

ASPEN BRANCH OF THE DENVER & RIO GRANDE WESTERN RAILROAD CORRIDOR



RECREATIONAL TRAILS PLAN UPDATE

DECEMBER 2005

Prepared for the Roaring Fork Transportation Authority



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I. INTRODUCTION

The Roaring Fork Valley has been experiencing growth and development unparalleled since European settlement during the silver boom of the late 19th century. The subdivision of agricultural land is gradually transforming the character of the valley floor from a predominantly rural, pastoral setting to a developed state inclusive of golf courses, housing and commercial centers. The linear property corridor of the Aspen Branch of the Denver & Rio Grande Railroad was purchased by the Roaring Fork Railroad Holding Authority (RFRHA) in 1997 to maintain a continuous valley-wide right-of-way for recreation, conservation and mass transit implementation. On November 1, 2001, the Roaring Fork Transportation Authority (RFTA) became the owner of the railroad corridor.

The corridor affords an opportunity to develop recreational trails and manage public access on and across the previously restricted private property. The centralized ownership, design and management of the corridor will help to maintain open space and the diverse valley legacy and enrich the adjacent communities and visitors alike.

There are over thirty-three miles of railroad corridor extending through the scenic valley of the Roaring Fork River. Passing through three counties and several towns and communities, the property offers the opportunity to provide a continuous recreational link between Glenwood Springs, Carbondale, Basalt and Woody Creek. The relative isolated nature of the railroad corridor as it traverses through private agricultural lands and along canyon walls presents a unique opportunity to provide a high quality outdoor experience including active recreation, habitat protection and interpretation.

The principal purpose in the original formation of RFRHA was the preservation of the railroad corridor, enabling multi-jurisdictional planning, funding, development and management of a public recreational trail system throughout the length of the corridor. Additional goals of property acquisition include providing access to public lands and to the Roaring Fork River, the preservation of open space and wildlife habitat, and to allow the development of mass transit uses. The Comprehensive Plan (CP) for the RFTA property envisions integrated trail and transit development within the railroad corridor as a regional asset inclusive of open space, recreation and transportation resources.

The purpose of this Trails Plan (the Plan) is to develop a conceptual plan and implementation guidelines for a recreational trail within the RFTA railroad corridor. The trail shall provide public use of the lineal property, and is envisioned to afford a wide range of recreation opportunities including, but not limited to: a continuous non-motorized trail link, river access, biking, hiking, equestrian uses, access to public lands, wildlife viewing, habitat conservation, and educational and interpretive activities. The plan is based on design requirements, recommendations and preferences evolving from public input and through the study of the corridor's physical and aesthetic qualities.

II. PROPERTY CHARACTER

A. Physical

The character of the Roaring Fork Valley (the valley) is a mosaic composition of native plant communities, agriculture, rural, suburban and urban land uses. The railroad corridor shares the valley floor with the river and State Highway 82, traversing through diverse land uses ranging from unspoiled natural areas to sand & gravel pits, including hay meadows, riparian forest, residential, commercial, and industrial districts along its course. The valley bottom is relatively narrow, averaging less than one mile in width and ranging from 1.5 miles near Carbondale to under 700 feet in the narrows of Snowmass Canyon. The railroad corridor property has numerous potential access points resulting from its proximity to State Highway 82 in the lower and mid valley, and at public road crossings throughout the corridor.

The railroad corridor extends a distance of approximately 33.3 miles in a narrow strip from the wye junction with the mainline in Glenwood Springs upvalley to the Woody Creek gulch. The property varies in width from 50 feet to 200 feet with a predominant width of 100 feet, encompassing approximately 460 acres. When the corridor was purchased in 1997 by RFRHA, the rail bed, ballast, ties and tracks were continuous throughout the corridor, with the exception of the short section removed by CDOT for highway improvements at Wingo Junction. In 2005 the RFTA Board of Directors approved the sale of the track tie and other track materials for salvage. Both the existing tracks and proposed transit line configured on the preferred alignment identified in the CIS alignment (alignment "C") are located on the centerline of the railroad corridor, effectively halving the useable width for trail implementation in certain areas at the time transit with trail occurs. The length of this 'transit-with-trail' situation totals 21.5 or 22.5 miles, dependent on the location of the transit crossing to the highway corridor at Catherine Bridge. In rail-to-trail sections (10.8 or 11.8 miles) the assumption is that the full width of the railroad corridor is available for trail alignment. The corridor length by county is 18.3 miles in Garfield, 3.1 in Eagle and 11.9 in Pitkin.

Generally, the corridor provides pastoral surroundings and views as it runs across the alluvial terraces of the valley floor. The foreground scenery of agricultural lands is highlighted by a backdrop of largely undeveloped valley slopes and distant mountain peaks. The impressive twin peaks of Mt. Sopris command attention from the lower reaches of the railroad corridor. In many areas the alignment lies directly adjacent to and above the river, offering scenic views of flowing water and associated riparian flora and fauna. The open, expansive views of the lower valley are an interesting contrast to those provided farther upvalley. In Snowmass Canyon the landscape canopy and vertical landforms along the corridor provide an enclosed, intimate experience, resembling a forested backcountry trail. This wide range of character helps enrich the experience for both passive and active recreation opportunities.

A large percentage of the upper valley walls are in the public domain such as state, Bureau of Land Management (BLM) or U.S. Forest Service (USFS) property. The adjacency of the project corridor offers several potential access points to these extensive public-owned parcels providing opportunities for backcountry hiking, skiing, equestrian and mountain biking activity. This property attribute is very important to residents seeking access to nearby public lands. It also dramatically increases the range and level of difficulty of recreational opportunities available from the trail corridor including the potential to provide a high-quality wilderness experience.

The composition of native vegetation changes as you move upvalley dependent on changing elevation, solar aspect and river adjacency. The complex composition of natural, riparian and agricultural vegetation patterns, coupled with the scenic landforms of a mountain valley provides a picturesque setting for outdoor recreation. This mixture of large open spaces, railroad corridors, dense cover, wetlands and the riparian river corridors also provide excellent wildlife habitat. Wildlife sightings commonly include elk, deer, fox, heron, eagle, falcon, bear, blue herons, eagles and other waterfowl species that provide viewing opportunities and add interest to the trail experience.

The Roaring Fork River with its winding ribbon of bottomland forest forms the visual and recreational backbone of the valley. The relationship between the railroad corridor and the river provides for a myriad of water-based recreation opportunities and forms an integral component of the property's character.

From the confluence with the Colorado River in Glenwood Springs upstream to Carbondale the river is designated Gold Medal water, characterized as some of the highest quality aquatic habitat in the state. An estimated 15,000 anglers utilize this valuable resource annually. River recreation opportunities include fishing, boating, swimming, waterfowl viewing, photography and numerous other activities. Throughout the corridor is an established network of river access easements for fishing and recreation. The RFTA trail enables public access to many of these areas. In addition the property encompasses additional riverbank areas which will become available for public river access. The Trail Plan identifies additional potential parking and trailheads on RFTA property further enhancing public use of this valuable resource.

In addition to the wealth of positive attributes, recreational and open space opportunities characterizing the property, specific physical and legal planning constraints exist that are considered in the plan. These factors significantly limit the options for trail alignment, access and the location of support facilities. The main limiting elements are the narrow, linear shape of the property, the shared use of the railroad corridor with the transit line, and the fiber optic easement restrictions. Potential conflicts between trail and transit functions will require safety, security and access control measures that will affect design and costs. The fiber optic line is addressed in a subsequent section. In addition, several other planning constraints such as wildlife, vegetation, ditches and wetlands also impact the trail plan and must be considered in the final design.

In several areas of the corridor steep topography across the property dramatically influences trail alignment, design and construction costs. In these areas the rail bed was benched into the slope with cuts and embankments, increasing the cross slope for much of the property width. Rail-with-trail implementation within the railroad corridor property requires relatively high construction costs due to earthwork, retaining walls and protective trail barriers. The plan recommends thorough evaluation of design alternatives for these areas during final design to determine the most cost effective, acceptable solution. Several other property characteristics were noted in the planning process which will affect final trail design and management decisions. These factors include:

- irrigation ditches crossing, running adjacent to, and within the property;
- seasonal and permanent ‘wetland’ areas adjacent to and within the property;
- the proximity and encroachment of State Highway 82 on the property;
- private crossings and encroachments including existing utility easements.

B. QWEST Easement

The RFTA property contains a utility easement granted to Southern Pacific Telecomm and subsequently transferred to Qwest for the installation, maintenance and operation of an underground fiber optic communications cable. The 10 feet wide easement parallels the rail bed, predominantly on the north side, with an average offset from the track of 8 to 10 feet. The continuous easement begins at 23rd St. in Glenwood, running upvalley the length of the property to Woody Creek.

Easement restrictions preclude the use of this utility corridor for trail implementation to the fullest extent possible. Crossings of the easement shall be minimized and shall intersect perpendicular to the cable. Trail implementation within the easement can occur only at corridor “choke” points. Within the easement all repairs to existing or proposed improvements, including the Rio Grande trail, resulting from fiber optic line repairs, are the responsibility of RFTA. The location of the line was considered along with other physical elements during the evaluation of trail alignments.

C. Conservation Covenant Areas

When RFRHA bought the railroad corridor, a conservation easement was placed on the entire corridor. However, through the Corridor Investment Study Process, it was found that many portions of the corridor did not contain the attributes described as “conservation values” by the conservation easement. Therefore, in 2001 the Conservation Easement was changed to a Conservation Covenant. Ten conservation covenant areas were established along the corridor and a corridor enforcement commission was established. The covenants require the owner to abide by its terms and require the owner to hire an outside consultant to evaluate the covenant areas each year and report the findings to the covenant enforcement commission.)

The area covered by the conservation covenant encompasses only those areas of the corridor that contain the “conservation values” described within the original conservation easement. The size was reduced from 34 miles (the full length of the corridor from Glenwood Springs to Woody Creek) to 17.50 miles (roughly one-half of the corridor).

D. Pitkin County Trail Easement

As defined in the Deed of Trail Easement, dated June 30, 1997, the Pitkin County Open Space and Trails board was deeded the right to construct an interim trail on the corridor within Pitkin County should the Comprehensive Plan not be completed within two years of the date of acquisition of the property. An interim trail alignment was identified in the Pitkin County reach that accommodates public use of the property while protecting the integrity of both existing and proposed rail and transit alignments. This trail has been completed on its interim alignment and by 2020 RFTA is required to identify a final alignment for the trail through Pitkin County.

In this plan the trail design assumes an 8 foot wide trail platform with crusher-fines surfacing and basic safety and signage improvements. Public land and river access points are identified.

III. TRAIL PLAN DEVELOPMENT

The Trail Plan was begun as a component of the Corridor Investment Study (CIS) and Comprehensive Plan (CP) for the then RFRHA property. The overall study was programmed for comprehensive evaluation of the costs, benefits and impacts of a proposed mass-transit system in the valley, primarily within the railroad corridor property. Culminating in the production of a Draft Environmental Impact Statement (DEIS), the study includes inventory and assessment of physical, economic and social impacts of several transportation implementation alternatives.

A. Task Force Workshops

As one facet of the broadly-scoped study, the Trails Plan utilized the previously established public involvement process of open Trails Workshops. Between May of 1998 and March of 1999, five publicly advertised workshops were held to formulate project goals and objectives, discuss alternatives, review progress and receive public comment. Through this series of public workshops the plan incorporated the community ideas and expectations for the trail corridor.

At the initial workshop attendees were introduced to the project and the study area through presentations and a hands-on work session using aerial maps of the corridor. Participants helped identify key goals, issues, constraints and opportunities to be considered in the planning process. Interested trail supporters volunteered to serve on the Trails Task Force, attend future meetings and gather information pertinent to the trail plan.

As a preferred transit alignment emerged the plan progressively developed. At subsequent Task Force workshops members reviewed and discussed trail alignment alternatives, design standards and recreation opportunities. The involvement and direction of the Task Force participants was key in the decision-making process and has helped build consensus and support for the plan. Their knowledge of the valley, existing use patterns and goals of local open space groups has been instrumental in the planning effort. It was with this key involvement that the design principles, goals and trail plan take its final form.

B. Project Coordination

As a result of the complexity inherent in a project of this scope, coordination for the planning study involved several project parameters and local agencies. Thorough coordination with the transit system planning effort is required because of the exacting design parameters and relatively large impact of a transit line on the narrow corridor. Transit elements affecting trail planning include station locations, passing tracks, grade-separated road crossings and overall rail bed improvements, all occurring within the railroad corridor and potentially impacting trail alignment.

Consistent with the CP goal of coordination with planning efforts of local agencies, trail planning has included county and local governments, trail, open space and recreation groups in the process. Consultations with the following agencies and interest groups in a positive, cooperative atmosphere has helped guide the plan toward meeting local objectives for parks, open space and trails.

- City of Glenwood Springs Planning Department
- Garfield County Planning Department
- Town of Carbondale Planning Department
- Town of Basalt Planning Department
- Mid-Valley Trails Committee
- Pitkin County Open Space & Trails Board
- Colorado Department of Transportation
- Glenwood Springs River Commission.

