparation of this plan was provided by a matching fund grant from GOCO to Clear Creek County.

Community Technical Team

Dennis Lunbery	Mayor	City of Idaho Springs
Bill Macy	Councilman	City of Idaho Springs
Mark Cucinella	Director	Clear Creek Metro Recreation District
Peggy Stokstad	President/CEO	Clear Creek Economic Development Corporation
Fred Lyssy	Mayor	Town of Silver Plume
Bert Weaver	Community Development Director	Clear Creek County
Steve Schultz	Chairman	Planning Commission
Lisa Leben Vogel	Director	Clear Creek County Lands
Tom Bennoff	Police Judge	Town of Georgetown
Harry Dale	Commissioner	Clear Creek County
Bob Poirot	Commissioner	Clear Creek County
Jo Ann Sorensen	Commissioner	Clear Creek County
Kevin O'Malley	Commissioner	Clear Creek County
Joan Drury	Commissioner	Clear Creek County
Carla Chiles	Selectman	Town of Georgetown
Cindy Condon	Assistant City Manager	City of Idaho Springs
Cassandra Shenk	Town Board Trustee	City of Idaho Springs
Rick Sprague	Mayor	Town of Empire
Mike Spies	Trustee	Town of Empire
Fred Rollenhagen	Planning Director	Clear Creek County
Sarah Kaminski	Planning Commissioner	Town of Georgetown
Hugh Osborne	Community Planner	National Park Service
Ken Quast	Board Member	Clear Creek Metro Recreation District

Meeting Space Providers

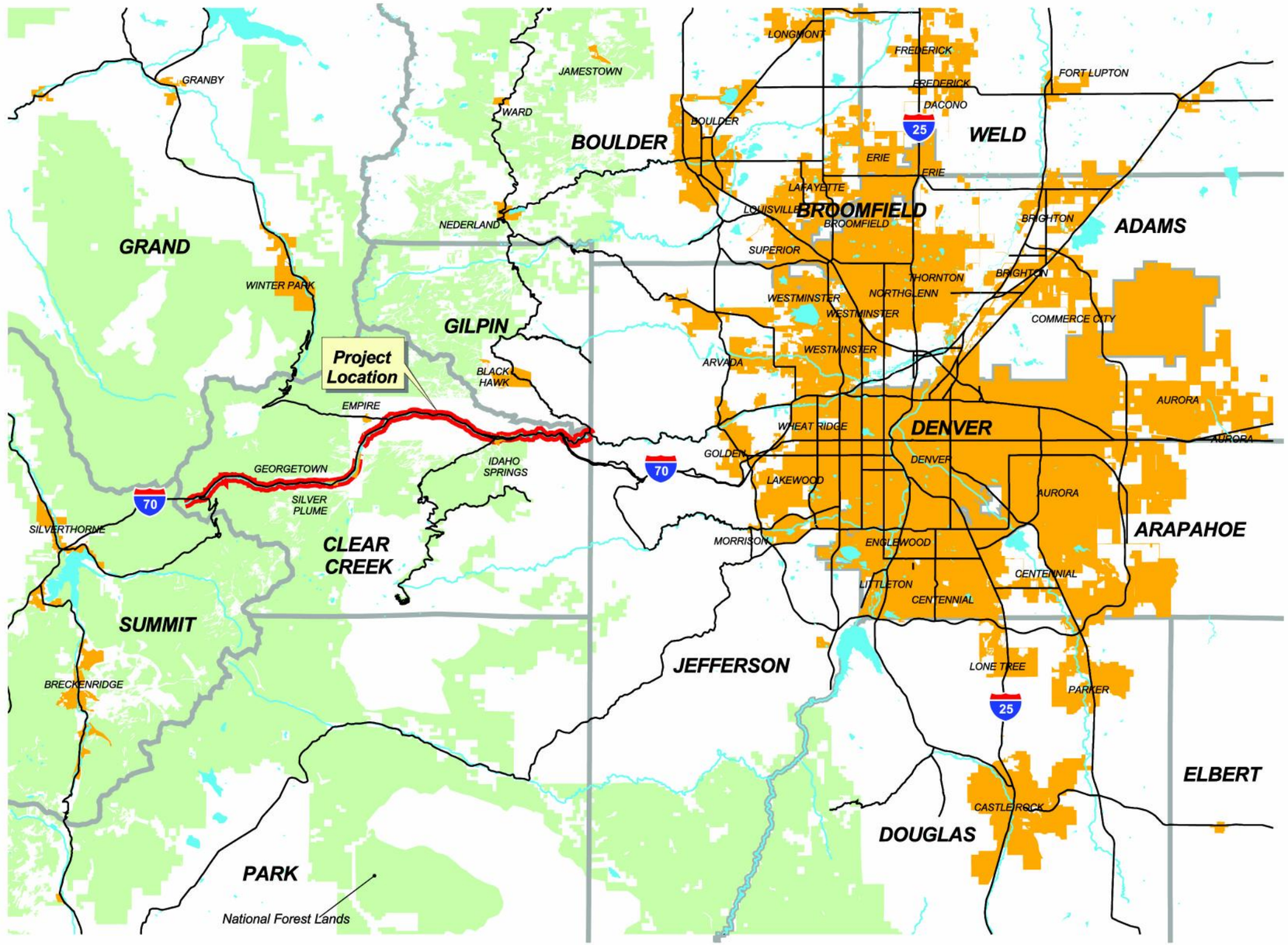
Clear Creek County
City of Idaho Springs
Idaho Springs Historical Society
Town of Georgetown
Georgetown Community Center

Planning Team

THK Associates, Inc.
Prime Consultant, Landscape Architect

MDG, Inc.
Environmental Consulting, Trail Planning

Community Planning Services
Mapping, Land Use

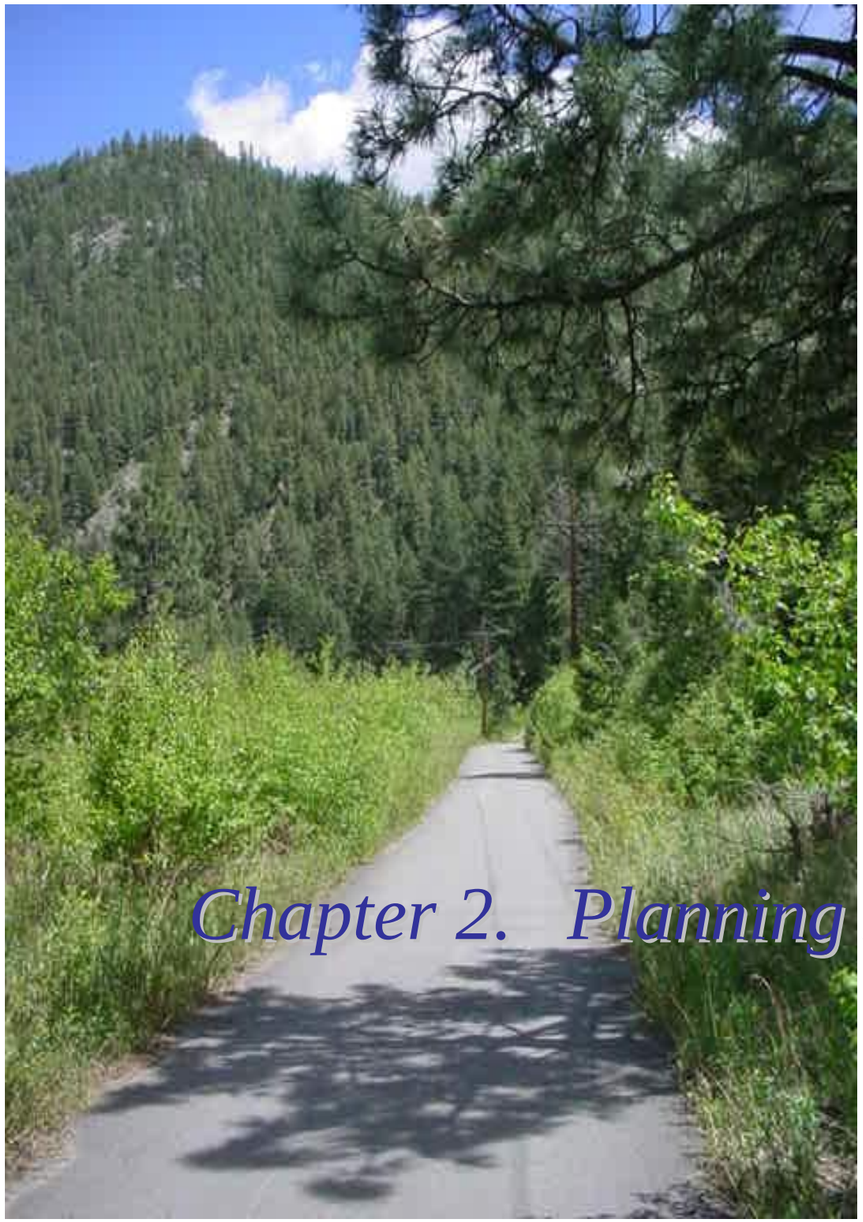


Prepared by:

tk associates, inc. & MDG INC Community Planning Services, LLC

NORTH

Map 1.1
Regional Setting



Chapter 2. Planning Process

A. PURPOSE OF THE PLAN

The development of the Clear Creek Greenway was first identified in the adopted 1990 Clear Creek County Inter-county Non-Motorized Corridor Master Plan. The Greenway then became the focal point of the 2003 Open Space Plan and a major development recommendation of the 2030 Clear Creek County Master Plan.

The Greenway, as envisioned in these plans, will serve as the backbone of Clear Creek County. It links the communities together with a string of open spaces, parks, recreational facilities and commercial recreational facilities along the creek. The Greenway will be the framework of the open space program, with connections to other open spaces such as the national forest, parks, recreation facilities and tourist attractions. It would further the goal of completing a trail system extending from the Continental Divide to the Platte River. **The purpose of the Clear Creek Greenway Plan is to provide a common vision for the Greenway that all stakeholders share and combine resources to achieve.**

Connections to the National Forest, municipal parks and recreation facilities from the Greenway are planned. One is the town of Georgetown's planned Gateway improvements. Georgetown plans major enhancements to the lake area, including a trail around the lake and a trail along the creek, all of which will be connected to the Greenway. Silver Plume open space, historic town and the 730 mine trail will also be linked with the Greenway. In addition, Idaho Springs' new open space to the north of town will also be connected through downtown to the Clear Creek Greenway trail. An extension of the Greenway trail to the Town of Empire is also planned.

Activity nodes will be created along the Greenway. There are several County-owned parcels which, when combined with other public and private parcels, could provide a string of parks, open space and recreation facilities along the creek. These parcels are essential to the development of the Greenway as an open space, parks and recreation corridor. The Recreation District, Open Space Commission (OSC) and commercial providers will offer a variety of activities.

Developing the Greenway as a major recreational attraction will not only provide recreation, but will also result in economic development opportunities for Clear Creek County and the municipalities. It will create the opportunity for joint venture with commercial providers. Some appropriate commercial uses will be encouraged to locate near the creek, providing more developable areas for the County. The municipalities can develop river-walks and other amenities along the creek. The Greenway will link to commercial tourist uses in the towns, encouraging tourists to shop, rent bikes, purchase fishing equipment and dine. Because of its access and visibility, the Greenway has the potential to become a significant tourist destination as well as a wonderful community amenity.

Greenway Objectives Identified in the 2030 Clear Creek County Master Plan

- Gain outside funding and create and implement a master plan for the Clear Creek Greenway in 2004.
- Immediately request transfer of management of appropriate County-owned parcels along the Greenway to the OSC.
- Begin to acquire appropriate privately owned parcels and easements along the Greenway.
- Work with the city of Idaho Springs to create a "Creekwalk" through town.
- Rehabilitate the main channel of Clear Creek and prohibit further filling of the creek. Public lands should be a top priority for rehabilitation.
- Link the Greenway with the planned trail around Georgetown Lake and the planned trail along the creek.
- Connect Silver Plume's open space, historic town and the 730 Mine Trail with the Greenway.
- Link Idaho Springs' new open space to the north of town to the Greenway.
- Pursue linkages to planned trails in Gilpin, Summit and Grand Counties.

B. PUBLIC INPUT PROCESS/PUBLIC MEETINGS

The public involvement program for the Greenway Plan included a variety of communication techniques designed to provide the greatest opportunity for County residents and property owners to participate in the plan-making process. The following activities were undertaken during the process:

Extent of Public Involvement Activities

- A Community Technical Team was formed, which consisted of County Commissioners; City Mayors and/or other representatives from the municipalities in the County; County and municipal Planning Commission members; County Planning staff and Directors and leaders of other civic and governmental entities within the County. There were 15 plus Community Technical Team meetings held throughout the process.
- All Community Technical Team meetings were public and citizens were welcome to attend. Approximately 10-18 people attended each of the Community Technical Team meetings.
- The Community Technical Team participated in a one-day field trip to review the key issue areas along the Greenway. Approximately 20 people attended the field trip.
- A series of three community workshops were held at two different locations. A combined total of approximately 175 people attended the five workshops.

- There were three community wide presentations before the County Planning Commission.

- A number of special outreach meetings were held with key stakeholders and property owners, including:

  a. Clear Creek Sheriff's Office
  b. Clear Creek Fire Department
  c. Clear Creek Emergency Preparedness Department
  d. HDPLC
  e. Lawson Neighborhood
  f. Empire City Council
  g. Colorado Department of Transportation
  h. United States Forest Service
  i. Rafting Companies
  j. Equestrian leaders in the County
  k. Property owners adjacent to the Greenway

- A link to the Greenway Plan was available through the Clear Creek County government website. At various times throughout the duration of the planning process, the Greenway planning effort received newsprint coverage. On several occasions, there were paid advertisements in the newspaper to solicit community input at meetings. Flyers were mailed to property owners adjacent to the Greenway to inform them of up-coming meetings and where to go to get information about the Greenway planning effort.

C. SUMMARY OF PUBLIC COMMENT

Following is a summary of public comment received as a part of the public input process.

- The Clear Creek Greenway trail should be all "off-street" and paved.

- There are some access issues with homes immediately adjacent to the creek. The trail will not always be able to be right along the creek.

- Where does the funding come from? The answer provided: grants, Colorado Department of Transportation, non-profits, developers, businesses and state and federal sources.

- The schedule of the project is based on the effort put forth by the partners in the Greenway. The Community Technical Team could evolve into a Greenway Management Team that would continue to plan and organize the development of the Greenway. Key stakeholders need to work together to facilitate on-going efforts.

- Safe wildlife viewing areas are needed along the Greenway for pedestrians, bicyclists and automobile users.

- A major element of the Greenway trail should be its connection to other destinations in the County.

- Make as much of the Greenway ADA accessible as is practicable.

- Provide access to the Berthoud Pass Research Corridor. The County is a partner with Partners for Access to the Woods, a trails master plan between Empire and Winter Park.

- What will make a successful greenway?

  a. Non-motorized use (hike/walk, bicycle, ADA, connects parks and amenities)
  b. Hard surfaced (paved) connection to Jefferson County trail, which is paved
  c. Enhances revenue
  d. Accommodates multi-day/single-day trips
  e. Many trail heads
  f. Pocket parks with picnic areas and playgrounds
  g. Bike depots for parking bikes; beverages, snacks and restrooms
  h. Provides camping
  i. Provides fishing access
  j. Provides boating access
  k. Creates wildlife viewing opportunities
  l. Includes a white-water park
  m. Safe for users
  n. Incorporates historic sites and education
  o. Accommodates family outings
  p. Accommodates pets
  q. Accommodates equestrian use

- The opportunity exists to coordinate the Greenway Plan with plans for I-70.

- Connect proposed water storage plans for the County with the vision for the Greenway. Explore recreational opportunities.

- Concerns about the long-term management of the Greenway. Would the existing recreation district be the logical entity to provide management oversight?

- The use of Inter-governmental Agreements can assist with Greenway development.

- Two trail surfaces are needed, one for horses and one for bikes and hikers.

- Potential equestrian use areas include:

  a. Bakerville area
  b. Argo Mine area in Idaho Springs
  c. Below the dam at Georgetown Lake

- Concerns about user conflicts on the trail.

  a. Bikes vs. hikers

b. Separate bikes from pedestrians in high-use areas

- Concerns about conflicts with wildlife.

  a. Need signs to warn people.
  b. Provide information to Greenway users about scaring wildlife away to avoid conflicts.
  c. Plan for wildlife bridges across the Greenway and I-70.

- Provide trails with less width to accommodate families, do not create everything for large groups of cyclists.

- Provide mountain bike access at Idaho Springs, Georgetown and Bakerville.

- Concerns about public vs. private property rights.

- Accommodate winter use.

  a. Nordic trails
  b. Tie into Loveland Ski Area

D. GOALS AND OBJECTIVES

The following goals and objectives emerged from the public participation process previously described. These goals and objectives provide key policy direction for developing the Greenway Plan's principles and recommendations found in Chapters 3, 4 and 6.

The Greenway Plan builds on the 1990 Clear Creek County Inter-County Non-Motorized Corridor Master Plan. The Greenway Plan goes a step further by becoming a shared vision for all participating stakeholders. This was achieved through the collaborative planning effort sponsored by the Clear Creek County Open Space Commission. The collaborative planning effort between stakeholders is only the beginning. With this plan, all stakeholders intend to move forward with management and implementation, as described in Chapters 6 and 7. The following goals and objectives were the basis of the planning effort and will continue to be the basis for the continued collaborative implementation of the Clear Creek Greenway.

Goal 1

The Greenway shall support the County's goals as described in the 2030 Clear Creek County Master Plan.

Objectives

a. Stimulate commercial development that is appropriate for the County.
b. Improve the image of the County: "Stay here, play here."
c. Strive to enhance adjacent property values.
d. Encourage redevelopment along the corridor.
   - pocket parks with picnic areas and playgrounds
   - bike depots for parking bikes; beverages, snacks and restrooms
   - camping

Goal 2

The Greenway shall enhance the quality of life for residents and businesses.

Objectives

a. Promote a healthy community, which promotes healthy residents.
b. Promote environmental, cultural and historical education.
c. Enhance recreational opportunities for residents and visitors.
d. Enhance the natural environment by creating buffers and protecting the watershed.

Goal 3

The Greenway shall be the "best in the west".

Objectives

a. Model of intergovernmental cooperation and planning.
b. Provide a variety of recreational uses during all four seasons.
c. Become a major destination.
d. Create a positive interface with wildlife corridors, habitats, wildlife bridges across I-70, etc.

Goal 4

The Greenway shall become a major connecting element within the region, County and between municipalities.

Objectives

a. Create a spine to which regional, County, Denver Metro Area, USFS and municipal trails all connect.
b. Reduce local trips and congestion on I-70.
c. Provide opportunities for alternative modes of transportation within the County.
d. Provide alternative emergency access routes along the corridor.
e. Anticipate connections to future development and future public facilities.

Goal 5

The Greenway shall be multi-use.

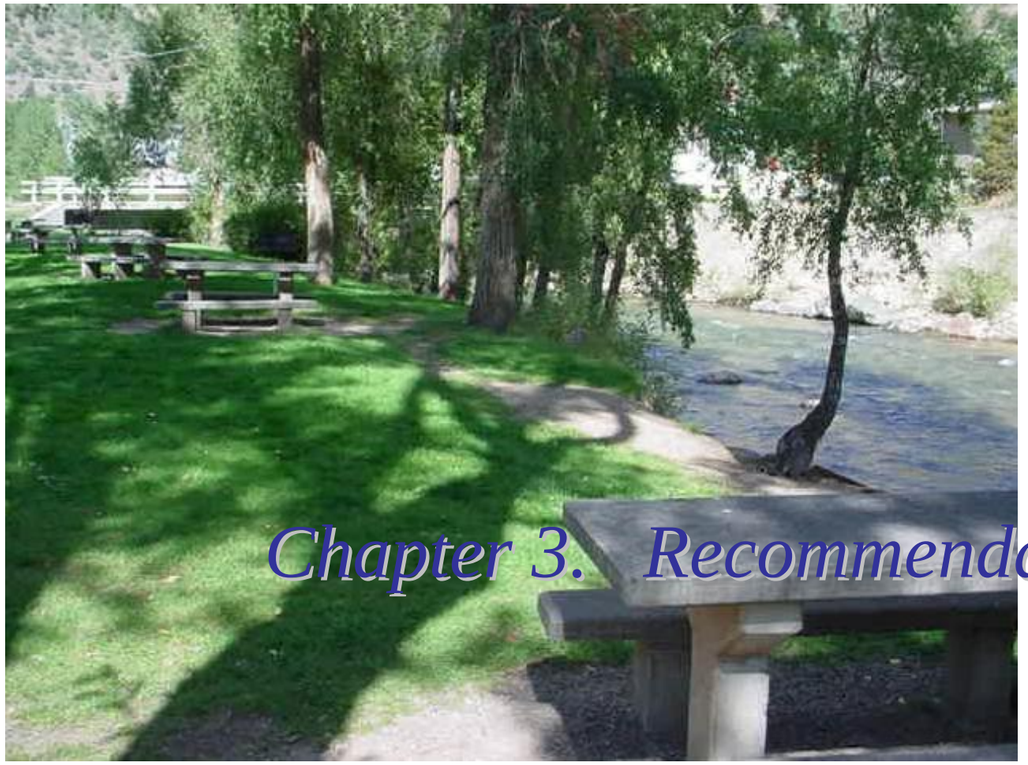
Objectives

a. Provide the following:
   - hard surfaced (paved) connection to Jefferson County trail, which is paved
   - multi-day/single-day trips

- many trail heads for both motorized and non-motorized uses

- fishing access
- boating access
- wildlife viewing opportunities
- white-water park
- equestrian trails
- nordic trails
- connection to the Loveland Ski Area
- connection to mountain bike trails

b. ADA accessible as much as is practicable.
c. Safe for users.
d. Incorporate historic sites and education.
e. A hierarchy of trails.



Chapter 3. Recommendations

A. RECOMMENDATIONS

Jefferson County Line to U.S. Highway 6 and I-70 Interchange

This segment of the Greenway was master planned by the National Park Service in 2004. The results of that effort were incorporated into the Clear Creek Greenway Plan. The trail alignment in this segment follows the old railroad grade for the most part. However, when U.S. 6 was constructed, portions of the railroad grade were obliterated. In these areas, the trail will have to be located adjacent to the roadway. Design Guideline "C" reflects options for roadside trail development.

At tunnel number 6, a rest area is proposed away from U.S. 6 in a location where automobile traffic cannot be heard. The rest area consists of several benches, a trash can and a place to get off of the trail.

U.S. Highway 6 and I-70 Interchange to the Hidden Valley Interchange

The trail exists through this segment of the Greenway. It is all asphalt and includes sections of 8' wide trail and sections of old roadway exceeding 24' in width. The trail will have to be brought up to standards as described in Design Guideline "A": a 10' wide, minimum, concrete trail with 4' shoulders.

A major trailhead is identified at the U.S. 6 and I-70 interchange. Its exact location is dependent on the Colorado Department of Transportation's final configuration of the interstate in this location. The plan identifies three (3) different alternative locations for the trailhead. A rest area is proposed in this segment where the drainage widens out and several meadows with wildflowers exist.

A trail connection under I-70 to the Central City Parkway is envisioned at the Hidden Valley interchange.

Hidden Valley Interchange to the West End of Idaho Springs

The Greenway in this segment is within Idaho Springs's city limits. The trail exists. Some of the trail shares the roadway and other lengths are 6' and 8' wide, concrete, asphalt, or gravel. Besides reconstructing the trail to standards as outlined in Design Guideline "A", the plan is to locate the main trail adjacent to the creek through this entire stretch. The plan is for the trail to link-up existing parks and public facilities with future parks. Future park opportunities have been identified at the Twin Tunnels and the old DOW game check station site, the Idaho Springs' old sewage treatment plant site and above the USFS Visitor Center. The existing parks and public facilities to be linked-up include the Scott Lancaster Bridge and Trail, the skate park, Idaho Springs Creekside Park, the Visitor Center, Town Hall and the waterwheel scenic overlook.

As a part of the Greenway Plan through Idaho Springs, a business loop through downtown is proposed to provide access to the restaurants and shops downtown. Also, downtown public restrooms are provided along with a trailhead. This is intended to increase pedestrian traffic downtown.

A bike depot is proposed in proximity to the Visitor Center and Creekside Park. This bike depot would include bicycle lockers, food (either vending machines or a food vendor) and, potentially, recreational equipment rentals like bicycles.

The trailhead, restrooms and park proposed for the Twin Tunnels area are seen as a tremendous opportunity. The game check station site is currently owned by the County, making it a logical early action project. Also, the traffic noise from I-70 is not audible, one of only 2 or 3 locations along the Greenway where this is true. Finally, wildlife is often seen crossing I-70 via the land bridge at the tunnel and it is a large flat site with great creek and frontage road access.

The Standley Road Segment (West End of Idaho Springs to the Dumont Interchange)

Because Clear Creek Canyon is very narrow at the Standley Road portion of the trail, trail users must share the road for the entire length of this segment. Roadside trail construction options, as described in Design Guideline "C", will be required for the better length of this section to eliminate the current road sharing situation. Along the western end of this segment, the opportunity exists to move the trail away from the frontage road closer to the creek. In this area, the opportunities for creek side open space, parks and campground exist. A rest area is envisioned at the west end of Idaho Springs where Standley Road crosses Clear Creek to take advantage of the views to the west. Fishing access will be provided at several key locations with steps from the roadside trail down to the creek. At these locations one or two parallel parking spaces will be provided.

Trail connections across Clear Creek under I-70 to Fall River Road and North Spring Gulch Road are also envisioned.

Dumont to Downieville

Along this segment the main trail crosses to the north side of I-70, connecting with the Dumont School (community center) and the businesses at Downieville. At the Dumont interchange, the trail will cross I-70 on the overpass bridge. At Downieville, the trail will cross under I-70 at the Downieville interchange and then cross Clear Creek to the south side and follow the utility easement running parallel with the creek.

Downieville to the Georgetown Lake Dam

A majority of the main trail will be adjacent to the roadway along this segment. However, the Clear Creek Drainage is much wider here, allowing plenty of room for the typical trail corridor as shown in Design Guideline "A". A portion of Silver Lake Drive , where there are no private driveways, would be closed to motorized traffic to accommodate the trail.

Several major elements of the Greenway occur in this section. Just west of Lawson is the Clear Creek White Water Park for kayaking with camping, restaurants and a bike depot. A gateway bridge structure is envisioned west of the White Water Park connecting the greenway trail with the trail along U.S. 40 to Winter Park. This bridge would provide a visual que to the existence of the Clear Creek Greenway to travelers on I-70. The trail extending west along U.S. 40 would connect to a trailhead at the Empire City Park just south of town. Connections to the Easter Seals Camp, as well as other United States Forest Service and Georgetown trail systems, also occur in this segment.

The development of the Greenway was one of the Economic Development Strategies identified in the 2030 Clear Creek County Master Plan. The intent was to encourage stream-side development opportunities that would relate to the creek and Greenway. Recreational, retail, and residential opportunities were identified. Along this segment of the Greenway is some of the most level land in the County. Property owners, which include Clear Creek County, are interested in this type of development. In Section "F" of this chapter is a discussion of recommended land uses and their relationship to the Greenway.

Encouraging and connecting with commercial recreational opportunities is also one of the objectives of the Greenway. In addition to a commercial rafting operation along this segment of the Greenway, there is an equestrian center, event center and a proposed R.V. park.

Georgetown Lake Dam to Silver Plume

This section of the Greenway links numerous recreational, tourist and business destinations including Georgetown Lake, Georgetown Visitor Center, the Loop Railroad, Georgetown Gateway Redevelopment area, downtown Georgetown, Silver Plume and numerous trails associated with the Georgetown/Silver Plume/Saxon Mountain Historic Districts.

South of Georgetown Lake the Greenway trail is seen as being integrated with future mixed-use development that would be oriented to Clear Creek and the lake. The Greenway would be an integral component of the pedestrian oriented vision for the redevelopment of the Argentine Street area, as discussed in the Georgetown Master Plan dated September 2002. Throughout Georgetown, we envision multiple connections across the creek to allow for access between the Greenway and neighborhoods, businesses, and other destinations. The Greenway through Georgetown would be a major non-motorized corridor linking all aspects of the community together.

Between Georgetown and Silver Plume the Greenway would be relocated from the I-70 R.O.W. to an easement within the Colorado State Historical Society's property that houses the Georgetown Loop Railroad. Further joint planning is required with the State Historical Society to determine the final location of the Greenway Trail. Currently, the National Park Service is working with the State Historical Society on a trail plan for the Loop Railroad site. This effort will be completed after the Clear Creek Greenway Plan has been published.

Within Silver Plume a business loop trail is envisioned along the main Greenway trail. This loop would connect users to businesses, the Silver Plume Museum and Dinger Park.

Silver Plume to Bakerville

From Silver Plume to Bakerville the Greenway trail is south of I-70 adjacent to the Frontage Road. However, for most of the reach, the typical corridor cross section, as shown in Design Guideline "A", can be accommodated. Along the western portion of this segment an additional, or an alternative, alignment was studied on the north side of I-70. The north side of I-70 does not accommodate the typical cross section due to numerous rock out croppings. This trail alignment will require a lower level of trail development. Potentially a soft surface trail.

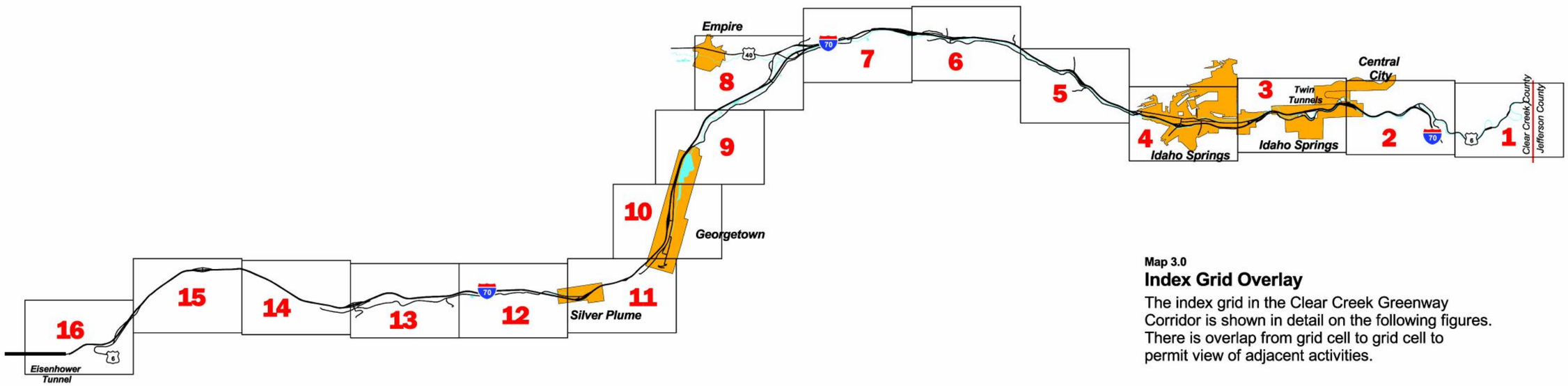
The alignment south of I-70 provides connectivity to the County land east of Bakerville where the County has planned a campground and reservoir.

At Bakerville, a joint Forest Service trail head and bike depot are planned. Rental of recreational equipment operated by an outside vendor is also envisioned.

Bakerville to Loveland

This section of trail has been installed, including bridges. However, it is currently a soft surface trail which the Forest Service and Clear Creek County have agreed that the trail will be paved and brought up to standards as identified in Design Guideline "A". Providing an alternative emergency route to I-70 is part of the importance of improving this segment of the trail.

Primitive tent camping is proposed just west of Bakerville in a location where I-70 traffic is not audible and the terrain is conducive to tent pad development at the Loveland Ski area connecting to a Loveland Pass. Trail is anticipated.



Map 3.0

Index Grid Overlay

The index grid in the Clear Creek Greenway Corridor is shown in detail on the following figures. There is overlap from grid cell to grid cell to permit view of adjacent activities.

The proposed trail alignment shown on the following maps is only conceptual. It is anticipated that additional design investigation and coordination with property owners and C.D.O.T. will be needed to determine the precise location of the trail.

Prepared by:

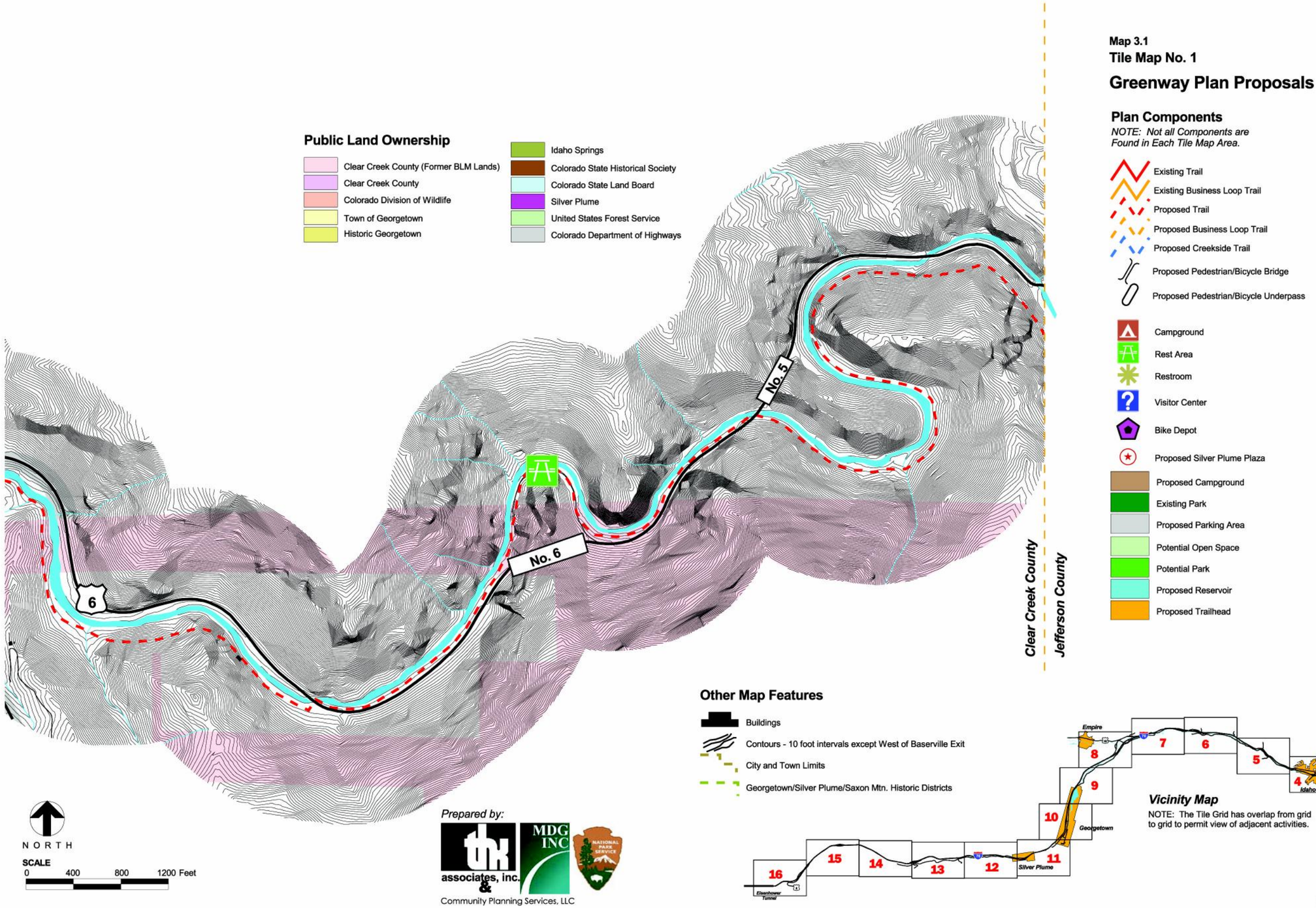
thk associates, inc. & MDG INC Community Planning Services, LLC