IV. TRAIL PROGRAMMING AND DESIGN PRINCIPLES

The development of the program for the trail plan began prior to the formation of RFRHA and evolved throughout the CIS/DEIS/CP process. Pitkin County purchased the railroad corridor segment from Woody Creek to Aspen in 1969. Today this corridor serves the upvalley residents as continuous trail corridor, providing recreation and off-road commuting opportunities. Since the opening of this amenity to public use, local trail supporters and agencies have been advocating the down valley extension of the system, due in part to the embargoed status of the rail line. Previous trail studies for the downvalley corridor include the Roaring Fork Trail Conceptual Plan (1992) and the Recreation Access Feasibility Study (1996). These plans and related planning documents completed for local highway projects and transit studies provided a major portion of the site inventory and project programming information for this trail plan.

A project program defines the individual components of the overall system. A program may be described in a variety of formats ranging from a simple list of components to a more generalized, broad set of guidelines, goals or principals that are utilized in the decision-making process to shape and steer project implementation. Design goals establish parameters for the physical design of the trail components. Programming for the RFTA trail was developed and refined throughout the planning process. Program elements include information, ideas and input from both past and current corridor studies and include local, regional and national sources and standards. Specific to the valley, program goals, principals and design elements have been summarized from the RFTA mission, legal requirements, meetings, public workshops, project research and coordination.

The main components of the plan involve recreation, preservation, interpretation and environmental education. Recreation objectives include the alignment and design of multiple-use, non-motorized trails and ancillary facilities for both hard- and soft-surface activities including biking, hiking, equestrian and other trail uses. The Roaring Fork Holding Authority - Comprehensive Trails Plan recreation component also includes access to the river and public lands. The preservation element seeks to maintain the natural resource to the fullest extent possible for wildlife, residents, visitors, and for the overall health and value of the natural system. Knowledgeable trail design and management of the corridor is key to resource protection. The interpretive/environmental education components will provide experiences designed to help give meaning to the landscape and to contribute to trail users' understanding of the cultural and natural elements of the Roaring Fork Valley environment.

The RFTA trail will function at several levels. On the valley-wide level the trail provides a continuous connection from Glenwood Springs to Carbondale, Basalt and Aspen, including spur trails, trailheads and points of interest such as river access or scenic overlooks. Individual trail segments may serve as discrete elements connecting local destinations, and as a part of the larger trail system. Trail users can spend several hours or several days enjoying different parts and features of the corridor. The program elements categorized below include principals, goals, objectives and specific recommendations for trail planning, future design and implementation of the trail system.



2010 Soft-Surface Trail East of Emma near Basalt High School

A. General

- Improve the quality of life for residents through the development of the corridor that meets expressed community transportation and recreation needs.
- Plan for a continuous trail throughout the corridor.
- The proposed trail alignments (paved and soft-surfaced) shall be restricted to use of the linear RFTA property to the fullest possible extent.
- Maximize recreation, education and interpretation opportunities.
- Develop a trail system that provides a quality experience for both local and visiting users, and results in economic benefits to the valley.
- Minimize impact to adjacent landowners from existing and proposed activities (transit, river access, etc)
- Take advantage of existing corridor resources including access points, road grades, trail connections and river access.
- Plan for the ultimate development of appropriate support facilities such as water stations, restrooms, picnic shelters, etc.
- Consider implementation costs.

B. Design Detail

- Trail design shall provide barrier-free access.
- The trail shall be a 10 feet wide hard surface, particularly in high volume areas.
- Develop a soft-surfaced jogging trail, minimum 4 feet wide with improved, soft gravel surface.
- Identify equestrian use of the corridor. Separate bridal path from paved trail for safety.
- Maximize separation of trail and transit alignments. Use grades, vegetation and ditches where feasible for separation and to improve user experience.
- Provide smaller soft-surface trails to access natural areas, the river and public lands where appropriate.
- Utilize a common theme in the design of all trail amenities and structures. Design and materials should complement the natural environment.
- Incorporate natural, salvaged and recycled materials as available and appropriate in design of trail improvements.
- Low maintenance and vandal resistance shall be design considerations.

C. Trail Use

- Design for multi-purpose use and provide interest and variety for users.
- Provide for a wide variety of high-quality, non-motorized, passive and active recreational experiences and opportunities.
- Provide a trail suitable for non-motorized commuting. Only non-motorized use shall be allowed, except for emergency and trail maintenance access.
- Trail design shall accommodate hiking, running, biking, skating, equestrian and challenged users. Other uses identified include picnicking, wildlife viewing, cross-country skiing, photography, river, environmental education/interpretation and public land access. Local communities may decide independently with respect to skaters, equestrians and other uses within developed areas.
- Plan shall accommodate specific design requirements and constraints of programmed uses.

- Camping and open fires are prohibited.
- See the RFTA Rio Grande trail rules and regulations for further detail.

D. Linkage

- Provide for convenient, direct access and use by residents and visitors. Identify trail access points considering proximity to residential, educational and employment centers. The trail will provide off-street connections between communities, towns, commercial employment centers and to other resources throughout the valley.
- Identify connections to existing and proposed trails, recreation areas, population and activity centers, roads, the river and public lands. Specifically, provide direct links to the Glenwood Springs River Trail, the Basalt-Old Snowmass Trail, the Rio Grande Trail and local trails in Carbondale and Basalt. Trail connections provide indirect access to the Glenwood Canyon Trail, the Christine State Wildlife Area, Pitkin County trails, BLM and USFS lands.
- Trail system shall emphasize regional recreational concept and commuter functions.
- Identify or develop off-street access to schools for student commuting and environmental education.

E. Environmental

- Protect natural qualities including habitat values and the river corridor.
- Minimize environmental impacts from trail construction.
- Minimize user impacts to resource through design management and education.
- Identify sensitive natural areas and recommend design and management mitigation measures.
- Evaluate alternative trail alignments that provide adequate buffer zones or completely avoid sensitive habitats.
- Consider mandatory or voluntary seasonal trail closure ('management' areas) during critical seasons (for example, endangered species nesting); provide detour route during temporary closure. Use seasonal closures and other management activities as environmental education opportunities.

F. Safety

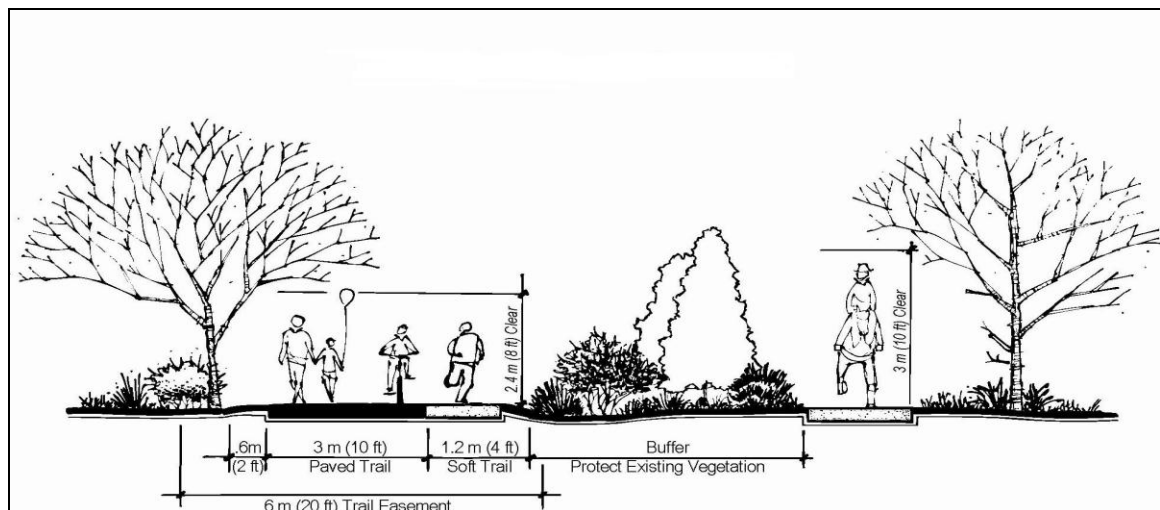
- Develop safe and secure trails for users and adjacent property owners.
- Provide sufficient trail pavement width to minimize user conflict.
- Provide adequate shoulder width and sight distance to enhance trail user safety.
- Locate trail access points and support functions considering safety, visibility and emergency access.
- Provide barrier fencing at convergence areas to protect trail user from transit hazards.
- Provide perimeter fencing where needed to protect property privacy or livestock.
- Utilize discrete or unobtrusive barriers to direct the trail user away from hazards and sensitive natural areas.
- Recommend grade-separated rail and major roadway trail crossings.
- Consider solar-powered emergency call boxes in isolated areas and at trailheads.

G. Interpretation

- Develop opportunities for environmental education and interpretation.
- Directly and indirectly expose trail users to natural processes and cultural resources.
- Minimize impact to historic, cultural and archaeological resources. Use existing infrastructure for interpretation.
- Coordinate educational interpretation with wildlife observation opportunities at “*Wildlife Watchpoints.*” Interpretive efforts should be focused on identified interpretive nodes along the corridor. Primary sites are envisioned at transit stops; therefore, those transit stops that intersect the trail will be critical interpretive nodes.
- Interpretive nodes along the trail that are not at transit stops or trailheads should be more understated than at transit stops or trailheads, to avoid community concerns for cluttering the landscape.
- All interpretive components should relate directly to identified themes as described in the companion document *Reading the Roaring Fork Landscape: An Ideabook for Interpretation and Environmental Education*, attached in Section III of the Comprehensive Plan.

H. Implementation

- Coordinate with local governments, agencies, commercial and public interest groups during design development to insure compliance with community and county planning objectives, state and federal requirements.
- Detailed designs for other proposed uses within and adjacent to the property should be prepared collaboratively, particularly the transit alignment, stations, passing tracks and highway improvements.
- Foster public support for region-wide recreation, environmental education and interpretation opportunities and the concept of regional land planning and stewardship.
- Utilize the resource of local interest groups and trail advocates willing to provide volunteer services and disseminate information.



Typical Section through 2010 Trail with Potential Equestrian Trail

V. TRAIL SYSTEM ELEMENTS

A trail system is an organized assembly of several discrete components including pavements, trailheads, signage, site furniture and other related elements, organized to meet the project's physical and aesthetic goals. In addition to the apparent features of pavement type, width and alignment, support facilities are vital to the success of any trail system. These elements can maximize the recreational potential of the resource and enhance the user experience. For example, trailside rest areas, interpretive stations and signage help to guide and inform, protecting both the user and the resource. A trailhead can serve as a multi-purpose parking area for river access, a highway wayside or a park-n-ride in addition to its trail related functions.

Trail infrastructure elements will contribute to the overall character and landscape of the Valley. Prominent trail features such as bridges, road crossings and picnic shelters will become a visual reminder of this regional amenity. These elements should be designed and integrated into the fabric of the natural and built environment to support the regional character, complement interpretive themes, and enhance the quality of the trail system and the user experience.

A. Trail Characteristics

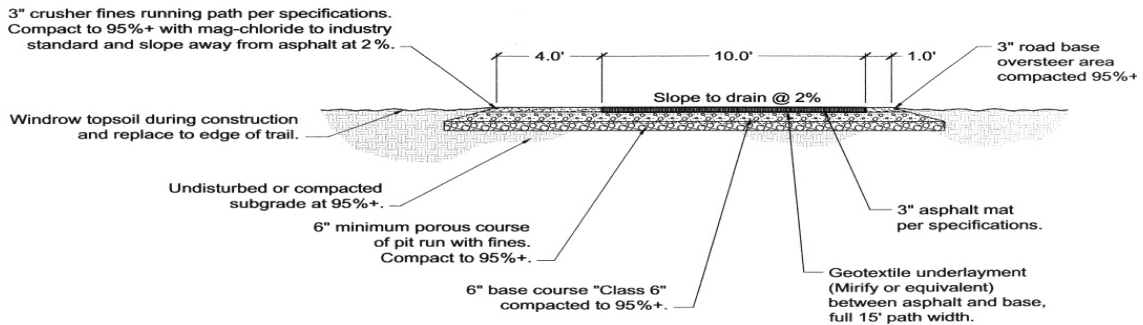
In transit with trail segments trail alignment is limited to one half or less of the overall corridor width due to the proposed transit alignment on the railroad corridor centerline. The fiber optic line on one side of the rail line further restricts the available width. The preferred alignment would occur near the edge of the property (generally the south east side of the corridor) to maximize the offset and buffer distance from the transit line. A 10 feet minimum buffer from the nearest track or transit line is recommended for trail user safety and comfort. Trail alignment generally runs on the downhill or river-side of the corridor to enhance river access and reduce impacts and conflicts with roadways. The plan also suggests a curving trail alignment where feasible to maximize design flexibility and landform integration. A winding trail can help improve the user experience by directing views and avoiding monotonous long, straight sections.

Environmental and habitat impacts are minimized by avoiding mature vegetation and reduced grading requirements of a curving alignment. In trail (without transit) sections the trail alignment can utilize the full width of the property, avoiding the fiber optic easement. In these sections the alignment generally utilizes the existing or previous rail bed to minimize environmental impacts and costs, and provide a superior viewing position for the trail user.

Several pavement materials are commonly used for both hard- and soft-surfaced trails and selection will significantly affect construction cost, maintenance, aesthetics and trail use. Conventionally hard-surfaced pavement options are limited to asphalt or concrete. Concrete is recommended for the trail for durability, use and aesthetic considerations.

Task Force recommendations include a pavement width of 10 feet with a 4 feet graded shoulder on one side (jogging path) and a maximum longitudinal slope of 5%.

Final design should include integral concrete coloration to reduce the visual impacts and glare.



Typical Construction Section through 2010 Asphalt Trail with Soft Surface Path

Proper surface finishing and sawcut joints provide a smooth, uninterrupted pavement for comfortable use by wheeled apparatus including wheelchairs, strollers, skates, blades and bicycles.

The structural design and width of the trail pavement and structures (walls, bridges) should be adequate to withstand loading by trail maintenance and emergency vehicles. A 6-inch thickness of concrete is considered minimum for this application. In some isolated sections of the corridor the trail provides the only vehicular access to the proposed transit line. Final trail design coordination should include potential transit related maintenance, inspection and access functions. As noted previously, trails within Pitkin County shall be constructed to standards defined in the *OST Trail Design and Management Handbook*.

Funding realities or public sentiment may not permit hard-surface pavement installation during the initial phase of trail implementation. In this case, the plan recommends construction of the full-width platform for the ultimate trail to facilitate future paving operations, maintenance and emergency access.

Separate soft-surface trails are included in the trail program primarily for running and equestrian uses. The implementation of the soft-surfaced running path is best accomplished as a shoulder extension of the primary trail alignment. This arrangement meets program objectives, avoids unnecessary resource impacts, and provides the most economical solution. A minimum four-foot-wide, soft-surface is recommended. This path can diverge from the main alignment if needed to avoid physical corridor constraints, reduce resource impacts or provide access to a view or resource apart from the main trail. The jogging path alignment should fall within the future 20 foot-wide-trail easement.

Horses can startle easily particularly from fast moving quiet objects such as bikes or bladders, and may kick out posing a serious safety hazard.

A separate alignment for the bridle path is recommended that will maximize the buffer areas between incompatible corridor uses. This reality necessitates that any bridle path implementation occur outside of the 20 foot trail easement. Bridle path alignment on the opposite side of the tracks from the main trail may be an option dependent on RFTA policy regarding dual alignments within the corridor. In highly developed areas the development of a separate bridal path may not meet safety and management objectives.

Horses function best on soft surfaces and in most soil conditions bridle paths function well on native surfacing. These trails have less strict design parameters for gradient, curve radii and drainage crossings. Trail implementation and maintenance should include shrub and boulder removal, mowing, tree trimming to provide 10 feet vertical and 8 feet horizontal clearances and trail markers for path delineation. At corridor choke points, road crossings and other areas the bridal path may join the main trail for physical, safety or cost-related issues. All trail users should be aware of these shared-use zones. Shared equestrian use of trail bridges should be avoided. Align bridle paths to intersect watercourses at safe ford locations or provide alternate route at river crossings.

B. Road and Transit Crossings

Crossings of public roads and private drives are required throughout the corridor. Grade separated trail crossings are highly recommended for highway crossings of State Highway 133 at Carbondale and State Highway 82 at Wingo. Due to poor sight lines and proximity to State Highway 82, the intersection of the trail with Grand



Avenue at Buffalo Valley is also recommended for a grade separated crossing. The plan for the transit overpass at State Highway 133 accommodates a trail platform. At Wingo Junction the trail plan recommends a bridge crossing of both State Highway 82 and the proposed transit line. Existing State Highway 82 underpasses adjacent to the corridor provide safe access across the highway near Aspen Glen, Carbondale and Emma. For at-grade road and private drive crossings, trail design should emphasize safety. Basic safety elements include right-angle intersections, adequate sight distances, warning signs and pavement markings for both trail and roads per the Manual of Uniform Traffic Control Devices (MUTCD) standards. Measures should be included to restrict trail access by unauthorized vehicles. The trail plan recommends additional design treatment for public road crossings to

further enhance trail safety, identity and recognition. Site improvements can include special crosswalk paving, landscaping, trail signage, rustic fencing and potentially lighting to enhance these trail entrances.

A main objective in the trail alignment design process seeks to minimize rail corridor crossings. Severe topography, river adjacencies and other corridor constraints require the trail to cross the potential transit alignment up to seven times along the corridor. It was strongly recommended by the Trails Task Force that the plan include grade-separated crossings for all trail-transit intersections. The plan includes underpasses at these locations to improve trail safety and reduce visual impacts. At grade crossings are suitable prior to transit line implementation.

C. Trailheads

In addition to neighborhood connections and street crossings, trail access would be provided at eight proposed and existing trailheads along the corridor. Trailheads provide parking and access to the trail system for valley visitors, groups, or residents choosing to drive their equipment or animals to the trail corridor. Trailheads are a place to park, meet, prepare equipment, obtain trail information, use a restroom, relax or picnic before or after recreating. The simplest trailhead facilities include parking for 5-10 vehicles, horse trailers and buses, and trail information signage. Basic services such as restrooms (composting or portable type), potable water, picnic shelter with table, trash collection, interpretation, equestrian facilities, and telephone are recommended to enhance the utility of the property. improve safety, and protect private property and the resource. Gates or removable bollards restrict trail access by unauthorized vehicles including ATV's and motorcycles. Depending on power supply, security objectives and local sentiment, trailhead areas may be lighted during evening hours.

Should transit stations be located adjacent to the trail alignment they could be incorporated with trailhead facilities to provide multi-modal transportation hubs. Transit station planning should include safe bicycle parking facilities and other provisions for interfacing bicycle travel with public transit, such as racks on buses and allowing bicycles on transit system.

The Plan proposes trailheads at several locations in response to the following criteria:

- Located directly adjacent to the trail within the railroad corridor property;
- Easily accessible from existing roads;
- Adequate size. to support planned improvements. Proposed trailheads are located at 200-foot-wide railroad corridor sections to insure sufficient property area.
- Distribution throughout the corridor length.

D. Bridges



The proposed trail alignment includes creek, gulch and road crossings at several locations that require bridge structures for trail continuity. Major crossings on the corridor include Cattle Creek, the Roaring Fork between the Satank bridge and Highway 133, Sopris Creek, the Roaring Fork at Wingo, State Highway 82 and the transit line at Wingo, Arbaney Gulch, and potentially at the end of the corridor at the Woody Creek gulch. At each of the river crossings it may be possible to utilize the existing railroad bridges for the trail until such time as a mass transit project is feasible within the rail corridor. For the Satank River crossing it may be feasible to utilize the structural support of the existing railroad bridge to accommodate a separated trail function.

The design of new bridges should identify with historic or other valley bridge precedents in the valley in materials, form and structure including supports, railings and decking. These highly visible trail elements should complement and enhance the landscape of the valley. Bridge engineering should accommodate vehicle loading and the widths of trail maintenance and security vehicles including emergency vehicles (ambulance, fire fighting), trail sweepers, plows, cross-country track setters and pickups. Crossing design should occur at right angles to the drainage to minimize impacts to the riparian area.

E. Rest Areas

Located at regular intervals along the trail corridor rest areas provide opportunities to stop along the trail, rest and enjoy the outdoor experience and the natural beauty of the corridor. A thoughtfully placed bench or turnout on the trail provides reason for pause, reflection and observation. Coordinate rest area location and design to relate to interesting or unique natural features, processes or views. Integrate rest areas with other trail elements such as interpretative stations, trail junctions, scenic overlooks or river access points.

F. Support Elements

Miscellaneous structures, site furniture, amenities and other design features are integral components of the trail system and can make significant contributions to the user experience. The design of trail elements should utilize a common palette of materials, colors and forms to present a cohesive image. Construction materials and design form should reflect the cultural and natural history of the valley and typify structures and elements found along the corridor. Railroads, ranching and mining are suitable local themes for design inspiration.

Materials should be sustainable, requiring minimal maintenance and have low susceptibility to vandalism. Encourage the use of recycled and salvaged materials. During trail clearing and grading, native materials can be salvaged and used for the design of trail infrastructure and amenities. Boulders can be used for retaining

walls, informal seating, vehicle barriers or culvert headwalls. Salvaged timbers and logs provide rustic benches, tables, fencing and structural elements. Other site elements include shelters, san-o-let enclosures, fencing and gates.



Signs and trash receptacles made from recycled materials, mounted on peeled juniper posts

G. Signage and Interpretive Elements

Providing accurate information is important for both use and management of the trail corridor. Signs are needed to convey information, directions and regulations but should be kept to a minimum to avoid clutter in the natural setting. For the RFTA trail, significant subject matter includes user safety related to the contiguous transit line, resource protection of the riparian corridor and respect for private property.



Signage stenciled on asphalt trail surface.

Signage should exhibit a consistent design theme throughout the corridor. Designs may include a graphic logo, potentially with a railroad focus, to relate to past and present use and property origin. Signage system should complement other site elements in materials, color and pedestrian scale. Salvaged railroad materials may potentially be utilized for signage elements including tracks, brackets, spikes and ties, for sign posts, mounting, anchoring, framing and other structural elements. Other trail amenities (benches, walls, fencing) can use similar materials for theme reinforcement.

All designs should consider the general context and particular setting in which signs are to be placed. Placement of signs within scenic vistas and sight lines should be avoided. Lettering styles should draw inspiration from historic precedent in the Valley and avoid exotic or contemporary styles. Utilize universal symbols where appropriate. Design a unified sign mounting system throughout trail corridor that minimizes vandalism, maintenance and the intrusion of signs on the landscape.

Several means of providing information via signage are recommended:

- Information Kiosk: Provide in prominent location at trailheads and other major access points. Include system map, safety items, regulations, resource and wildlife protection, distances, phone numbers, etc. The kiosk can also provide interpretive information to describe natural and cultural themes and locate interpretive stations along the trail. To reduce trailhead clutter the information center may dispense pet clean-up bags and trail guides. Bulletin space is available for temporary or seasonal postings, warnings or restrictions.
- Interpretive Sites: Locate primary interpretive nodes at stations where trail and transit lines converge, and at trailheads. Along the trail interpretive messages can use existing elements or creative messages (e.g. text or animal tracks embedded into pavement or boulders) in lieu of stand-alone signage to highlight a particular site feature or natural process and educate the trail user. Interpretation should support an overall interpretive theme. Encourage the use of symbols in lieu of text to convey information. Refer to the interpretive plan *Reading the Roaring Fork Landscape* for more information.
- Trailside Signs: Provide information to the trail user involving mileage, directions and distances at trail and road intersections and points of special interest. Mileage signs can be used in tourist areas to encourage travel to noted locations. A unified system of simple signs, posts, narrow corridors or other symbols should be developed to indicate river and public land access points from the trail. On the riverbank, limits of public access areas should be delineated to protect private property. A unified system of simple post markers or similar discrete elements may be used.
- Private property signs should be installed at points where trespass is likely.
- Identity Signs: To enhance trail recognition, use and security, develop a graphic logo or system of common elements that identify the trail from public road crossings, at trailheads, local accesses and along the length of the trail.
- Traffic Control: Regulatory signage and pavement markings should be required for safety, code and liability concerns. Typical messages include “stop”, “caution horse xing”, “yield”, etc. and pavement markings to improve user safety. Utilize standard graphic symbols where applicable. Safety signs should conform to the MUTCD standards for size, mounting location, message, etc. Signage and traffic control markings for trail/roadway intersections are included as Appendix B of this plan. The signage system may be developed further by RFTA in a separate document that sets signage standards. Further information is available by contacting the RFTA director of trails.

VI. TRAILS PLAN DESCRIPTION

This section of the document describes the proposed alignment, features, design elements and recreational opportunities for the 2010 trail located within the RFTA property. A proposed trail with transit alignment is not included in this description, but is anticipated to be addressed in the future based on the current needs and technologies. The 2010 trail alignment provides a continuous trail connection throughout the railroad corridor per RFTA board policy. The trail alignment is located entirely within the railroad corridor and avoids the rail bed to the extent possible. At pinch points and wetlands, that are either the result of topographic conditions or a narrow corridor width, the trail is placed over the rail bed.

Conservation covenant areas have been identified where sensitive environmental conditions exist on the trail segments. See the Comprehensive Plan, Attachment IV, Conservation Area Assessment, Appendix B, for descriptions and locations of conservation areas.

The RFTA trail is described in eight segments that vary in length from 0.9 miles to 3.2 miles. The ninth and tenth segments are part of the Pitkin County trail easements. These trail segments are also identified on Maps 1 through 6, following. Several segments of the trail are already constructed; the remaining sections will be complete by 2010. The trail descriptions reference distances that are measured in two ways. The mileage marker system extends over the entire length of the trail. The engineering system is based on 100-foot increments where 1+00 is equal to 100 feet. The engineering measurements start at the beginning (north) of the referenced trail segment and continue to the end (south) of the segment.

The 2010 trail begins at the wye at the confluence of the Roaring Fork River and the Colorado River. The Glenwood Springs River trail has been constructed by the City of Glenwood Springs along a section of the RFTA railroad corridor, from the wye to 23rd Street (MP 361.7). The Glenwood Springs River trail also extends north over a bridge that crosses the Colorado River and provides access to Two Rivers Park. This trail extension provides concrete and soft-surfaced connects to the popular Glenwood Canyon Trail that extends east through the Glenwood Canyon. It also provides a connection to the Lower Valley (LoVa) Trail system that will connect Glenwood Springs to Rifle and Parachute along the Colorado River.