NORTH

Map 3.1

Tile Map No. 1

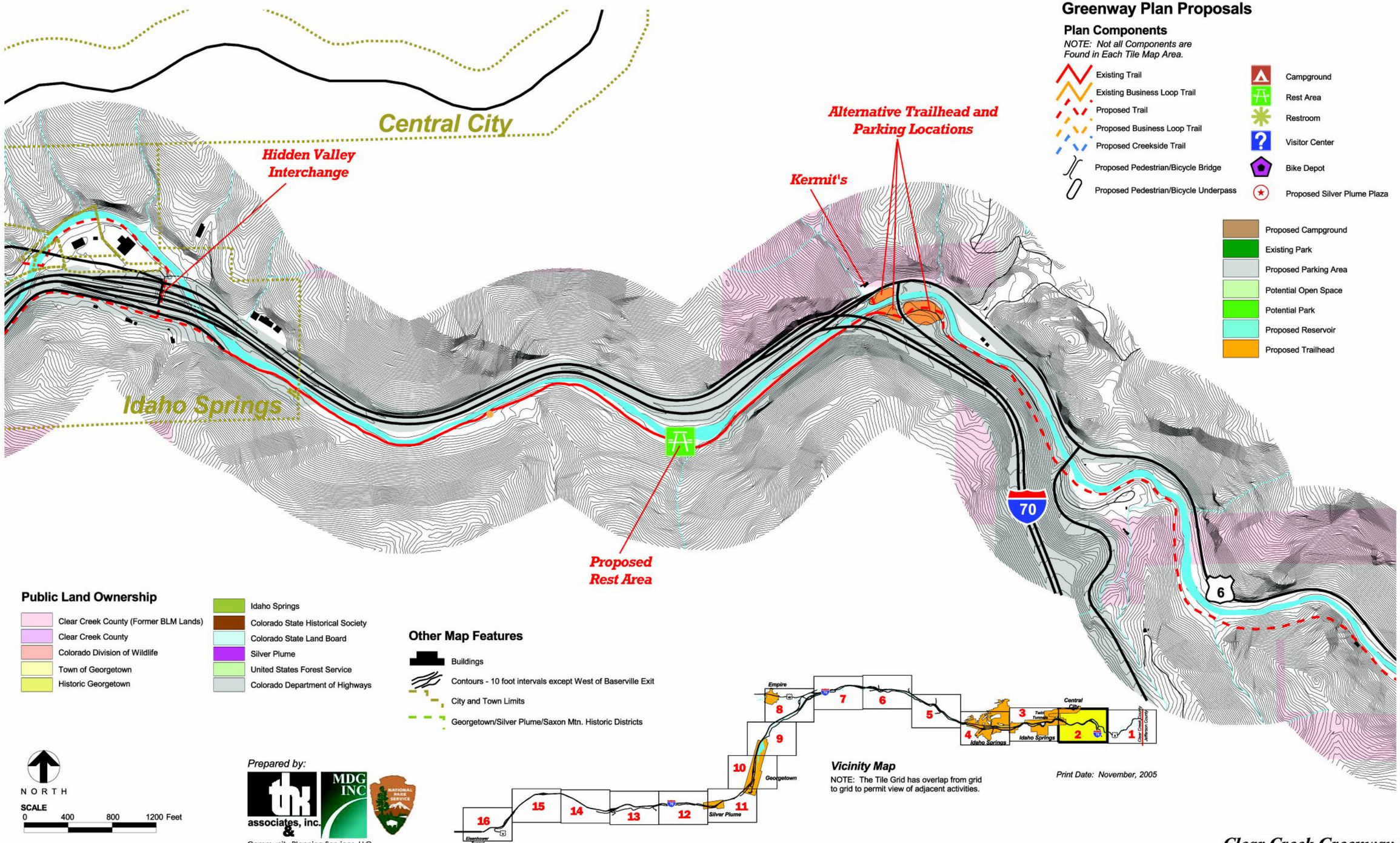
Greenway Plan Proposals



Map 3.2

Tile Map No. 2

Greenway Plan Proposals



Map 3.3

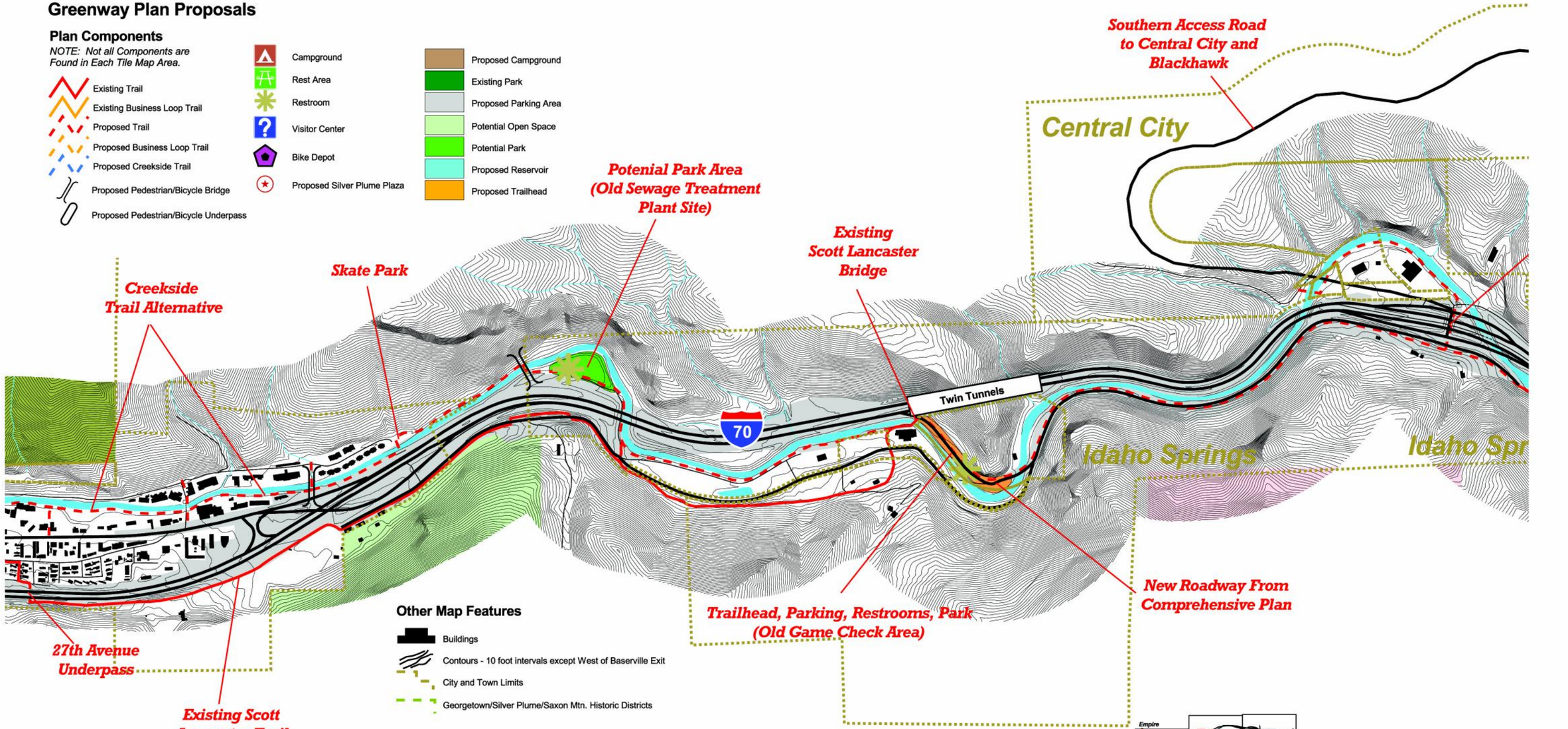
Tile Map No. 3

Greenway Plan Proposals

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

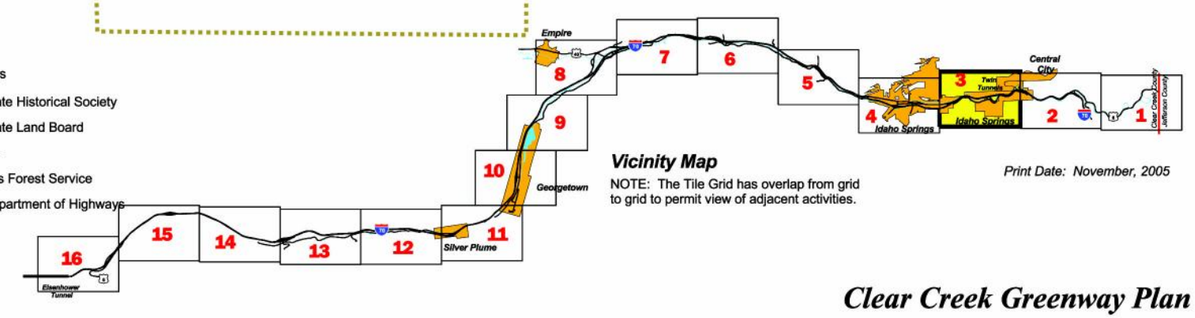


Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways



Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005

NORTH

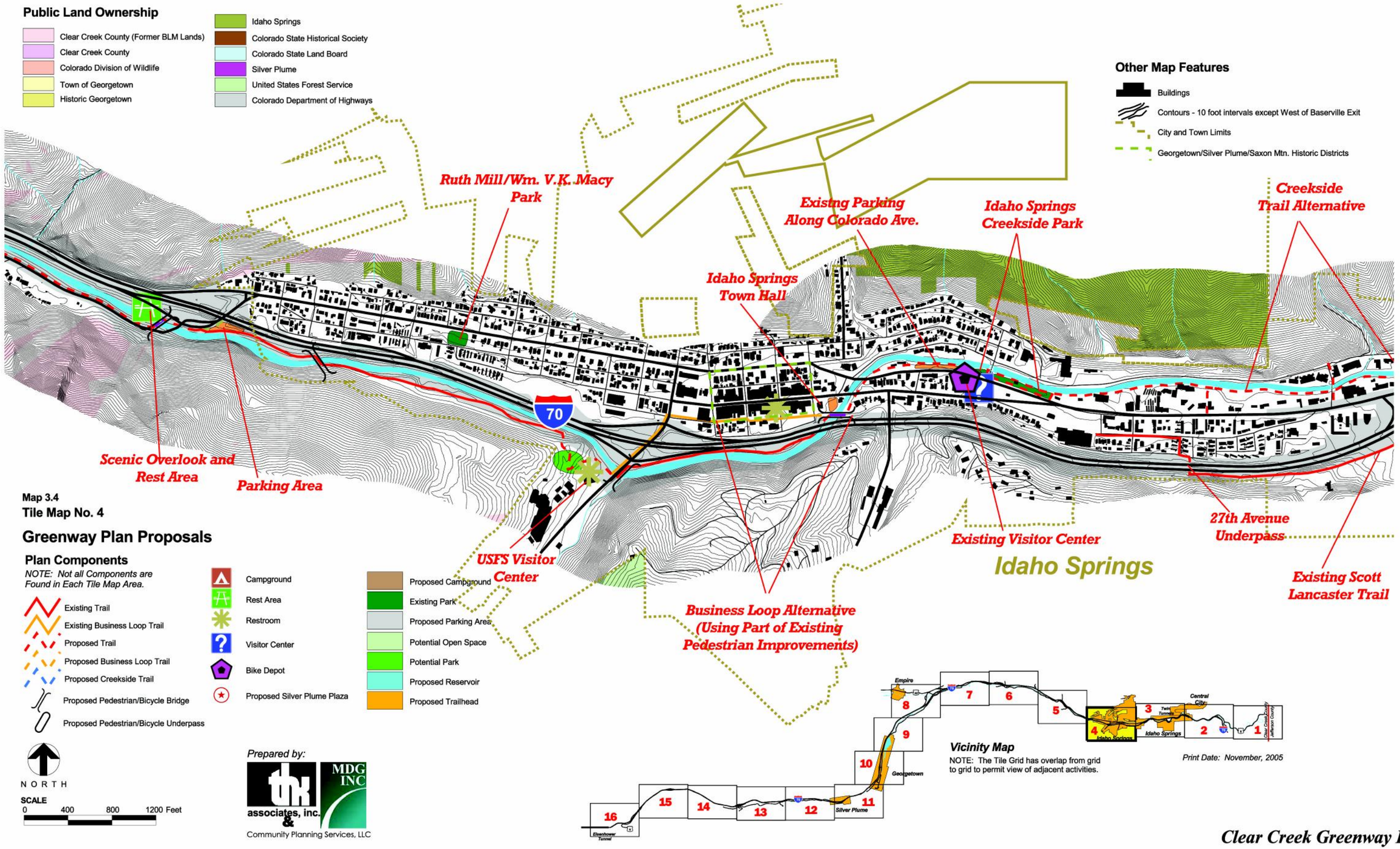
SCALE

0 400 800 1200 Feet

Prepared by:

tnk associates, inc. & MDG INC

Community Planning Services, LLC


Public Land Ownership
Clear Creek County (Former BLM Lands)
Clear Creek County
Colorado Division of Wildlife
Town of Georgetown
Historic Georgetown
Idaho Springs
Colorado State Historical Society
Colorado State Land Board
Silver Plume
United States Forest Service
Colorado Department of Highways
Other Map Features
Buildings
Contours - 10 foot intervals except West of Baserville Exit
City and Town Limits
Georgetown/Silver Plume/Saxon Mtn. Historic Districts
Ruth Mill/Wm. V.K. Macy Park
Existng Parking Along Colorado Ave.
Idaho Springs Creekside Park
Creekside Trail Alternative
Idaho Springs Town Hall
70
Scenic Overlook and Rest Area
Parking Area
USFS Visitor Center
Business Loop Alternative (Using Part of Existing Pedestrian Improvements)
Existing Visitor Center
Idaho Springs
27th Avenue Underpass
Existing Scott Lancaster Trail
Map 3.4
Tile Map No. 4
Greenway Plan Proposals
Plan Components
NOTE: Not all Components are Found in Each Tile Map Area.
Existing Trail
Existing Business Loop Trail
Proposed Trail
Proposed Business Loop Trail
Proposed Creekside Trail
Proposed Pedestrian/Bicycle Bridge
Proposed Pedestrian/Bicycle Underpass
Campground
Rest Area
Restroom
Visitor Center
Bike Depot
Proposed Silver Plume Plaza
Proposed Campground
Existing Park
Proposed Parking Area
Potential Open Space
Potential Park
Proposed Reservoir
Proposed Trailhead
NORTH
SCALE
0 400 800 1200 Feet
Prepared by:
associates, inc.
MDG INC
Community Planning Services, LLC
Vicinity Map
NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.
Print Date: November, 2005
Empire
Georgetown
Silver Plume
Idaho Springs
Central City
Eisenhower Tunnel
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Map 3.5

Tile Map No. 5

Greenway Plan Proposals

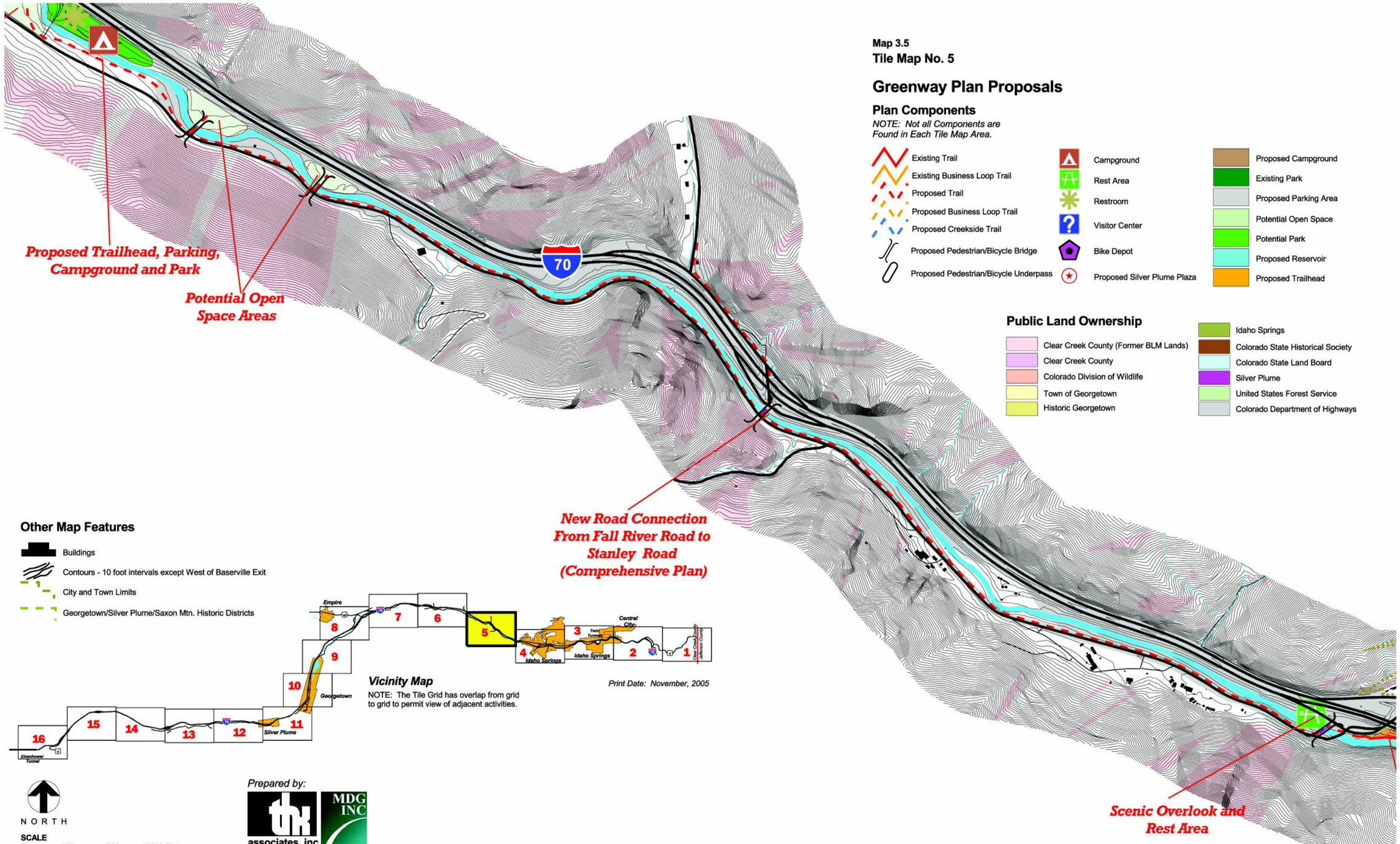
Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways



Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts

Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005

NORTH

SCALE
0 400 800 1200 Feet

Prepared by:

tk associates, inc. & MDG INC
Community Planning Services, LLC

Map 3.6

Tile Map No. 6

Greenway Plan Proposals

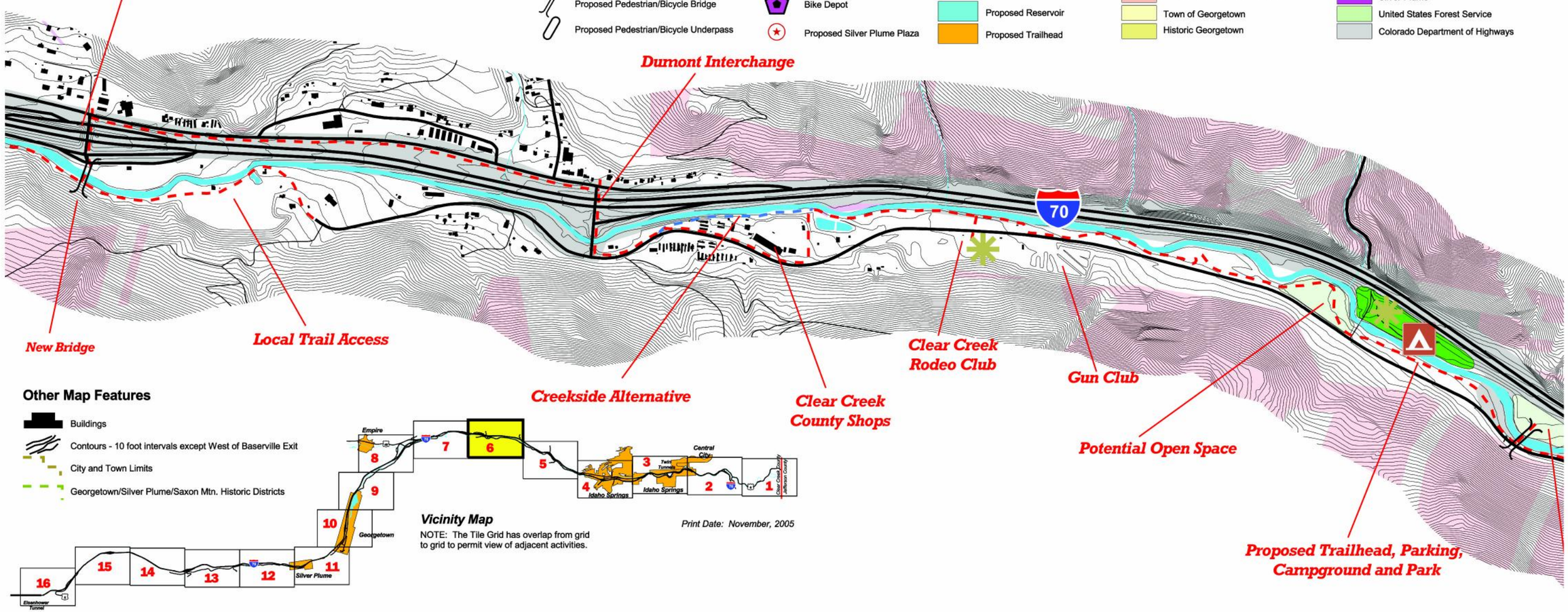
Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways



Map 3.7

Tile Map No. 7

Greenway Plan Proposals

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

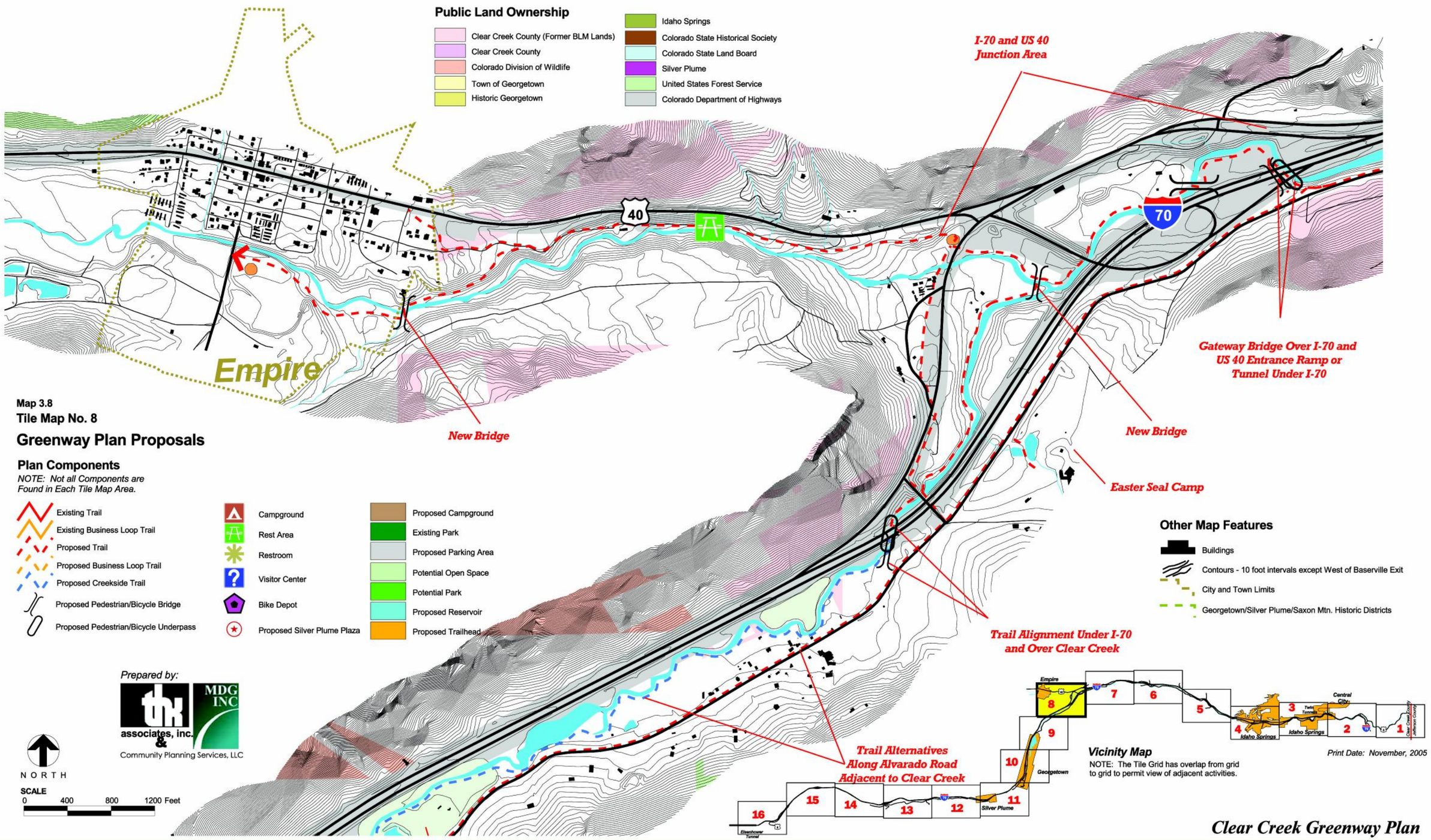
Public Land Ownership

Clear Creek County (Former BLM Lands)

Clear Creek County

Idaho Springs

Colorado State Historical Society


Public Land Ownership
Clear Creek County (Former BLM Lands)
Clear Creek County
Colorado Division of Wildlife
Town of Georgetown
Historic Georgetown
Idaho Springs
Colorado State Historical Society
Colorado State Land Board
Silver Plume
United States Forest Service
Colorado Department of Highways
I-70 and US 40 Junction Area
Gateway Bridge Over I-70 and US 40 Entrance Ramp or Tunnel Under I-70
New Bridge
New Bridge
Easter Seal Camp
Trail Alignment Under I-70 and Over Clear Creek
Trail Alternatives Along Alvarado Road Adjacent to Clear Creek
Empire
40
70
Map 3.8
Tile Map No. 8
Greenway Plan Proposals
Plan Components
NOTE: Not all Components are Found in Each Tile Map Area.
Existing Trail
Existing Business Loop Trail
Proposed Trail
Proposed Business Loop Trail
Proposed Creekside Trail
Proposed Pedestrian/Bicycle Bridge
Proposed Pedestrian/Bicycle Underpass
Campground
Rest Area
Restroom
Visitor Center
Bike Depot
Proposed Silver Plume Plaza
Proposed Campground
Existing Park
Proposed Parking Area
Potential Open Space
Potential Park
Proposed Reservoir
Proposed Trailhead
Other Map Features
Buildings
Contours - 10 foot intervals except West of Baserville Exit
City and Town Limits
Georgetown/Silver Plume/Saxon Mtn. Historic Districts
Prepared by:
thk associates, inc.
&
MDG INC
Community Planning Services, LLC
NORTH
SCALE
0 400 800 1200 Feet
Vicinity Map
NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.
Print Date: November, 2005
Empire
Idaho Springs
Central City
Idaho Springs
Georgetown
Silver Plume
Eisenhower Tunnel
1
2
3
4
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8
9
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15
16

Map 3.9

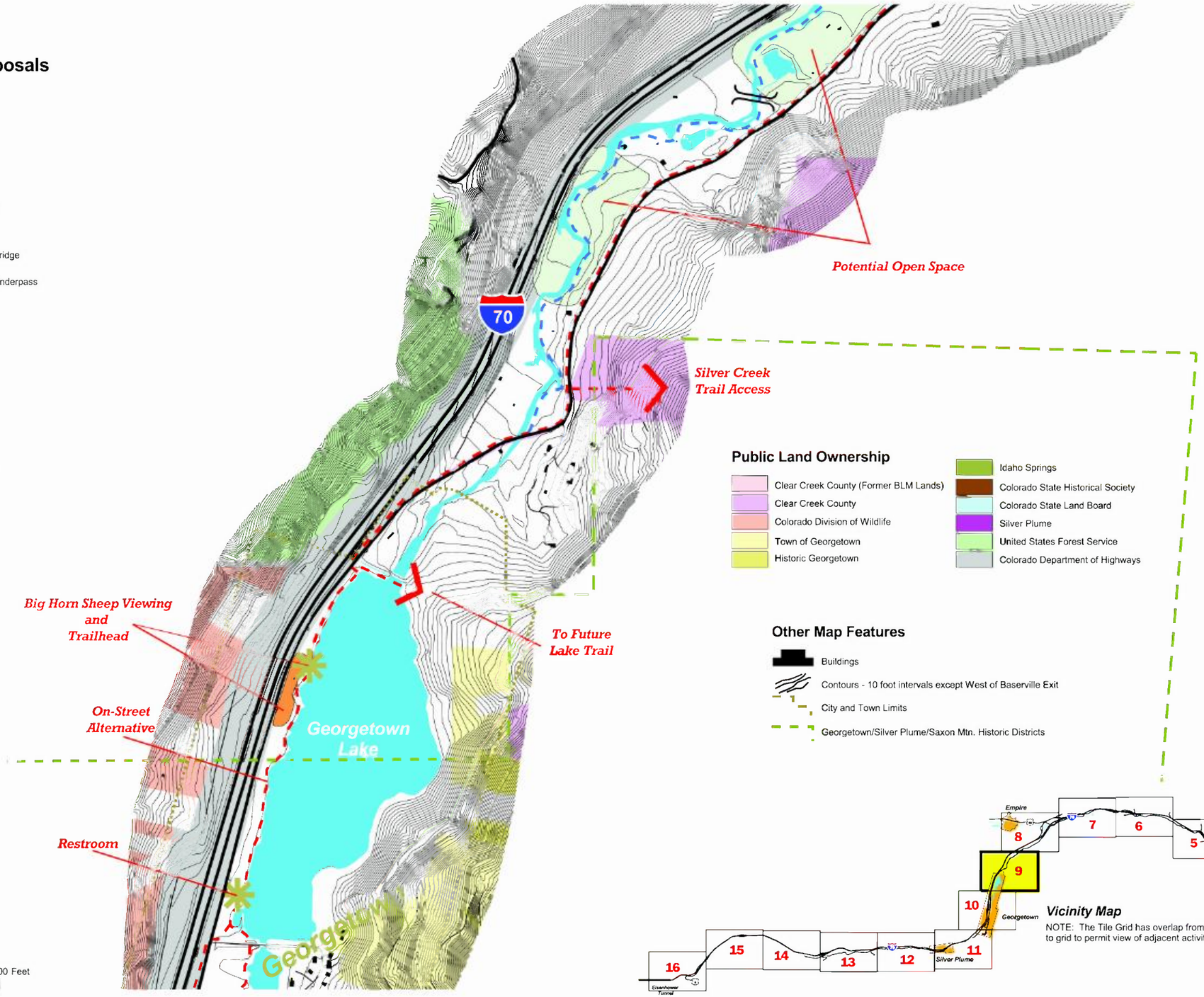
Tile Map No. 9

Greenway Plan Proposals

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead



Prepared by:

tk associates, inc. & MDG INC Community Planning Services, LLC

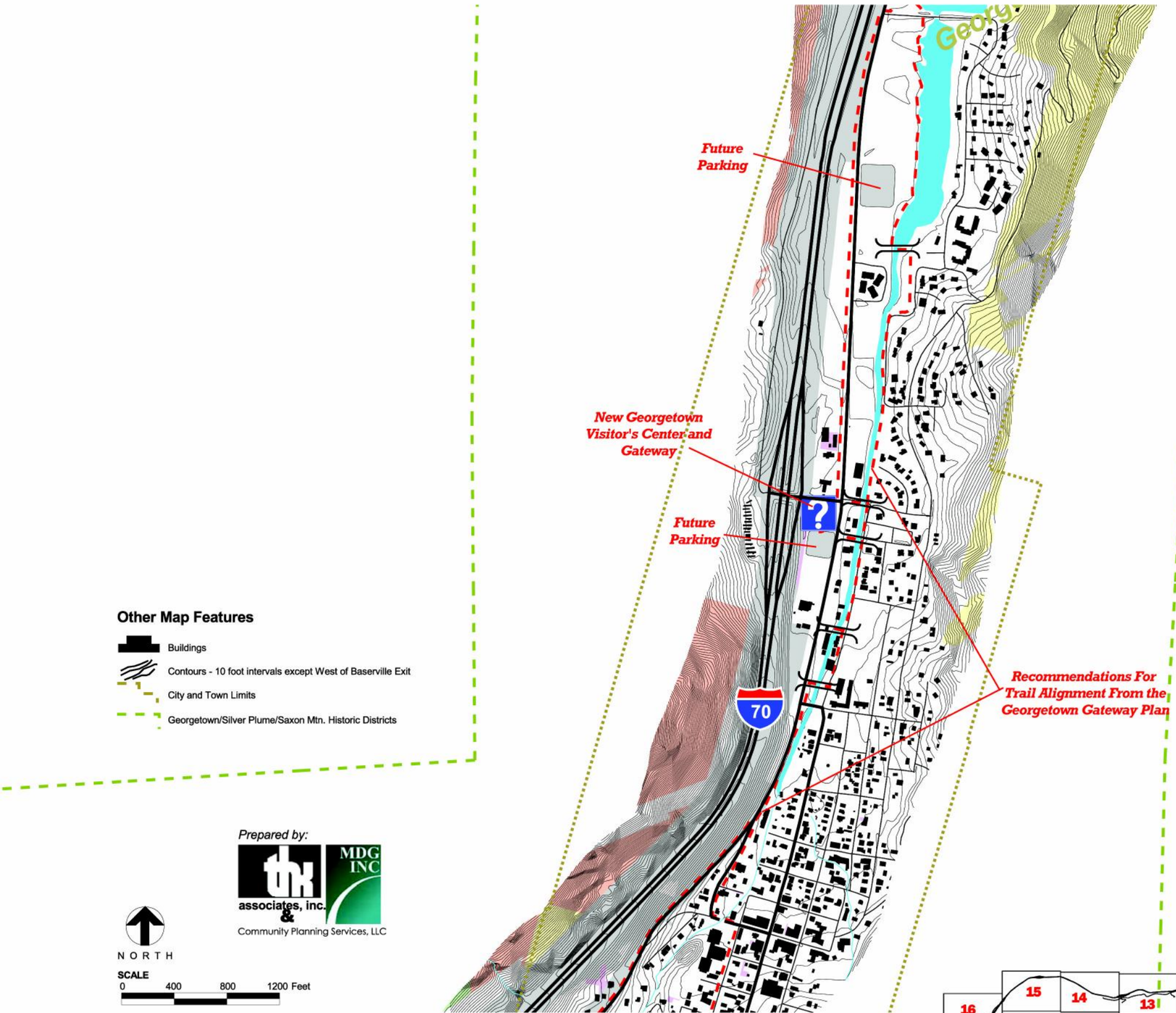
NORTH

SCALE 0 400 800 1200 Feet

Map 3.10

Tile Map No. 10

Greenway Plan Proposals



Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways

Other Map Features

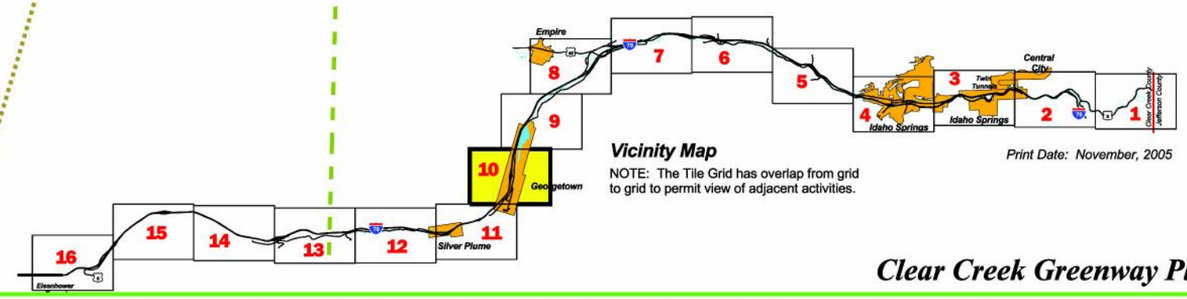
- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts

Prepared by:

tk associates, inc. & MDG INC Community Planning Services, LLC

NORTH

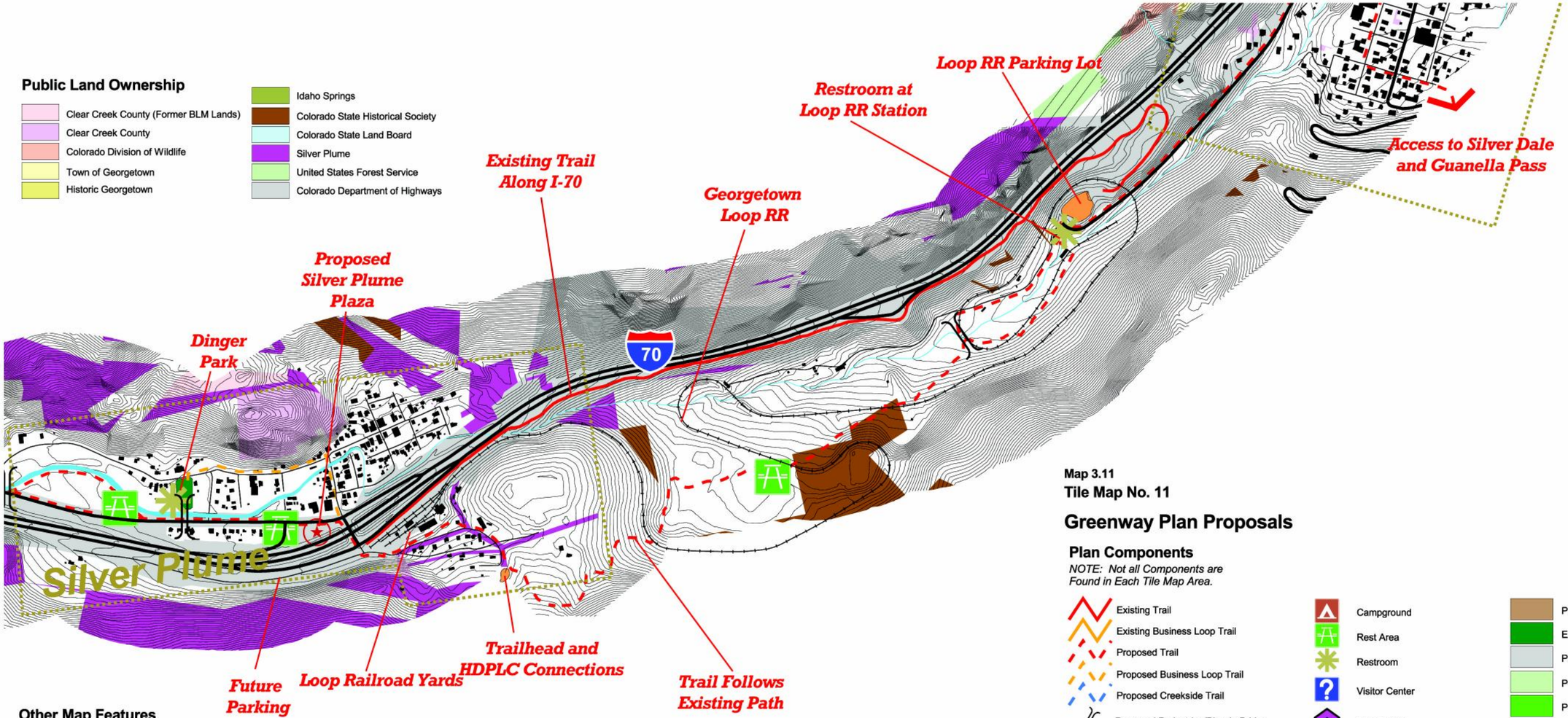
SCALE
0 400 800 1200 Feet



Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005



Map 3.11

Tile Map No. 11

Greenway Plan Proposals

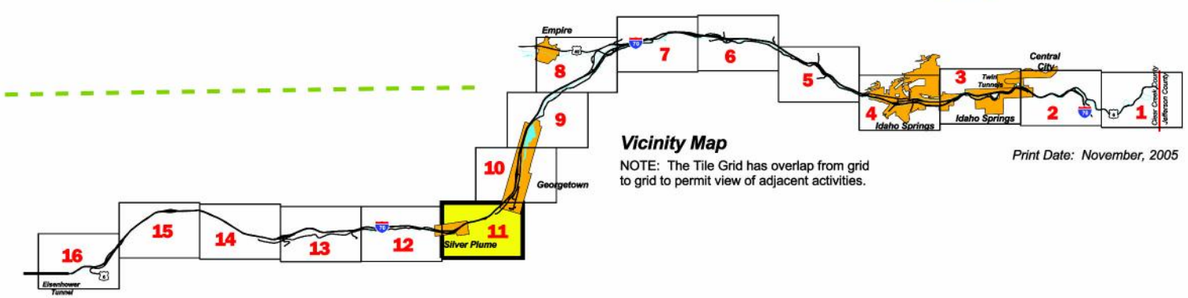
Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts



Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005

NORTH

SCALE

0 400 800 1200 Feet

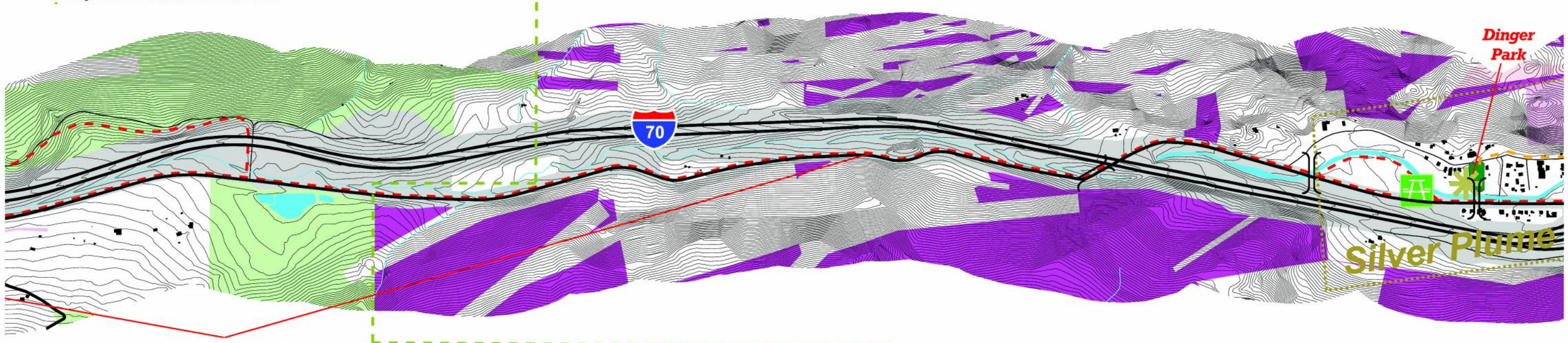
Prepared by:

tk associates, inc. & MDG INC

Community Planning Services, LLC

Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts



Map 3.12

Tile Map No. 12

Greenway Plan Proposals

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

NORTH

SCALE

0 400 800 1200 Feet

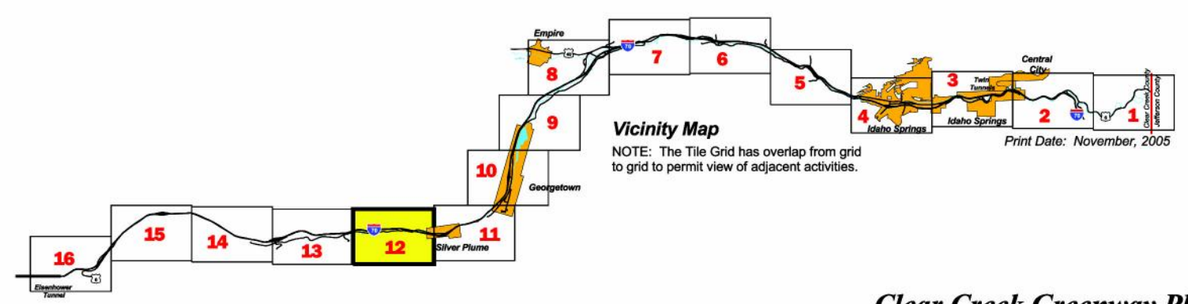
Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways

Prepared by:

thk associates, inc. & MDG INC

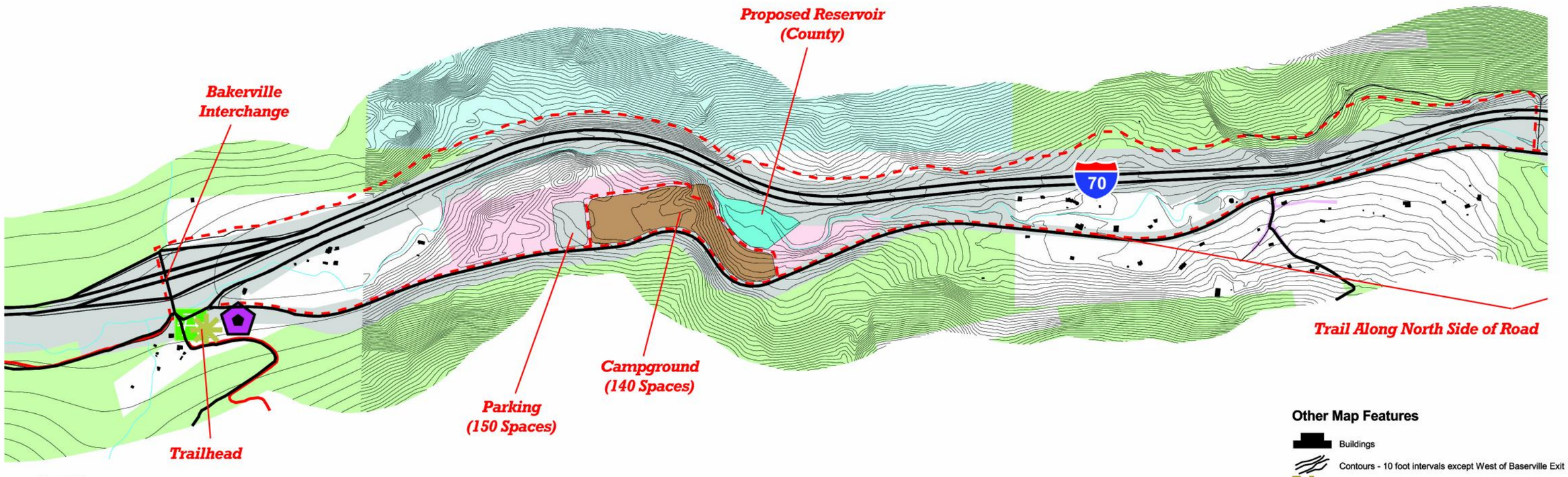
Community Planning Services, LLC



Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005



Map 3.13

Tile Map No. 13

Greenway Plan Proposals

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways

NORTH

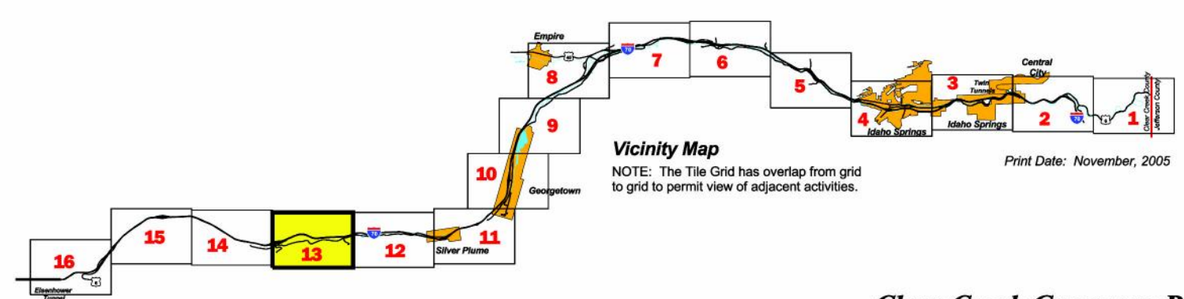
SCALE

0 400 800 1200 Feet

Prepared by:

tk associates, inc. & MDG INC

Community Planning Services, LLC



Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005

Map 3.14

Tile Map No. 14

Greenway Plan Proposals

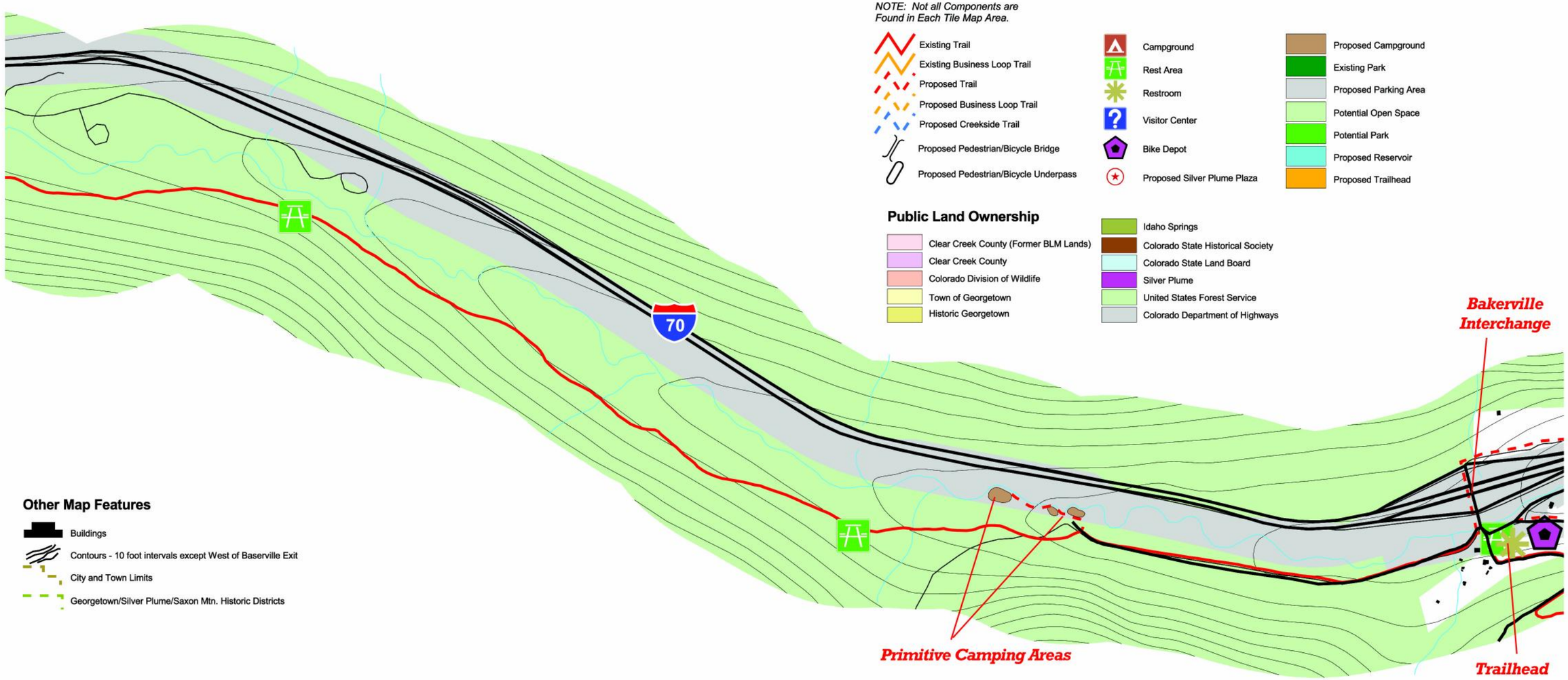
Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways



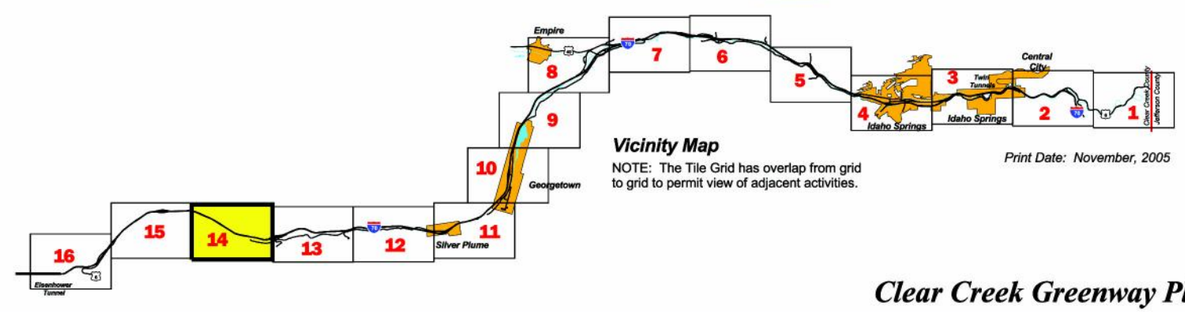
Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts

NORTH

SCALE
0 400 800 1200 Feet

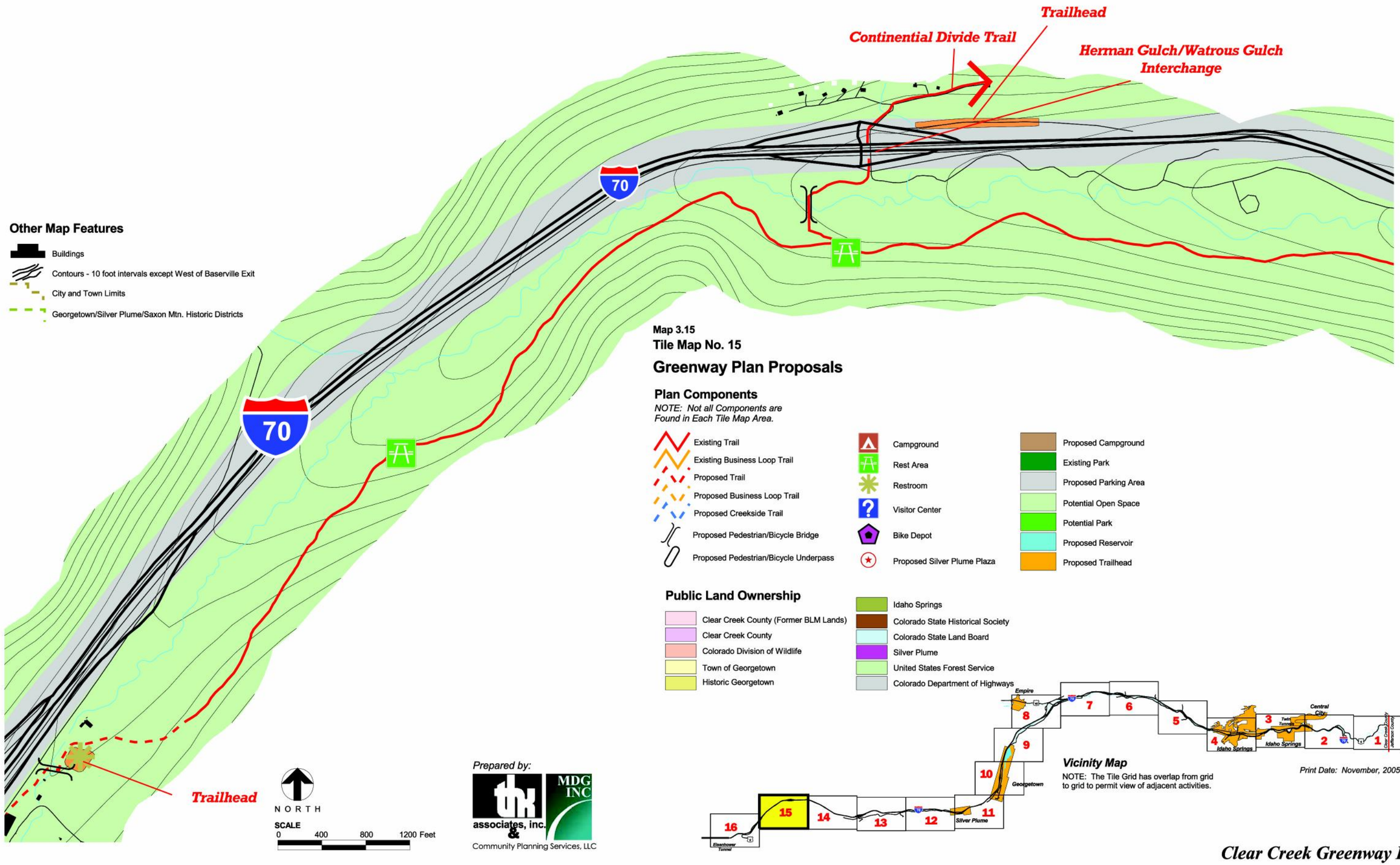
Prepared by:
tk associates, inc. & MDG INC
Community Planning Services, LLC



Vicinity Map

NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.

Print Date: November, 2005


Trailhead
Continential Divide Trail
Herman Gulch/Watrous Gulch Interchange
70
70
Trailhead
Other Map Features
Buildings
Contours - 10 foot intervals except West of Baserville Exit
City and Town Limits
Georgetown/Silver Plume/Saxon Mtn. Historic Districts
Map 3.15
Tile Map No. 15
Greenway Plan Proposals
Plan Components
NOTE: Not all Components are Found in Each Tile Map Area.
Existing Trail
Existing Business Loop Trail
Proposed Trail
Proposed Business Loop Trail
Proposed Creekside Trail
Proposed Pedestrian/Bicycle Bridge
Proposed Pedestrian/Bicycle Underpass
Campground
Rest Area
Restroom
Visitor Center
Bike Depot
Proposed Silver Plume Plaza
Proposed Campground
Existing Park
Proposed Parking Area
Potential Open Space
Potential Park
Proposed Reservoir
Proposed Trailhead
Public Land Ownership
Clear Creek County (Former BLM Lands)
Clear Creek County
Colorado Division of Wildlife
Town of Georgetown
Historic Georgetown
Idaho Springs
Colorado State Historical Society
Colorado State Land Board
Silver Plume
United States Forest Service
Colorado Department of Highways
Empire
Idaho Springs
Central City
Georgetown
Silver Plume
Vicinity Map
NOTE: The Tile Grid has overlap from grid to grid to permit view of adjacent activities.
Print Date: November, 2005
NORTH
SCALE
0 400 800 1200 Feet
Prepared by:
tnx associates, inc.
MDG INC
Community Planning Services, LLC

Map 3.16

Tile Map No. 16

Greenway Plan Proposals

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

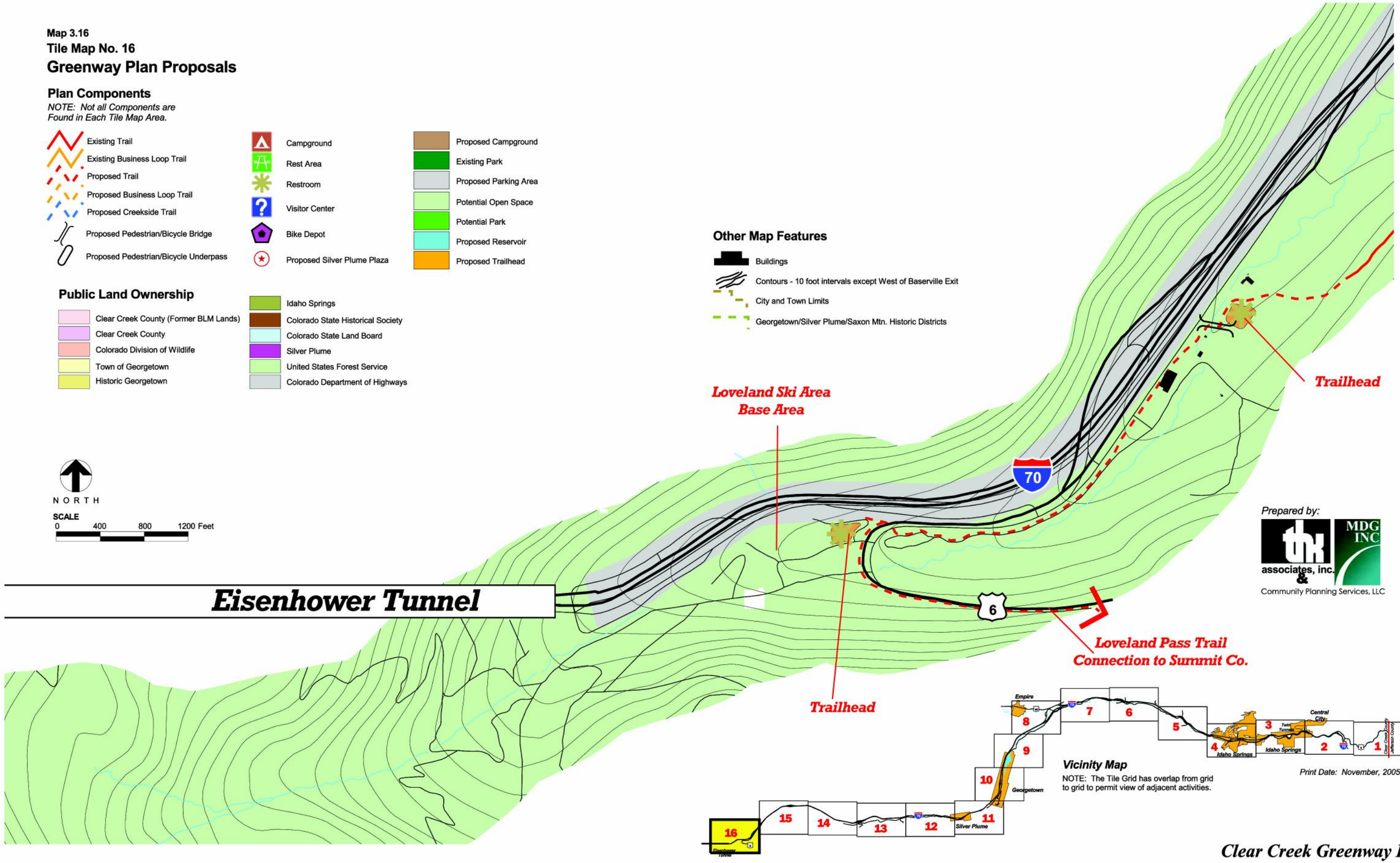
- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Public Land Ownership

- Clear Creek County (Former BLM Lands)
- Clear Creek County
- Colorado Division of Wildlife
- Town of Georgetown
- Historic Georgetown
- Idaho Springs
- Colorado State Historical Society
- Colorado State Land Board
- Silver Plume
- United States Forest Service
- Colorado Department of Highways

Other Map Features

- Buildings
- Contours - 10 foot intervals except West of Baserville Exit
- City and Town Limits
- Georgetown/Silver Plume/Saxon Mtn. Historic Districts



C. BOATING ACCESS

The 2030 Clear Creek County Master Plan included a River Access Plan. That plan has been included in the Greenway Plan in its entirety as Map 3.17.

Commercial and private boating concerns worked with the Clear Creek Metropolitan Recreation District to identify specific boating access points that need to be improved to accommodate anticipated future use. Following is a list of the access points with the goals for development.

Map Location C. Tubes

Short Term Goals
- New bridge, remove culverts
- Clean up launch, smooth out and remove some rocks
- Permanent restrooms and comfort station
- Define parking a priority, for rafters, fishing and 4x4's on trailers (there isn't much room for parking), limited over night parking
- Signage
- Property needs to be acquired (South side of bridge and both of creek)
- Trash receptacles

Long Term Goals
- Picnic area
- Camp site

Tubes

Map Location E. Upper Dumont

Short Term Goals
- Clean up launch area, smooth out and remove some rocks
- Signage with map
- Trash receptacles

Long Term Goals
- Picnic area
- Camp site

Upper Dumont

Map Location F. Fairgrounds (Hiawatha)

Short Term Goals

- Permanent restrooms and comfort station
- Clean up launch area
- Parking area defined, not necessarily paved
- Re layout drop off to include a turn around (so buses do not have to back down hill to creek)
- Signage
- Screen highway with vegetation (very important)
- Trash receptacles

Long Term Goals

- Picnic area
- Camp site

Hiawatha (Lower Dumont)

Map Location H. Outer Limits

Short Term Goals

- New bike path needs to work with drop-off
- Carry rafts uphill to drop off, path needs to be wide enough for pedestrians and rafts
- Steps and rails down to creek from path (rails to slide rafts along)
- Restrooms and comfort station
- Parking area defined, not necessarily paved
- Signage
- Trash receptacles

Long Term Goals

- Picnic area
- Camp site

Outer Limits

Map Location I. Chicago Creek

Short Term Goals

- Clean up launch area (move rocks make a smoother launch)
- Foot path from middle school parking lot to launch area for people not using commercial rafting
- Upgrade bus and raft drop off area
- Add signage for parking
- Signage noting historical importance (first spot in Colorado that gold was found)
- Trash receptacles

Long Term Goals

- None

Chicago Creek

Map Location R. Kermits

Short Term Goals

- Define parking for many types of users (rafting, fishing, overnight, etc.), a few long term parking spots
- Restrooms and comfort station
- Clean up launch (rocks)
- Signage
- Trash receptacles

Long Term Goals

- None

Kermits

D. FISHING ACCESS

The 2030 Clear Creek County Master Plan included a River Access Plan. That plan has been included in the Greenway Plan in its entirety as map 3.17.

Clear Creek offers many fishing opportunities along the entire length of Clear Creek. The River Access Plan map 3.17 identifies many of these opportunities due to the current levels of use, as well as future anticipated levels of use, additional parking, trash receptacles and improved access is required. Following is a list of the access points with the goals for development. At several locations, access for persons with various disabilities is planned. In Chapter 4, typical fishing access design guidelines are provided for use in developing these areas.

Map Location 2. Bakerville

- No facilities needed
- Parking area defined, not necessarily paved
- Signage marking private property
- Private property mixed in
- Trash receptacles

Bakerville

East of Bakerville

- No facilities needed
- Signage
- Parking
- Trash receptacles

East of Bakerville

Map Location 5. Georgetown Reservoir – Spillway

- Clean up
- Parking
- Signage
- Additional plantings (native)
- Private or public ownership?
    - Trash receptacles

Georgetown Reservoir – Spillway

Map Location 8. Empire Junction – Spaghetti Ranch

- Handicap Accessibility
- Parking
- Signage
- Trash receptacles

Empire Junction – Spaghetti Ranch

Map Location 9. Mile Hi Rafting – White Water Kayak Park

Short Term Goals

- Create Whitewater Rapids
- Improve access
- Terracing for spectator area
- Parking
- Restrooms
- Trash
- Picnic Table
- Trailhead

Long Term Goals

- Camp site
- Improved parking

Mile Hi Rafting – White Water Kayak Park

Map Location 10. Downieville Truck Stop – Between Stanley and Empire

- One and two car pullouts for parking
- Trash receptacles

Downieville Truck Stop – Between Stanley and Empire

Map Location 11. Dumont Bridge (Upper Dumont)

- Picnic tables
- Access based on property ownership
- CDOT R.O.W.
- Trash receptacles

Dumont Bridge (Upper Dumont)

Map Location 12. Stanley Road and Bridge

- Fishing access upstream
- Signs at steps from cantilevered path "Fishing Access"
- One and two car pull outs for parking
- Trash receptacles

Stanley Road and Bridge

Map Location 13. Charlie Taylor Water Wheel

- Signage
- Trash receptacles
- Identify access

Charlie Taylor Water Wheel

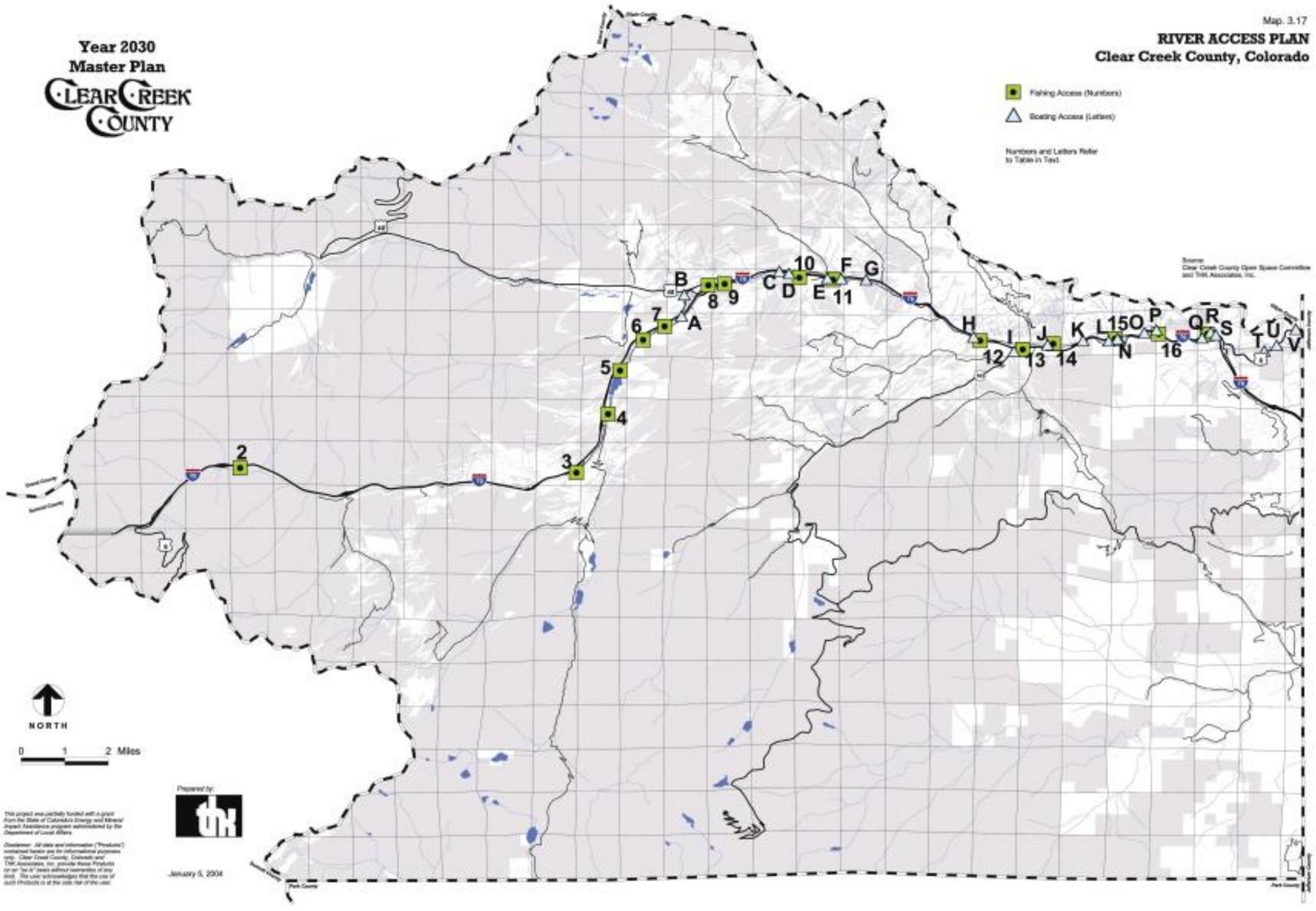
Map Location 17. Kermits

- Fishing other side of river from raft launch
- Main access for greenway
- Parking for many uses
- Restrooms & comfort station
- Signage
- Trash receptacles

Kermits

Map 3.17

This map provided in its entirety from the 2030 Clear Creek County Master Plan.



River Access Legend

Shape	ID	Location	Iden	Type
Point	0	Bakerville at Reibel Bridge	2	Fishing
Point	0	West of Georgetown	3	Fishing
Point	0	Inlet to Georgetown Lake	4	Fishing
Point	0	Spillway to Georgetown Lake	5	Fishing
Point	0	Shadow Ranch	6	Fishing
Point	0	East of Shadow Ranch	7	Fishing
Point	0	Empire Junction	8	Fishing
Point	0	Mile Hi Rafting	9	Fishing
Point	0	Downieville Truck Stop	10	Fishing
Point	0	Dumont Bridge	11	Fishing
Point	0	Stanley Bridge	12	Fishing
Point	0	Charlie Tayler Water Wheel	13	Fishing
Point	0	Riley Park	14	Fishing
Point	0	Clear Creek Rafting	15	Fishing
Point	0	Hidden Valley	16	Fishing
Point	0	Kermits	17	Fishing
Point	0	Cemetary	A	Boating
Point	0	West Fork Junction	B	Boating
Point	0	Tubes	C	Boating
Point	0	Weigh Station	D	Boating
Point	0	Upper Dumont	E	Boating
Point	0	CCC Fairgrounds	F	Boating
Point	0	Spring Gulch	G	Boating
Point	0	Outer Limits	H	Boating
Point	0	Chicago Creek	I	Boating
Point	0	Riley Cooper Park	J	Boating
Point	0	Skate Park	K	Boating
Point	0	Under Bridge	L	Boating
Point	0	Clear Creek Rafting	M	Boating
Point	0	Pond	N	Boating
Point	0	Below Box	O	Boating
Point	0	Hidden Valley	P	Boating
Point	0	Li'l Easy	Q	Boating
Point	0	Kermits	R	Boating
Point	0	Frei Quarry	S	Boating
Point	0	Tunnel	T	Boating
Point	0	Terminator	U	Boating
Point	0	Tunnel 4	V	Boating

E. COORDINATION WITH MAJOR STAKEHOLDERS

As part of the planning effort, major stakeholders were included such as the Colorado Department of Transportation, the United States Forest Services, the Colorado State Historical Society and other major property owners. As segments of the Greenway are designed and engineered, additional coordination with these stakeholders will be required. Following are the key issues, organized by stakeholders, that will require additional coordination, as well as consideration in the final design.

Colorado Department of Transportation (CDOT)

- CDOT would prefer that none of the proposed trail alignment occur on lands that they will have to purchase as future right-of-way. At this time, after analyzing the entire trail alignment, it does not appear to be an issue.

- CDOT, as well as the Open Space Commission, would prefer that the proposed Greenway Trail avoid environmentally sensitive areas. As a part of the Greenway Plan, an environmental review of the Clear Creek drainage was conducted, see Appendix "A". There are many environmental issues along Clear Creek; however, the environmentally sensitive areas were avoided with the proposed Greenway Trail Alignment.

- As much as possible, CDOT would prefer that the proposed Greenway Trail not occur in I-70 R.O.W. After analyzing the entire trail alignment, in a number of places, the trail is located in the I-70 R.O.W. However, the plan has attempted to minimize this issue. There are several logical explanations for where it does occur in the R.O.W.

  a. The trail, or connections to the trail, occur in the R.O.W. at all points where the trail crosses I-70. These crossings occur at interchanges, bridges over Clear Creek and at I-70 and SH-40 where a pedestrian overpass is proposed.

  b. The trail, for the most part, runs on the south side of Clear Creek. There are places where the R.O.W. extends to the south side of the creek. In these locations, the trail is in the R.O.W. so that the trail can be in close proximity to the creek, avoid motorized vehicle conflicts and maximize land use. In these locations, the trail does not conflict with any of the proposed alternatives for I-70.

- Due to the narrowness of the canyon, creek location, I-70 location (both existing and proposed locations) and adjacent land uses, there are a number of pinch points that were jointly identified by CDOT and the Clear Creek Open Space Commission **requiring additional coordination** at the time that either the trail or I-70 goes to final design. Creative design solutions will be needed. These locations are as follows.

  a. Trail head location at I-70 and SH6. The master plan identifies three (3) alternative locations for the trailhead (Kermits area).

  b. Access under the I-70 structure at the Hidden Valley interchange. This is a connection from the Greenway Trail to the Central City Parkway.

  c. The Scott Lancaster Bridge is a 4-f issue on the west side of the twin tunnels.

  d. Trail under the I-70 bridge crossing Clear Creek at the potential park on the east end of Idaho Springs. This potential park site is Idaho Springs' old sewage treatment plant site.

  e. Westbound ramp off I-70 into the east end of Idaho Springs, pinch point with ramp, trail and the creek.

  f. The 12' x 12' box culvert under I-70 at 27th Place Access to the athletic fields on south side of I-70 must be maintained.

  g. Water Wheel Park west to USFS office. The trail exists on the north side of the creek between the creek and I-70. Here the existing trail conflicts with I-70 improvement alternatives.

  h. The Big 5 Super Fund site, west of the USFS office. The trail and park alternatives conflict with one of the I-70 improvement alternatives.

  i. Rafting put-in point at Standley Road and I-70.

  j. Proposed Fall River interchange. A spur trail connects the Greenway Trail to Fall River Road.

  k. I-70 overpass of North Spring Gulch Road. A spur trail connects the Greenway Trail to North Spring Gulch Road.

  l. I-70 inter-change at Dummount. Millcreek access from Greenway Trail.

  m. Trail connection to Downieville through port-of-entry. CDOT is not sure the port-of-entry is going to stay in this location.

  n. Silver Lake Drive. This is a county maintained road. However, a portion of the road is in CDOT R.O.W. As a part of the Greenway Plan this road would be closed to motorized traffic and used as a trail.

  o. Proposed White Water Park improvements are in CDOT R.O.W.

  p. Proposed Greenway pedestrian overpass of I-70 at SH40.

  q. The entire I-70/SH40 area.

  r. CDOT's wetland mitigation areas south of I-70 between the I-70/SH40 interchange and the Georgetown Dam. The wetland mitigation areas will be managed so as not to allow public access.

s. The Georgetown Dam, the frontage road, I-70, the creek and Trail are a pinch point.

t. The historic loop railroad area. Currently, the existing trail is in the I-70 R.O.W. immediately adjacent to I-70. The trail has to be located either on State Historical Society property or on I-70 R.O.W.

u. I-70 inter-change at Silver Plume. The Greenway Trail passes under I-70.

v. I-70 bridge over Frontage Road at the west end of Silver Plume. The Greenway Trail passes under I-70.

w. The Loveland Valley Ski Lodge is a pinch point with lodge, creek, SH6, I-70 and the trail.

x. Straight Creek Road used as a trail connection to Summit County. The Greenway Trail has to get around the east portal of the Eisenhower Tunnel.

- Wherever the Greenway Trail is constructed in I-70 R.O.W., environmental clearances and access permits will be required.

United States Forest Service (USFS)

- Currently, the USFS supports the Clear Creek Greenway Plan. Portions of the trail are currently on USFS property between Bakerville and the Loveland Ski Area. This segment of the trail is a soft surface trail with bridges that will accommodate light trucks. The USFS has agreed with Clear Creek County that this trail will be paved in the future to meet the trail standards identified in Chapter 4 – Design Guidelines. Currently, the USFS maintains this segment of the trail. However, other potential trail improvement alternatives are shown on USFS property. The USFS is not in a position to maintain this additional trail, so if any of the proposed trail improvements occur, maintenance will become the responsibility of the County or a future Greenway non-profit organization.

- Wherever Greenway Trail improvements are constructed on USFS lands, NEPA environmental clearance and access permits will be required.

- The primitive camping identified as a part of the plan, just west of Bakerville, will require further coordination with the USFS.

- The USFS is interested in coordinating their planned trailhead at Bakerville with the proposed bike depot at Bakerville. The USFS trailhead does not have to occur on USFS lands.

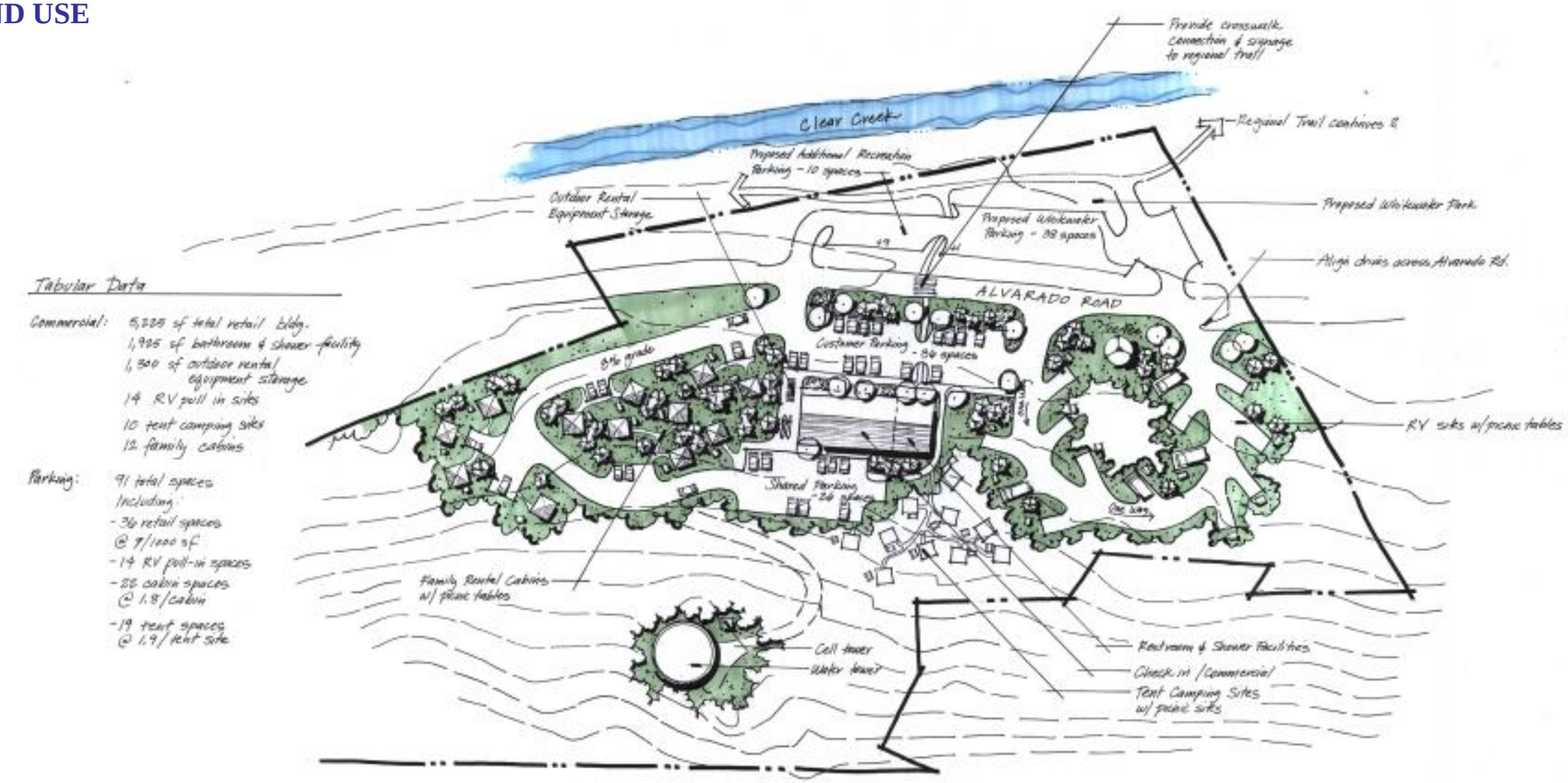
- The USFS would like to coordinate with Greenway signage program as it is developed.

- The USFS would be interested in a partnership to develop a small park or scenic overlook just north of the USFS visitor center in Idaho Springs. There is agreement that the flat area along the USFS nature trail, at the top of the ridge, would be a good location for such a development. Since the proposed location is on USFS land, further coordination on how access to this location will occur is required.

Colorado State Historical Society

The Georgetown Loop Railroad is a major regional tourist destination along the Clear Creek corridor with thousands of visitors annually. Currently at this location, the trail is predominantly in the I-70 R.O.W. immediately adjacent to I-70. Due to the future widening of I-70, the Greenway trail will have to pass more directly through the Colorado State Historical Society property. Conceptually, there is agreement on this. Currently, the Colorado State Historical Society is starting to work with the National Park Service to develop a circulation plan for their site. This plan will not be completed until sometime after the Greenway Plan is published. As a part of the circulation planning effort with the National Park Service, the final location of the Greenway Trail through the site will have to be coordinated with the State Historical Society.

F. LAND USE



Potential mixed-use developments on property currently owned by the County.

As a part of the planning process for the Greenway, the proposed land use plan from the 2030 Clear Creek County Master Plan was revisited to see if the Greenway planning effort illuminated the need for refinements to the land use plan. At the time that the County-Wide Master Plan was prepared it was the opinion of the Planning Commission that this would, in fact, be the case. The Planning Commission felt that development of the Greenway was a significant component of the County-Wide Master Plan Economic Development Strategies. Following are the Economic Development Strategies from the County-Wide Master Plan from which the Greenway and the suggested land use recommendations were developed. (See Maps 3.18 through 3.21.)

Clear Creek as a Natural Resource and Source of Economic Benefit Strategies

EDS30 Promote and manage access and utilization of Clear Creek (waterway) as a major attraction to the County. Partner with the public and private sector to develop a water park concept.

EDS31 Use the Greenway concept as a tool to protect environmentally sensitive land, provide access to recreation on the Creek, contribute to the economic value of adjacent lands, help guide the location of development, link communities, provide off-road transportation, increase recreational opportunities, increase property values and attract visitors.

EDS32 Provide opportunities for businesses to develop in mixed-use areas along Clear Creek.

Land Use Recommendations

Definitions of the land use categories are provided in Chapter 4 of the 2030 Clear Creek County Master Plan. Maps 3.18 through 3.21 reflect the proposed Greenway and the associated land use recommendations. On these maps, all United States Forest Service lands are shown as OSR (Parks, Open Space and Recreation). This was done to help future planners understand the balance needed between open space and developed areas. As described in the 2030 Clear Creek County Master Plan, the OSR areas help to provide separation between the different communities along Clear Creek that are concerned about maintaining their own individual character.

The major changes in land use recommendations are listed here in order from east to west to highlight them for the reader.

- Since the 2030 Clear Creek County Master Plan was completed, the Town of Idaho Springs has completed a major annexation east to the Hidden Valley interchange, expanding the Town Center (TC) land use. Also, Idaho Springs is now seeing some mixed-use opportunities north of I-70 along their northeast boundary. Additional rural residential (RR) land is also now seen north and east of Town. These changes have all come about since the Central City Parkway opened in 2004.

- Additional mixed-use (MU) areas are shown along Alvarado Road by the County White Water Park extending west to the Empire Junction area. The concept here is to take advantage of County-owned lands and provide opportunities for future development. The County will be creating incentives to encourage development in these areas, and has already begun studying how mixed-use development might occur in these areas.

- The addition of large lot residential (LLR) areas just east of Empire. Mixed-use (MU) will still be a part of this development, but will be limited to the Empire Junction area. The large lot residential is proposed by the current owners to maintain overall visual quality of the area while still allowing the property owner the ability to develop his property in a cost-effective manner.

Westbound I-70 looking towards Empire Junction

- The other area of change occurs between the Georgetown Lake Dam and the Easter Seals Handi-Camp. Mixed-use has been added below the dam because the opportunity for recreational businesses to locate here was identified during the Greenway planning process. Currently, there is an equestrian facility in this area and the R.V. campground has been approved by the County. As a part of the proposed I-70 improvements, the I-70 PEIS identifies areas along the creek as wetland mitigation areas. These areas have been identified as buffer (B) areas.

  Also, rural residential has taken the place of large lot residential as a more appropriate level of development.

The Greenway and the adjacent land use are seen as the backbone of the 2030 Clear Creek County Master Plan. Therefore, this series of land use maps are intended to be used by planners to guide the development and redevelopment, in some cases, of the Clear Creek drainage.

CDOT Wetland Mitigation Area

Map 3.18:

LAND USE RECOMMENDATIONS

Clear Creek County Line to West End of Idaho Springs

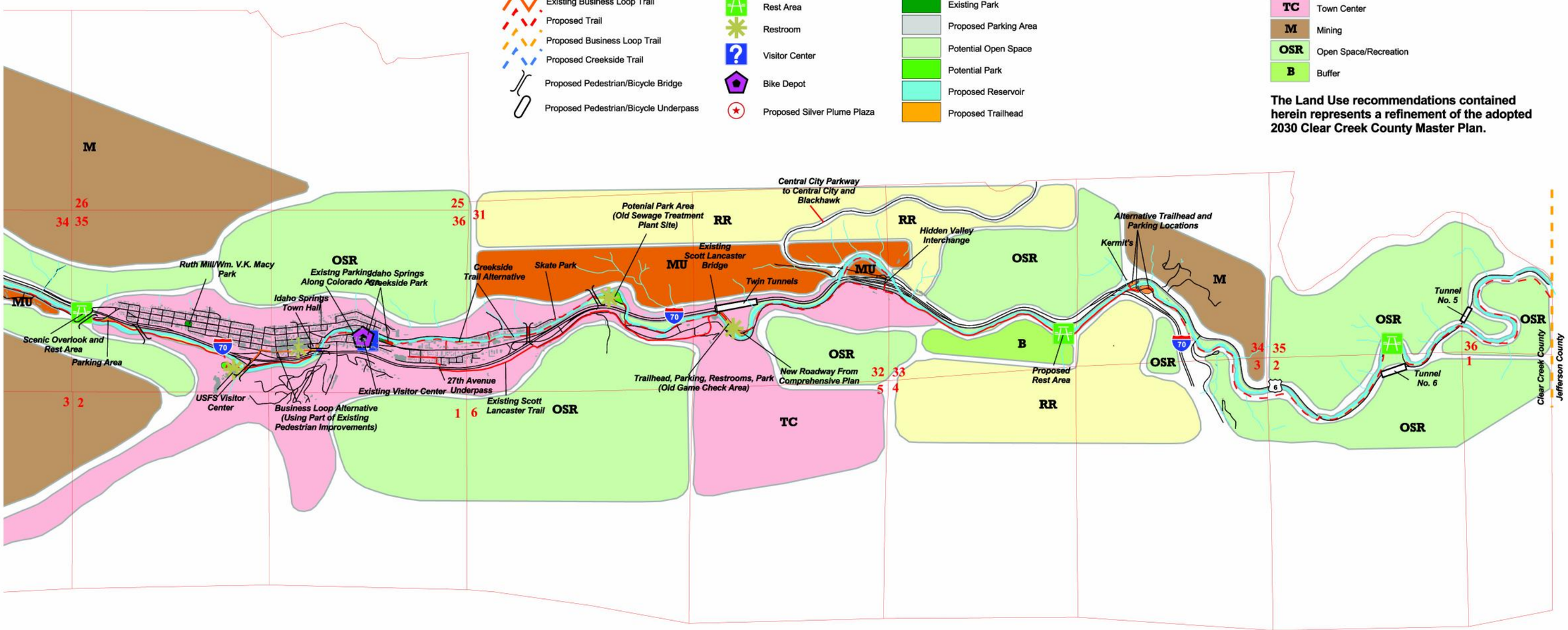
RR	Rural Residential
LLR	Large Lot Residential
MU	Mixed Use
TC	Town Center
M	Mining
OSR	Open Space/Recreation
B	Buffer

The Land Use recommendations contained herein represents a refinement of the adopted 2030 Clear Creek County Master Plan.

Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead



Prepared by:

tnk associates, inc. & MDG INC Community Planning Services, LLC

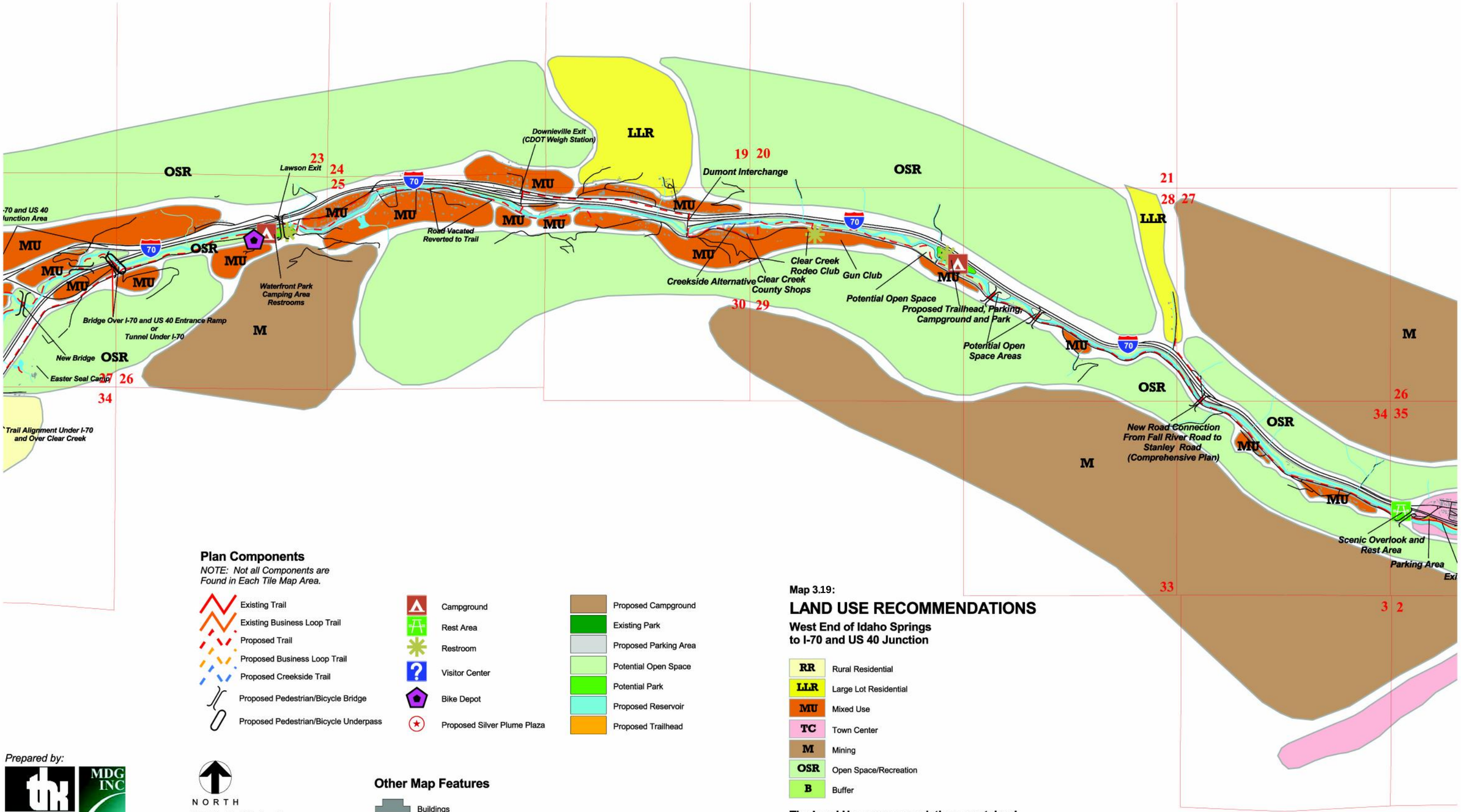
NORTH

SCALE: Each Section Line Represents and Area of Approximately One Square Mile

Other Map Features

- Buildings
- 00 Section Lines

The land use recommendations shown here are a refinement of the adopted 2030 Clear Creek County Master Plan recommendations.



Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

Map 3.19:

LAND USE RECOMMENDATIONS

West End of Idaho Springs to I-70 and US 40 Junction

RR	Rural Residential
LLR	Large Lot Residential
MU	Mixed Use
TC	Town Center
M	Mining
OSR	Open Space/Recreation
B	Buffer

The Land Use recommendations contained herein represents a refinement of the adopted 2030 Clear Creek County Master Plan.

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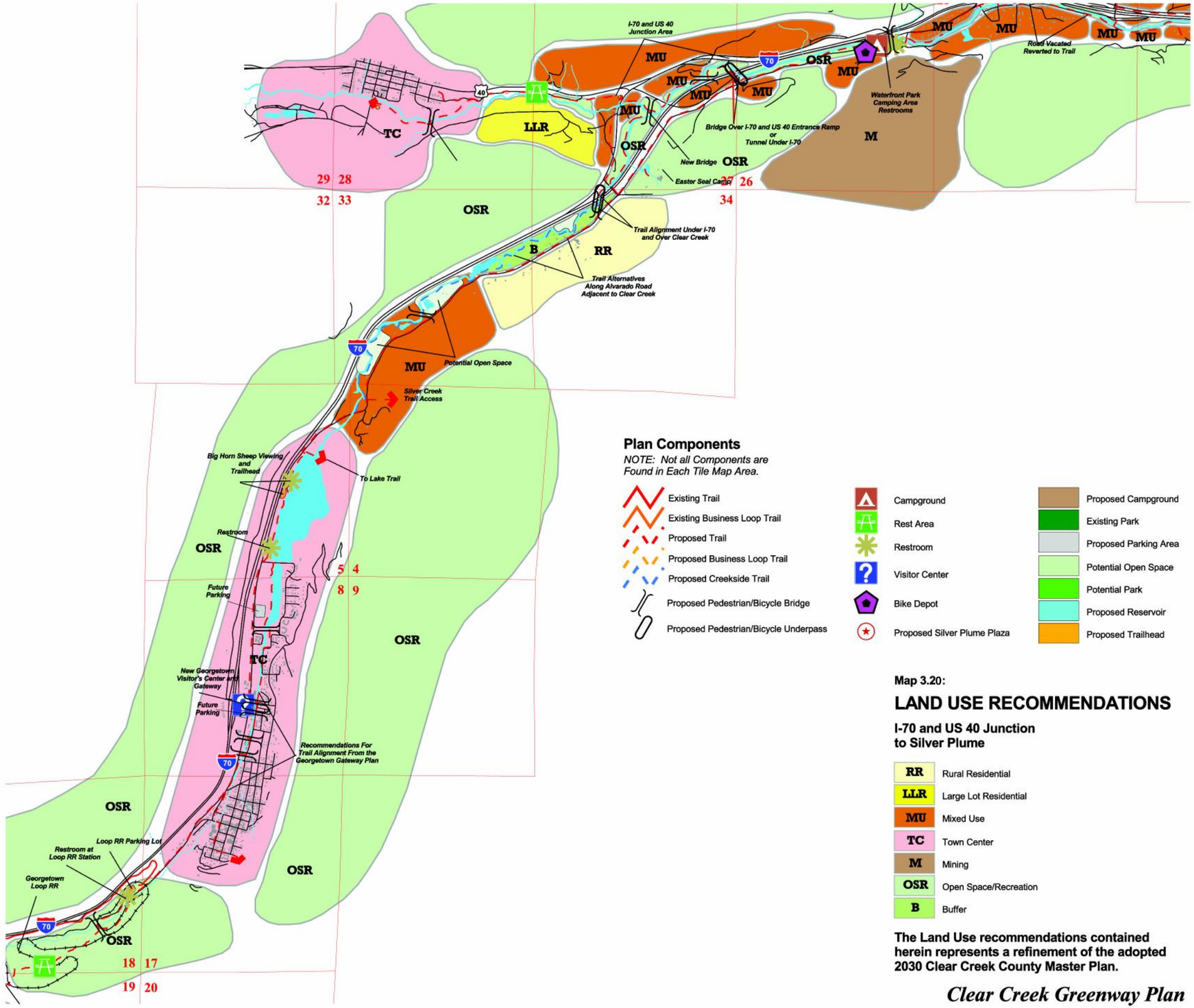
tk associates, inc. & MDG INC
Community Planning Services, LLC

NORTH

SCALE: Each Section Line Represents and Area of Approximately One Square Mile

Other Map Features

- Buildings
- 00 Section Lines



Map 3.20:

LAND USE RECOMMENDATIONS

I-70 and US 40 Junction to Silver Plume

RR	Rural Residential
LLR	Large Lot Residential
MU	Mixed Use
TC	Town Center
M	Mining
OSR	Open Space/Recreation
B	Buffer

The Land Use recommendations contained herein represents a refinement of the adopted 2030 Clear Creek County Master Plan.

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Community Planning Services, LLC

NORTH

SCALE: Each Section Line Represents and Area of Approximately One Square Mile

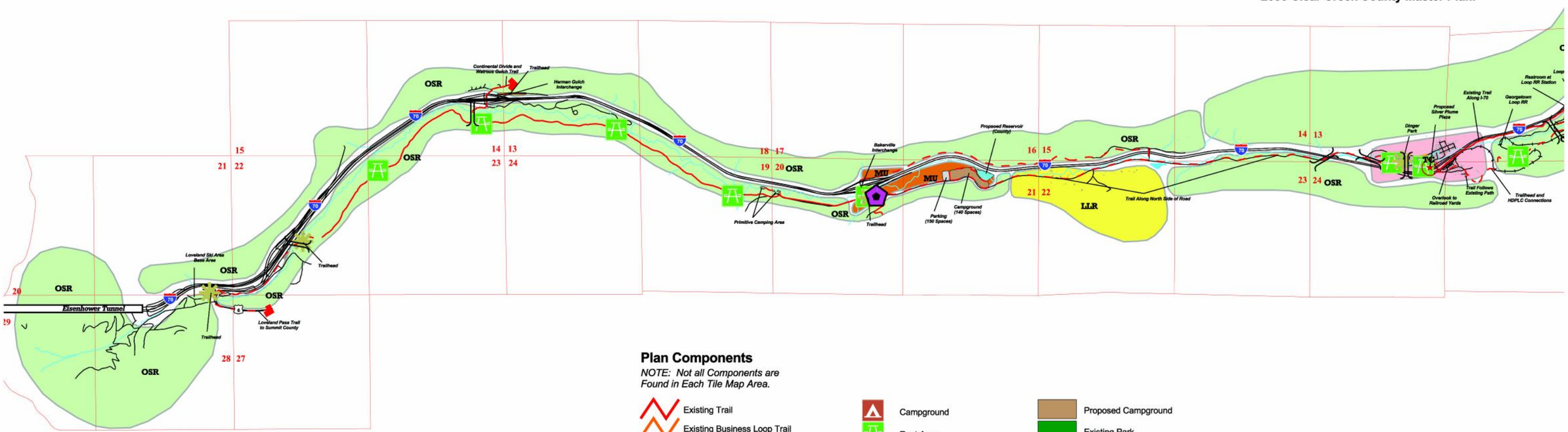
Map 3.21:

LAND USE RECOMMENDATIONS

Silver Plume to Loveland Ski Area

RR	Rural Residential
LLR	Large Lot Residential
MU	Mixed Use
TC	Town Center
M	Mining
OSR	Open Space/Recreation
B	Buffer

The Land Use recommendations contained herein represents a refinement of the adopted 2030 Clear Creek County Master Plan.



Plan Components

NOTE: Not all Components are Found in Each Tile Map Area.

- Existing Trail
- Existing Business Loop Trail
- Proposed Trail
- Proposed Business Loop Trail
- Proposed Creekside Trail
- Proposed Pedestrian/Bicycle Bridge
- Proposed Pedestrian/Bicycle Underpass
- Campground
- Rest Area
- Restroom
- Visitor Center
- Bike Depot
- Proposed Silver Plume Plaza
- Proposed Campground
- Existing Park
- Proposed Parking Area
- Potential Open Space
- Potential Park
- Proposed Reservoir
- Proposed Trailhead

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Community Planning Services, LLC

NORTH

SCALE: Each Section Line Represents and Area of Approximately One Square Mile

Other Map Features

- Buildings
- 00 Section Lines

Chapter 4. Design Guidelines

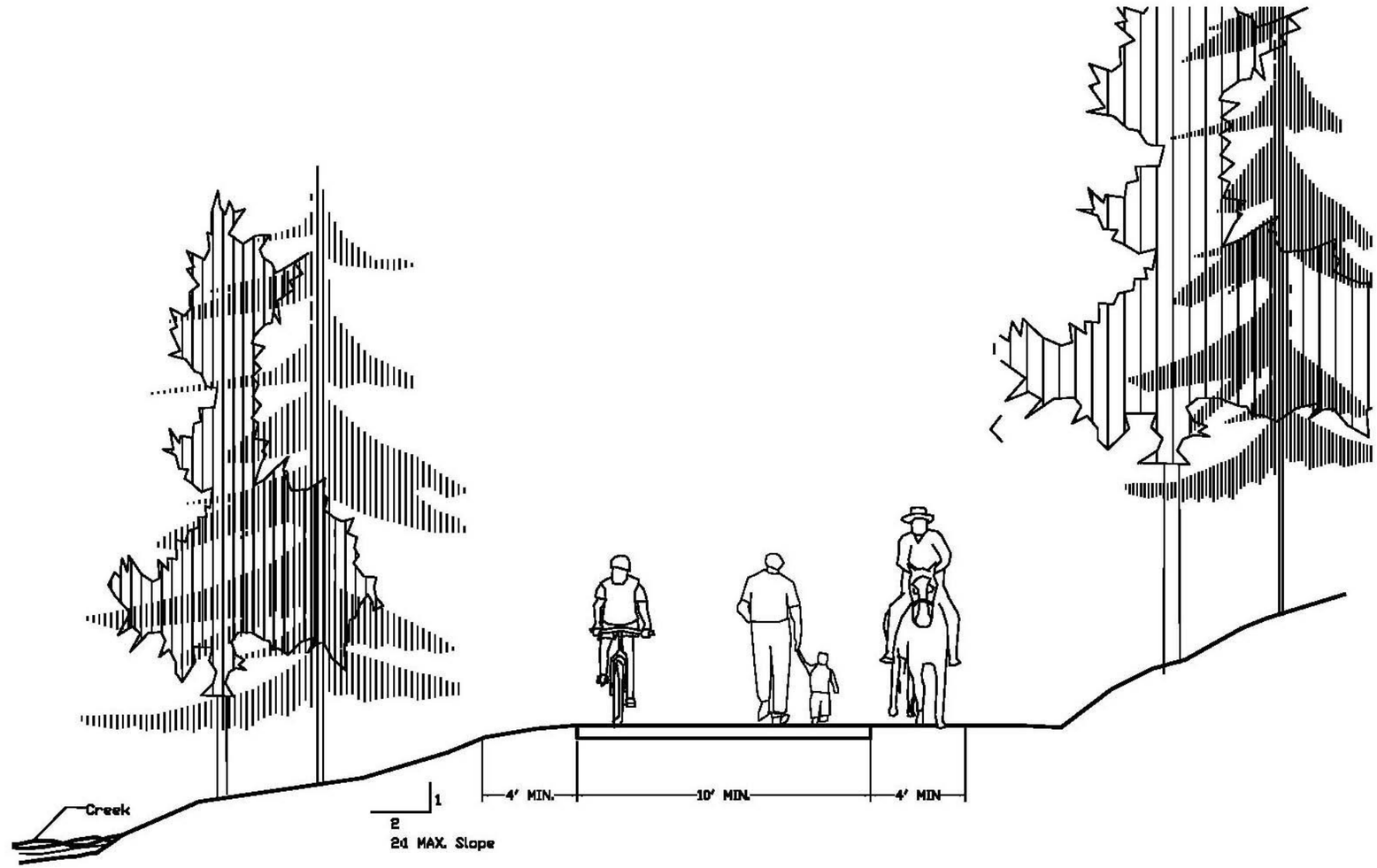
A. TRAIL CORRIDOR

The Clear Creek Greenway trail corridor varies considerably in size, shape and appearance, from one end of the county to the other. Therefore, design of each segment should take full advantage of the opportunities present in eachthat segment. For example, when the trail is traversing a park, the design should include a meandering trail with abundant trail stops, picnic areas, parking for autos and other elements. A corridor along the edge of a wetland might include ecological points of interest, boardwalk and wildlife overlooks.

The following issues need to be considered during design:
- vertical and horizontal trail alignment
- sight distance
- shoulders
- vertical and horizontal clearance
- edge treatment
- joints
- accessible grades
- impact to sensitive plant and wildlife species

These additional design guidelines for trail alignment will improve the functional and aesthetic components of a trail segment:

- Use slow, gentle curves where possible - straight line trails will be the only available alignment in some places
- Avoid large trees and their root zone. This will avoid damage to trees and the potential for future damage to trail.
- Avoid "muck" areas or other unsuitable soil conditions, which could add to the cost of building the trail
- Attempt to access all natural and man-made amenities without destroying the commuting potential of the trail. Too much "creativity" will render the trail useless for commuters
- Avoid long steep inclines, which are undesirable to users, particularly the physically challenged; traverse the terrain for ease in ascending and descending
- Create access points from local streets and neighborhoods
- Attempt to create the proper balance of functional and aesthetic elements in trail development
- Preserve or provide ecological buffer zones between the trail and natural resources
- Design the trail corridor in such a way that storm run-off is concentrated, retained and released in a manner that reduces flooding, erosion and contamination of the river



Section

Part of an effective and comprehensive bicycle transportation system should include a network of on-street facilities, which may include the following; bike routes, areas that share the road, bike lanes and solid bike lanes all of which use a variety of street situations that exist.

1. Bike Lanes

A bike lane defines a portion of the roadway for the exclusive or preferential use by bicyclists. Regulatory bike lane signs inform motorists and bicyclists of this condition and are supplemented with pavement markings, including striping. Refer to the Manual on Uniform Traffic Control Devices (MUTCD) and the American Association of State Highways and Transportation Officials (AASHTO) for additional information on bike lanes.

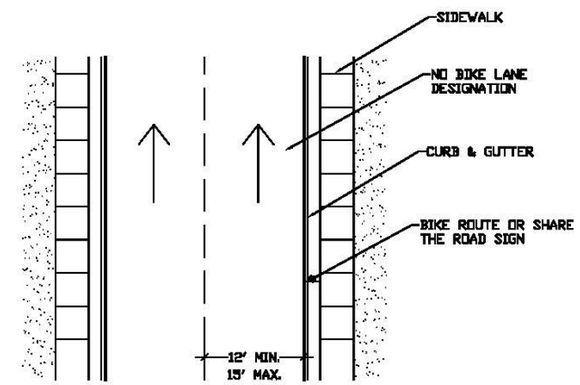
Bike lane standards for on-street lane widths vary according to particular situations. The MUTCD and the AASHTO includes:
Minimum lane width for on-street bicycle use is four feet, not including the gutter pan.
When on-street car parking is allowed, bike lanes should be five feet wide. Refer to part 9C of the MUTCD and AASHTO for additional bike lane signage, pavement markings and layout information.
Where motor vehicle traffic is heavy (especially large vehicle traffic), or speeds are in excess of 35 mph, or there is a high turnover rate for on-street parking, an additional width of 1 foot should be added to the bicycle lane. Refer to the Federal Highway Administration report Selecting Roadway Treatments to Accommodate Bicycles, 1992 (on page 32 of this document) for additional information on roadway selection criteria.

2. Bike Routes, Including Shared Use Lanes

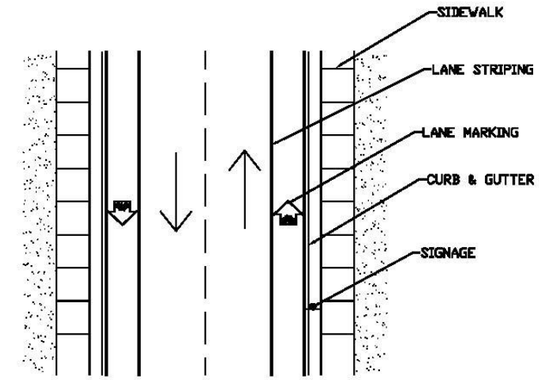
A bike route is officially designated with signs and route markers and appropriately marked on bike maps as a segment of a network of "bikeways," but is open to motorized vehicle travel and has no designated bike lane. The AASHTO Guide for the Development of Bicycle Facilities offers the following statement: "the assumption that roadways and highways will be used by non-motorized vehicles, to varying degrees, except where such use is specifically prohibited; therefore, new roads and improvements to existing roads shold be constructed under the assumption that they will be used by bicyclists".

The provision of "Share The Road" sign assemblies (W11-1 signs & W16-1 plaques) can be useful to alert motorists to the likely and legitimate presence of bicyclists and to encourage cooperation between motorists and bicyclists.

Shared use lane marking arrows can be useful to define the likely travel corridor of bicyclists within the shared use lane. These arrows can reinforce the bikeway designation of the street and (to a lesser extent) may reduce "Wrong Way" bicycling. One study has shown that this treatment can also reduce sidewalk bicycling, thereby reducing conflicts with pedestrians.



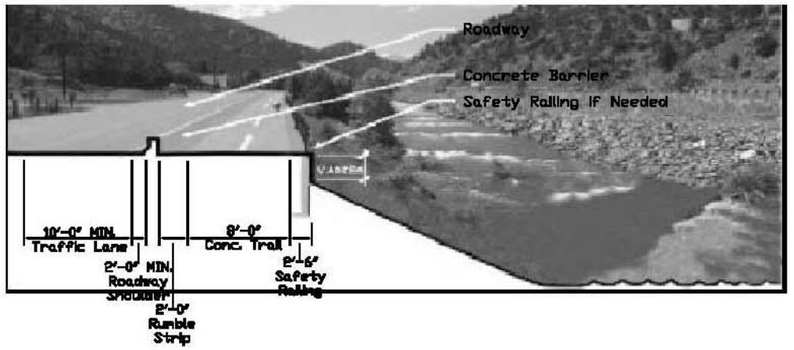
On-Street Bike Route/ Share the Road



On-Street Bike Lane

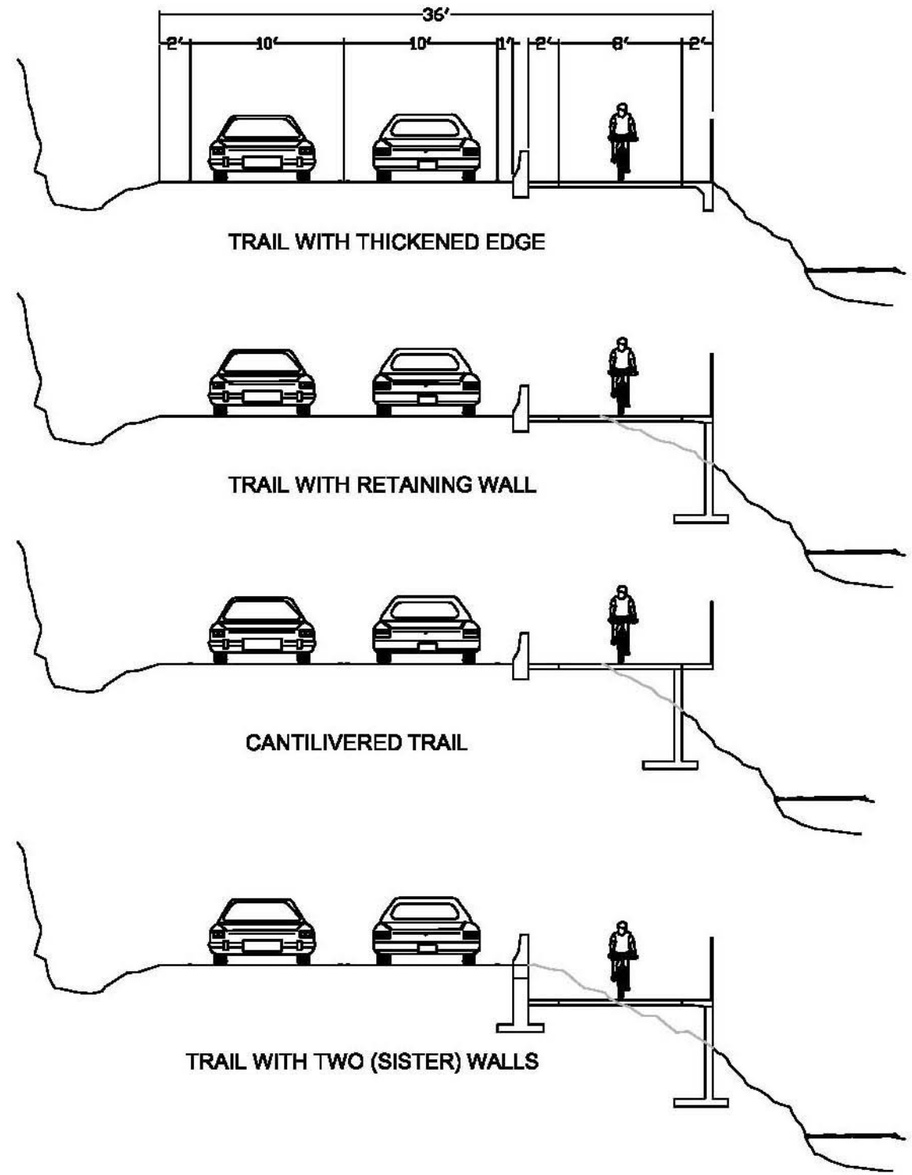
C. ROADSIDE TRAIL OPTIONS

Where the creek comes into close proximity with a roadway such as Stanley Road, little room is available for the greenway trail. Whenever this scenario occurs, either the roadway width must be reduced to accommodate the trail, or a bench for the trail must be created on the creekband using a structural retaining wall system. Safety for the motorist and greenway user is of primary concern. Therefore, an approved traffic barrier between the trail and roadway should be installed whenever the trail is within ten feet (10') of the roadway shoulder edge. Many existing scenarios can occur; therefore, a traffic engineer should be consulted prior to the placement of any barrier along a roadway.



Separated Non-motorized Trail Section

Several opportunities exist to create a bench for the trail, including the four options identified here. The correct trail option to be selected will depend on the roadway width, and the steepness, width and depth of the creek bank. If a minimum roadway width of 36' exists, no retaining walls will be required for the trail.



Trail Options Along Stanley Road Section

D. TRAIL UNDERPASSES

One of the primary reasons for creating multi-use trails is to separate bicyclists and pedestrians from potential hazards such as vehicles and trains. In some cases, a new bridge or tunnel is needed to achieve this goal. In other locations, retrofitting existing highway bridges and railroad trestles can help make the trail safe for users.

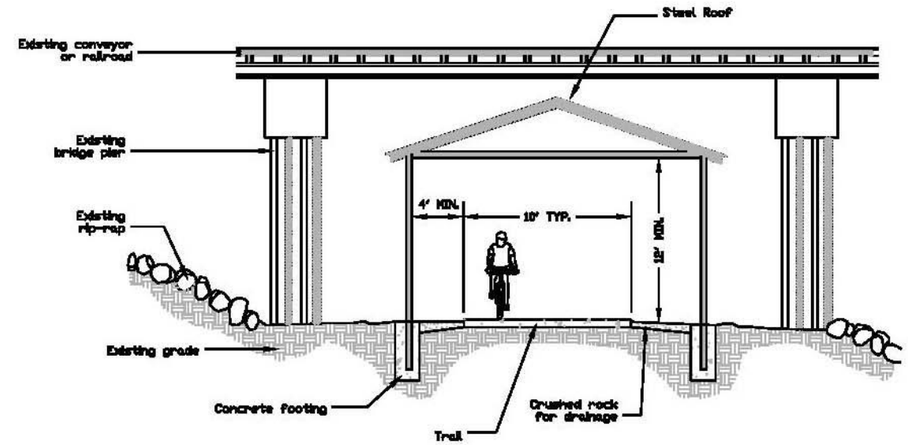
Where it is physically possible, automobile bridges spanning over Clear Creek should be retrofitted to accommodate trail passage beneath the bridge. Viaducts frequently have space available for a trail in the bay closest to the abutment. AASHTO requires a minimum of eight vertical feet between the trail surface and the bottom of the bridge for pedestrians, ten feet of vertical clearance is required if it is expected to provide access for maintenance and emergency vehicles. If equestrian use is expected, vertical clearance of 12 feet is desirable. If 12 feet of clearance is not possible, a sign should be posted warning equestrians of the low clearance and requiring the rider to dismount and proceed under the bridge.