The trail descriptions begin where RFTA's trail starts at 23rd Street in Glenwood Springs. The RFTA trail extends thirty-two miles upvalley to the end of the RFTA Rio Grande Trail at Woody Creek. From Woody Creek, the trail continues to Aspen along the Pitkin County Rio Grande Railroad Corridor. This trail segment has been built by and is owned by Pitkin County. The Pitkin County Trail Easement is the trail section from the Pitkin/Eagle County line to Woody Creek. A description of the Pitkin County Trail Easement is also included as it is located within the RFTA corridor.

The Rio Grande trail has unequalled scenic value and recreational opportunities. The trail links most of the communities in the valley, provides a backbone through the Roaring Fork valley that is part of the framework for a regional trail system, and also provides connections to many enjoyable spur trails.



Pitkin County trail segment near Basalt

A. 23rd Street to Buffalo Valley (2.8 miles)

This trail segment extends 2.8 miles from the end of the existing river trail at the intersection of 23rd Street (MP 361.7), State Highway 82 and Grand Avenue in Glenwood Springs, upvalley to Buffalo Valley (MP 364) near the intersection of County Road 115 (Red Canyon) with State Highway 82.

From the start of the alignment at the intersection of 23rd Street in Glenwood Springs, the trail crosses Grand Avenue at a signalized intersection. For the first 1,500-feet of the rail corridor, the actual right-of-way is only 50-feet wide (25-feet either side of the centerline of the tracks). From station 0+00 to 5+00, the trail can be placed on the west side of the rail bed immediately adjacent to the right-of-way boundary. However, from station 5+00 to 15+00, the rail bed is built up in such a fashion as to create a short, steep hillside on the west side of the tracks. Because of this configuration, the trail will be placed directly on the rail bed for this section, which ends at the 27th Street crossing.

At station 15+00 (MP362.03), the corridor widens to 100-feet (50-feet either side of the centerline of the tracks) with a section of 200-feet width (100-feet either side of the centerline of the tracks) between stations 36+00 and 44+00. The relatively flat nature of the corridor in this area allows the trail to move away from the rail bed and follow adjacent to the right-of-way boundary or existing fence lines, past the RE-1 facility, LDS Church and Valley View Subdivision. Along this segment there are several opportunities for neighborhood access points connecting to residential streets.

There is an existing primitive road and an old, unused ditch-bed in this area, along with buried electric utilities, all of which can easily be avoided by meandering the trail along the ample right-of-way width. There is also an open, reinforced drainage ditch from the Wal-Mart shopping center that crosses the rail corridor and goes over to the north edge of the Rosebud Cemetery. The trail will need to cross this ditch as it travels up the west side of the rail corridor. The Rosebud Cemetery at MP362.9 offers a point of interest and relatively easy trail implementation along its length.

The area adjacent to the Rosebud Cemetery and Grand Avenue can be used in the future to place a trailhead (T.H.#1).

At station 57+00 (MP362.82), the right-of-way width expands to 200-feet in width (100-feet either side of the right-of-way), a configuration that remains constant to the end of the trail section. At station 63+00, Grand Avenue encroaches significantly on the rail corridor in an area of steep slopes, requiring the trail to utilize the rail bed for approximately 500-feet to station 68+00. The utilization of the rail bed also allows the trail to avoid an old, potentially historic retaining wall between the rail bed and Grand Avenue. At station 68+00, the trail can then continue along the west and south side of the right-of-way. The rail corridor in this area contains relatively dense scrub oak/mountain shrub vegetation on a sloping hillside.

After about 3,000-feet, the trail again joins the rail bed at station 96+00 to station 102+00 avoiding steep slopes between the rail bed and Grand Avenue. The close adjacency of the river results in scenic river views. The trail then leaves the rail bed and continues along the west and south side of the rail corridor at station 102+00 until the terminus of this trail section at Buffalo Valley at station 110+00. Red Canyon on the east side of State Highway 82 is a popular bike ride accessible at the signalized State Highway 82 intersection.

B. Buffalo Valley to Colorado Mountain College (CMC) Intersection (3.03 miles)

This alignment starts at the intersection of County Roads 154 and 115. From station 0+00 to station 12+00 the right-of-way is 50-feet wide and the rail bed is built up in such a fashion as to create a short, steep hillside on both side of the tracks. Because of this configuration, the trail is located on the rail bed from station 0+00 to station 12+00.

Past the Holy Cross Electric facility, at station 12+00 (MP 364.1) the right-of-way widens to 100-feet. At this point, the trail leaves the rail bed and parallels the edge of the right-of-way along the west side. The railroad corridor drops below State Highway 82 providing a relatively quiet and pastoral setting. The trail runs adjacent to open hay meadows for 1.4 miles. A large portion of this agricultural land is protected by the Jackson conservation easement. At station 17+00 two minor irrigation ditches and a fence line are located within the west side of the right-of-way. These private improvements within the rail corridor continue to Station 72+00. RFTA will need to work with the adjacent ranch owners to relocate the fences and possibly the ditches to provide room for the trail in this segment.

The trail continues along the west side of the corridor, avoiding the Qwest easement, until reaching County Road 156 (station 83+00) where the trail makes a perpendicular crossing of the County Road. Immediately after the County Road 156 crossing at station 83+00, the right-of-way widens to 175-feet continuing to station 90+00, then narrows on the east side of the tracks to 25-feet. The west side remains approximately 100-feet wide from the centerline of the tracks to station 114+00. In this area, the trail will meander through the west side of the corridor, preserving the juniper, pinion and scrub oak vegetation that is prevalent.

At MP365.4 the river meanders back toward the corridor, increasing the cross-slope and requiring substantial grading for trail implementation. Property line location and the presence of the Glenwood Ditch to the north of the rail bed maintain the trail alignment on the south side of the tracks. Boat and fishing access occurs upstream from the Westbank Bridge (MP365.9).

At station 92+00, the gently sloping hillside becomes steeper, and the trail will be placed on top of the rail bed to avoid these steep slopes starting at station 110+00. At station 131+00, the trail leaves the rail bed and follows along the west side of the corridor until its terminus at County Road 114 (CMC Road at MP 367 or station 181+00). In this area, the trail follows along relatively flat terrain as the corridor passes by light-commercial uses near the intersection with the CMC Road.

There are several factors that support the State Highway 82 and County Road 114 intersection as a primary trailhead location (T.H. #2). These factors include the 200 foot railroad corridor width, an existing transit stop, Colorado Mountain College and the signalized highway access.

C. CMC Intersection through Bair Chase Ranch (1.9 miles)

This segment of trail travels almost two miles through the recently approved Bair Chase Ranch PUD. As part of the development agreement, which includes the granting of an access easement across the RFTA railroad corridor, the project has made several contributions to the RFTA trail system. A soft surface 10-foot-wide trail alignment on the railroad corridor through the two mile length of the property will be provided to RFTA. RFTA will install the asphalt trail surface. In addition, Bair Chase Ranch will provide landscape maintenance, irrigation and vegetation management in the railroad corridor.

The trail alignment starts at the intersection of County Road 114 and Highway 82, also known as the CMC intersection. The alignment travels south on the west side of the rail corridor, which is 200-feet wide in this area (100-feet either side of the tracks) from station 0+00 to station 16+00. The trail design is allowed to meander using relatively shallow curvature radii, taking advantage of the width of the corridor in this section. From station 16+00 to station 94+00, the corridor narrows to 100-feet (50-feet either side of the tracks). The trail alignment continues to meander back and forth along the west side of the corridor through the Bair Chase property, also avoiding the fiber optic line and unnecessary railroad bed crossings. This segment provides a quiet, rural setting with scenic views of the riparian river corridor and views to towering Mt. Sopris to the south.

At the access road to the Bair Chase Ranch immediately north of Cattle Creek (station 60+00) a grade-separated trail underpass will be provided by the developer as a part of the access easement agreement. The trail continues south towards Cattle Creek, staying below the grade of the rail bed as it approaches the Cattle Creek trestle (station 65+00). The wooden railroad trestle and irrigation diversion structures at Cattle Creek provide visible interpretation opportunities.

The trail crosses Cattle Creek on a new pedestrian bridge provided by the developer and then continues south between the rail bed and the buried Glenwood Ditch. The trail continues in this fashion until reaching an area of jurisdictional wetlands along the ditch alignment (station 87+00 to station 89+00). The trail merges with the rail bed for approximately 100-feet to avoid the wetlands, then leaves the rail bed to continue following between the rail bed and the buried ditch. At the south end of the Bair Chase property, the trail merges with the buried ditch at station 92+00 to station 102+00 and uses the ditch alignment as a platform to cross moderate to steep slopes between the rail bed and the river.

D. Bair Chase Ranch to Carbondale at Highway 133 Intersection (3.2 miles)

This alignment starts at the south end of the Bair Chase property where the railroad corridor is adjacent and parallel to State Highway 82. The alignment travels south on the west side of the railroad corridor, which varies between 75-feet and 200-feet in width. The trail design primarily follows parallel to the tracks to take advantage of the topography and keep the slope of the trail to a minimum. At MP368.8 there is a steep pinch point between the highway and a river oxbow. This section of the trail has several unique and interesting features including scenic river views, bald eagle roost sites, a Division of Wildlife (DOW) fisherman's access, and extensive river easements on both banks of the channel. The adjacent ranch is protected by the Larsh conservation easement. To serve this trail segment a trailhead (T.H. #3) is proposed in a wide railroad corridor section with existing private road access, just upvalley from the undeveloped CDOW fishermen's parking area (MP369.5).

Near the south property boundary of the Aspen Glen (station 92+00), the trail alignment merges with the rail bed as the corridor becomes flanked with two irrigation ditches and the side slopes become steep. At station 119+00, an opportunity exists for the trail to leave the rail bed and follow adjacent to the river for approximately 600-feet. The trail then joins the rail bed at station 125+00 for the next 4,075 feet to avoid wetlands and steep slopes.

The segment beyond Aspen Glen continues past the confluence of the Crystal River with the Roaring Fork River. The trail passes the closed Satank Bridge over the Roaring Fork River that offers a potential historic interpretation element. Several river access easements exist in this area including the north side of the river from the Satank Bridge to the railroad bridge, from the SH133 bridge downstream 1/8 mile, (and across the river from the Satank Bridge downstream to the confluence) and up the Crystal to the Colorado Rocky Mountain School Bridge.

The trail crosses the Roaring Fork River on the existing railroad bridge. At station 166+00 near the Carbondale Community School, the trail leaves the rail bed and follows to the south of the tracks until the intersection with Highway 133 and Highway 82 in Carbondale.

E. Carbondale to Catherine Store Bridge at Main Street and County Road 100 (3.0 miles)

After crossing the Roaring Fork River the trail enters Carbondale in a 200-foot-wide railroad corridor section. Trail alignment on the south edge of the corridor provides views of the valley from above the rail bed cut and connects to a trailhead (T.H. #4) at the proposed State Highway 133 transit station location. A transit overpass of State Highway 133 is proposed that will accommodate the trail crossing of this busy roadway. The State Highway crossing will also provide connections to the proposed local trail system including Red Hill, enhancing the site's potential function as a high visitation information center.

After crossing State Highway 133 the trail enters downtown Carbondale through an area of mixed residential, commercial and industrial development. Historically the rail corridor was treated as a back alley with homes and businesses sited to face away from this noise generator. Trail implementation in this corridor that bisects the Town has outstanding potential to provide a vibrant, off-street pedestrian axis to complement the Central Business District. This section of trail also provides direct foot or bike access to the proposed downtown Carbondale transit station. The trail alignment is on the south side of the rail bed to avoid the fiber optic line and connect directly to the transit station.

At the eastern edge of Carbondale at White Hill, the character of the corridor quickly shifts from an enclosed passageway to an open, elevated position hugging the south toe of the valley. The next 2.8 miles of trail to Catherine Store Bridge offers superior views of the valley floor, with its ranches and extensive riparian forest, along with views to Basalt Mountain, upvalley to the east.

This alignment starts at the intersection of County Road 100 and Snowmass Drive on the east side of Carbondale. It is recommended that traffic calming measures, for example stop signs and pedestrian crossing road markings, are implemented to improve safety at this intersection. The alignment places the trail directly on the rail bed for approximately 2,635-feet, avoiding an area of steep slopes and an area of jurisdictional wetlands. At Hobo Gulch, the trail departs from the rail bed and follows an existing haul road located adjacent to and south of the railroad tracks for approximately 2,915-feet to the intersection with the Mid-Continent access road. The impressive Mid-Continent Resources coal load-out facility at MP 374.6 provides a potential interpretation site related to resource extraction.

The trail alignment continues to follow south of the railroad tracks for approximately 550-feet until joining with a siding track formally used to access the coal load-out facility. The trail is then placed directly on the rail bed for the siding track for approximately 4,800-feet. The siding track rejoins the mainline, and the trail continues on the rail bed of the main line until its terminus at the Catherine Store Bridge. In total the trail is placed on the mainline railroad bed for approximately 4,250-feet to avoid an area of jurisdictional wetlands and an area of steep hillside.

A trailhead (TH #5) is proposed immediately west of Catherine Bridge in a 200 foot-wide railroad corridor section (MP375.9) providing good access for this scenic section of trail and river easement at the bridge

F. Catherine Store Bridge to Rock Bottom Ranch at the Garfield/Eagle County Line (2.45 miles)

The two and three quarters miles of trail above Catherine Store Bridge provide the most extensive and scenic backcountry experience of the property. The river and the railroad corridor are in close proximity through this roadless area that includes valuable undisturbed wildlife habitat. There are dramatic river views from the trail, as well as opportunities for river and public land access.

Through this sensitive habitat final corridor design should identify secondary trails for BLM and river access and revegetate excess social trails to discourage use and protect habitat.

At MP376.6 a hiking trail connects to BLM land providing access to the popular Crown area trail system. Additional public land access points occur between here and MP378.2 due to the adjacency of BLM land to the south of the corridor. The upper transit crossing option occurs at MP377.1 permitting unrestricted trail use of the corridor upvalley to Emma. It is important for trail location and construction to avoid unnecessary resource impacts. Resources include spectacular riparian habitat, and opportunities for wildlife viewing, winter sport, photographic and interpretive sites. The winding alignment of the corridor enhances the trail experience, providing changing viewsheds and inviting exploration at each turn.

The alignment starts at the Catherine Store Bridge on County Road #100. From station 0+00 to station 79+00 the trail will generally follow the rail bed, allowing the trail to meander towards and away from the river to provide variability. The trail will leave the mainline of the railroad at station 79+00 and follow the rail bed of an old siding located to the south of the tracks. After following the siding, the trail will once again join the rail bed at station 85+00. The trail should be designed to meander where possible to provide variety to the trail user. At station 126+00, the trail leaves the rail bed for approximately 1,000-feet, following along the north side of the corridor. The trail then comes back to the rail bed at station 135+00 following it until the terminus of this trail segment (station 147+00) at Rock Bottom Ranch.

Rock Bottom Ranch is a nature preserve owned by the Aspen Center for Environmental Studies. Rock Bottom Ranch provides a refuge for wildlife, especially herons and bald eagles. It is also a demonstration center for sustainable agricultural practices. RFTA and Rock Bottom Ranch are coordinating to develop guidelines for trail access in this segment of the RFTA trail. The goal is to protect the sensitive natural environment while allowing people to use this trail segment that traverses a beautiful area. Other potential protection tools include wood fencing, signs, and controlled access from the trail alignment.

G. Rock Bottom Ranch to Hooks Spur Lane (2.07 miles)

This alignment starts at the end of Hooks Spur Lane at the entrance to the Rock Bottom Ranch (station 0+00) where the trail leaves Garfield County and enters Eagle County (MP378.35). Views from the trail begin to open up as the river, valley wall, and railroad corridor diverge. There is a large Great Blue Heron rookery in this area providing interesting wildlife viewing. From this point eastward the railroad corridor parallels Hooks Spur Lane offering scenic views of the ranching land uses of the valley floor.

The alignment travels east directly on the rail bed for approximately 850-feet, avoiding an area of jurisdictional wetlands. The trail then leaves the rail bed at station 8+50 and follows an old primitive road within the south side of the rail corridor for approximately 800-feet, and returning onto the rail bed at station 16+50. The trail continues on the rail bed until station 26+00, where it diverts off of the rail bed and follows along a dry field on the south side of the rail corridor for approximately 450-feet. At station 31+00, the trail resumes an alignment on the rail bed for approximately 4,250-feet. The Eagle County recreation complex and social services facility occurs on the other side of the river near MP379.6. It is not visible from the trail alignment. A trail connection from the RFTA Trail to the EI Jebel community could be located through the intermediate private land parcel at the time that development of the parcel is planned.

At station 73+00, the trail leaves the rail bed again and travels along the south side of the rail corridor for approximately 1,800-feet. An irrigation ditch in the rail corridor will need to be crossed and a fence in the corridor will have to be relocated to facilitate this alignment. This section of trail ends at the intersection of Hooks Spur Road with Hooks Lane (station 93+00). Trailhead #6 is located here. The nearby Hooks Bridge offers access across the river at MP380.6 providing a connection from the trail to a primitive boat launch area, a river access easement, and a local trail system that connects to the Willits/EI Jebel population center on the north side of the river.

H. Hooks Spur Lane to Sopris Creek at the Eagle/Pitkin County Line (0.9 miles)

This trail reach is an important student commuter route due to its linkage of mid-valley population centers with Basalt High School. From Hooks Spur Lane to Emma, the railroad corridor extends through small, scenic residential and ranch parcels, passing farm ponds and irrigation ditches. It is isolated from public roads until it crosses Sopris Creek on the improved railroad bridge and converges with Emma Road at the State Highway 82 intersection (MP382.05). Traffic calming and striping of the pedestrian crossing is recommended for this intersection.. In this area, a highway underpass at Sopris Creek links the trail to an existing Town of Basalt trail to the north and parallel to State Highway 82. The Town of Basalt trail connects to extensive river access easements. It also passes historic buildings that may provide an opportunity for historic interpretation. The Sopris Creek crossing is also the

approximate location of the county line at MP 381.7 where the railroad corridor enters Pitkin County.

I. Pitkin County Trail Easement - Sopris Creek to Old Snowmass (5.5 miles)

Upvalley the trail proceeds through open agricultural ranches of the mid-valley with protective livestock fencing. East of Emma at MP382.1 the transit line leaves the railroad corridor and the soft surface trail runs on the south side of the rail bed. Two minor pinch points occur due to slope and irrigation ditch conflicts between MP382.4 and 382.8 where the trail utilizes the rail bed for short lengths to avoid excess grading and drainage improvements.

Adjacent public land (owned by BLM) south of the railroad corridor affords access to the Light Hill trails network at MP382.7. There is a potential access behind the Basalt High School at MP383.5. The High School is identified as a trailhead location (#7) since there is road access, parking, existing facilities and opportunities for trail connections to the community of Basalt.

Continuing upvalley the trail proceeds through pasture land until entering the Roaring Fork Club, a golf course and residential development at MP384.4. *Special trail design considerations may be required for the section through the golf course for trail user safety and the prevention of unauthorized property access. Very attractive native plantings have been installed by the Club along this section of trail that is also maintained by the Club.*

The railroad bridge at Wingo is retrofitted for the trail river crossing. Bridge modifications include trail decking and handrails among other improvements. A river access easement exists at the railroad bridge. A long trail bridge spans State Highway 82 at Wingo Junction (MP385).

Upvalley from Wingo the trail alignment is located on the north side of the rail bed to avoid conflict with nearby homes or with steep slopes down to the river. The trail alignment follows the top of the cut for the rail bench to MP385.7.

Trail design on the north side of the track provides an expedient connection to the existing Basalt-Old Snowmass Trail at MP385.7. This paved trail alignment runs predominantly within the railroad corridor, crossing the rail bed five times between MP385.7 and its terminus at a trailhead (#8) with a parking area at Old Snowmass (MP386.8).

This segment of trail offers stunning views up and down the valley. Numerous public land and river access opportunities are available. River access occurs in two locations: on the opposite side of the river from Lazy Glen and downstream for one mile from the Old Snowmass Bridge. The existing trail link to Basalt crosses through BLM land at three points providing public land foot and hoof access to the north.

J. Pitkin County Trail Easement - Old Snowmass to Woody Creek (6.87 miles)

The bridge at Old Snowmass marks the west end of River Road that shares the railroad corridor with the trail and transit alignments on the north side of the steep canyon. At this location the almost vertical valley wall slopes down to the river to squeeze the road and rail bed onto narrow corridor platforms through a narrow corridor pinch point. Part of this section includes existing retaining walls below River Road adjacent to the river.

At the mouth of Wheatly Gulch (MP387.1) the canyon widens facilitating integration of transit with trail. A foot and hoof trailhead has been established at this point on the Dart property, near a historic pioneer cemetery. From here to MP389.1 the trail continues on the north side of the track to avoid conflict with River Road and to take advantage of superior views and the character of this edge of the property. Just upvalley the trail passes the Bates siding and historic brick schoolhouse at MP387.5. Scenic views of the valley, red cliffs, pastoral ranches, and occasional sightings of elk and deer grazing on adjacent south facing pastures enhance the trail experience.

Along the next few miles there are many fisherman's easements. The first of these occurs at MP388.6. A river recreation easement exists at MP389.1 where River Road crosses over to the north side of the track. The plan proposes a trail crossing to the river (south) edge of the property. The trail bridges Arbaney Gulch just upvalley from this point. Additional fishing easements occur near MP389.4 and 389.6. Near here the valley begins to narrow with the river meandering closer to the railroad corridor, resulting in steep side slopes and trail implementation constraints including several pinch points (MP389.65. to 390). The trail is placed on the rail bed through these sections and the Phillips Curves reach of the river. This zone is a quiet, relatively intimate stretch of railroad corridor far above the river with scenic views. An irrigation ditch is benched into the steep slope below the rail bed. A recreation easement exists between the pinch points within the watercourse of the river.

Immediately upstream, the slopes to the riverbank soften, providing easy river access and BLM land access at MP390.1 (through private property). Upvalley from the Phillips property, the transit alignment leaves the railroad corridor at MP390.55 and the trail alignment utilizes the rail bed up to Woody Creek. Numerous long and steeply benched sections of the property require use of the rail bed to bypass pinch points. From Lower Gerbazdale upvalley to Woody Creek, the RFTA corridor becomes a rail-to-trail property. The rail bed is benched into a steep section of valley wall to MP391.85. Trail features in the area include existing access to BLM & USFS lands at the base of Triangle Peak (MP391.2), the Lower Woody Creek Bridge river easement on the north bank from MP390.7 to MP391.4, and fisherman's access on the Koch property near MP391.1.

From MP391.0 to MP391.2 the trail alignment is proposed on the riverside of the rail bed to reduce impacts for the nearby River Road. Interesting irrigation flume structures occur adjacent to the scenic and steeply benched rail bed between

MP391.2 and 391.6. At MP391.6 the trail crosses Gerbaz Way that provides a road connection across the river to State Highway 82 via the Lower Woody Creek Bridge. A trail on the side of Gerbaz Way crosses Highway 82 via an underpass and affords access to the Aspen Village residential area and public lands (BLM and State) on the west side of the Valley.

For the next 1.5 miles the trail transects the quiet of the lower floodplain terrace, removed from both River Road and the river, passing through intermittent stands of dense trees. The corridor is relatively enclosed and intimate as it runs adjacent to residential “ranchettes” of the lower Woody Creek area. A short length of fishing easement occurs near MP392.45 via private land access to the river. At MP393.0 the trail encounters a multiple rail siding at the county's Pitkin Iron property. Development of this site includes open space adjacent to the railroad corridor with public parking and a trailhead (#9). A footpath and pedestrian crossing of the river are proposed to connect to the affordable housing and State Highway 82 on the opposite side of the river. The Pitkin Iron site has historical value related to early settlement and mining that may be significant for interpretation.

Just past the Pitkin Iron site, River Road crosses the railroad corridor for the final time and the trail assumes an elevated position relative to the road, benched into an alluvial terrace. From this vantage point the trail offers scenic views of the Woody Creek basin, Shale Bluffs, Buttermilk and Aspen ski areas. The trail continues to the upper terminus of the RFTA property at Woody Creek Road (MP393.67).

The RFTA trail connects with the existing Rio Grande Trail at Woody Creek that provides a continuous route upvalley to Aspen with numerous recreational adventures in between. The trail first enters Aspen at Puppy Smith Road near the Aspen Post Office and the Aspen Center for Environmental Studies.

VII. PHASING RECOMMENDATIONS

The implementation of the 2010 trail requires a multi-year funding and phasing plan that identifies both valley-wide and localized priorities. The following strategy is recommended to initially establish the continuous trail corridor, followed by subsequent improvements and amenities to further expand trail use and enrich the user experience.

- Implement the 2010 trail alignment to allow public use of the corridor. Trail surfacing may be phased, initially as a multi-use, stabilized soft-surface trail to limit initial costs. The full-width trail platform should be constructed to facilitate maintenance and emergency access, and future surfacing improvements. Bridges should be considered high priority items, absent a nearby, accessible crossing. Hard surfacing and retaining wall improvements can be prioritized into discrete phases and occur as funding is available. If applicable, the equestrian trail may be implemented concurrent with the 2010 trail clearing, grubbing and grading to economize on the equipment mobilized for the main trail establishment. Initial trail development shall include basic signage, and simple improvements (e.g. fencing, trash receptacles) to inform and direct the user, and protect both the resource and private property.

- Establish trailheads to encourage non-resident recreational use. Provide limited parking, rest areas, restrooms and information for resident and visitor trail users.
- Install interpretive system sites and/or signage to educate and enrich the trail experience.
- Provide site amenities such as furniture, shelters, landscaping, special signage, etc. to enhance recreational appeal, user comfort and range of opportunities.



Newly Constructed Asphalt Surface Trail Segment near Emma

VIII. MANAGEMENT, MAINTENANCE AND OPERATIONS

For successful operation and continuity of the RFTA trail an integrated, comprehensive maintenance and management program is essential. The trail plan should adopt minimum maintenance standards to ensure trail quality and safety. A comprehensive program will help ensure that required maintenance is performed and will minimize conflict between user groups. Trail operations and management responsibilities may be unified under a single entity or delegated to local jurisdictions. For the RFTA, trail multi-jurisdictional management is recommended. The development of the program should include representation of all involved parties inclusive of RFTA - the counties, towns and agencies having jurisdiction along the corridor and adjacent public lands.