It is also important to ramp the trail up to the level of the road to provide for both maintenance/emergency vehicle and local user access.

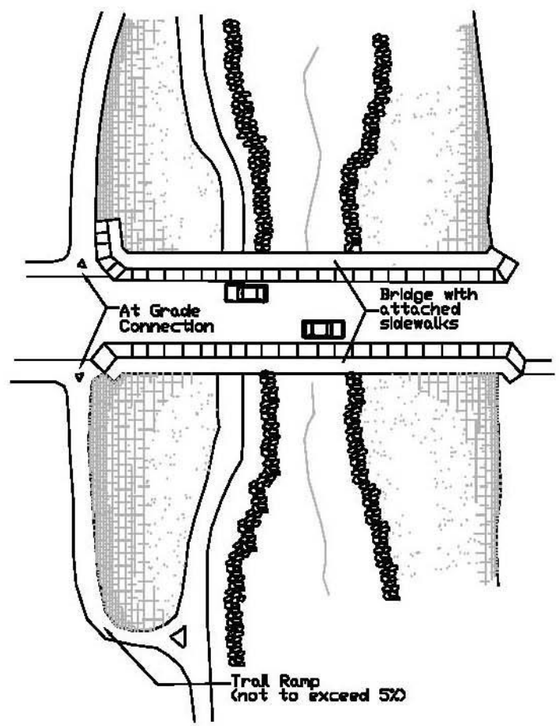
Design of trail underpasses should include the following elements:

- The underpass should be straight or have nothing more than a gentle curve
- Should have lighting on entrances and underneath bridge
- Trail users should have an unobstructed view of the underpass from at least 140' away
- Signage should be placed at least 100' beyond both ends of the underpass to warn users of the changing trail conditions
- Underpass may include structural walls on one or both sides of the trail
- Centerline stripe to keep users on their side of the trail
- Underpass may require safety railing

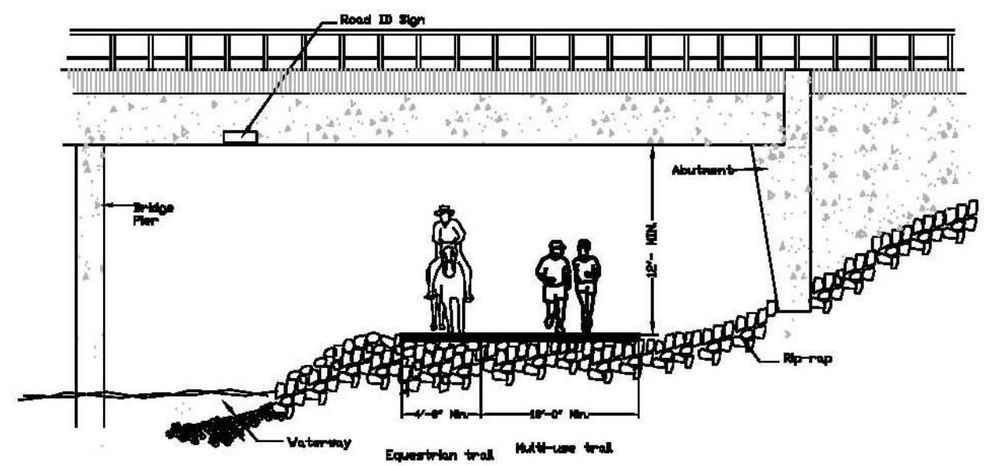
Railroad underpasses should include a metal roof structure that prevents objects from falling onto the trail surface or trail users.



Railroad Underpass Elevation



Bridge Underpass Plan



Roadway Bridge Underpass Elevation

E. NON-MOTORIZED BICYCLE AND PEDESTRIAN BRIDGES

Bicycle/Pedestrian Bridges should be used to cross natural or man-made drainages which have continual running water, chances of frequent flooding, and significant riparian or wildlife habitat value.

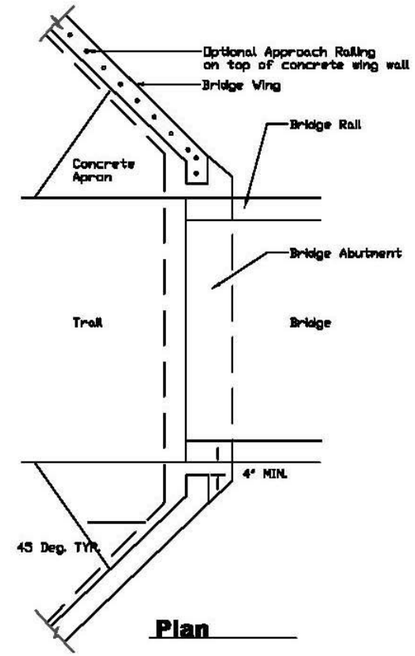
Standard attachments for bridges are as follows:

- Safety Rails
  - 4'-6" above deck surface
  - Maximum of 4" spacing between rails
- ADA Hand Rails
  - 3'-6" above deck surface per AASHTO
  - 1 1/4" diameter galvanized pipe
- Rub Rail
  - 3'-6" Smooth rub rail above deck surface per AASHTO
- Toe Plate
  - 1/4" x 6" steel toe plate mounted to the inside face of both trusses
  - Provide a 2" gap between bottom of plate and top of deck surface.

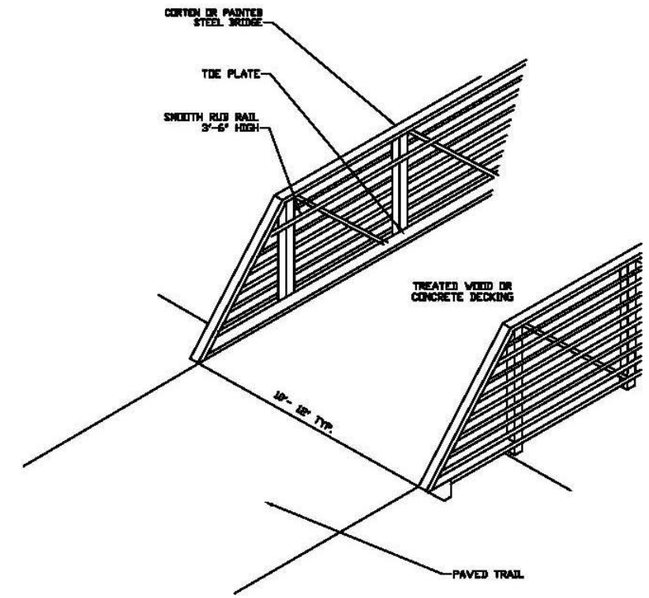
There are numerous options when choosing a bridge. The bridge can be prefabricated, custom or a retrofit to an existing structure such as a roadway bridge or railroad tressel. Prefabricated painted or self-weathering steel are the most common types of bicycle and pedestrian bridges. Self-weathering steel is a very low maintenance alternative, as it requires no painting maintenance. It is possible to customize a prefabricated bridge by changing the railing design and adding architectural elements at the approaches. This can often help tie the architectural style of the bridge into its surroundings.

Decking on the bridge can also vary. Reinforced concrete decking is durable, making it virtually maintenance free as well as providing a smooth surface for multifaceted users. Treated wood or recycled plastic decking can add a more rustic appeal to the bridge, but also adds maintenance and safety issues. Replacement of worn, warped and splintered wood becomes necessary after a few years to provide a safe surface for its users and recycled plastic decking may be slippery when wet or covered with frost, ice or snow.

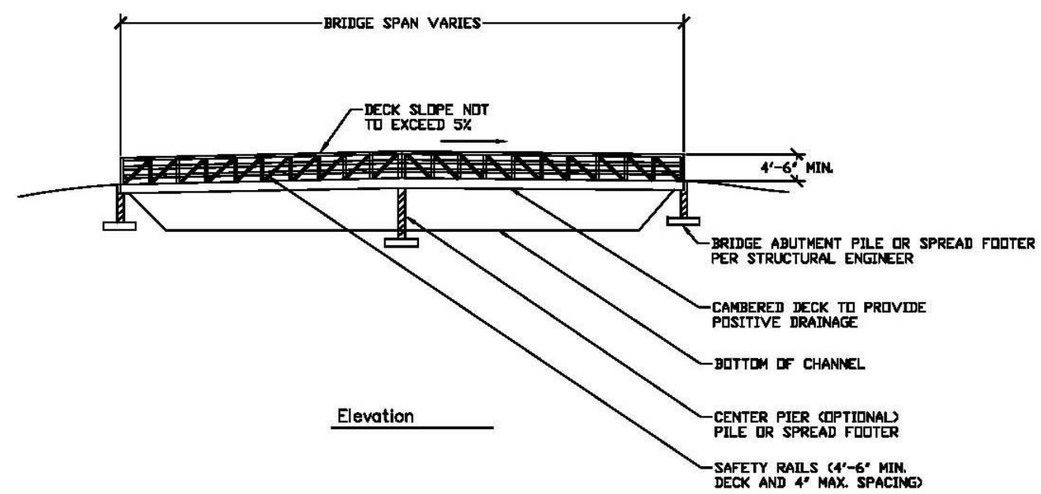
It is also important to consider approach railings for the bridges in areas where the abutment wing walls drop-off more than 30 inches or the side slopes are 3:1 or greater or other unsafe conditions exist.



Plan



Isometric



Elevation

Elevation

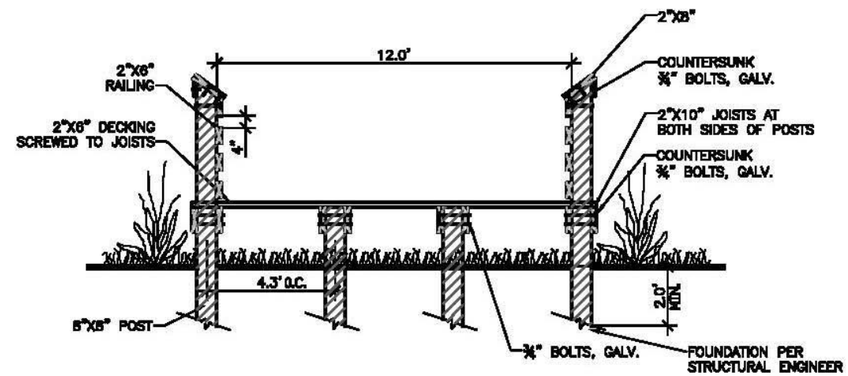
F. BOARDWALKS

Areas containing wetlands may require special considerations for installation of trails. The following actions may be required when considering construction activities in or near wetlands, bogs, marshes or other sensitive habitats.

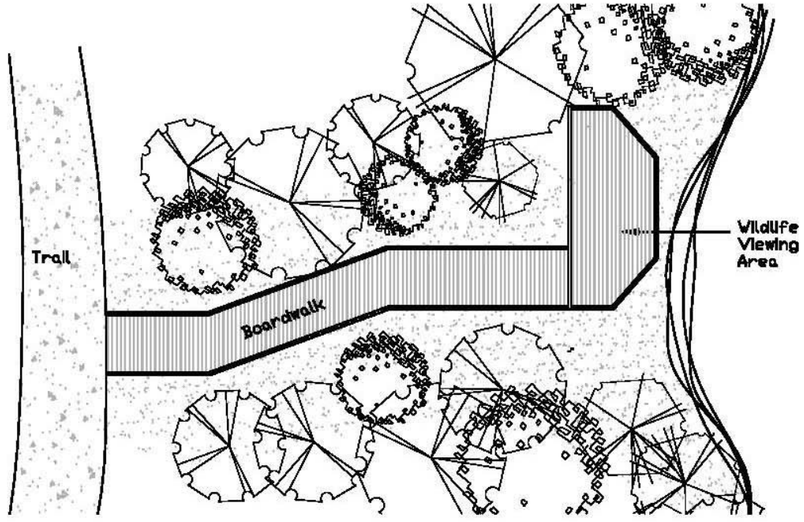
- A permit may be required from the Corps of Engineers, U.S. Army and/or local agencies for any development that includes filling in wetlands. Boardwalks or floating walks are generally allowed.
- Verify and understand local, state and federal regulations for construction in wetlands.
- Minimize construction and trail user access and disruption to sensitive environmental areas.
- Utilize bridge design guidelines for handrails, widths, height, structure, etc.

Boardwalks may be the only option for continuing the non-motorized greenway through wetlands or to provide access to wetland/wildlife areas.

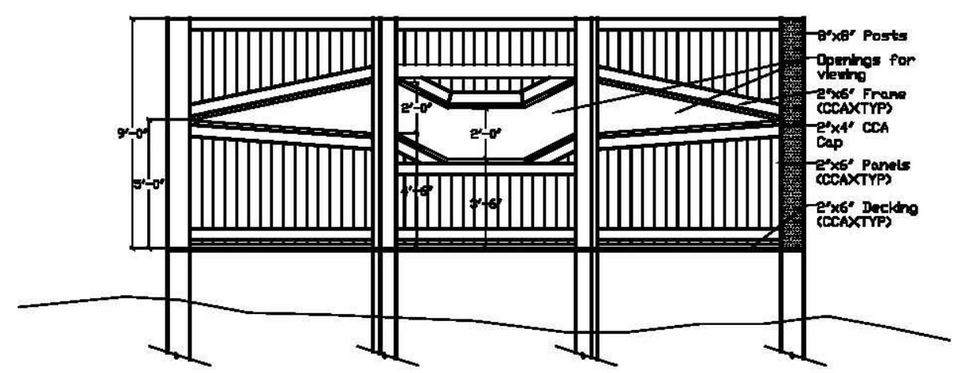
When used as part of the continuous non-motorized trail, the boardwalk shall be the width of the main trail (10 foot minimum) and designed to accommodate small maintenance vehicles such as golf carts.
Boardwalks being used to access wildlife viewing areas should be 6'-8' in width.



Boardwalk Used as an Extension of the Greenway Trail Section



Wildlife Observation Location Plan



Wildlife Observation Platform Section

G. TRAIL SURFACE OPTIONS

The type and condition of surface material must be suitable for the intended use(s), level of long-term maintenance and budget. Any pavement surface should be free of:

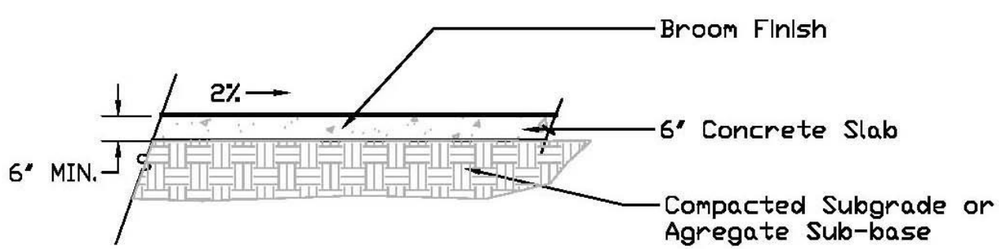
- Irregularities, such as gaps between slabs
- Bumps and holes
- Drop-offs at pavement edge
- Material overlaps causing uneven surfaces

Surface material selection for trails will vary depending on use considerations for a given segment. Common choices are:

- Crushed stone aggregates
- recycled asphalt or concrete
- Asphalt

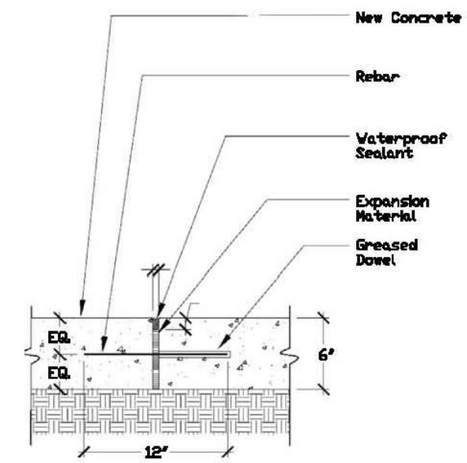
Selection of surface material will be determined by:

- Geographic location (material suitability to climatic conditions)
- Cost of material
- Anticipated primary user groups
- Anticipated vehicular traffic (i.e., emergency, maintenance, etc.)
- Availability of material / access to site

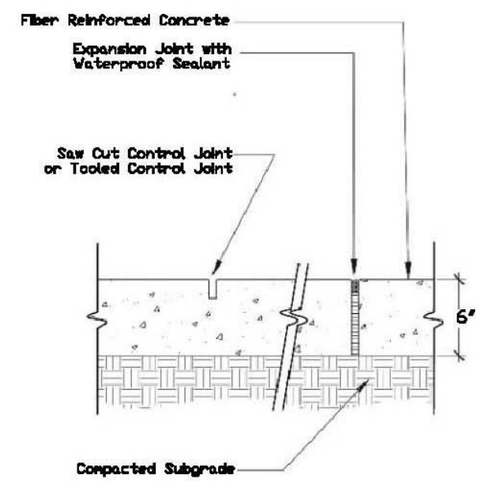


Typical Concrete Section

TYPICAL CONCRETE SECTIONS



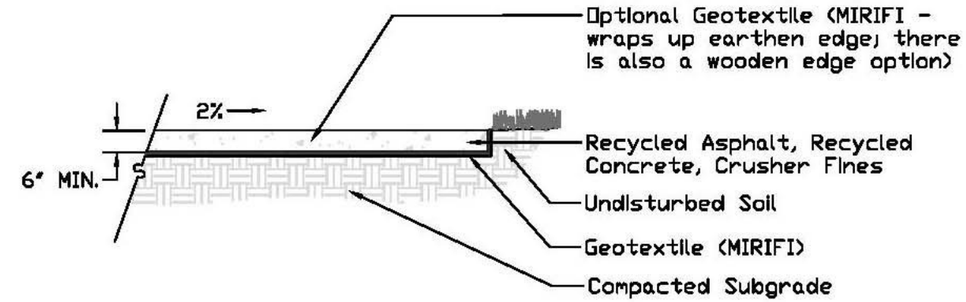
Concrete Cold Joint Section



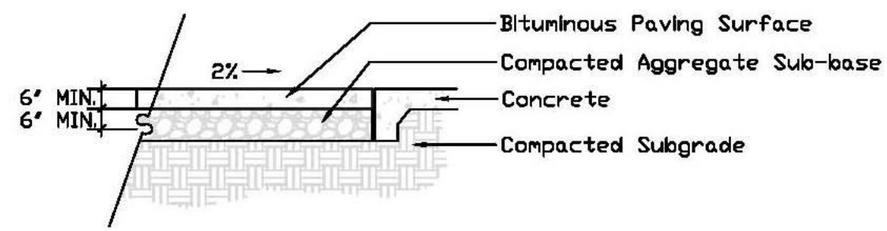
Concrete Expansion/Control Joints Section

TRAIL SURFACE OPTIONS (con't)

SURFACING	PROS	CONS
Asphalt	-Good for all non- motorized trail uses -Low visual impact -Low cost installation -Short term, low cost maintenance -Water repellent surface	-Edge containment may be required -Softens in warm weather -Good sub-base required -Soluble with petroleum solvents -Freeze damage possible -Significant long-term maintenance -Not good for areas prone to flooding -May be more expensive than concrete over the life of the trail due to replacement
Concrete	-Good for all non-motorized trail use -More durable than other options -More design choices, than asphalt including color -Low short term cost and long term maintenance -Suitable for poor sub-soils	-Joints required -Non-resilient surface -Can crack -Expensive to remove and replace -Higher Cost over other options
Aggregates & Recycled Materials	-Low cost installation -Range of colors -Not a good pavement for recreation activities that use small wheels, such as rollerblades, skates	-Need to replenish every few years -Weed potential -Edging may be required



Typical Soft Surface Trail Section



Typical Bituminous Paving Section

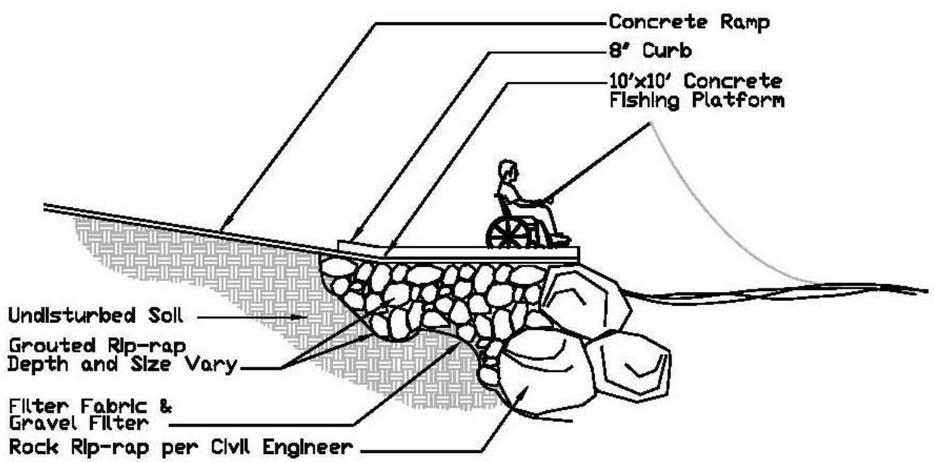
H. FISHING ACCESS

Clear Creek has long been recognized as a favorite destination for fishing. However, some popular fishing holes on the creek are difficult to access and are not accessible to persons with various disabilities.

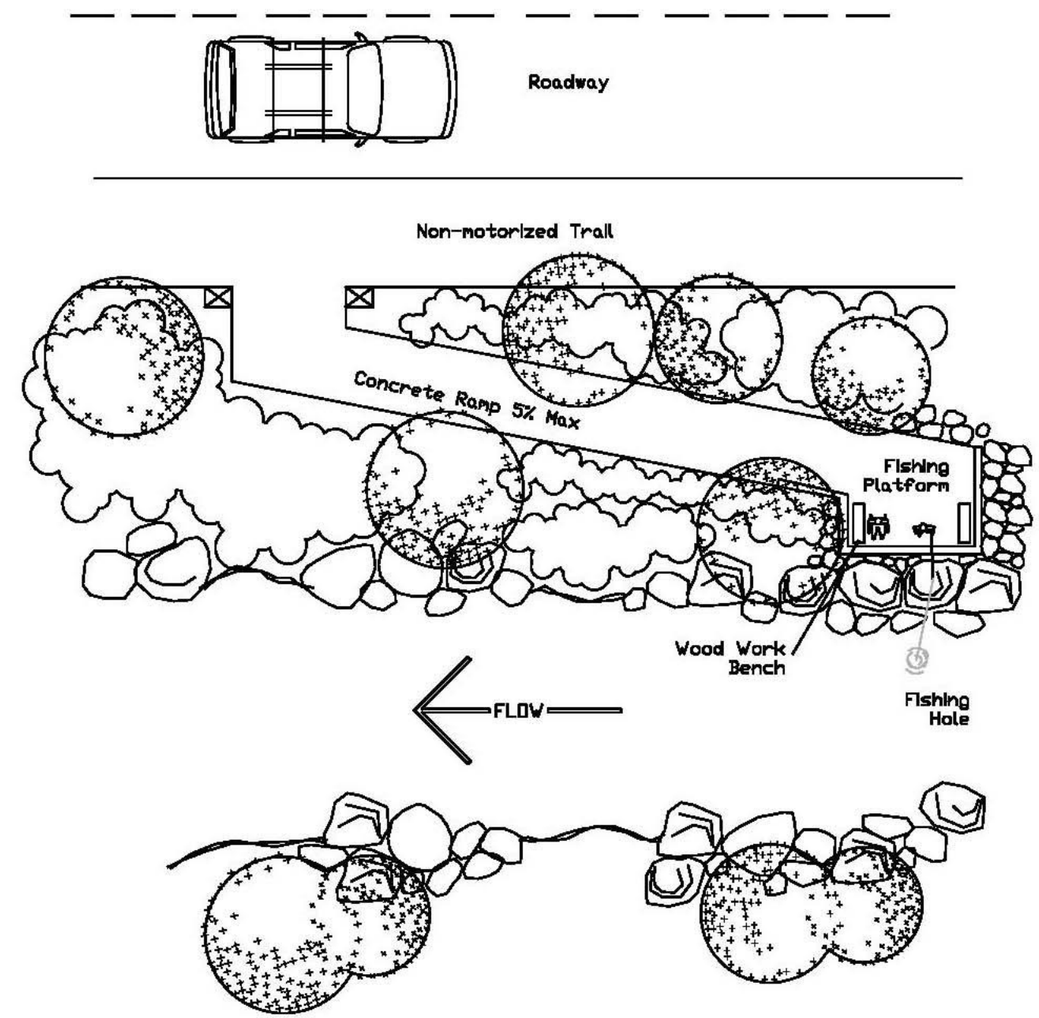
Whenever existing site conditions allow, the Clear Creek Greenway should allow for accessible fishing.

Accessible ramps constructed of reinforced concrete will provide an accessible path to fishing holes and will be capable of withstanding flood events.

A five percent (5%) grade should not be exceeded for the access ramp since handrailing would be required per the ADA guidelines for grades exceeding 5%. Railings are not advised due to the possibility of flood born debris becoming entrapped in the railings, resulting in damage to the railing and ramp system.



Fishing Platform
Section



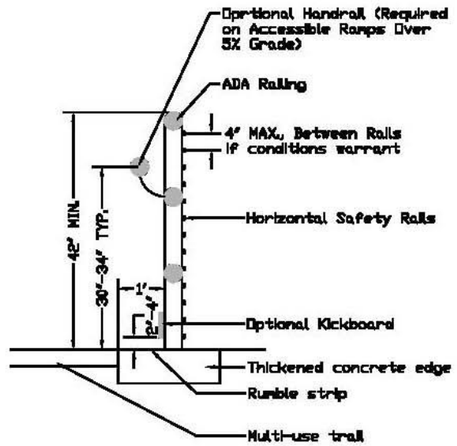
Fishing Platform
Plan

I. SAFETY RAILINGS AND ACCESSIBLE RAMPS

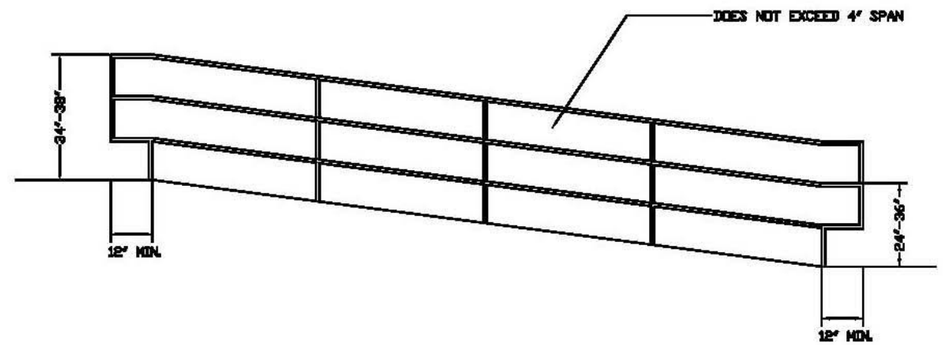
Safety railings are to be used for the safety of trail users where there is more than a 3:1 side slope or a 30 inch vertical drop-off from the trail surface.

Handrails should be located adjacent to portions of the trail that consist of steep grades to provide accessibility to physically challenged users. ADA Guidelines must be followed to provide safe conditions for all users.

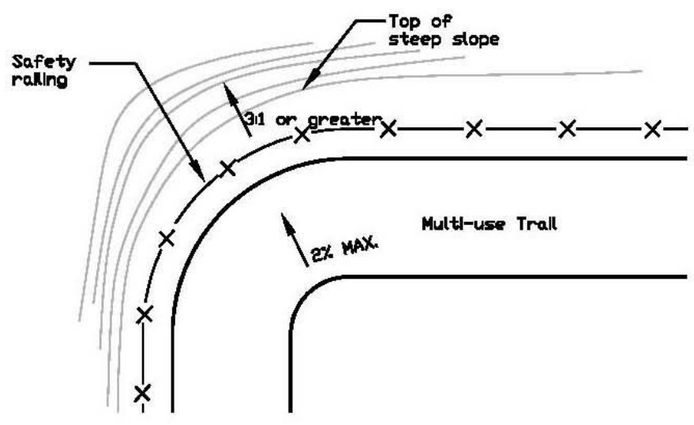
The Americans with Disabilities Act (ADA) recommends that a maximum grade of 5 % be maintained on all ramps for accessibility. However, a maximum grade of 8.33" can be used over a 30 foot distance when combined with a 5 foot landing that has a grade of 2%. When the grade exceeds 5 %, handrailing must be provided. (see Safety Railing Section). The cross slope cannot exceed 2 %.



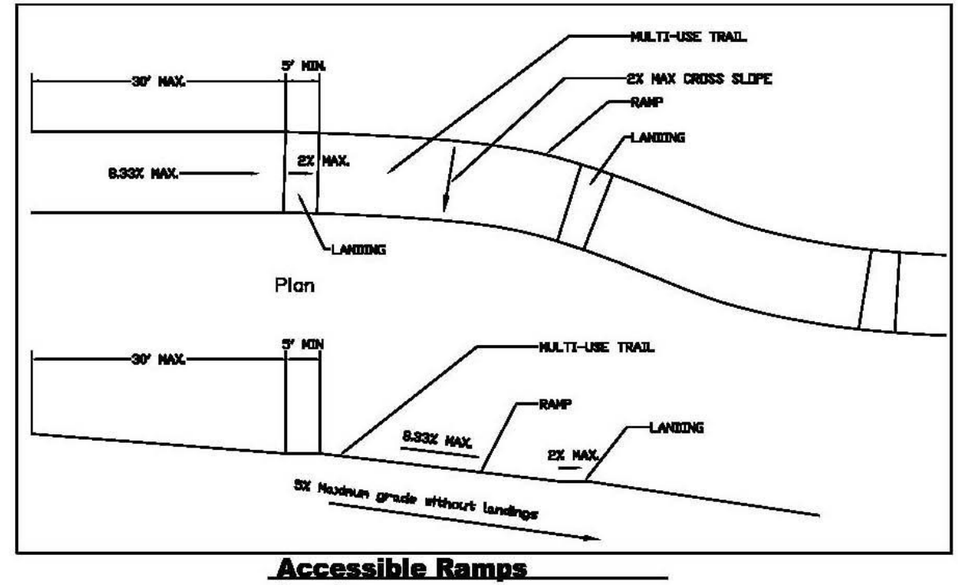
ADA Safety Railing
Section



Safety Rail
Elevation



Safety Rail on Curves
Plan



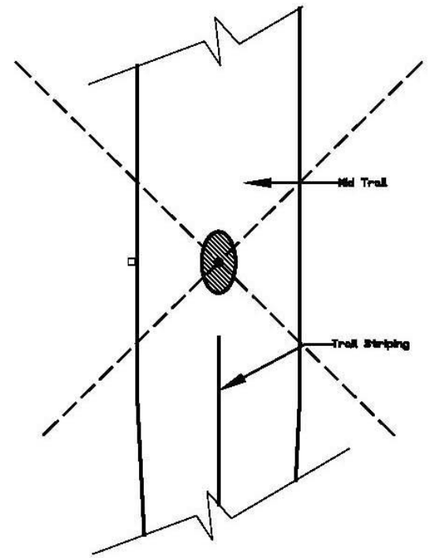
Accessible Ramps
Section

J. RESTRICTIVE ACCESS BOLLARDS

Restrictive access bollards can be used to prohibit unauthorized vehicular access into the Greenway Corridor.

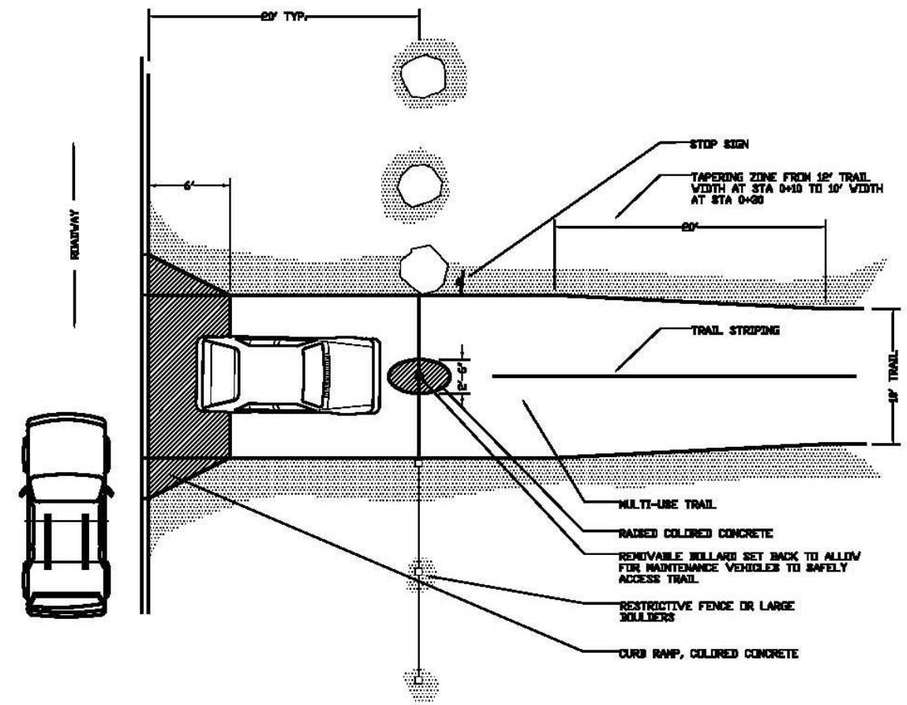
If a bollard is to be used, it should be removable for maintenance and emergency vehicle access. Installing the bollard in a metal sheath with a latch and lock anchored in a concrete foundation will allow for easy removal for authorized vehicles. The height of the bollard should be a minimum of 3'-6" above the surface of the concrete and include reflective panels to aid in visibility to the trail users. Whenever possible, the restrictive access bollard should be located approximately 20 feet back from the edge of the road to allow maintenance and emergency vehicles to pull out of the traffic flow while removing/replacing the bollard.

Restrictive Access Bollards should not be used at the entrances to bicycle and pedestrian bridges or where continues flow of travel is expected such as mid-trail.

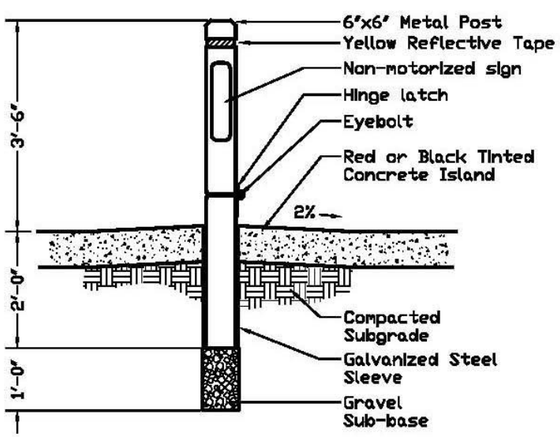


Mid Trail Restrictive Access Bollards are hazardous to greenway trail users.

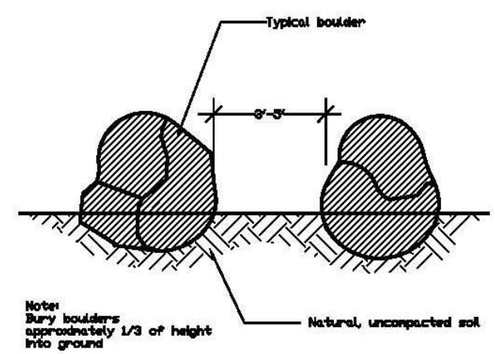
Mid-Trail Restrictive Access Bollard Plan



Restrictive Access Bollard Plan



Restrictive Access Bollard Section



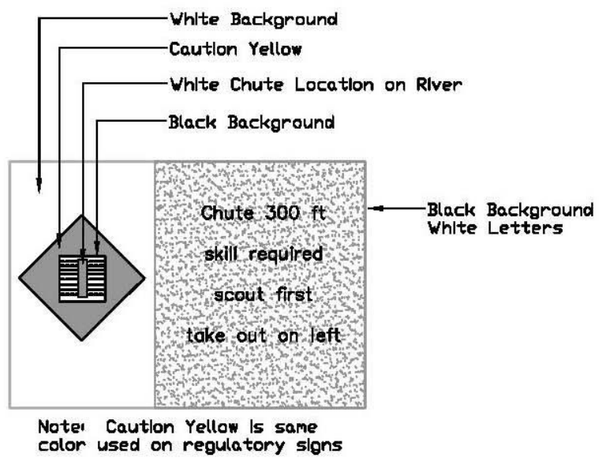
Restrictive Access Boulder Barricade Plan

K. BOAT CHUTES AND PORTAGES

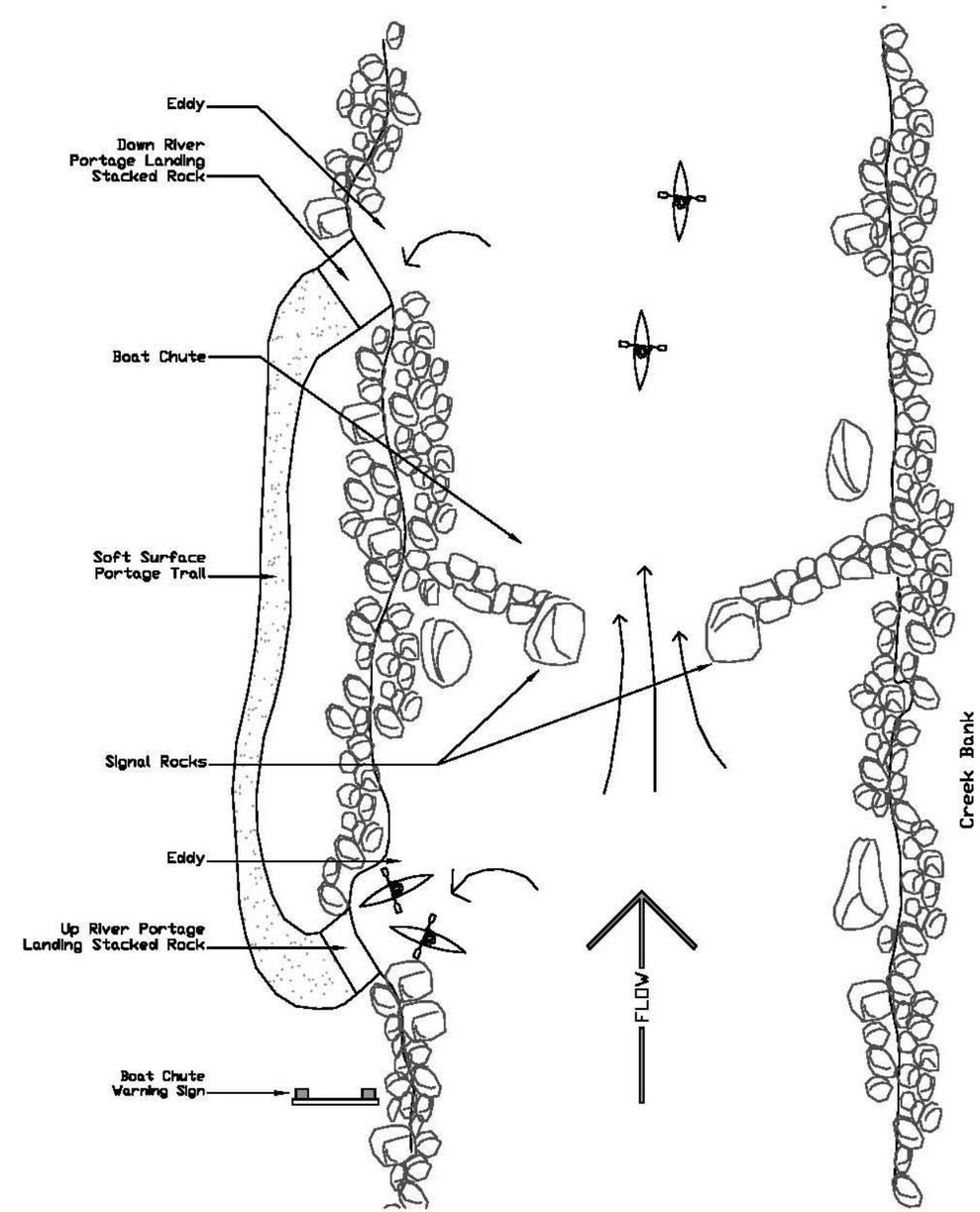
Boat chutes are designed to allow a swifter current through the channel in a selected area, resulting in a more challenging boating experience while reducing the chances of boats being turned over by the rolling action of the water. Prominent signal rocks are often used to locate the entrance to the boat chute.