Similar to other open space and park facilities, trail management maintenance operations utilize both full-time employees and seasonal staff. Staff levels depend on desired level of presence of enforcement and patrol, information/educational programs and in-house versus contracted maintenance services. Volunteer and “adopt-a trail” programs are encouraged to reduce Operations and Management costs and improve the sense of local ownership. The following basic scope of responsibilities lists many of the services generally required for trail maintenance and management/operations.

The trail rules and regulations are available on the RFTA web site at RFTA.com.



Carbondale to Catherine Store Trail Segment Under Construction

A. Maintenance

- Trash collection, litter control
- Tree, shrub and groundcover maintenance (pruning, mowing, selective thinning, etc.). Infrastructure inspection, maintenance and repair (bridges, fencing, culverts, lighting, etc.). Repair of site amenities (benches, signs, tables), seasonal openings and closures
- Cleaning and maintaining of water and sanitary facilities
- Safety system: signs, pavement markings
- Trail surface inspection, maintenance and repair (sweeping, snow removal, sanding, etc.)
- Noxious weed control (weed species will travel along corridor)
- Cosmetic repairs (graffiti removal, repainting)
- Riverbank clean-up programs
- Erosion control

B. Management /Operations:

- Emergency assistance including medical and rescue
- Security patrol/enforcement of trail use regulations (vandalism prevention, other crime, etc.)
- Educate and manage potential user conflicts (bike/jog, blade/hike, individual/commercial, etc.)
- Prevent unauthorized motorized vehicle use
- Address and resolve liability issues
- Ecological Management: native plant restoration, beaver management
- Trail Host/Guide Programs

C. Management Principles and Actions

In addition to specific tasks required for maintenance and operation of the trail system, a comprehensive management plan includes activities outside of the trail corridor. The following principles, actions and design elements can help secure funding for trail construction and operations, and facilitate the unified management of the system.

- On-going collaboration with local and county governments, agencies, interest groups and RFTA should be initiated to coordinate trail funding, implementation and management efforts and avoid duplication of services. Working together the counties and communities in the Valley can promote good design, continuity of resource quality and economies of scale. A united front among the communities will help promote the project enhancing funding probabilities.
 - The RFTA trail is both a local and regional endeavor with local segments forming the most heavily-utilized, vital links in the regional system. An effective operating relationship among the participants is essential for funding and implementation of trail improvements within a reasonable time frame.
 - Publicize the benefits and opportunities of the trail to improve visibility, local involvement and pride. Locally funded, strategic pilot projects can help generate public interest and demonstrate dedication to the completion of the comprehensive project.
 - Vital involvement of key stakeholders is critical for project coordination and eventual development.
 - On-going review of adjacent proposed development activities to ensure compatibility with RFTA conservation, access and recreational goals for the property.
 - Organize a management entity with overall responsibility for trail funding, implementation and perpetual management:
 - Extend and maintain the intergovernmental agreement authorizing RFTA as the basis for cooperative implementation and management of regional trail system and open space. Maintain a multi-jurisdictional trails steering committee to provide trails development and management cooperation,
- OR
- Form a non-profit corporation with tax exempt status and a Board of Directors but no jurisdictional authority. All projects based on cooperative partnerships with public and private entities. Must include all participating communities with consensus on organizational structure, programming and representation. This corporation can apply for, accept and hold grant funding.

D. Management Elements

- Animal control and leash regulations should be posted and the public should be well-informed.
- Education and potential fines can be effective deterrents, reducing management cost of animal control enforcement.
- Improve the utility and aesthetics of the corridor by elimination of illegal activities such as dumping. Again, education and potential serious fines may be effective management tools.
- Develop a weed control program that improves habitat through restoration of native plant species in disturbed areas of the corridor.
- Area lighting and emergency phones at trailheads help decrease vandalism and improve emergency response.

IX. FUNDING

The RFTA trail will be implemented through the efforts of public and private groups working in cooperation. Funding to support trail improvements, management and maintenance will come through creative use of public and private sources of assistance. The trail will be implemented through funding sources of grants, special appropriations programs, Open Space programs, county general funds, recreation districts, private fundraising, gifts and donations. The design of the program for trail funding should attempt to:

- Organize and energize trail supporters with the goal of securing local sponsorship
- Organize local fund raising activities (volunteer activities and fund raising), and solicit funding from corporations, foundations, local non-profit agencies, civic groups and other private sources
- Work with local businesses to support the interpretive program, particularly those themes that examine the importance of human activities in the landscape
- Pursue non-local funding sources
- Build productive relationships with federal, state and local agencies and stakeholders
- Request federal and state agencies grants and technical assistance.

The following funding sources should be explored as system management responsibilities and identifies the most likely sources of assistance.

A. Trail Construction

- Local community and county funds
- Colorado State Parks Funds
- State Trails Program Grants
- GOCO (Great Outdoors Colorado) Grants
- Private Sector: Corporate, Individual, Non-Profit
- CDOT ISTEA-21 Enhancements funding
- Colorado Historic Society

- Colorado Department of Local Affairs Energy Impact Grants
- Salvage of railroad infrastructure
- Volunteer Organizations including Volunteers for Outdoor Colorado (VOC)
- Local school & college programs
- USDA Natural Resources Conservation Service - Resource
- Conservation and Development Program

B. Operations & Maintenance Costs

- Local community and county funds (local management within city limits)
- Easement and right-of-way license fees
- Concession contracts and special use permits
- Volunteer programs
- Trail User Fees
- Transit user Fees



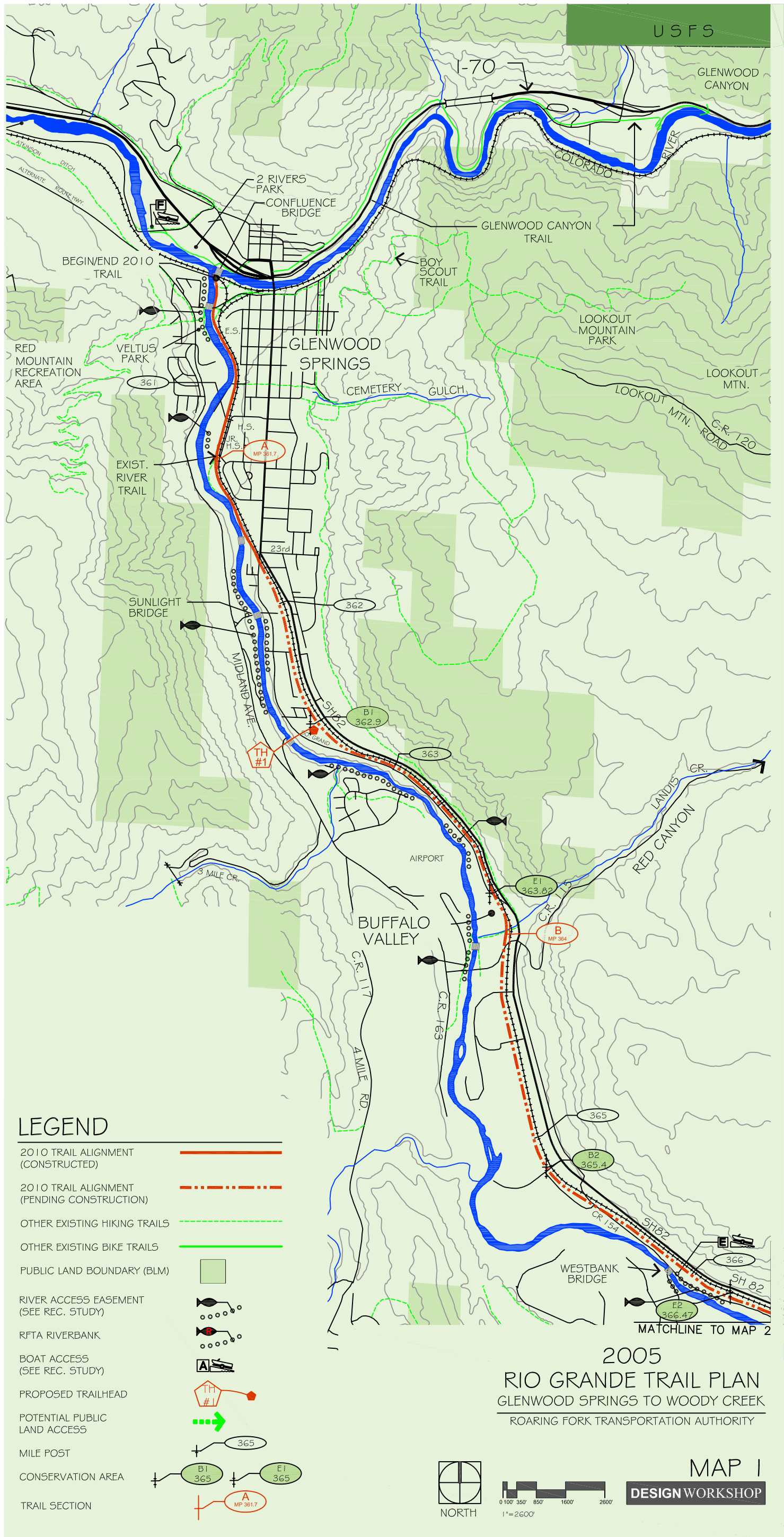
Volunteers Break Ground on a New Trail Segment near Emma

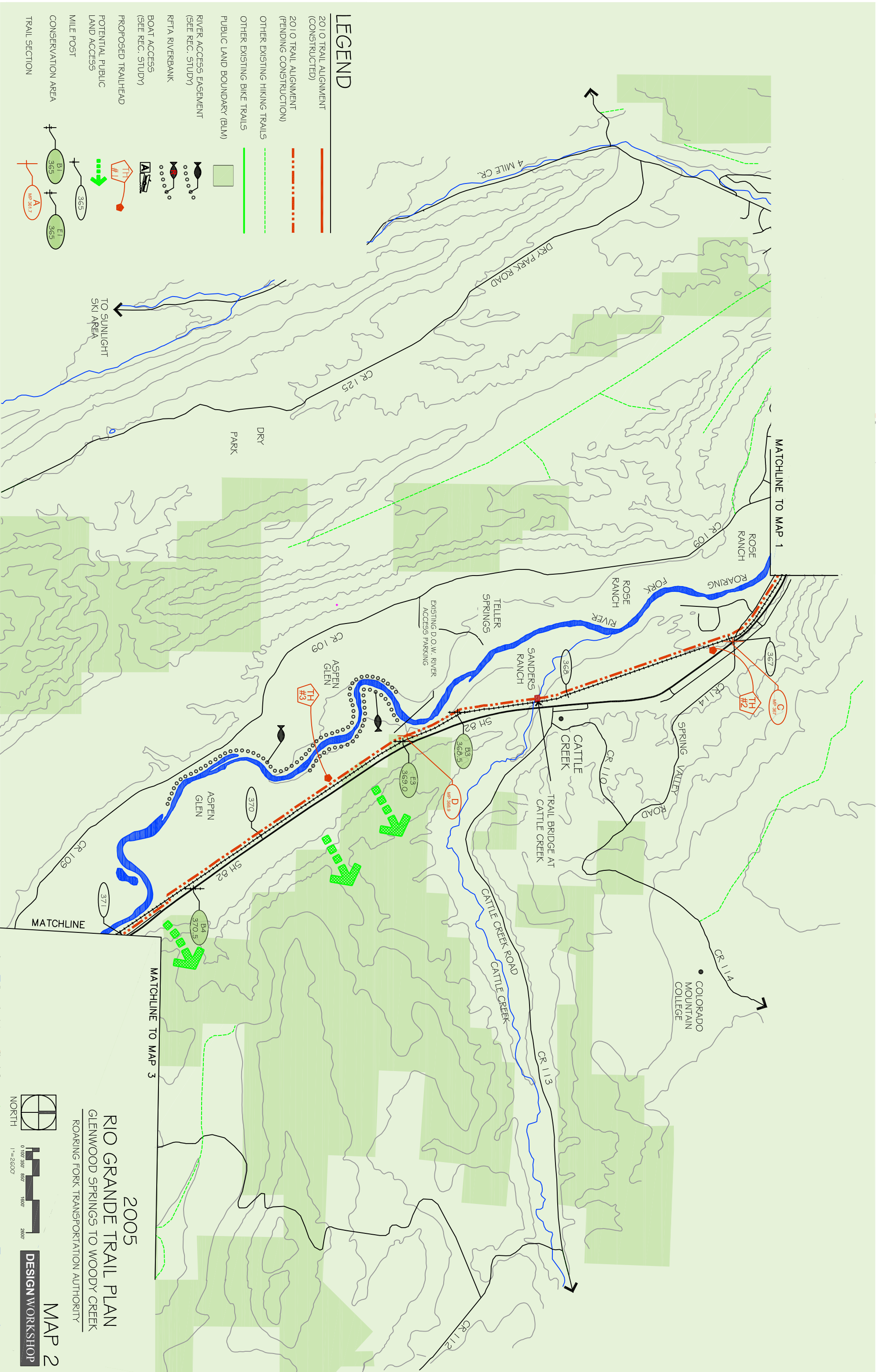
MAPS

APPENDIX A

APPENDIX B

Maps





LEGEND

- 2010 TRAIL ALIGNMENT (CONSTRUCTED) —
- 2010 TRAIL ALIGNMENT (PENDING CONSTRUCTION) - - -
- OTHER EXISTING HIKING TRAILS - - -
- OTHER EXISTING BIKE TRAILS —
- PUBLIC LAND BOUNDARY (BLM)
- RIVER ACCESS EASEMENT (SEE REC. STUDY) —
- RFTA RIVERBANK —
- BOAT ACCESS (SEE REC. STUDY) —
- PROPOSED TRAILHEAD (SEE REC. STUDY) #1
- POTENTIAL PUBLIC LAND ACCESS #1
- MILE POST + 365
- CONSERVATION AREA ■
- TRAIL SECTION B1 E1 A