For safety reasons, portages should allow egress around all dams, boat chutes and utility crossings. Landings of stacked stones to allow for river elevation fluctuations, should be set back and angled from the main current, creating eddies for safer boat put-in and take out. Portage trails should also afford a good view of the boat chutes so that boaters can preview the boat chute feature.

A boat chute warning sign should be prominently placed far enough upstream of any portage trail and/or boat landing to provide adequate warning. The sign should indicate the distance to the chute, the side of the portage, and the location of the chute in relation to the river.



Drop Structure/Boat Chute Warning Sign

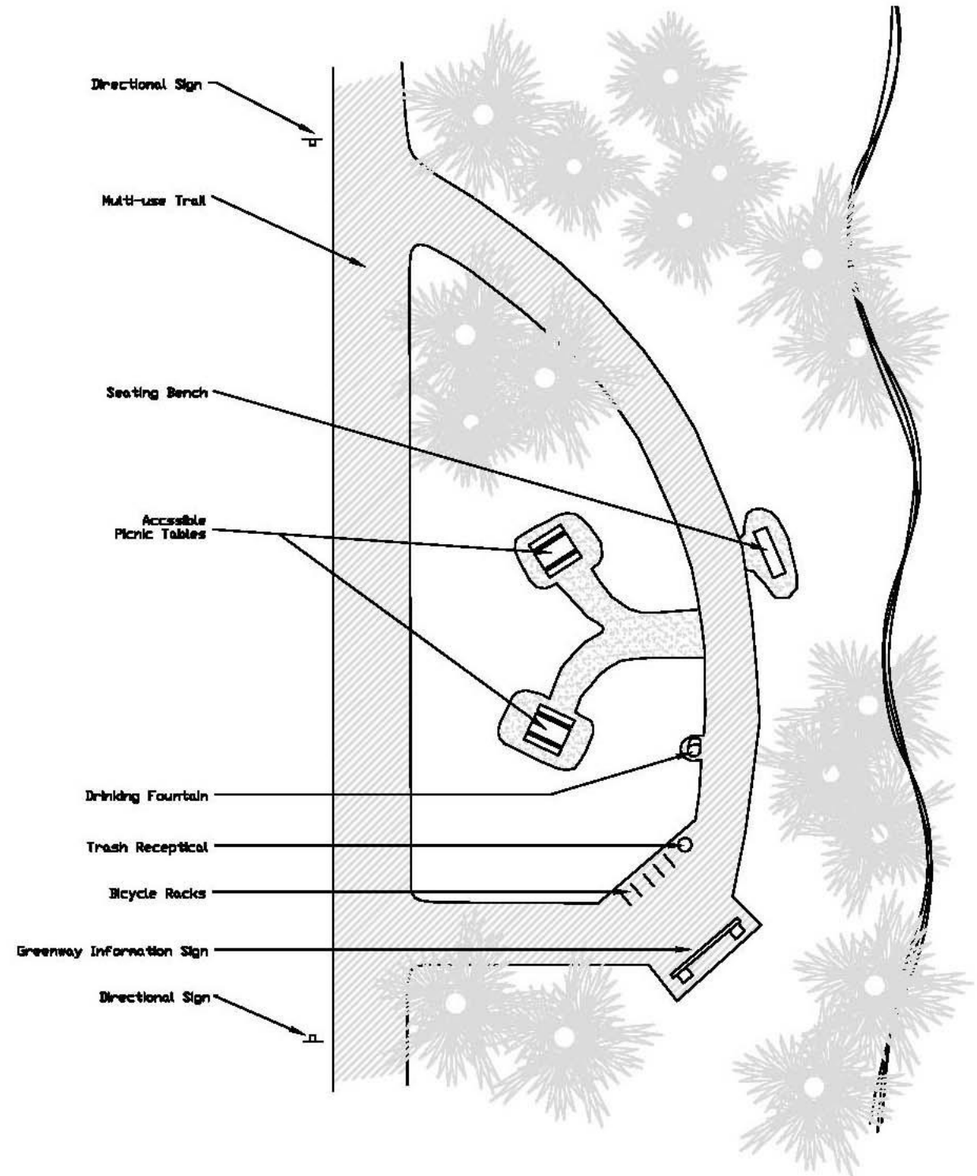


Boat Chutes and Portages
Plan

L. POCKET PARKS AND REST AREAS

Pocket Parks are small parks that are located adjacent to the trail and are typically accessible only from the trail. Pocket Parks are located at points along the greenway corridor that hove unique attributes such as views, a grove of shade trees, or an area next to water. Pocket Parks typically have the following amenities within them:

- Shade trees or a small shade shelter
- Picnic tables and seating benches
- Trail information/directional signs
- Education/interpretive signs
- Drinking water when possible
- Bicycle racks



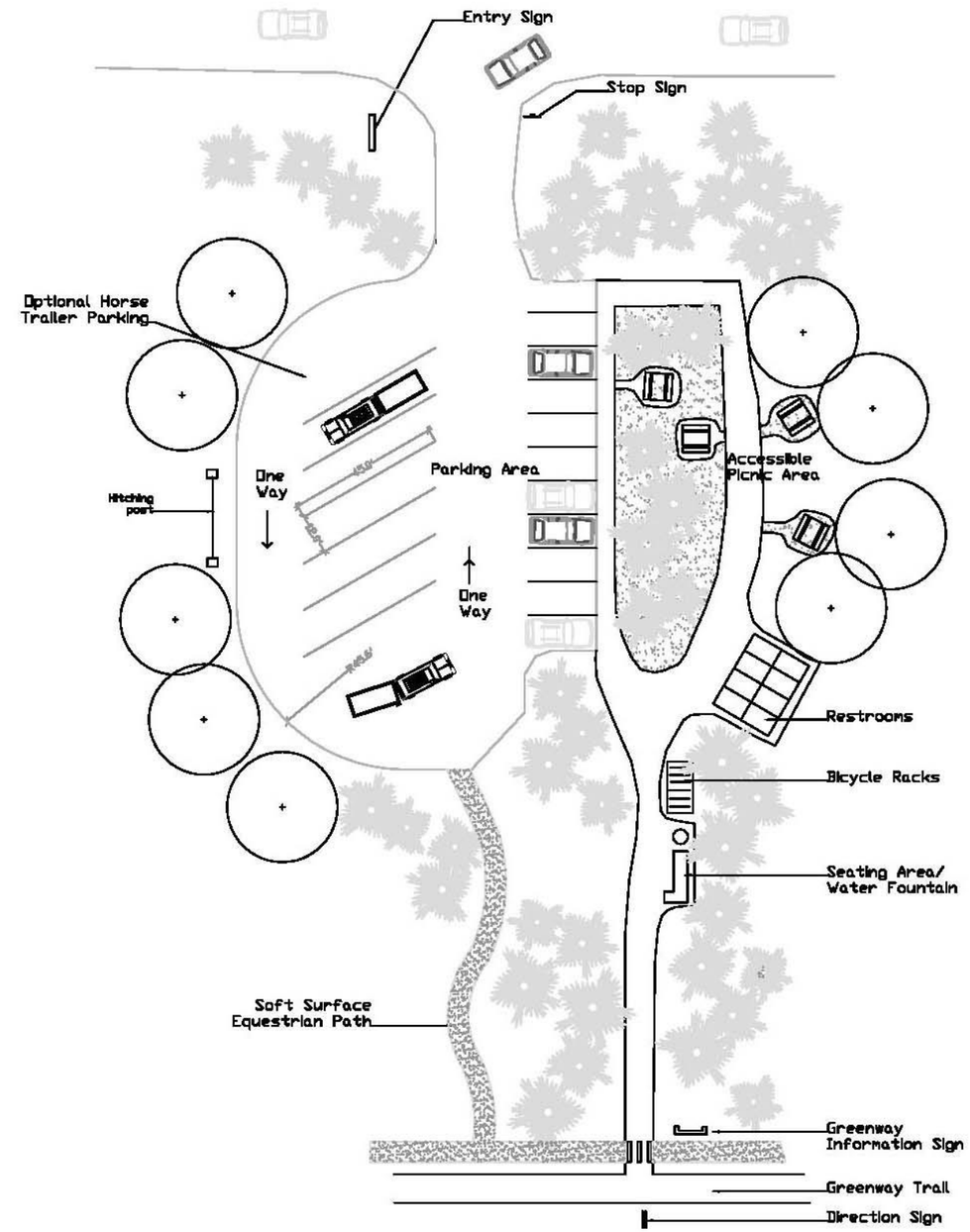
Plan

M. TRAILHEAD PARKING

Trailhead parking areas allow for safe and easy access to the Greenway Trail for automobiles. Trailhead parking can also be designed so that they function as a small pocket park that services the recreational trail user. Typical amenities in a trailhead parking area include:

- Restrooms (chemical or flush)
- Drinking Water
- Shade and shelter
- Landscaping (shade trees, sod, shrub beds, etc.)
- Bike racks
- Picnic tables and seat benches
- Parking for cars
- Optional Parking for trucks and horse trailers
- Parking lot entrance sign
- Greenway corridor information/directional sign
- Trail connection to the main recreational trail corridor

The location and parking capacity of trailhead parking areas depends on a trailheads' proximity to residential and commercial areas as well as the distance between each trailhead parking area. Trailheads located at the terminus of a recreational trail are desirable, additionally, many existing parks that have a trail running through them can be used as trailheads. All trailhead parking lots should be accessible per the Americans with Disabilities Act.



Trailhead Parking Plan

N. SIGNAGE

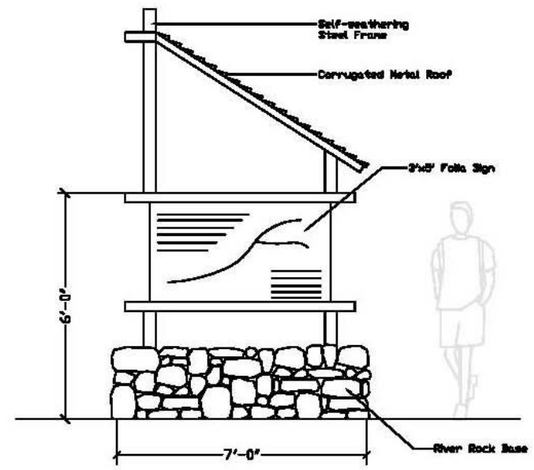
Different types of signs provide information that is important to safe and enjoyable use of the Clear Creek Greenway. Signs can be categorized into four major types including regulatory, directional, information and education/interpretive signs.

Regulatory Signs
Regulatory signs have information that assists the trail user of existing physical and potential conditions that may occur along the corridor. These conditions may include warnings about a blind corner, steep grades, crossings or potential slippery conditions. The type and size of regulatory sign is determined by the Manual on Uniform Traffic Control Devices (MUTCD) which is published by the U.S. Department of Transportation.

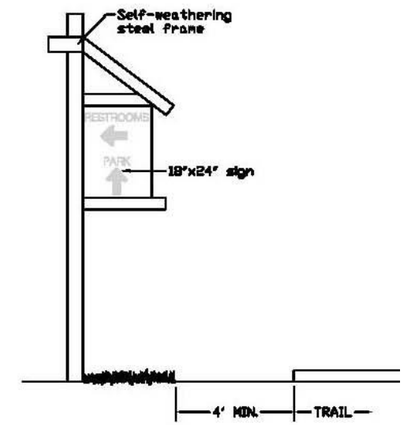
Information Kiosk Signs
Directional/Information signs generally have an illustrative map which contains information beneficial to the trail corridor user such as location of restrooms and water fountains, resting areas, trail access points and written information regarding rules and regulations. These signs are usually located at pocket parks, trailheads and other entrances to the Clear Creek Greenway.

Directional Signs
Directional signs are located along the greenway and provide directional information to the user. Directional signs are used at trail intersections and allows the trail user to know the destinations that are ahead for each alternative route.

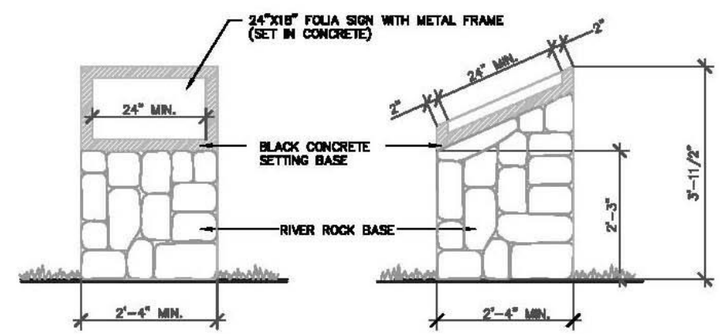
Education/Interpretive Signs
Education/Interpretive signs provide information about significant natural or cultural events and/or places along Clear Creek. Explaining the importance of riparian ecosystems or a specific species of plant or wildlife are typical ecological themes found on these signs. Telling a story about the people who once lived along the creek or have influenced the creek (both good and bad) are examples of information that will enhance the users overall experience and appreciation of Clear Creek greenway.



Information Kiosk Sign Elevation



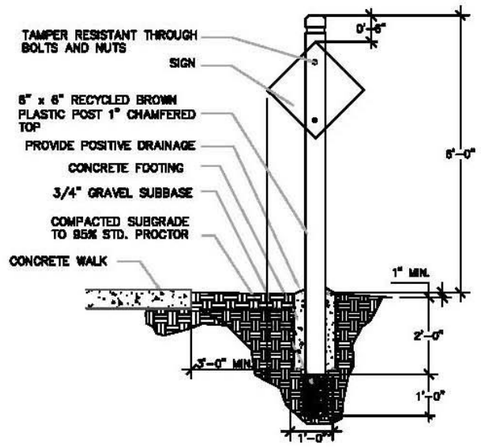
Standard Directional Sign



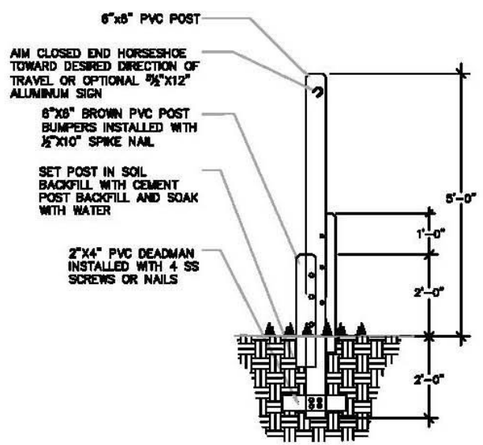
Education / Interpretive Sign Elevation

SIGNAGE (con't)

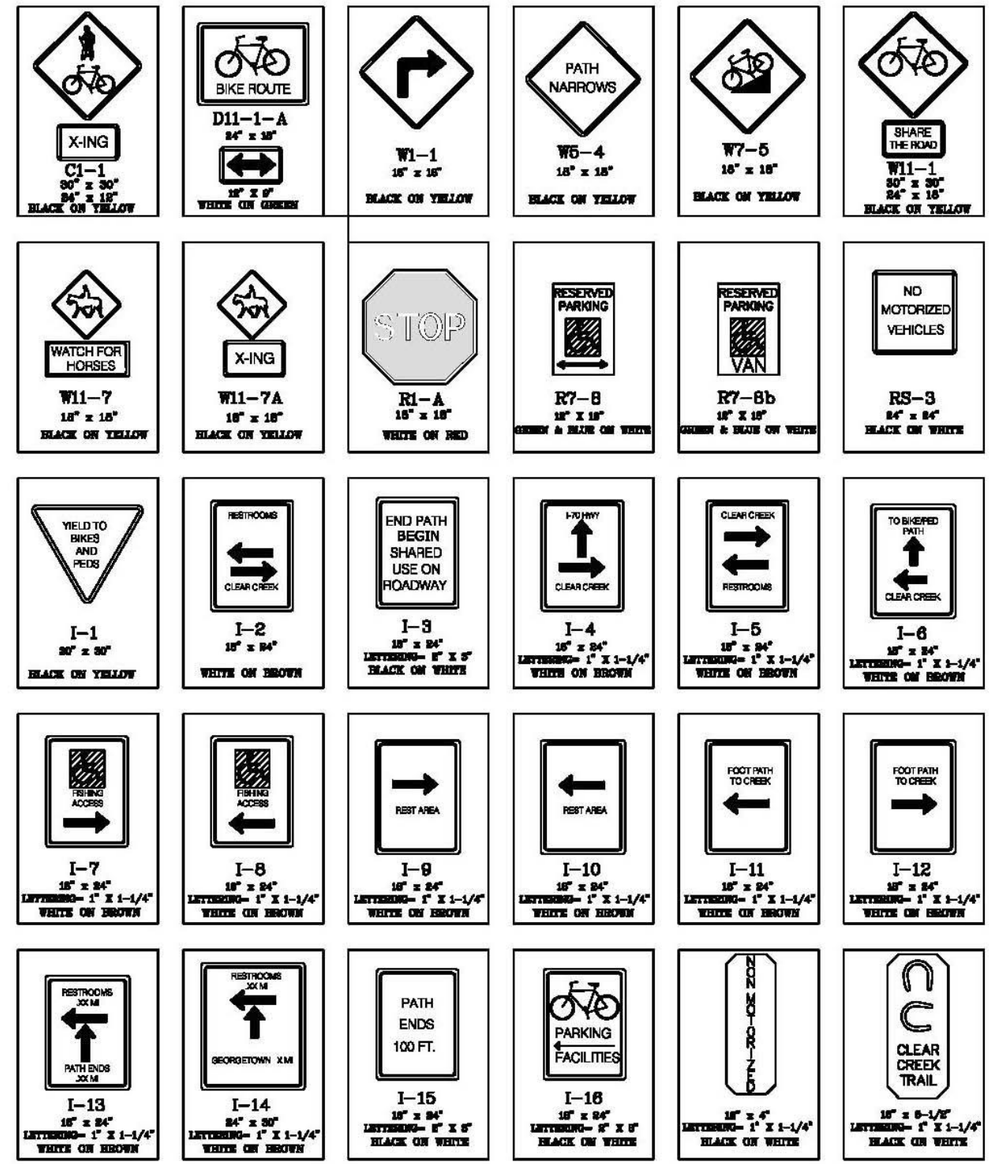
NOTE:
1. ALL SIGNS SHALL BE ALUMINUM AND CONFORM TO CDOT AND MUTCD SPECIFICATIONS REGARDING SIZE, THICKNESS, TEXT AND BACKGROUND COLORS, ECT., UNLESS OTHERWISE NOTED.
2.ALL SIGNS SHALL BE REFLECTIVE



Standard Regulatory Sign Section



Standard Equestrian Sign Post Section



Typical Regulatory Signs

O. RETAINING WALLS

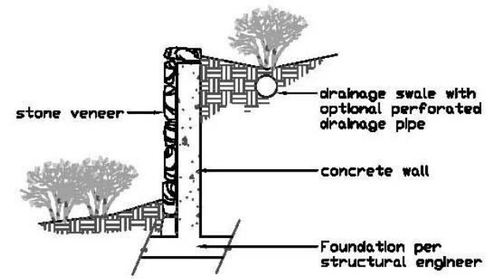
Retaining walls are used to create the appropriate grade through an area that has side slopes that are too steep, when the corridor is too narrow or when the horizontal slope needs to be cut or filled in order to reduce the up and down motion of the trail grade.

The following guidelines for the selection of retaining wall materials and design should be considered:

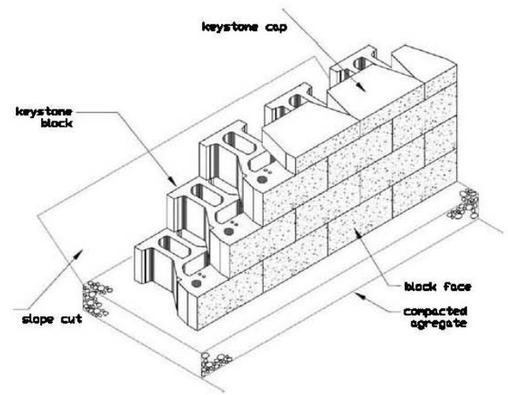
- Benched trails may require retaining walls along the outer edge of the shoulder on the uphill side.
- Walls may be constructed of a number of materials, including stone, timbers, masonry units, or poured-in-place concrete.
- Use of retaining walls above the trail in "cut" situations is more desirable than below the trail in "fill" situations.
- When the change in elevation is less than 18" in 10-feet, the trail shoulder may be graded out to return to the undisturbed grade.
- The slope should not exceed a 2.5:1 (vertical to horizontal relationship) along benched trail shoulders, for ease of construction and maintenance.
- When slope conditions above the trail cause water to be deposited along the uphill shoulder, and adequate swale must be provided along that shoulder with low points and a drain outlet by piping underneath the trail.
- Guardrails are recommended along the downhill edge of trails when the slope is greater than 3:1 and when "fill" section exceeds 10-feet, or when more than a 30" vertical drop exists.

Retaining walls along the trail system should be visually attractive as well as structurally sound. Walls can be either above, below or on both sides of the trail. In general, it is preferable to place the wall above the trail so that the wall is retaining an undisturbed slope and to eliminate the need for a railing on the downhill side of the trail.

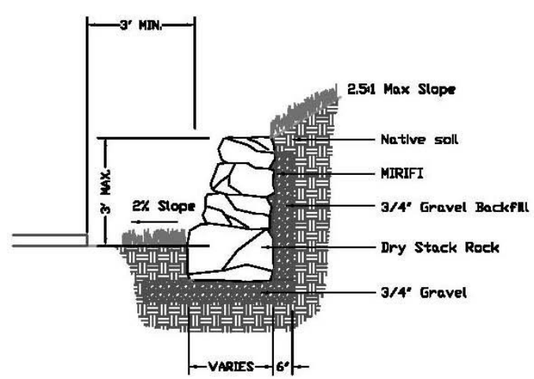
Uneven surfaces that will deter vandalism such as stone veneer, split block or textured concrete are preferred over smooth surfaced walls.



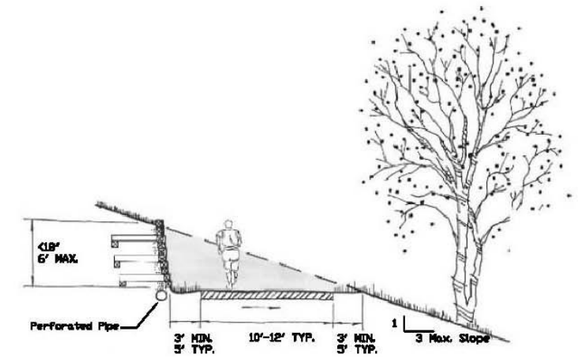
Concrete Wall with Grouted Stone Veneer
Section



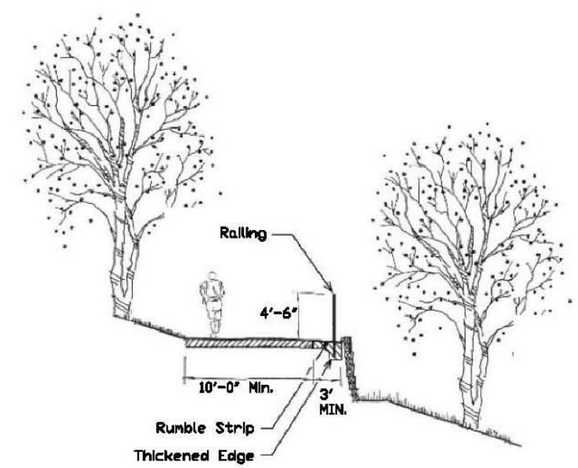
Masonry Unit Wall
Perspective



Dry Stack Stone Wall
Section



Wood Wall
Section



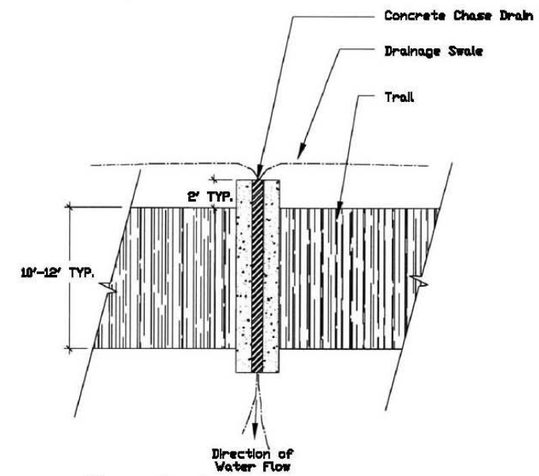
Safety Railing Application
Section

P. LOW WATER, CHASE DRAIN AND CULVERT CROSSINGS

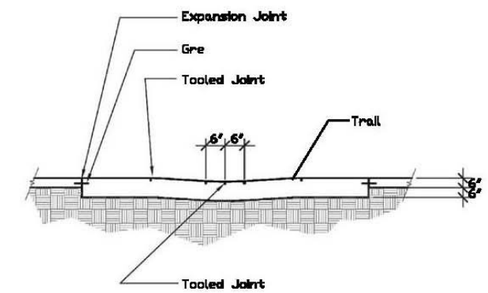
In many instances, smaller drainage areas can be traversed by trails without the expense of a bridge. It is advisable to consult a Civil Engineer for a hydraulic analysis prior to placing any structure within a drainage area.

The following crossings could be utilized:
-Reinforced Concrete Pipe (RCP)
-Corrugated Metal Pipe (CMP)
-Chase Drain
-At-grade Low water crossing

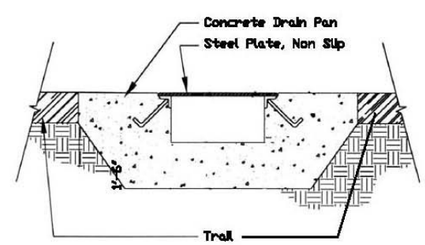
Culverts should only be used when:
-The drainage channel is narrow (less than 20').
-Water volumes can be contained within the selected culvert size.
-Fill material is acceptable within the channel.
-Local officials consent to installation of structures within a drainage area.



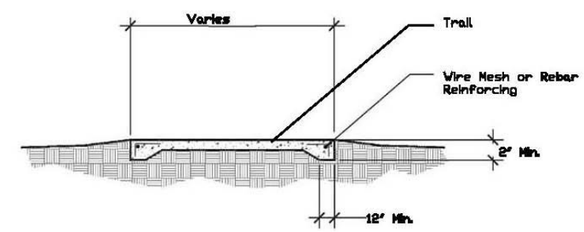
Chase Drain Plan



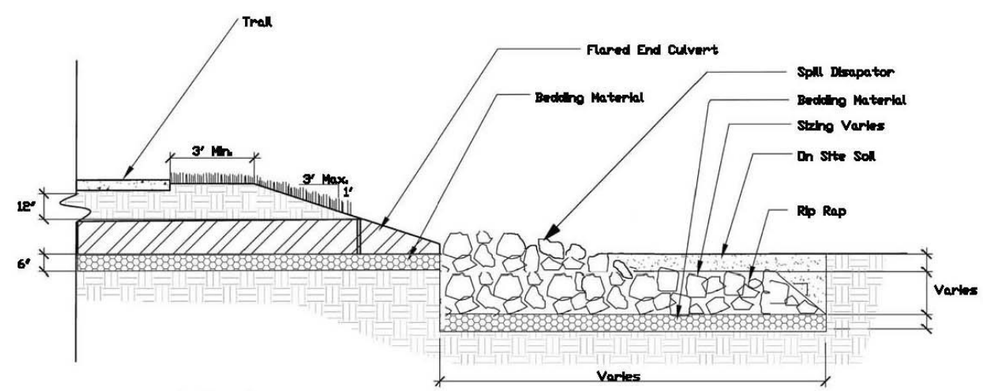
At Grade Low Water Crossing Elevation



Chase Drain Section



At Grade Low Water Crossing Section



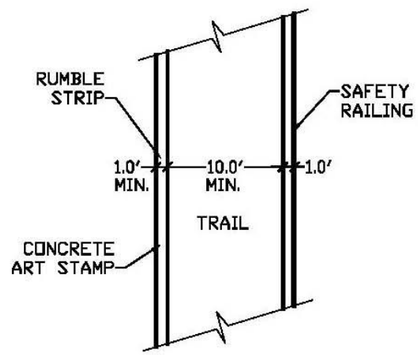
Culvert Section

Q. RUMBLE STRIPS

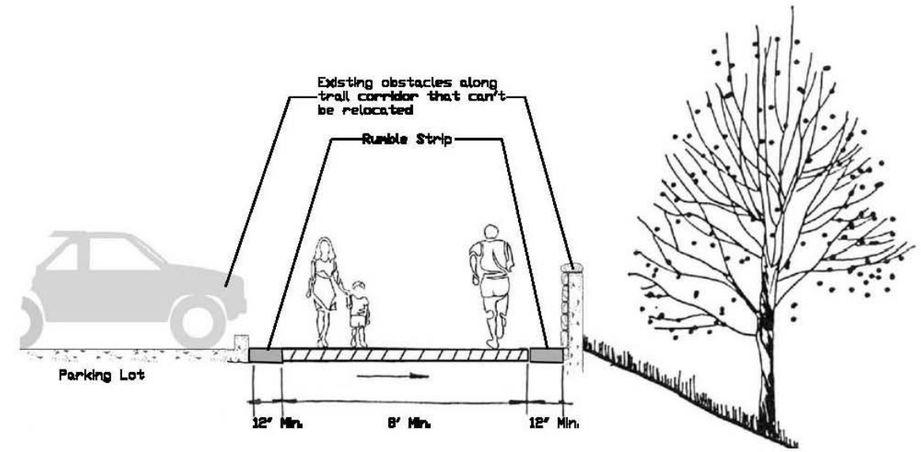
Rumble Strips should be used at areas along the trail corridor where sufficient horizontal clearance from obstacles along the side of the trail is not possible or feasible. Providing a coarse texture and different color on the shoulders of the trail can warn users of possible dangers.

The edge of the trail may, if necessary, extend to the edge of a significant object such as an existing tree, wall, curb or large boulder. If the recovery zone is limited on one or both sides of the trail for more than 15 linear feet, the section with low clearance should be treated as a hazard zone and include signs indicating "slow" and/or "stop".

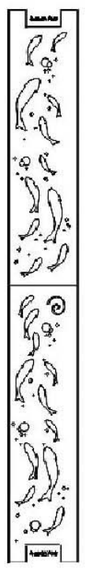
In circumstances where the trail is adjacent to a steep slope or drop-off such as the small channel crossing shown on the bottom right, a rumble strip is recommended to warn users as well as provide a recovery zone. If the vertical drop exceeds 30 inches, a safety railing may need to be installed along the outside edge of the rumble strip. Always refer to the local building codes in your area for actual safety railing requirements at vertical drops.



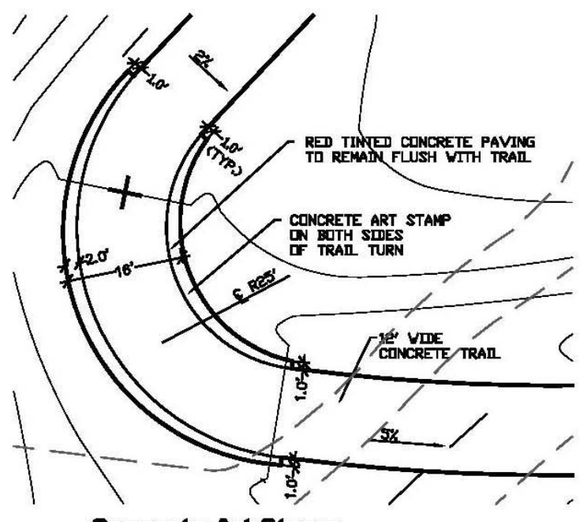
Concrete Art Stamp Plan



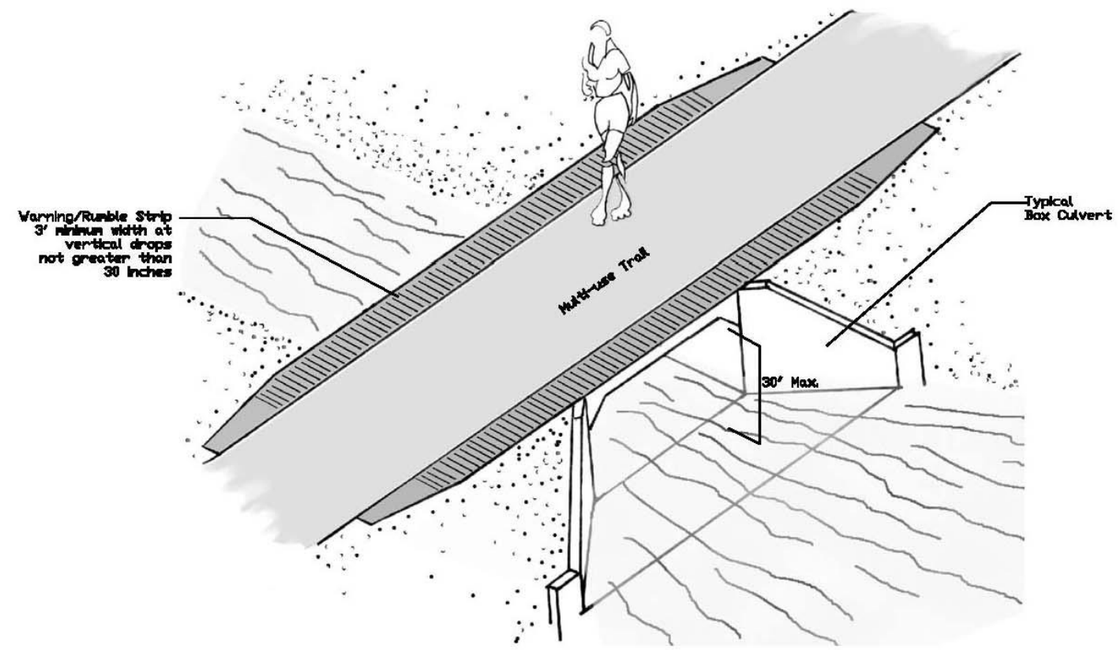
Typical Trail Section with Rumble Strip Section



Concrete Art Stamp Plan



Concrete Art Stamp Location Plan



Typical Channel Crossing with Rumble Strip Perspective

R. LANDSCAPING AND RESTORATION

The Clear Creek ecology is best characterized as a dynamic ecosystem that exhibits a great diversity of habitat types that have been largely influenced and created by human encroachment into this environment. Most of the native habitat and nature of the Clear Creek basin prior to its exploitation of minerals, water, wood and encroachment of roadways has resulted in an extensive reduction of native habitat and wildlife.

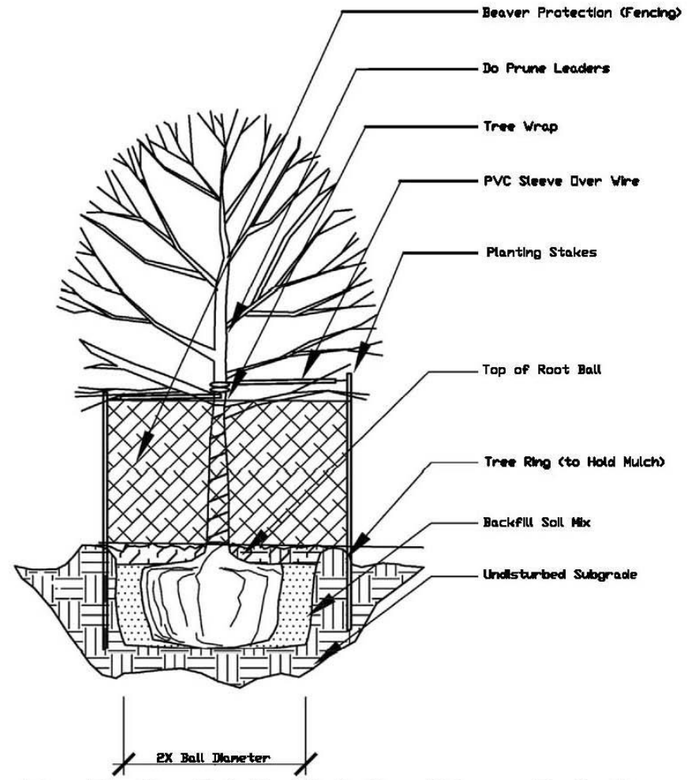
The most dramatic change to the Clear Creek in ecological terms has been the narrowing of the creek banks through channelization efforts to build bridges, roadways, and building structures. Native creek terraces that were inundated by periodic floods have been reduced to channelized riverbanks. The result of this action in less habitats and niches for vegetation and wildlife, resulting in reduced species diversity and numbers.

There are three requirements in order for a revegetation/restoration project to be successful. They include:

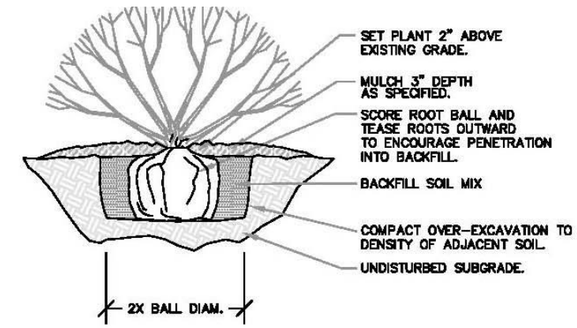
1. Land Form and Hydraulics
Involves the construction of river banks in such a way that will sustain vegetation. Creating flood plain terraces at the correct elevation to maximize periodic flooding and ground water conditions, and manipulating the creek edge to create niches for diverse wetland communities require an understanding of creek hydraulics, soils, and the survival requirements of each plant species.

2. Plant Species Selection
Selection of the appropriate plant species for the ecological condition that is created is crucial for plant survival. Factors to consider are germination and establishment requirements, draught tolerance, tolerance to flooding and/or being inundated by water for long periods of time, aggressiveness, ability to stabilize soil, and value to wildlife.

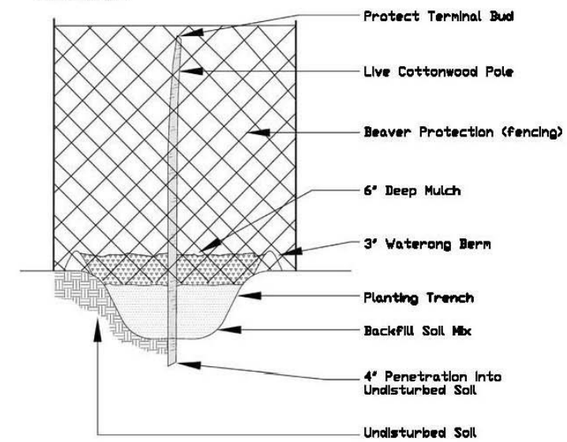
3. Environmental Factors
Predicting weather patters and how much flooding will occur on any drainage way is an exercise in guess-estimates and luck. No matter how well a project is researched, designed and installed; Mother Nature must cooperate in order for the revegetation/restoration project to be successful. However, a good revegetation/restoration design will factor in a "worse case scenario" clause when designing the project. Certain planting techniques such as live willow staking and live cottonwood pole planting can be successful in a variety of environmental conditions if planted correctly. For example, live willow stakes can be planted in a wide zone along the creek edge. In drought years the willows planted next to the creeks edge may survive. In high precipitation and runoff years the willows planted furthest away from the creeks edge may have the best chance for survival.



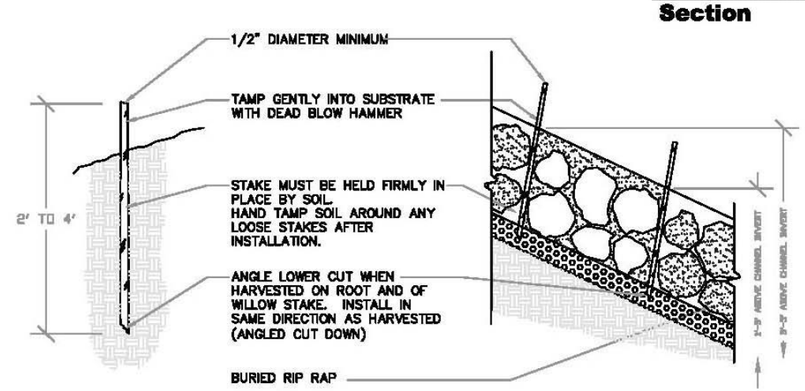
Tree Planting Detail with Optional Beaver Protection Section



Shrub Planting Detail Section



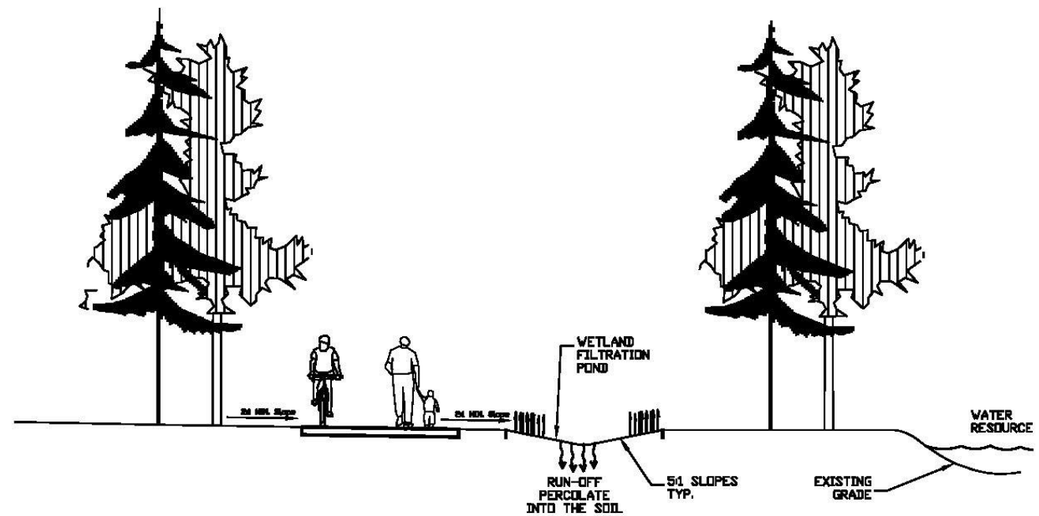
Live Cottonwood Pole With Beaver Protection Section

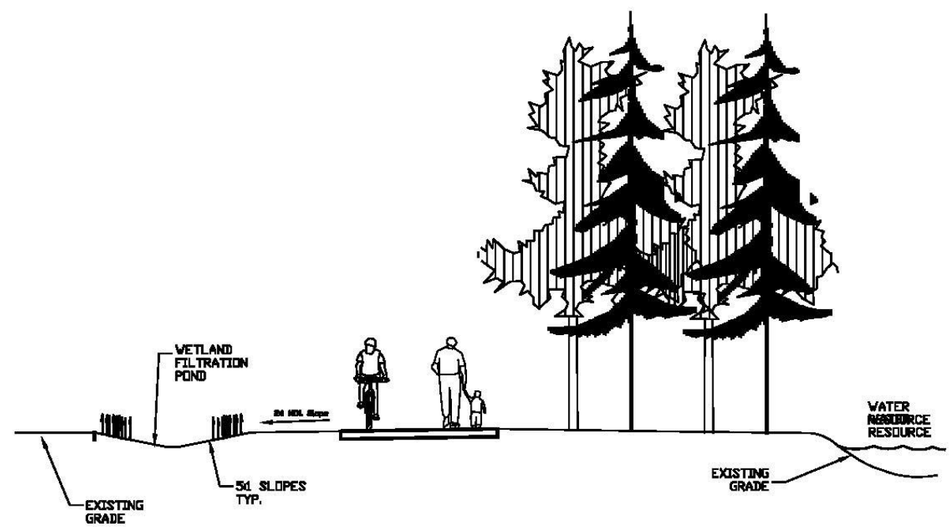


Live Willow Stake in Soil and RipRap Joint Planting Detail Section

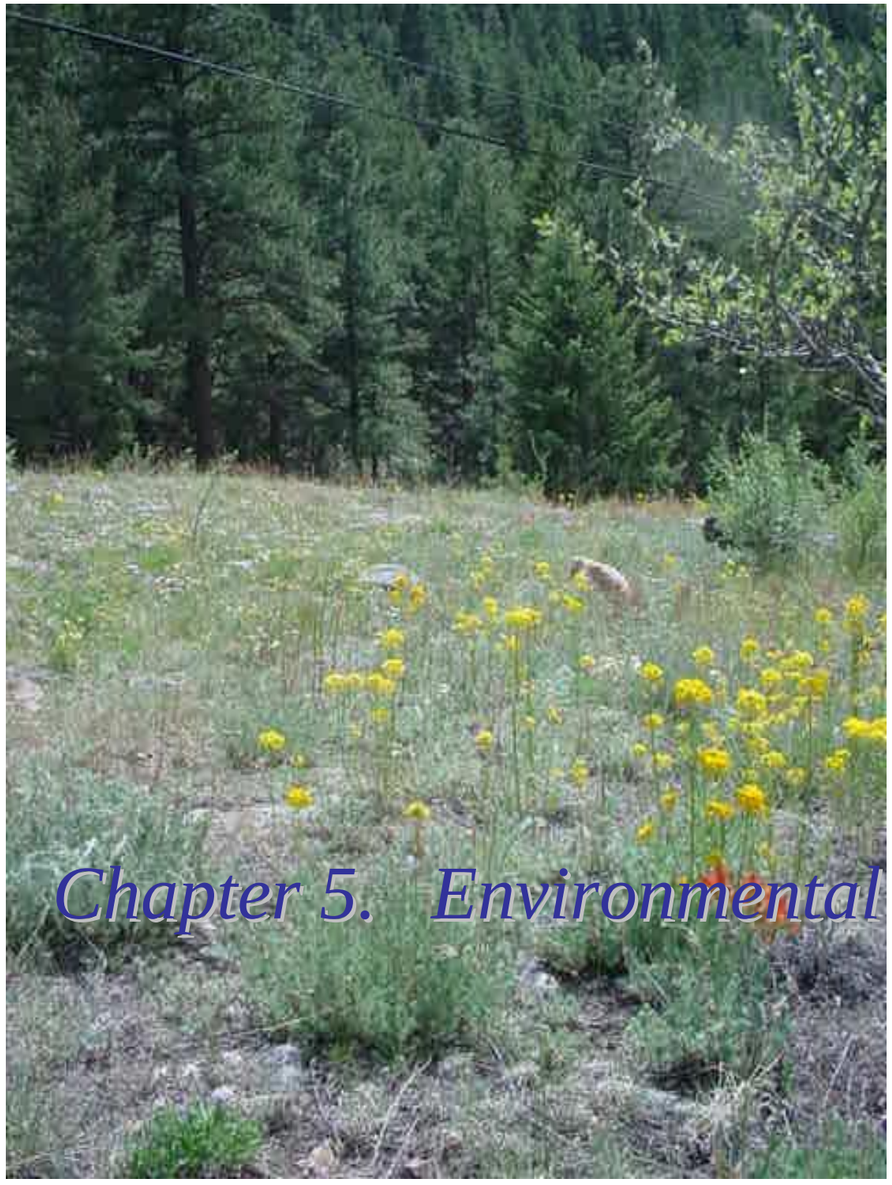
S. WETLAND FILTRATION POND

Whenever possible, storm runoff should be directed into small detention ponds so that the runoff does not flow directly into the water resource such as Georgetown Reservoir or Clear Creek. When collected, the storm runoff water will slowly percolate into the subsoil. If enough storm runoff exists, wetland plants such as cattails may become established, providing added pollution filtration of the runoff.





Section



Chapter 5. Environmental Issues

A. SUMMARY OF FINDINGS

The topographical and physiological changes that occur throughout the proposed Clear Creek Greenway Trail corridor provide for diversity in wildlife, wildlife habitat topography and views. Clear Creek and its riparian ecological zone flows through the sub-alpine, montaine and foothills ecological zones providing a diverse array of plant and wildlife species. In addition, views to the alpine ecological zone to the west are common from Clear Creek. The total elevation change from the Jefferson/Clear Creek County boundary and the Loveland Ski Area is 4,200 feet.

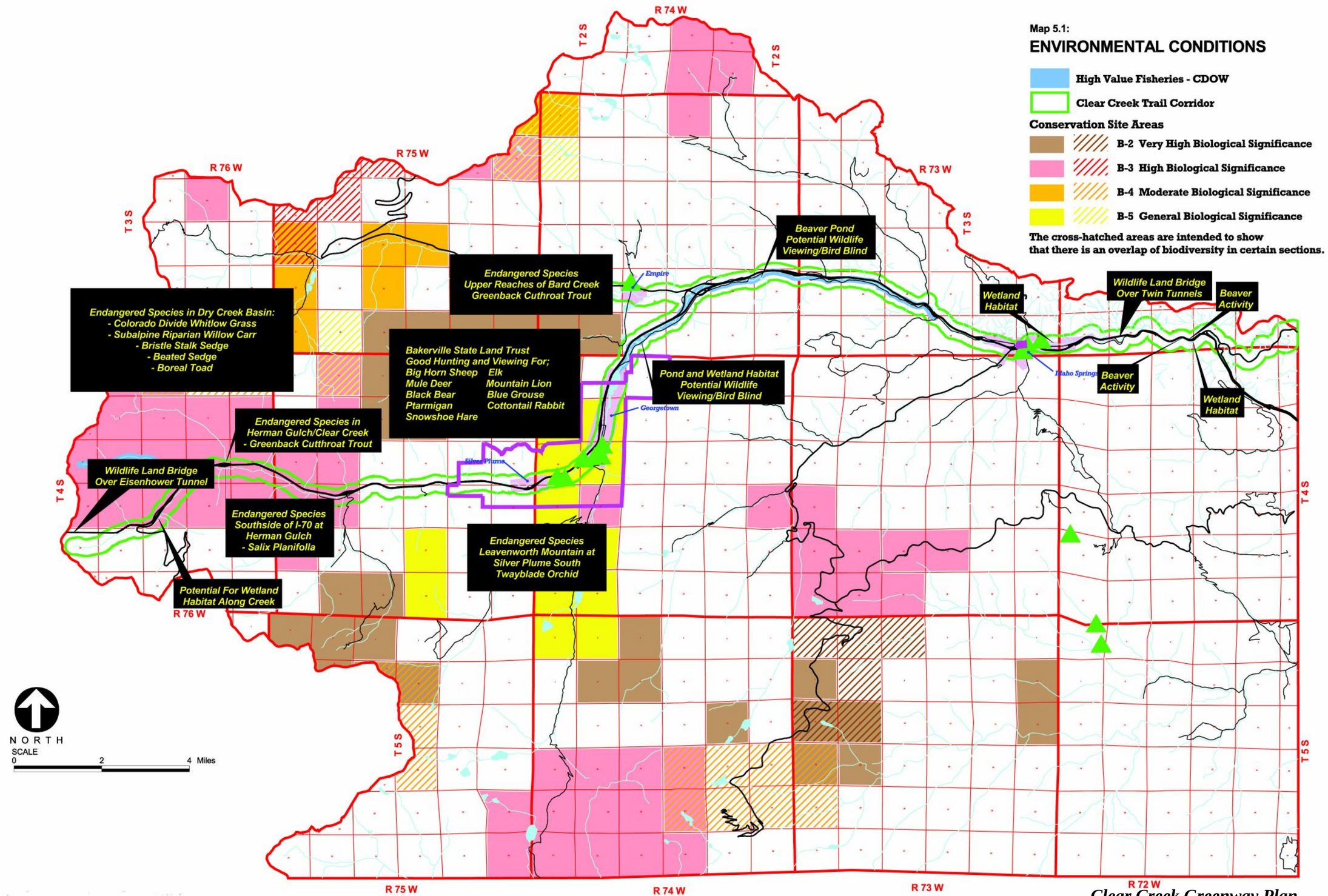
Much of Clear Creek through Clear Creek County has been influenced by the extensive encroachment of the I-70 Corridor, County roads and commercial and residential development. Because of these encroachments, Clear Creek will never be a natural, pristine waterway. Besides the visual impact of encroachment, noise pollution from I-70 is present throughout much of the corridor. However, many reaches of Clear Creek, where they depart from development, provide a window into how the creek looked before the area was settled by humans and should be protected and enhanced whenever possible.

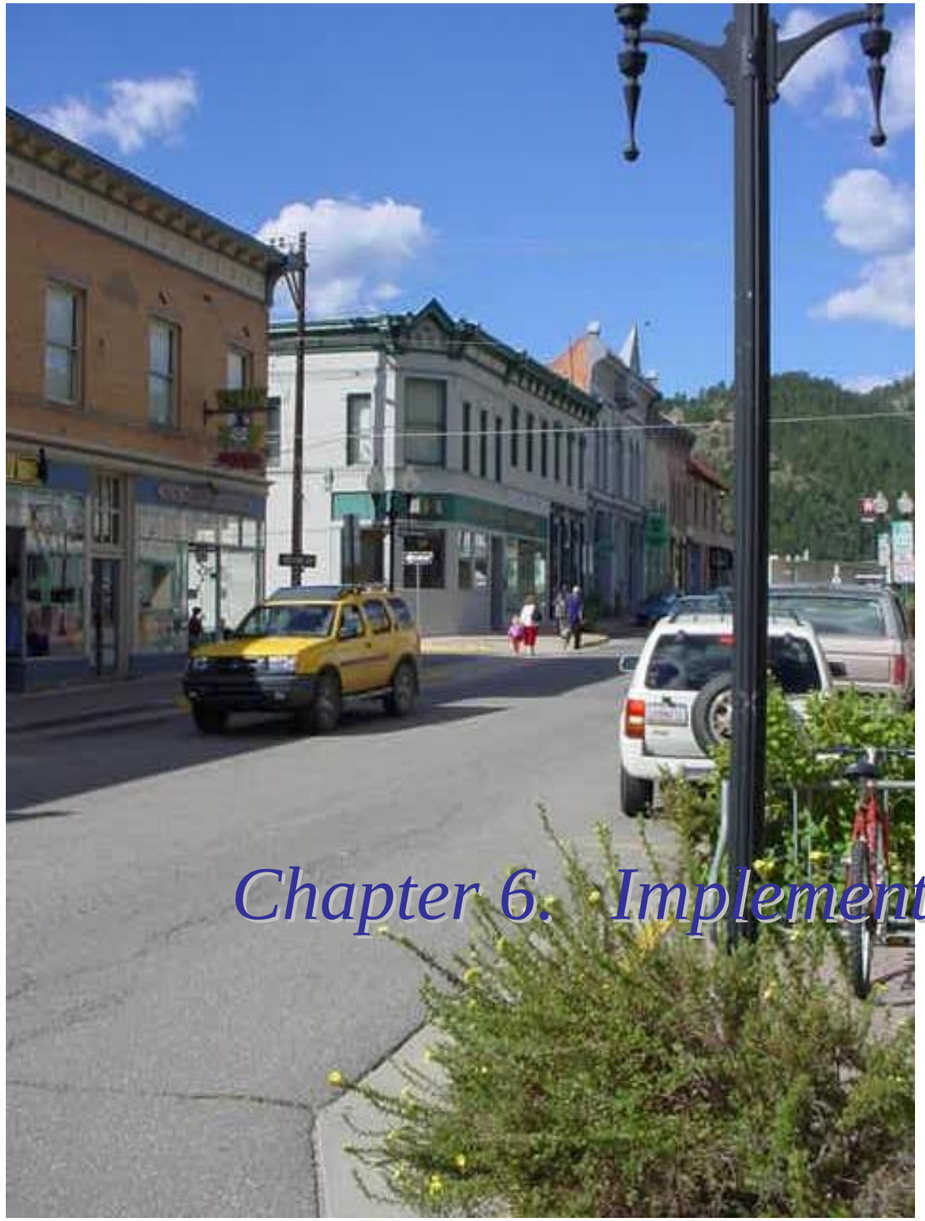
The planning team uncovered no major environmental issues during its research that would impede the development of the Greenway Trail, although several areas along Clear Creek (see Map 5.1 - Environmental Conditions) are known habitats to endangered species such as the cutthroat trout. The major environmental permitting issue will be the appropriate identification, avoidance and/or mitigation of wetlands due to the construction of trails or trail amenities. As discussed in the Environmental Technical Memo (see appendix "A") and to ensure that all regulatory issues are known and to determine which permits apply to the project, an on-site, pre-project meeting should be conducted with environmental regulatory agencies prior to final design and engineering. Trail construction should avoid wetlands and habitats that support threatened and endangered species. When these areas cannot be avoided, use of low impact design solutions, such as boardwalks, should be considered.

Aquatic resources that support endangered species, such as the greenback cutthroat trout, should be considered in design. Storm runoff from the Greenway Trail corridor should be collected into small wetland detention ponds so that the runoff can percolate naturally into the ground and not flow directly into the creek or a creek tributary. Wetlands established in the detention ponds will provide some additional filtration of waterborne pollutants.

Greenback Cutthroat Trout

Please refer to Appendix "A" for the entire Environmental Technical Memo. As a part of this planning effort, a review of existing environmental reports and studies for Clear Creek was summarized in the Technical Memo.


Map 5.1:
ENVIRONMENTAL CONDITIONS
High Value Fisheries - CDOW
Clear Creek Trail Corridor
Conservation Site Areas
B-2 Very High Biological Significance
B-3 High Biological Significance
B-4 Moderate Biological Significance
B-5 General Biological Significance
The cross-hatched areas are intended to show that there is an overlap of biodiversity in certain sections.
R 74 W
T 2 S
R 75 W
R 76 W
R 73 W
T 3 S
T 4 S
T 5 S
R 72 W
Beaver Pond Potential Wildlife Viewing/Bird Blind
Endangered Species Upper Reaches of Bard Creek Greenback Cuthroat Trout
Empire
Wetland Habitat
Wildlife Land Bridge Over Twin Tunnels
Beaver Activity
Endangered Species in Dry Creek Basin:
- Colorado Divide Whitlow Grass
- Subalpine Riparian Willow Carr
- Bristle Stalk Sedge
- Beated Sedge
- Boreal Toad
Bakerville State Land Trust
Good Hunting and Viewing For;
Big Horn Sheep
Elk
Mule Deer
Mountain Lion
Black Bear
Blue Grouse
Ptarmigan
Cottontail Rabbit
Snowshoe Hare
Pond and Wetland Habitat Potential Wildlife Viewing/Bird Blind
Idaho Springs
Beaver Activity
Wetland Habitat
Georgetown
Endangered Species in Herman Gulch/Clear Creek - Greenback Cutthroat Trout
Silver Plume
Wildlife Land Bridge Over Eisenhower Tunnel
Endangered Species Southside of I-70 at Herman Gulch - Salix Planifolla
Endangered Species Leavenworth Mountain at Silver Plume South Twayblade Orchid
Potential For Wetland Habitat Along Creek
NORTH
SCALE
0
2
4 Miles



Chapter 6. Implementation

A. POLICY AND DIRECTION

With limited financial resources, Clear Creek County's implementation of the Greenway Plan will require very careful planning and creative funding. It will be important to take maximum advantage of all resources and opportunities to achieve the goals of the plan. However, condemnation and the use of the power of imminent domain will not be a part of the implementation plan.

As a first step, forming a non-profit organization to manage and maintain the Greenway is a priority. Please refer to Chapter 7. This non-profit will be formed out of the partnerships that developed during the planning process with all of the major stakeholders in the County.

The next step will be for the non-profit organization to identify an initial key project that will set the tone for Greenway development. This project should meet the criteria identified in this chapter in Section B. An emphasis should be placed on visibility and importance to all stakeholders so the whole community rallies together to make the project happen. In Section C of this chapter, project and segment suggestions are provided as a place to start in developing a plan for the first project and other potential follow-up projects.

During the planning process, stakeholders felt that the future non-profit organization should make the phasing decisions and that it was the responsibility of this plan to provide the background and criteria needed to make the decisions. Criteria and potential projects are identified in the following sections of this chapter.

Periodically, as conditions change and opportunities arise, the non-profit organization should go through a phasing and prioritization process to keep an Implementation Plan in place. This should occur on a yearly basis. The Implementation Plan should be seen as an ever-changing "**living**" document.

B. CRITERIA FOR PHASING

(Listed in Order of Priority)

1. Safety
   - Minimize conflicts between non-motorized and motorized users
   - All weather access by emergency vehicles
   - Provides multiple points of access
   - Provides alternate routes
   - Improves access and mobility

2. Cost Effectiveness
   - Ability to cost share/leverage
   - Takes advantage of charitable contributions

3. Fundable Increments

4. Highly Visible
   - Perpetuates successful implementation of the project

5. Connection between two destinations, development of activity nodes or extension of an existing trail
   - Parks
   - Open space
   - Recreation amenities
   - Downtowns and commercial hubs
   - Museums
   - Schools
   - Visitor centers
   - Inter-modal connections
   - Event centers
   - Etc.

6. Resolves Community Needs
   - Quality of life
   - Economic benefit to County and Municipalities
   - Transportation
   - Health
   - Recreation
   - Education

7. Political Expediency

C. PROJECT AND SEGMENT PHASING SUGGESTIONS

(Listed east to west, not in order of priority.)

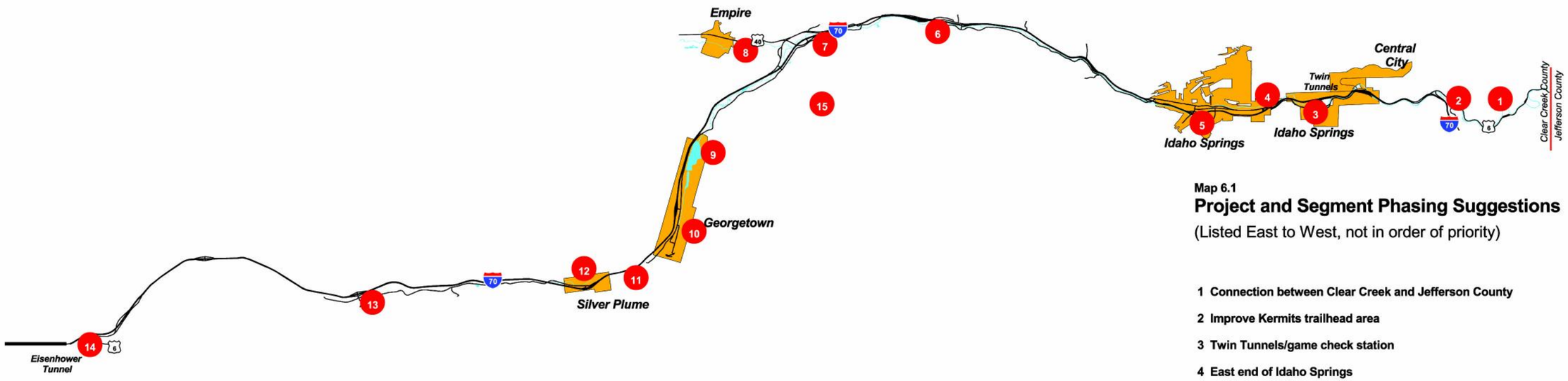
1. Connection between Clear Creek and Jefferson County

2. Improve Kermits trailhead area

3. Twin Tunnels/game check station

4. East end of Idaho Springs

5. Idaho Springs
6. Dumont/Downieville area
7. Gateway bridge
8. Connection to Empire
9. Georgetown Lake area
10. Georgetown/Argentine Street
11. Connection through Loop Railroad
12. Silver Plume
13. Bakerville trailhead and bike depot
14. Connection to Loveland Ski Area and Summit County
15. Bring existing facilities up to current design standards



Map 6.1

Project and Segment Phasing Suggestions

(Listed East to West, not in order of priority)

1 Connection between Clear Creek and Jefferson County
2 Improve Kermits trailhead area
3 Twin Tunnels/game check station
4 East end of Idaho Springs
5 Idaho Springs
6 Dumont/Downieville area
7 Gateway bridge
8 Connection to Empire
9 Georgetown Lake area
10 Georgetown/Argentine Street
11 Connection through Loop Railroad
12 Silver Plume
13 Bakerville trailhead and bike depot
14 Connection to Loveland Ski Area and Summit County
15 Bring existing facilities up to current design standards

Prepared by:

tk associates, inc. & MDG INC Community Planning Services, LLC

NORTH

Chapter 7. Management and Maintenance

A. MANAGEMENT STRUCTURE RECOMMENDATIONS AND FUNDING STRATEGIES

Current System
Despite relatively small financial and human resources, Clear Creek County and the incorporated municipalities within the County have been successful in constructing trails. The County does not have a Park and Recreation Department so any maintenance activities on the Greenway Trail within County jurisdiction must be completed by either the Clear Creek County Public Works Department or by a maintenance contractor.

The County and its municipalities have recognized that by combining their resources toward the development and maintenance of the Clear Creek Greenway, they will enhance the possibility for future funding and the establishment of an organized Greenway maintenance program. In addition, they understand that the creation of a private, not-for-profit organization, who's mission is the funding and maintenance of Greenway Trails throughout the County, could substantially assist the public sector in implementing a successful, comprehensive Greenway trail system.

Several management methods to implement and maintain greenway trails have been successful in communities throughout Colorado and the nation. The two most common are implementation through the local municipalities public works or parks department and not-for-profit organizations.

Municipal Publics Works or Parks Department
The most common implementation method and the most effective for larger municipalities with larger populations and tax revenues. Municipalities typically contract with a planning and/or design consultant to perform much of the work. Construction is completed by a contracting firm through a competitive bidding process. Maintenance is generally funded and completed by a well-funded and trained public works or park maintenance staff.

Pros:
- Political support and funding are usually present because it is a homegrown project.
- Certain funding sources outside of the municipal budget can be obtained only by an incorporated municipality such as TEA.
- Manipulates are best suited for maintenance of greenway trails due to liability issues and the need for a trained, professional staff.
- Municipalities can use the same equipment to maintain trails as they use to maintain other amenities, thereby making the purchase and maintenance of the equipment more efficient and cost effective.

Cons:
- Trail projects must compete for internal management, political and financial support with other public works projects.
- Funding for trails may not always be the highest priority since staff must divide time with other projects, making the implementation process move slowly. Municipalities are often not eligible for grants from private grant funding organizations.
- Maintenance budgets rarely keep pace with new facilities.
- Municipal employees and elected officials come and go, which may change priorities to reflect differing interests, personalities and campaign promises.
- Long-term project continuity can be a problem.

Not-For-Profits
Not-for-profits are private organizations that manage/coordinate either specific elements or all aspects of trail implementation including: coordination, planning, design, funding, land acquisition and maintenance. Not-for-profits should work closely with local municipalities in order to coordinate their efforts because the ultimate responsibility and ownership will belong to the local jurisdictions.

Pros:
- Linear projects such as trails are often located in multiple jurisdictions. Therefore, a single organizational entity can have a significant advantage rather than a piece-meal approach by each separate entity.
- Not-for-profit organizations should have a specific mission/goal.
- Not-for-profits can apply for funding grants not available to municipalities.
- Not-for-profits can set up an endowment fund that can provide long term funding stability for the organization.
- Some businesses and individuals prefer to work with and support not-for-profits rather than municipalities.
- The not-for-profit Board of Directors should be made up of individuals that represent the community, are respected and have connections with financial assets, landowners, or politicians, etc.
- Project continuity over a long period of time is easier with a dedicated not-for-profit than a municipality.
- Can be helpful in limited maintenance activities, not requiring powered equipment, on the trail system.
- Not-for-Profits can set up and perpetuate an endowment fund that can be used to pay for staff, light duty maintenance activities and public relation activities. A certain percent of all funds acquired should be put into the endowment fund.

Cons:
- Start-up money may be difficult to obtain.
- Not-for-profits that have many goals/missions may not be as effective as those that are more specific.
- If a not-for-profit is involved, some municipalities might become complacent in pursuing the trail project(s).
- A poorly conceived Board of Directors can do more harm than good.

- Not-for-profits are made up of volunteers, especially in the beginning. Since an all-volunteer organization will not have the time to complete all of the tasks required, many not-for profits will require a paid staff to organize the project.
- Many not-for-profits will require a paid staff and a stable budget to continue their mission.
- Due to liability and funding issues, not-for-profits are not set up for the exclusive maintenance of constructed trails.
- Raising funds for maintenance from the private sector has been traditionally difficult for not-for-profits.
- Due to cost constraints and liability issues, maintenance activities requiring equipment are not recommended.

B. MAINTENANCE PLAN

Adequate funding for the management and maintenance of the Clear Creek Greenway should be considered throughout the master planning, design and implementation phases of the Greenway development process.

The quality of management and maintenance will ultimately determine the success of the project. A poorly managed and maintained Greenway will be unsuccessful because the public will perceive the amenity as a liability and will avoid using the trail. Broken glass on or adjacent to the trail or vagrants loitering on the Greenway indicates to the user that the area is not maintained, is not patrolled and may be unsafe to use. An effective management plan involves frequent patrolling of the corridor by law enforcement and maintenance officials, and communication between law enforcement, safety and rescue, maintenance personnel, planners and designers. In addition, Greenway Trail users should have the ability to easily contact the appropriate department personnel in order to report problems that exist along the Greenway corridor.

Bicycle Police patrol the Greenway Trail on similar project

Goals for the Clear Creek County Greenway Trail Maintenance Program should include:

- Greenway construction should involve design methods and materials that are durable and low in maintenance requirements.
- Greenway maintenance shall be pro-active, not reactive.
- The Greenway corridor shall be kept clean and safe on a daily basis.
- Maintenance activities shall avoid damage to the Greenway Trail and amenities.
- Maintenance activities should not interfere with the safe and enjoyable recreational use of the Greenway.
- The Greenway Maintenance Program shall be cost effective, efficient and appropriate for this type of public facility.

Multi-Purpose Greenway Trail systems have specific maintenance requirements, many of which are different from typical park and open space maintenance needs. Because people are walking, riding bicycles and jogging on a narrow strip of pavement, the surface and adjacent areas must be kept clean and free of debris and obstacles that may cause injury to the users. At a minimum, daily inspections and maintenance during peak use and bi-weekly inspections/maintenance during off-peak use are needed to keep Greenway Trails clean and safe.

Another consideration is how best to move maintenance personnel and equipment up and down the Greenway Trail corridor. Maintenance trucks, when used, can cause damage to the trail, must make frequent stops to remove/replace traffic control bollards and are often an unwelcome sight to Greenway Trail users who are trying to avoid automobiles altogether.

Use of maintenance trucks and other heavy equipment cannot be eliminated because they are used to remove or place heavy items and haul equipment. However, most of the daily tasks associated with keeping the Greenway Trail corridor clean can be accomplished with the aid of small, gas or electric powered carts such as those used to maintain golf courses and bicycles towing maintenance carts.

Trail Rangers on bicycles with maintenance carts are an efficient method of daily Greenway Trail maintenance, as seen on a similar greenway.

The advantages of small motorized carts and bicycles are that they dramatically reduce potential damage to the trail surface and edges, do not disturb trail users and wildlife as much as trucks, and cost less to purchase and operate. In addition, maintenance personnel can better see potential safety problems because they are traveling slower and are more exposed to the same conditions that the recreational trail user is experiencing, which is much harder to do from the front seat of a truck. Finally, small maintenance carts and bicycles are a more efficient working platform because they can be maneuvered around vehicle control bollards without stopping and maintenance personnel can more easily park a cart or bicycle in order to perform a task.

There are several methods for providing ongoing maintenance for a trail system, including maintenance provided by the public works department, volunteers, specially trained Greenway Trail Rangers, or a combination of the above.

PUBLIC WORKS DEPARTMENT

Currently, all major maintenance tasks on existing portions of the Clear Creek Greenway are completed by the Clear Creek County Public Works Department or by contractors as requested by the Clear Creek County Planning Department. Major maintenance tasks might include repair of asphalt paving and soil erosion and removal of heavy items such as fallen trees and tree limbs.

The Public Works Department is not funded, staffed, trained or in possession of the type of equipment that is best utilized for Greenway Trail maintenance.

Typical maintenance tasks best completed by the Public Work Department include:

- Maintenance activities that require safety training and/or certification such as with some types of machinery.
- Removal of heavy debris such as trees, boulders, etc.
- Mowing operations.
- Repair that requires specialized equipment including repair of the trail surface, erosion problems, drainage issues, etc.
- Snow removal.
- Moving or installing amenities that require machinery for installation.

Disadvantages of a Public Works Department Greenway Trail Maintenance program include:

- The Greenway Trail is not likely to be the department's highest priority when compared to roadway maintenance.
- The Public Works Department utilizes light to heavy maintenance trucks to perform work. These vehicles are not appropriate for frequent use on the recreational trail.
- The Public Works Department schedule and resources often do not allow for daily inspection and maintenance of the trail corridor.
- It is difficult to inspect the trail from the interior of a maintenance vehicle.
- A lower skilled maintenance task such as picking up trash is not the most efficient use of Public Works Department personnel.
- Current staff is often over-committed to maintenance of existing facilities.

GREENWAY TRAIL RANGER PROGRAM

A Greenway Trail Ranger program consists of full and/or part-time municipal employees that are paid to perform light duty maintenance operations and assist trail and park users with help, such as giving directions, answering questions and repairing flat tires on bicycles. Because they are highly visible to the public, Trail Rangers are ambassadors for the County and the eyes and ears for the Public Works and Public Safety Departments.

Typically, Trail Rangers are responsible, self-motivated young adults of high school and college student age who exhibit enthusiasm for working in an outdoor setting and enjoy working with people. Trail Ranger equipment consists of a small gas motor maintenance cart, bicycle with a tow-behind metal cart, broom, shovel, bicycle repair kit, drinking water, first aid kit, trail brochures and trash bags. Trail Rangers can also be trained in first aid, including treatment of heat exhaustion, heat stroke and CPR. To stay in communication with the Public Works and Public Safety Departments, Trail Rangers should be equipped with two-way radios or cellular phones. It is recommended that the Trail Rangers wear a uniform consisting of a T-shirt with the words "TRAIL RANGER" clearly marked on it, comfortable shorts or pants and shoes.

Typical duties of the Trail Ranger include:

- Keeping a daily journal of events, work completed, etc.
- Daily inspection of the entire trail corridor.
- Daily removal of all debris/hazards from the trail surface and adjoining area.
- Communication with the Public Works and Public Safety Departments, as warranted.
- Daily cleaning of restrooms.
- Painting.
- Installation of small items that do not require machinery such as trail signs.
- Public relations by assisting the public.
- Coordinating volunteers.
- Litter clean-up.

Trail Rangers provide a variety of maintenance tasks including removal of debris from the trail and assisting the public, as seen on a similar greenway.

The main advantage of Greenway Trail Rangers is that they perform an important public relations role and provide work/maintenance tasks, which would not be productive for the Public Works Department to perform. The end result is a more efficient use of manpower and equipment and the associated costs.

For safety reasons, Greenway Trail Rangers should always work in pairs of two. The number of Greenway Trail Rangers will depend on the total length of Greenway that requires patrolling and maintenance. The most practical management of the Greenway Trail Rangers daily schedule is to send two teams of two in each direction down the trail from a central location. Each team quickly travels their respective half of trail, stopping to remove debris from the trail surface and noting additional maintenance tasks that can be completed at a latter time. The remainder of the day should be dedicated toward maintenance activities that require more time and effort, meeting and assisting trail users and coordinating volunteers.

VOLUNTEERS

The residents of Clear Creek County, ultimately the owners of the Greenway, will find it cost effective and rewarding to volunteer their time to the Public Works Department and Greenway Trail Rangers for light duty maintenance activities. Civic organizations can officially adopt a section of trail corridor to supplement other maintenance efforts. Any volunteer maintenance activity should be coordinated with and approved by Clear Creek County.