MATCHLINE TO MAP 1

TO SUNLIGHT SKI AREA

MATCHLINE TO MAP 3

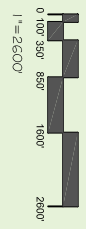
2005

RIO GRANDE TRAIL PLAN GLENWOOD SPRINGS TO WOODY CREEK

ROARING FORK TRANSPORTATION AUTHORITY

MAP 2

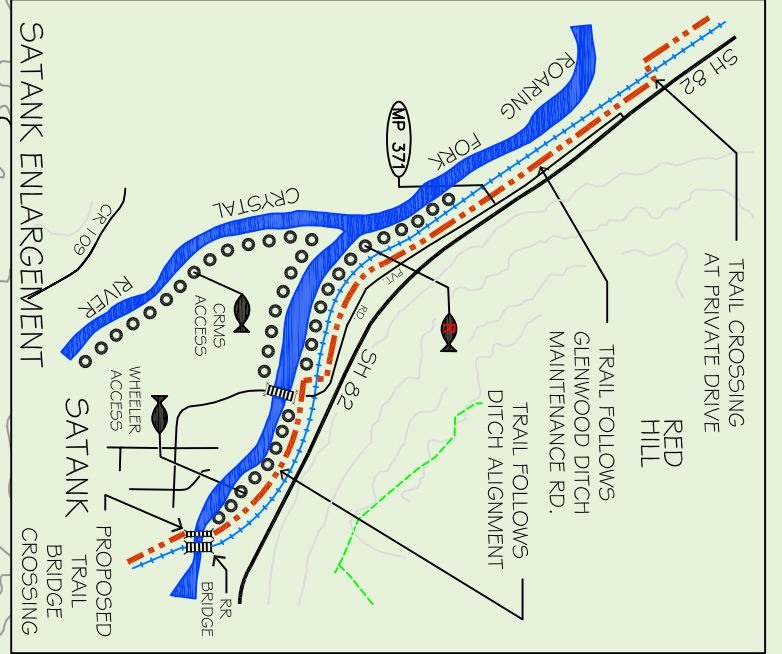
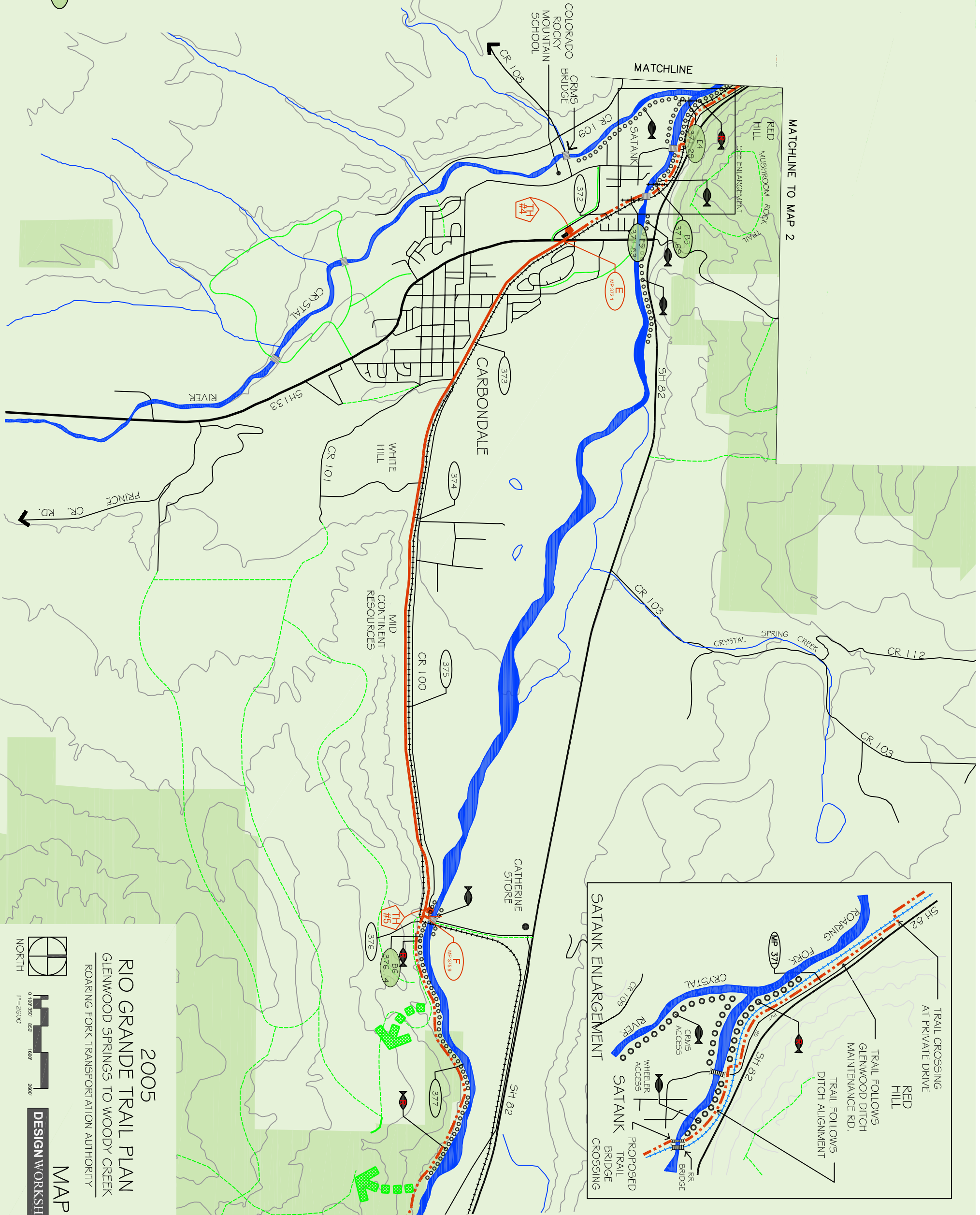
DESIGNWORKSHOP



NORTH

1"=2,500'

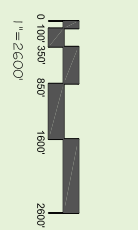
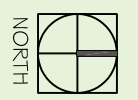
- ### LEGEND
- 2010 TRAIL ALIGNMENT (CONSTRUCTED)
 - 2010 TRAIL ALIGNMENT (PENDING CONSTRUCTION)
 - OTHER EXISTING HIKING TRAILS
 - OTHER EXISTING BIKE TRAILS
 - PUBLIC LAND BOUNDARY (BLM)
 - RIVER ACCESS EASEMENT (SEE REC. STUDY)
 - RFTA RIVERBANK
 - BOAT ACCESS (SEE REC. STUDY)
 - PROPOSED TRAILHEAD
 - POTENTIAL PUBLIC LAND ACCESS
 - CONSERVATION AREA
 - TRAIL SECTION



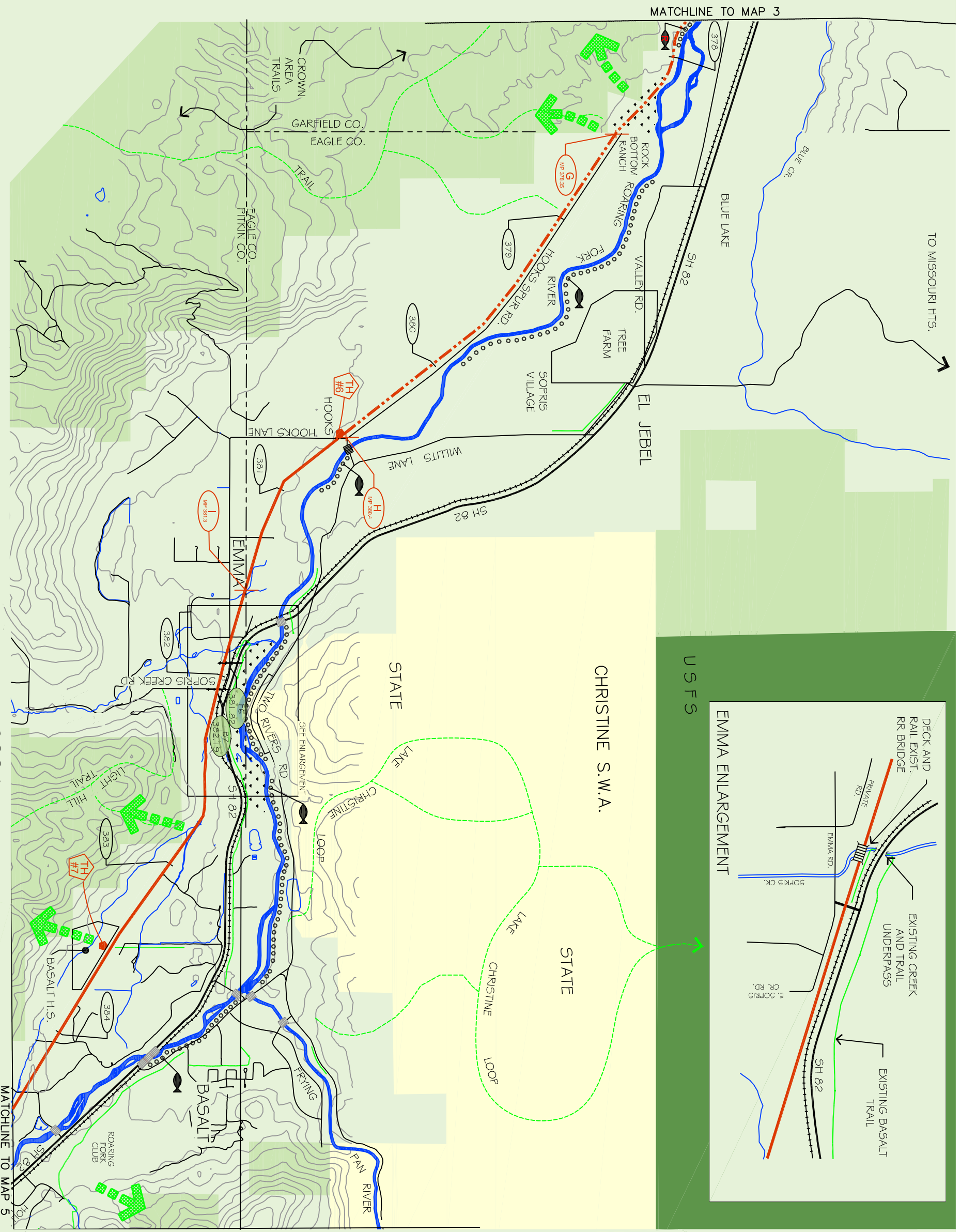
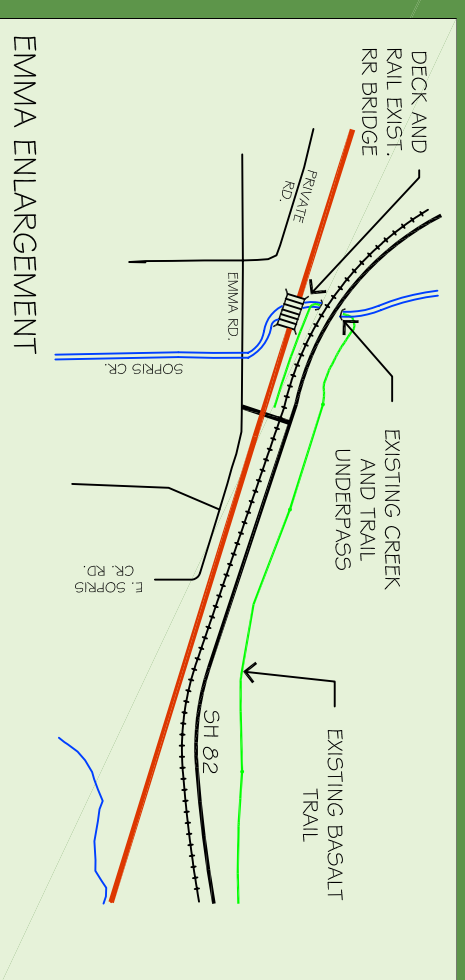
MATCHLINE TO MAP 2