Use of volunteers to perform maintenance tasks generally should not include the operation of equipment, such as mowers, tractors, weed trimmers, chain saws and other similar equipment.

Volunteers pose after construction of a picnic shelter. Soft surface trail construction is a favorite volunteer activity.

Typical maintenance tasks that are appropriate for volunteers include:

- Soft surface, nature trail construction
- Construction of picnic shelters, rest areas, sign posts, etc.
- Trash removal
- Planting trees, shrubs and flowers
- Installing signs
- Painting
- Graffiti removal
- Conducting user surveys on the trail

C. ESTIMATED COSTS

Costs for elements of the Greenway are included, using 2005 construction costs. When using this information in ensuing years, an inflation factor should be applied. The estimated costs are based on the elements presented in Chapter 4 – Design Guidelines. These estimated costs are intended to be used by managers and planners to project future development costs of future Greenway projects.

Ten to fifteen percent should be added to the estimated costs for surveying, design and engineering services. The higher percentage should be used when the project requires more technical input like cantilevered trail sections over the creek, major trail heads and bridges. Also, utility extensions associated with any potential project have not been included in the estimated costs because this element can vary widely in cost due to site specific conditions. When using these estimated costs, it is necessary to add costs for designs, engineering and utilities.

By applying the following estimated costs to the Greenway, the entire Greenway, as planned, would cost in excess of $33 million.

Major Trail Head

10 Parking Spaces
5 Vehicle/Trailer Spaces

10,000 S.F. Asphalt Lot
5' Concrete Sidewalk (200 L.F.)
5' Crusher Fines Path (400 L.F)
Picnic Tables (4)
Restroom (Pit Typ.)
Bench
Trash Recepticle
Drinking Fountain
Bike Rack
Landscaping
Signage
Seeding
Grading (Earthwork)
Mobilization
Demo/Site Prep
Erosion Control

Major Trail Head Total 225,000.00

*Assumes No Utility Connection
Design/Engineering Fees of Facility- 8-12%

Minor Trail Head

5 Parking Spaces
2 Vehicle/Trailer Spaces

5,000 S.F. Asphalt Lot
5' Concrete Sidewalk (200 L.F.)
5' Crusher Fines Path (400 L.F)
Picnic Tables (4)
Bench
Trash Recepticle
Bike Rack
Landscaping
Signage
Seeding
Grading (Earthwork)
Mobilization
Demo/Site Prep
Erosion Control

Minor Trail Head Total 150,000.00

*Assumes No Utility Connection
Design/Engineering Fees of Facility- 8-12%
No Potable Water

Bike Depot

Restroom
Lockers
Covered Bike Storage/Bike Lockers
Vending Machine
Optional Retail and Rental Space

Bike Depot Total 300-350,000.00

Pocket Park

0-1 Acre
5' Crusher Fines Path (200 L.F)
Picnic Tables (2)
Bench
Trash Recepticle
Bike Rack
Signage
Landscaping
Grading (Earthwork)
Mobilization
Demo/Site Prep
Erosion Control

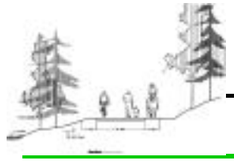
Pocket Park Total 100,000.00

Boating Chutes

Boulders (Chute/Drop Structure)
Portage Trail (Crusher Fines)
Grading (Earthwork)
Machinery
Demo/Site Prep

Boating Chutes Total 15,000.00

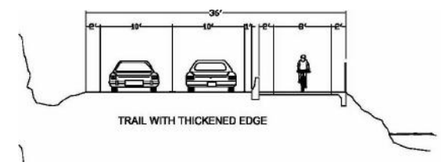
Typical Trail Conditions



6" Thick Concrete - 10' Width, 4' Shoulders
Grading (Earthwork)
Seeding
Demo/Site Prep
Erosion Control

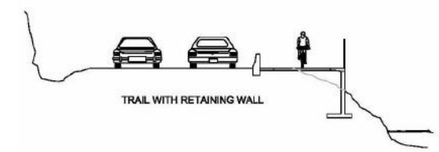
Trail Installation Total 55.00 per LF

Roadside Trail Conditions



Trail with Thickened Edge
6" Thick Concrete - 10' Width, 4' Shoulders
Thickened Edge
Jersey Traffic Barrier (Poured in Place)
Safety Railing
Seeding
Demo/Site Prep
Erosion Control

Trail with Thickened Edge Total 190.00 per LF

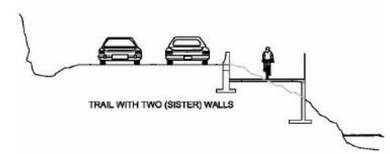


Trail with Retaining Wall (Assuming 3' Wall Height)
6" Thick Concrete - 10' Width, 4' Shoulders
Concrete Retaining Wall
Jersey Traffic Barrier (Poured in Place)
Safety Railing
Seeding
Demo/Site Prep
Erosion Control

Trail with Retaining Wall Total 315.00 per LF

Cantilivered Trail
6" Thick Concrete - 10' Width, 4' Shoulders
Cantilivered Support
Thickened Edge
Jersey Traffic Barrier (Poured in Place)
Safety Railing
Seeding
Demo/Site Prep
Erosion Control

Cantilivered Trail Total 330.00 per LF



Trail with Two (Sister) Walls
6" Thick Concrete - 10' Width, 4' Shoulders
Sister Walls
Jersey Traffic Barrier
Safety Railing
Seeding
Demo/Site Prep
Erosion Control

Trail with Two (Sister) Walls Total 407.00 per LF

Gateway Bridge

I-70 & State highway 40 (~200' in Length)
Ramps
Peers
Architectural Features
Canopy Mounts
Abutments
Bridge Installation

Gateway Bridge Total 1,750,000.00

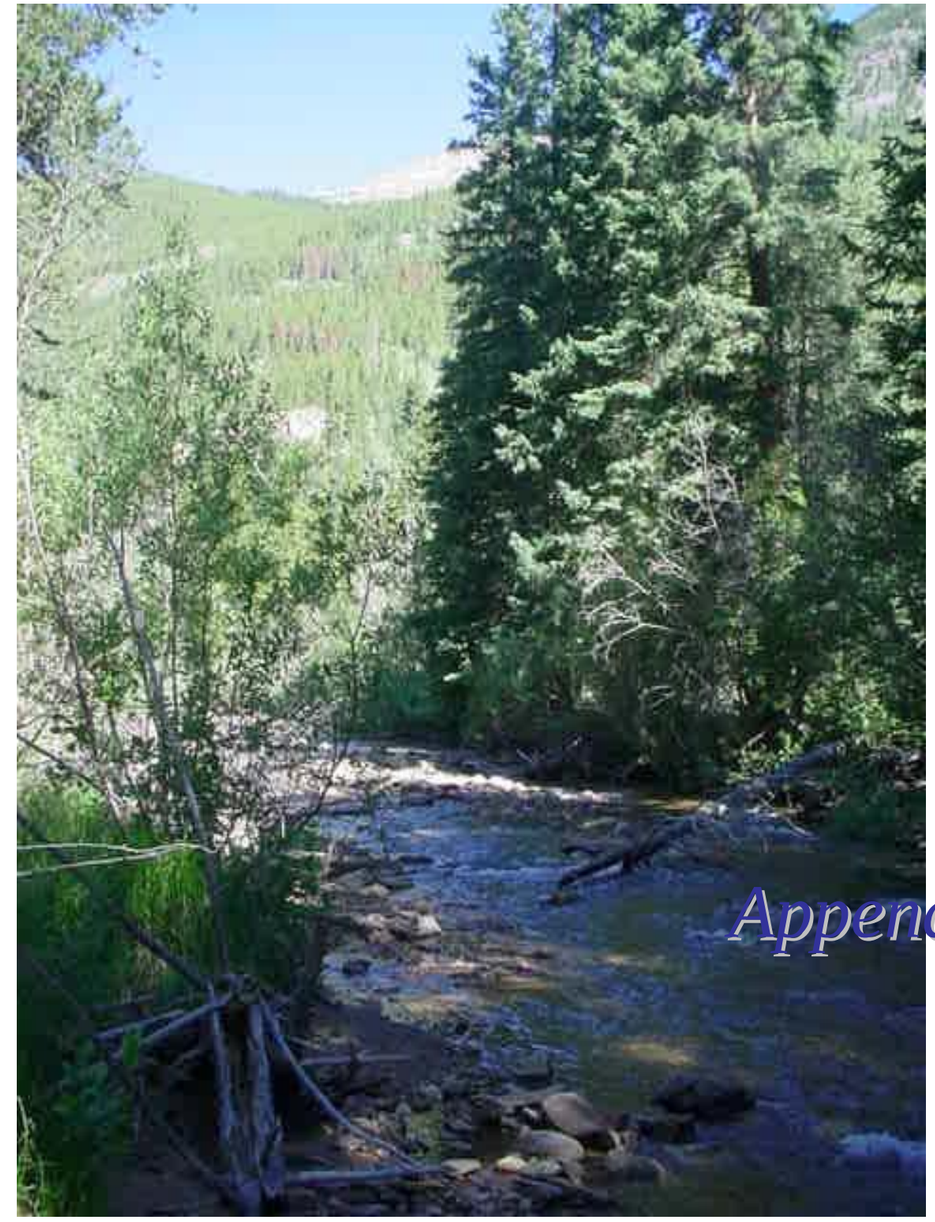
Creek Crossing Bridge

135 X 10 FT Prefabricated Bridge
Concrete Bridge Deck
Wing Walls
Bridge Abutments
Bridge Installation

Bridge Work Total 155,000.00

Trail/Park Amenities and Drainage

Access Control Bollard	EA	1,000.00
Boulders (Barricade) 3' x 3' x 3'	EA	350.00
Boardwalk - 12' Wide	LF	250.00
Wildlife Observation Platform	SF	25.00
Fishing Platform - 10' x 10' 8" Thickened Curb (Ramp Assumes 10' Vertical Drop @ 5%)	EA	7,500.00
Shade Shelter/Picnic Shelter - 20' x 20'	EA	30,000.00
Directional Signage	EA	500.00
Information Signage	EA	500.00
Information Kiosk	EA	4,000.00
Interpretive Sign in Kiosk	EA	8,000.00
Regulatory Signage	EA	150.00
Tie Retaining Wall	FF	15.00
Dry Stack Retaining Wall (No Foundation)	FF	30.00 - 75.00
Concrete Retaining Wall with Stone Veneer	FF	70.00
Culvert Crossing (Concrete Head Walls with Stone Veneer)	EA	3,000 - 4,000



Appendices

APPENDIX "A"

CLEAR CREEK COUNTY GREENWAY MASTER PLAN

ENVIRONMENTAL OPPORTUNITIES & CONSTRAINTS MEMO REPORT

June 9, 2005

Prepared by

Merle D. Grimes, LLC
1042 Broken Arrow Circle
Elizabeth, CO 80107

BACKGROUND AND PROJECT OBJECTIVES

I. GOALS OF THE PROJECT

Clear Creek County has been developing a non-motorized, bicycle and pedestrian trail along the Clear Creek drainage basin. In 2004, the County completed a Comprehensive Plan, which recommended that a comprehensive Greenway Plan be initiated for Clear Creek within the County. The goals for the Clear Creek Greenway Plan include:

- Complete a plan to respond to potential and future Interstate 70 widening efforts
- Develop a strategy for funding and implementation
- Provide for economic development by attracting visitors into the County
- Reduce the need for vehicles in the County and along the I-70 corridor
- Provide a quality recreational amenity to County residents
- Protect the natural beauty of Clear Creek
- Establish non-motorized trail connections by linking together Silver Plume, Idaho Springs, Georgetown, Empire and Lawson within the County along Clear Creek as well as the Loveland Ski Resort, Herman Gulch area, the Easter Seal Camp, the Waterworks Park Camping Area, the Rest Area by Beaver Pond and Georgetown Reservoir up to the Jefferson/Clear Creek County line.

II. GOALS AND OBJECTIVES OF THE ENVIRONMENTAL REPORT

Specific goals of this Environmental Report include:

(1) Identify potential environmental issues that could affect the basic alignment and design of the trail and amenities.

(2) Identify potential negative impacts caused by future Greenway Trail development.

(3) Identify possible educational and interpretive opportunities within the corridor.

The essential objectives of this report are to:

(1) Identify sensitive environmental resources found within the corridor boundaries.

(2) Describe the issues and opportunities as the Clear Creek Greenway Plan develops and use this information in order to avoid sensitive areas and minimize negative impacts along the proposed trail corridor. This report is not intended to serve as a NEPA Environmental Assessment.

The basis of this report is founded on site reconnaissance, literature review and on-site meetings with regulatory officials, citizens, environmental experts, and the County. The report summarizes all information gathered to date to fully understand the preferred trail alignment and alternatives as the project is in the early phases of the planning process.

To begin with a literature review was conducted and environmental experts were interviewed and asked to review the potential trail corridor in order to examine alternative routes. Local residents were interviewed for site-specific historical information. This information was mapped into a habitat assessment map delineating the areas identified by the regulatory agencies in Conservation Site Reports rating them as to sensitivity. They also listed the significant plants and animals observed within the corridor.

Further, Section VI describes the constraints and opportunities associated with each natural resource based on the information obtained in the literature search and from input from experts and agencies.

III. ENVIRONMENTAL PERMITTING – PROCESS AND ISSUES

A. Basic Issues and Process

As reaches of the Clear Creek Greenway Plan are approved for implementation, the County will need to address and possibly obtain approvals and/or permits from various environmental regulatory agencies prior to construction. The extent of environmental permitting will depend on whether the proposed trail is located near potentially sensitive habitats, the local municipal jurisdiction that the project is located in and the entity from which funding has been approved.

The proposed Greenway Trail corridor should attempt to avoid sensitive habitats that may contain endangered species and species of concern that are found on the Federal List of Endangered Species. However, with most greenways that are generally located along water bodies such as Clear Creek, avoidance cannot always be accomplished.

To determine if the existing habitat and trail alignment are potential issues, the County representative should conduct a Pre-Project Environmental Permitting Meeting early in the process with a representative from the U.S. Army Core of Engineers and any local environmental regulatory person(s) at the proposed project site. At this time, the regulatory agencies can provide the County Representative with a specific list of potential issues and permits that would be required to construct the project. The County Representative may be a County employee or a consultant hired by the County.

Common issues are encroachment into wetlands, encroachment below the ordinary high water mark of the creek, endangered plant and animal species and sites that possess cultural/archeological significance and fill in the flood plain. Even though permits may be required, the final trail alignment and design can be completed as to make the project acceptable under different permitting regulations.

B. Federally Funded Projects

Most federally funded projects are managed through the Colorado Department of Transportation (CDOT). Prior to construction, the trail project elements must meet the requirements of the National Environmental Policy Act (NEPA), Section 404 of the Clean Water Act (if applicable), and the Rivers and Harbors Act of 1899 (if applicable). In addition, all projects that are located in waters of the United States involving fill in a flood plain, regardless of funding sources, require a Section 404 permit from the United States Army Corps of Engineers. The Section 404 permitting process will require compliance with NEPA.
Essential to compliance with NEPA and Section 404 permitting will be the evidence of genuine effort to avoid and to minimize potentially adverse impacts caused by the project's construction and operation. In order to successfully comply with these requirements, demonstration of avoidance of development within sensitive areas and minimizing impacts must begin in the earliest phases of planning.

This demonstration of efforts to avoid sensitive habitats will be accomplished in the following manner:

(1) Locate all areas that contain sensitive habitat (see section III-A, Pre-Project Environmental Permitting Meeting) identified by either soils, plant or animal life existing in a particular area, or significant species of plant or animal.

(2) Identify environmental resources within the corridor.

(3) Propose alternative alignments for the trail or amenities associated with this work that will minimize negative impacts. The result is a plan that suggests the best layout of the trail that is environmentally, the least damaging.

The potential environmental issues that are pertinent to development include: archaeologically sensitive sites, unstable soils, wetlands, endangered species to include, but are not limited to, the boreal toad, the black swift, greenback cutthroat trout, orchids, any other known species of concern, and habitats of upper montaine woodlands, lakes and ponds, aquatic and riparian resources of the Clear Creek.

IV. LIST OF REFERENCES AND LITERATURE

A review of the available scientific literature on the study corridor was conducted in order to obtain and identify sensitive environmental resources present within the study corridor. The following summarizes this information:

IV – A. Surface Water Resources

Williams Russell & Johnson, Inc. Team, 1995
Flood Recovery Study
Natural Hazards Research and Publications Information Center, University of Colorado, Boulder, 1992

Colorado Department of Public Health and Environment
Water Quality Control Division
http://water.state.co.us

Colorado Water Conservation Board
http://cwcb.state.co.us

FEMA, 1992
Flood Insurance Study for the City of Idaho Springs and Georgetown area, Clear Creek County

Water Resources Data for Colorado, 1995
Includes summaries of surface water flows, water quality, groundwater level and water use.

Colorado Department of Public Health and Environment
Water Quality Control Division

http://www.water.state.co.us

Colorado Water Conservation Board
http://www.cwcb.state.co.us

IV-B. Geological Resources

United States Department of Agriculture Soil Conservation Service, 1968
Soil maps of Clear Creek County, Colorado (separate list of hydric soils is also available from the local Natural Resource Conservation Service office).

United States Geological Survey, 1988
7.5 minute topographical map of Idaho Springs and Georgetown area

http://geosurvey.state.co.us

IV–C. Climate

http://ccc.atmos.colostate.edu

http://www.crh.noaa.gov/den/cli/climo.html

IV-D. Air Quality

Department of Public Heath and Environment
Air Pollution Control Division

IV-E. Biological Resources

United States Department of Agriculture, 1991
Hydric soils of the United States.

United States Army Corps of Engineers, 1987
Wetland delineation manual used by the Army Corps of Engineers which is required for preparing all wetland delineations for Section 404 permits.

Mitsch and Sosselink, 1993 **
Wetland reference referred to by the Environmental Protection Agency (1995) describing importance of wetland functions.

Brinson, 1993a**
Hydrogeomorthic classification of wetlands
Describes the classification scheme used by federal agencies to determine wetland functions and values. Used in EPA (1995) ADID.

Brinson, 1993b**
Study of the relationship between wetlands associated with streams of different orders: sizes and position in the watershed, and their effect on water quality.

Dahl, et al., 1991**
Reference mentioned in EPA (1995) describes the importance of wetlands as habitat for threatened and endangered species.

Forman and Godron, 1986**
Reference mentioned in EPA (1995) stressing the value of wetlands as a means of movement of organisms through unsuitable habitats and dispersing plant propagules.

Barbour, Michael G., William Dwight Billings, Cambridge University Press
North American Terrestrial Vegetation

Williams Russell & Johnson, Inc. Team, 1995
Includes wetlands assessment based on qualitative field survey and National Wetland Inventory maps, (US Fish and Wildlife Service), as well as coordination with the Colorado NR Natural Heritage Inventory.

Colorado Department of Natural Resources, Wildlife Resources Division,
Colorado Natural Heritage Program
Protected Plants of Colorado

List and map county by county of all plants with protected plant status for the state of Colorado.

Colorado Natural Heritage Program
Colorado State University
May 1999
Conservation Handbook, Volume 3, No 2

List and map county by county of Colorado's Animals, Plants, and Plant Communities of Special Concern.

IV-F. Hazardous Waste

Colorado Department of Public Health and Environment
http://www.cdphe.state.co.us/hm/hmhom.asp

Colorado Department of Labor and Employment
Oil and Storage Tank Division
http://ops.cdle.state.co.us

V. SUMMARIES OF COMMUNICATIONS AND RESOURCES

V-1. Water Issues

United States Army Corps of Engineers
Terry McKee
Denver Regulatory Office
9307 South Wadsworth Blvd.

Littleton, CO 80128-6901
Phone: 303-979-4120

Met with Terry and completed windshield survey of the entire project corridor. As an official response to the meeting, Terry's supervisor drafted the attached letter dated November 18, 2004 regarding review of plans and potential permitting requirements.

Further, Terry explained that the water in Clear Creek looks clean and pristine; however, it is contaminated with heavy metals from mining, including arsenic, which affects fishing in the Creek.

Colorado Water Conservation Board
Susan Lesovsky
Discussed the surface and ground water quality issues of Clear Creek, and she referred us to Mr. Jim Hall of the Colorado Office of Water Resources with the Colorado State Division of Water Resources.

Colorado State Division of Water Resources
Jim Hall
970-352-8712
Jim is the Division Engineer for Division 1, Ground Water issues. Jim found no significant ground water issues along the corridor.

Colorado Department of Health, Water Quality Control Division
Sarah Johnson
303-692-3609

I-70 Corridor Draft Programmatic Environmental Impact Statement, December, 2004
Colorado Department of Highways
U.S. Department of Transportation - Federal Highway Administration

V-2. Hazardous Waste Issues

Colorado Department of Public Health and Environment
Diana Huber - 303-692-3331
There are many hazardous waste issues with Clear Creek as a result of the significant mining industry in the area. There is one superfund site in Clear Creek County, the Clear Creek/Central City site located in Central City and Idaho Springs at the Argo Tunnel.

The impacts are reduced fishery and impacts to other aquatic life, and habitat. The impacts to humans are exposure to heavy metals, including lead, arsenic and cadmium.

Diana agreed to review a map of the proposed corridor and help determine if there are landfills or other areas of contamination for Clear Creek that may affect the alignment of the trail. No major issues were identified. However, it should be noted that a Phase One, Hazardous Material Study may be required for projects that are utilizing federal or state funding and that hazardous spills are common along railroad tracks and within and near mine sites.

Colorado Department of Labor and Employment Oil and Storage Tank Division
Tim Kelly, Environmental Protection Specialist
303-318-8544

70 facilities listed for Clear Creek County, with 36 events of release of contamination; however they are not mapped. The COSTIS database will show all the facilities and give information as to which of these facilities are still active. Go into the Event section, look at processes, for what is active, and events. Events are created in response to an environmental release. Go into Events, and it will tell the history of the site.

V-3. Threatened and Endangered Species Issues
Colorado Department of Natural Resources, Division of Wildlife
Ruby Marsh, 303- 291-7206 Assistant Director of Grassland Association Species

Gave me information about the Grassland Plan and the Division website: www.wildlife.state.co.us

Colorado Natural Heritage Program
Michael Mennefee, Environmental Review Coordinator
Colorado State University
8002 Campus Delivery
Fort Collins, CO 80523-8002
Phone: 970-491-7331
Michael prepared Conservation Site Reports of the project area and some mapping information. Further, he gave me contact information for other resource people and organizations.

Birds:

Rocky Mountain Bird Observatory (http://www.rmbo.org/homenon.html)
Colorado Field Ornitholigists at Colorado State (http://www.cfo-link.org)

Endangered Species, Mammals, Fish:

United States Fish and Wildlife
Adam Misztal, Fish and Wildlife Biologist
USFW
Colorado Field Office
755 Parfet Street
Lakewood, CO 80215

Adam is in charge of the Threatened Species program.

Adam reviewed a map of the proposed alignment and provided general locations of species habitats that would be affected by the alignment.

I-70 Corridor Draft Programmatic Environmental Impact Statement, December, 2004
Colorado Department of Highways
U.S. Department of Transportation - Federal Highway Administration

V-4. Wetlands Issues

Federal Environmental Protection Agency
Army Corps of Engineers
Terry McKee 303-979-4120

I-70 Corridor Draft Programmatic Environmental Impact Statement, December, 2004
Colorado Department of Highways
U.S. Department of Transportation - Federal Highway Administration

V-6. Air Quality Issues

Colorado Department of Public Health and Environment,
Air Pollution Control Division
Bill Hague, Physical Science Researcher
303-692-3241

There are no air quality/pollution monitors in Clear Creek County, as they expect no significant pollution problems there. Monitoring stations were set up in Idaho Springs in the late 1970's but the findings were benign.

He expects the air quality outside the I-70 corridor to be very good, and if there were any problems it would be in winter only as a result of temperature inversion, which would trap any particulates under the ceiling.

V-7. Clear Creek County Issues

Public Works Dept.

Permits are processed as part of the County Building Permit, including the following potential requirements:

1. Flood Plain Development permit
2. Land Disturbance permit
3. City review and approval of all plans.

V-8. Historical and Archaeological Issues

Colorado Office of Archaeology and Historic Preservation
Lovella Kennedy
Colorado Historical Society
1300 Broadway
Denver, CO 80203
303-866-3395
oahp@chs.state.co.us

The Colorado Historical Society does not review maps for large scale planning efforts for significant archeological sites. Ms. Kennedy suggested that when a specific project is being contemplated that a request to the department be made to determine if any significant archeological sites have been identified in that area.

VI. ENVIRONMENTAL CONSTRAINTS AND OPPORTUNITIES ASSOCIATED WITH THE CLEAR CREEK GREENWAY

VI-A. Physiography and Topography

Opportunities

The topographical and physiological changes that occur throughout the trail corridor provide for diversity in the forest canopy including typical bank stabilization plants to make the soils stable enough for the trail construction.

This diversity of topography with the corresponding changes in forest canopy determines the shade and cover for wildlife, which also varies along the trail corridor.

Opportunity exists for educating the public about the diverse habitats found along the river corridor, so that preservation, protection and enhancement may be evident as the trail allows users in the riparian zone. In turn, the user will feel inclined to himself protect the environment, in this habitat as well as in general.

The trail corridor is subject to flooding which presents opportunities for interpretation of floods and floodplain issues.

The lakes at the Georgetown Reservoir and Lakes provide the opportunity to create passive recreation and possible camping and fishing facilities for the public.

Opportunity is present to avoid and minimize potentially adverse impacts on floodplains and floodway caused by placement of structures in these areas.

Constraints
Floodplains constitute a difficulty in placing structures in the floodplain; the Clear Creek Greenway master plan will take this issue into consideration.

Plan will need to include measures to avoid and minimize problems with geotechnical instabilities.

VI-B. Climate

Opportunities
The pleasant climate will allow for use during fall, summer and spring of the trail system.

Constraints
The threat of flooding by periodic storms may require consideration, which can be addressed with the Omaha District Corps of Engineers Water Resources Division.

VI-C. Air Resources

Opportunities
There are no special opportunities identified, as air quality is not a function controllable by the plan.

Constraints
There are no monitoring stations in the study area for SO2, lead, and ozone. The maximum value that is the standard for ozone is 125 parts per billion.

Potential effects of increased air emissions should be fully evaluated in future environmental assessments.

VI-D. Geological Resources

1. Soils

Opportunities
Opportunity exists to educate people about wetland soils and systems and how soils determine plant and animal life on the river corridor.

There is the opportunity to integrate information about the soils of Clear Creek County with other ecological elements of the trail corridor in educational and interpretive displays.

Constraints
Hydric soils that are associated with wetlands are characterized by high water and flooding in periods of heavy rainfall. This may affect the location of roads and bicycle paths and other structures.

Wetland soils are subject to the U.S. Army Corps of Engineers

2. Fossils

Opportunities

Fossils, which could possibly occur along the creek bank and in other locations in the study area, present an opportunity to educate the public.

Constraints
Identification of sites could lead to looting; therefore, care must be taken to educate the public about the need to preserve and respect these areas.

VI-E. Surface Water Quality and Quantity

1. Surface Water Quality

Opportunities
There is the opportunity to avoid and minimize negative impacts on surface water quality during construction of bike trails and roads by locating these structures in areas that will produce minimal soil erosion during the construction phase and by implementing BMP's during construction to minimize soil erosion.

Opportunity exists to educate the public regarding water quality and all related factors.
Constraints
None identified.

2. Surface Water Quantity

Opportunities
Opportunity exists to educate the public about the forces that converge to cause flooding and the associated recovery aspects.

Constraints
None identified

3. Ground Quantity and Quality

Opportunities
Opportunity exists to educate and inform the public about groundwater quality issues, including sources of contamination and how these issues can be solved.

There is the opportunity to educate the public about groundwater supplies including local supplies, types of aquifers, and regional supply issues. Also, there is a big story to tell about the impacts to humans, the environment and all species of plants and animals from the mining industry.

Constraints
Groundwater quality can be affected by contamination from pollutants arising from surface water runoff, particularly from the mining industry.

The contamination of Clear Creek needs to be addressed with regard to encouraging fishing in the waters.

VI-F. BIOLOGICAL RESOURCES

1. Wetlands

Wetlands are valuable and sensitive habitats protected by Section 404 of the Clean Water Act. Fill in waters of the United States, including wetlands, require a U.S. Army Corps of Engineers Permit from the Omaha District. The Section 10, Clean Water Act Permits are required for structures placed in navigable waters of the United States. Avoidance and minimization is a major component of the Section 404 permitting process.

Therefore, the least environmentally damaging practicable alternative should be selected from a set of preliminary alternatives. The result is a preferred alternative that demonstrates the maximum avoidance and minimization of impacts on wetlands and significant habitats and trees.

Opportunities
Opportunity for education about wetland types, quality of, extent, functions, associated values, and their effect on plant and animal life and activity.

Opportunity exists to avoid and minimize impacts on wetlands resulting from project related construction activities. This has been a major consideration in the proposed placement of the trail in the planning process.

Constraints
The corridor has primarily forested, seasonally flooded, temporarily flooded wetlands and minor emergent wetlands. These wetlands serve several useful functions, including flood control, erosion control, water quality protection, wildlife habitat, and fish habitat. For these reasons, these areas have been avoided in the proposed trail alignment.

2. Aquatic Resources

Opportunities
Clear Creek and its tributaries presents an opportunity to avoid and minimize adverse impacts on water quality and fish and invertebrate populations of the creek as a result of project related construction activities. This has been achieved in the planning phases by avoiding wetlands and any river crossings which would directly affect these habitats.

Constraints
The Clear Creek is a relatively diverse and productive aquatic system. However, it has been affected by point and non-point sources of pollution.

3. Air Quality

Opportunities
The trail corridor area is in full attainment for ozone (O3), Total Suspended Particulate matter (TSP) and sulfur dioxide (SO2), which are the federal air quality standards that are used to evaluate air quality of a particular area. No special opportunities have been identified for this resource category since air quality if a function of factors not controllable by the plan.

Constraints
None

VI-G. Themes for Educational Opportunities

Interpretive signs of various themes located along the Clear Creek Greenway will provide a fun, educational opportunities further enhancing the total experience for the user. Interpretive signs should include both graphics and text in order to convey the story. In addition, the contents of the interpretive sign should be easily understandable.

The following Educational Themes should be considered for the Clear Creek Greenway corridor:

1. General Geological History
An overview of the evolution of the Clear Creek Drainage Basin including how the Mountain Range and Clear Creek were formed over time. Sub-topics should include the evolution of geological features, animals, and plants, from the Continental Divide to the South Platte River.

2. General Ecological Significance
Overview of the ecological importance of Clear Creek in Clear Creek County and the region. including how human encroachment into the Clear Creek corridor has significantly altered its value as a natural resource.

3. Review of the Major Ecological Zones Located along Clear Creek.
Elevation and aspect (north, south facing slopes) have a significant impact on determining plant communities and ecological zones in Clear Creek County and this story should be told.

4. General Cultural Significance
Stories about the people who lived in, explored, and settled Clear Creek County, from the days of the Native Americans to the present time. Of specific concern would be those who lived near and/or utilized Clear Creek's natural amenities for survival or commerce.

5. Site Specific Interpretation of Plants and Wildlife
Many plants and animals can be observed along the corridor. Interpretive signs are an effective way to identify these species and to discuss their habitat, migration and breeding habits as well as their value to the ecology of the area. Also need to mention if the species is listed as endangered or threatened.

6. Site Specific Interpretation of Culture
People have lived and worked on or near the banks of Clear Creek for hundreds of years. Some of these individuals have made significant (good and bad) contributions to the community and the Clear Creek

ecology. Their stories should be told so that Greenway users can begin to understand how humans have relied on natural resources and have made Clear Creek County what it is today.

VII. SUMMARY OF FINDINGS

The topographical and physiological changes that occur throughout the proposed Clear Creek Greenway Trail corridor provide for diversity in wildlife, wildlife habitat topography and views. Clear Creek and its riparian ecological zone flows through the sub alpine, montaine and foothills ecological zones providing a diverse array of plant and wildlife species. In addition, views to the alpine ecological zone to the west are common from Clear Creek. The total elevation change from the Jefferson/Clear Creek County boundary and the Loveland Ski Area is 4,200 feet.

Much of Clear Creek through Clear Creek County has been influenced by extensive encroachment of the I-70 Corridor, county roads and commercial and residential development. Because of these encroachments, Clear Creek will never be a natural, pristine waterway. Besides the visual impact of encroachment, noise pollution from I-70 is present throughout much of the corridor. However, many reaches of Clear Creek, where they depart from development, provide a window into how the creek looked before being settled by humans and should be protected and enhanced whenever possible.

The planning team uncovered no major environmental issues during its research that would impede the development of the Greenway Trail; however, several areas along Clear Creek (see Map 5.1 Environmental Conditions) are known habitats to endangered species such as the cutthroat trout. The major environmental permitting issue will be the appropriate identification, avoidance and/or mitigation of wetlands due to the construction of trails or trail amenities. As discussed in this Memo, an on-site, pre-project meeting should be conducted with environmental regulatory agencies prior to final design and engineering to ensure that all regulatory issues are known and to determine which permits apply to the project. Wetlands and habitats that support threatened and endangered species should be avoided by trail construction. When wetlands cannot be avoided, use of low impact design solutions such as boardwalks should be considered.

Aquatic resources that support endangered species such as the greenback cut throat trout should be considered in design. Storm runoff from the Greenway Trail corridor should be collected into small wetland detention ponds so that the runoff can percolate naturally into the ground and not flow directly into the creek or a creek tributary. Wetlands established in the detention ponds will provide some additional filtration of water born pollutants.

APPENDIX "B"

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
DENVER REGULATORY OFFICE, 9307 SOUTH WADSWORTH BOULEVARD
LITTLETON, COLORADO 80128-6901

November 18, 2004

Ms. Sara Edi Grimes
MDG, Inc.
1042 Broken Arrow Circle
Elizabeth, CO 80107

RE: The Clear Creek Greenway Initiative Recreational Trail
Corps File No. 200480590

Dear Ms. Grimes:

Reference is made to the November 16, 2004 field review conducted by Mr. Merle Grimes of MDG and Mr. Terry McKee of my office concerning the above-mentioned project located along and near Clear Creek in Clear Creek County, Colorado.

If any work associated with this project requires the placement of dredged or fill material, and any excavation associated with a dredged or fill project, either temporary or permanent, in waters of the United States at this site, this office should be notified by a proponent of the project for Department of the Army permits or changes in permit requirements pursuant to Section 404 of the Clean Water Act. Waters of the U.S. includes ephemeral, intermittent and perennial streams, their surface connected wetlands and adjacent wetlands and certain lakes, ponds, drainage ditches and irrigation ditches that have a nexus to interstate commerce.

Work in waters of the U.S. should be shown on a map identifying the Quarter Section, Township, Range and County of the work and the dimensions of work in each area of waters of the U.S.

Mr. McKee agreed that you will evaluate this project alignment for any streambed or wetland impacts then delineate and map the areas of these streambed and wetland impacts on the alignment plans of the recreational trail. At that time Mr. McKee would review your wetland delineations. Or you may choose to use an environmental consultant to do the wetland delineation and mapping.

Normally projects of this kind would be authorized by nationwide permit Nos. 14 and/or 18.

If there are any questions call **Mr. Terry McKee** at **303-979-4120** and reference **Corps File No. 200480590**.

Sincerely,

Timothy T. Carey
Chief, Denver Regulatory Office

APPENDIX "C"

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Region One
Planning and Environmental Unit
18500 East Colfax Avenue
Aurora, Colorado 80011-8017
Phone: 303-757-9651
Fax: 303-757-9746

October 3, 2005

Mr. Tim Mauck
Open Space Coordinator
Clear Creek County Open Space
P.O. Box 2000
Georgetown, CO 80444

Dear Tim:

Thank you for the opportunity to review the Draft Clear Creek Greenway Plan (7-29-05). The Colorado Department of Transportation (CDOT) understands how important the Greenway project is to Clear Creek County and we believe you have the framework for an outstanding project that encompasses a wide range of recreational opportunities that will be enjoyed by both residents and visitors.

Because we have been working together throughout the development of this plan and coordinating efforts with the I-70 Mountain Corridor PEIS, CDOT offers only a few comments.

1. Page 4 – The objective to "Rehabilitate the main channel of Clear Creek and prohibit further filling of the creek" is noteworthy. However, I could not find any discussion in the Plan as to how this objective will be met.

2. Page 8 – The sketch showing a pedestrian crossing over I-70 is new. This will need close coordination with the PEIS to ensure compatibility with the preferred alternative. It will also need approval from FHWA.

3. Pages 13-28 – In the legend, change "Department of Highways" to "Department of Transportation".

4. Page 14 – Project components in the vicinity of I-70/US 6/Kermits need to be coordinated with the preferred alternative in CDOT's Gaming Area Access EIS. Contact Cecelia Joy with questions regarding details of the EIS.

5. Page 19 – The Weigh Station does not belong to CDOT. The Dumont Port of Entry belongs to the Colorado Department of Revenue.

6. Section C – All references to removing rocks to clean up boat launch areas is likely to lead to increased erosion into Clear Creek and stabilized entrances should be planned.

7. Pages 39-40 – The information in this section presents a reasonable explanation of CDOT's review objectives and identification of areas of conflict that will need further review at a later, detailed design stage.

8. Page 45 – CDOT's proposed wetland mitigation site known as the Barry property is incorrectly located on the map. Evan Kirby of J.F. Sato recently sent you a message with the correct location. Additionally, the portion of the Barry property located on the north side of the highway is proposed big horn sheep mitigation habitat.

9. Pages 43-46 – It is recommended that proposed development of rural residential and large lot residential land use next to I-70 consider incorporation of noise mitigation strategies.

10. Page 50 – As you design trail underpasses, consider how they can also be made "wildlife-friendly".

11. Page 68 – Impacts to water quality from erosion, stormwater runoff, work in the Creek, or disturbance of contaminated soils will also be a major issue for much of this corridor.

    All portions of the project that occur in the I-70 right-of-way will require environmental clearances from CDOT and FHWA. The specific clearances required will be determined when more specific details of the project are developed.

12. Because of the complexity of the data files and the variety of information that needs to be interfaced, it is not practical for the right-of-way unit to conduct a detailed technical review of the actual "footprint" of the Greenway as it relates to the I-70 right-of-way. Similar to what was done for the whitewater park, we will continue to coordinate our projects with assistance from our respective consultants so that the planning, review and approval processes will as efficient and cost effective as possible.

Please contact me or Jay Kramer if you have any questions.

Sincerely,

Chris Paulsen
CDOT, Reg 1
Env. Project Manager

Cc: CDOT – Joy
CDOT – Kramer
Project File

APPENDIX "D"

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