MATCHLINE TO MAP 4

2005
RIO GRANDE TRAIL PLAN
 GLENWOOD SPRINGS TO WOODY CREEK
 ROARING FORK TRANSPORTATION AUTHORITY



DESIGN WORKSHOP
MAP 3



- ### LEGEND
- 2010 TRAIL ALIGNMENT (CONSTRUCTED) ———
 - 2010 TRAIL ALIGNMENT (PENDING CONSTRUCTION) - - - - -
 - OTHER EXISTING HIKING TRAILS - - - - -
 - OTHER EXISTING BIKE TRAILS - - - - -
 - PUBLIC LAND BOUNDARY (BLM) ———
 - RIVER ACCESS EASEMENT (SEE REC. STUDY)
 - RTFA RIVERBANK
 - BOAT ACCESS (SEE REC. STUDY)
 - POTENTIAL PUBLIC LAND ACCESS
 - MILE POST
 - CONSERVATION AREA
 - TRAIL SECTION

2005

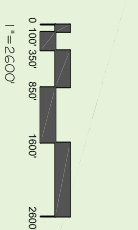
RIO GRANDE TRAIL PLAN

GLENWOOD SPRINGS TO WOODY CREEK

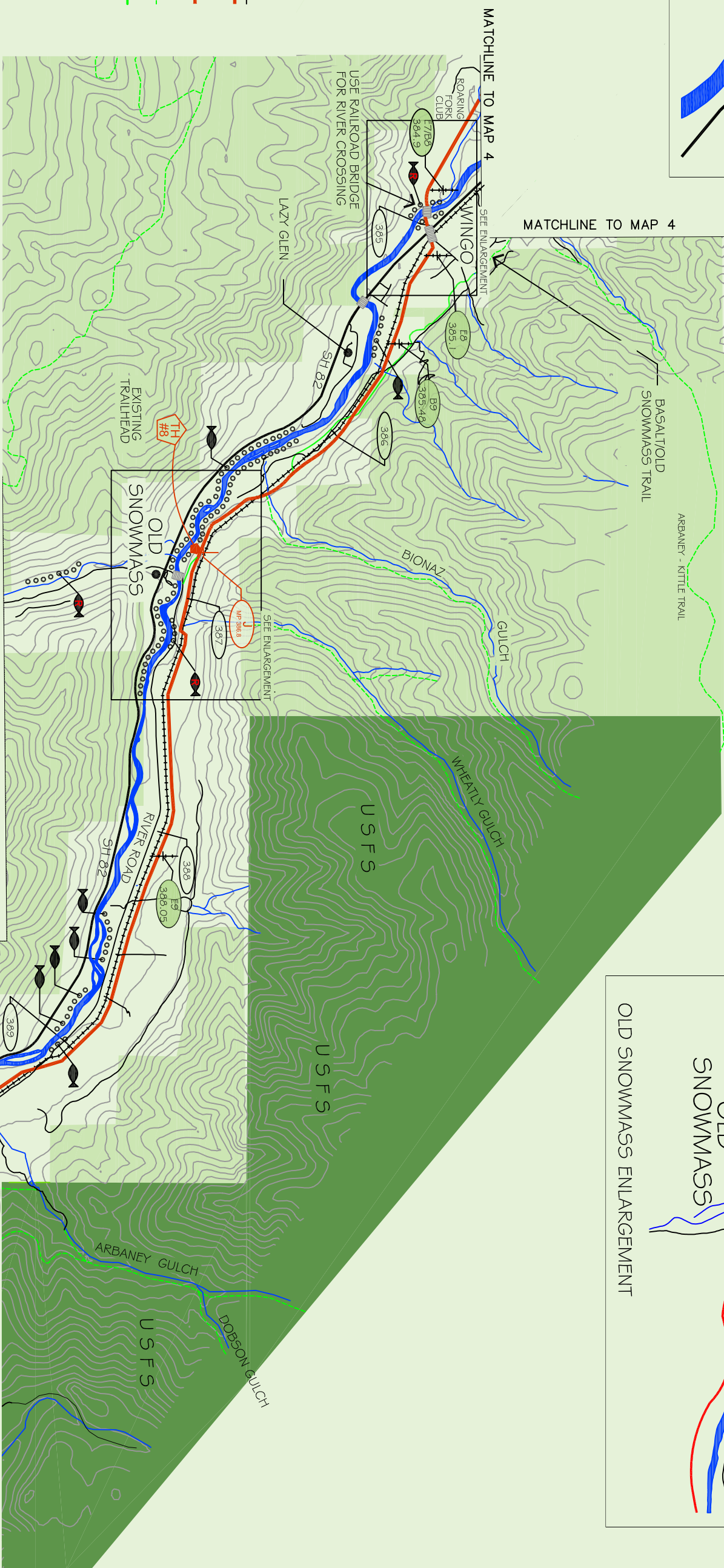
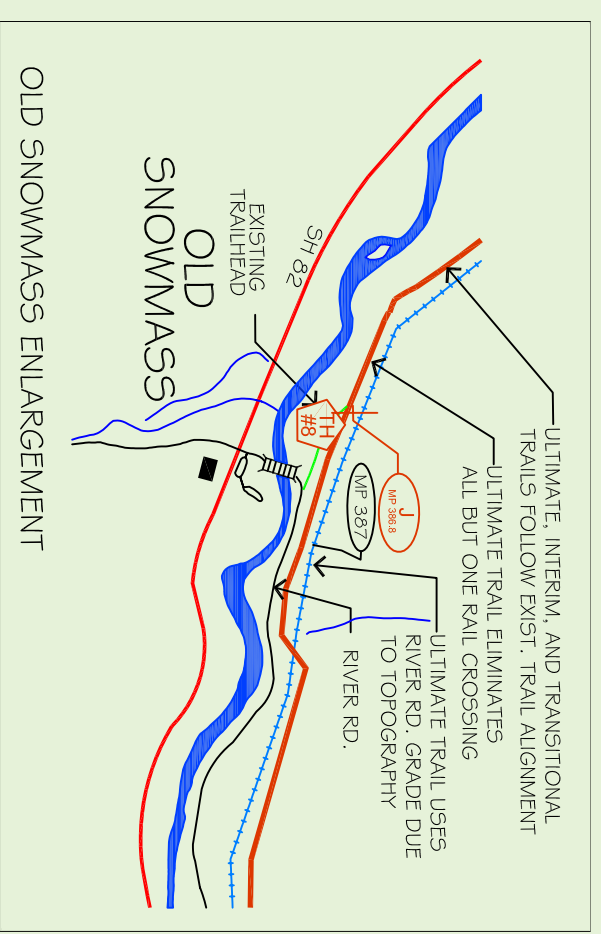
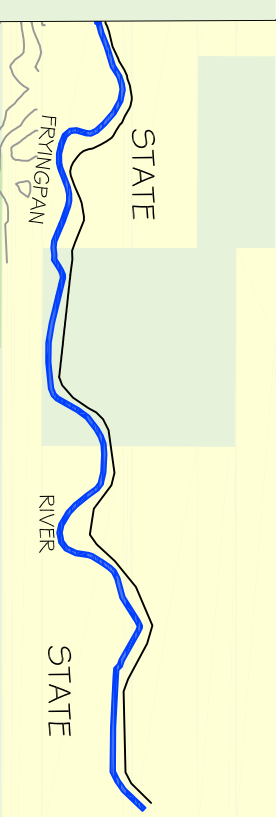
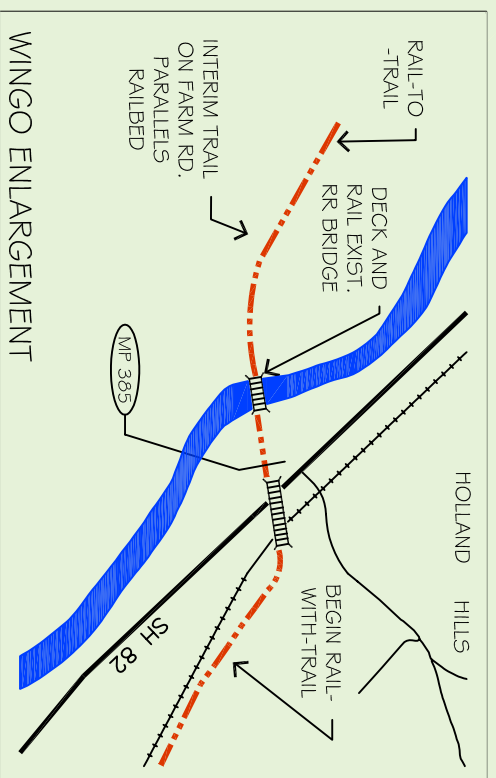
ROARING FORK TRANSPORTATION AUTHORITY

MAP 4

DESIGN WORKSHOP



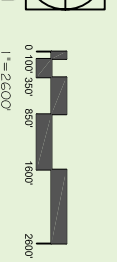
MATCHLINE TO MAP 5

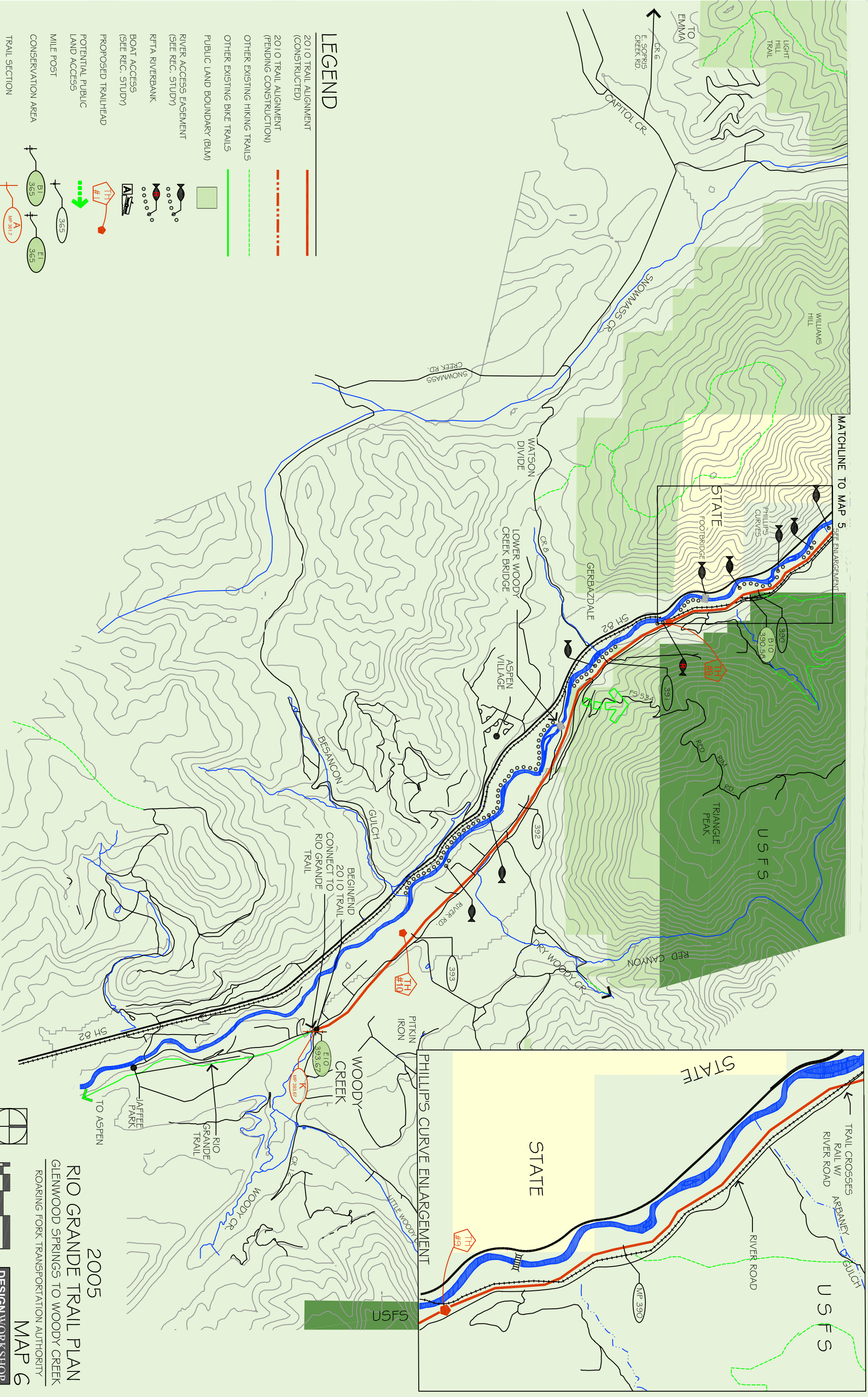


LEGEND

- 2010 TRAIL ALIGNMENT (CONSTRUCTED)
- 2010 TRAIL ALIGNMENT (PENDING CONSTRUCTION)
- OTHER EXISTING HIKING TRAILS
- OTHER EXISTING BIKE TRAILS
- PUBLIC LAND BOUNDARY (BLM)
- RIVER ACCESS EASEMENT (SEE REC. STUDY)
- RTTA RIVERBANK
- BOAT ACCESS (SEE REC. STUDY)
- PROPOSED TRAILHEAD
- POTENTIAL PUBLIC LAND ACCESS
- MILE POST
- CONSERVATION AREA
- TRAIL SECTION

2005
RIO GRANDE TRAIL PLAN
 GLENWOOD SPRINGS TO WOODY CREEK
 ROARING FORK TRANSPORTATION AUTHORITY
MAP 5
DESIGNWORKSHOP

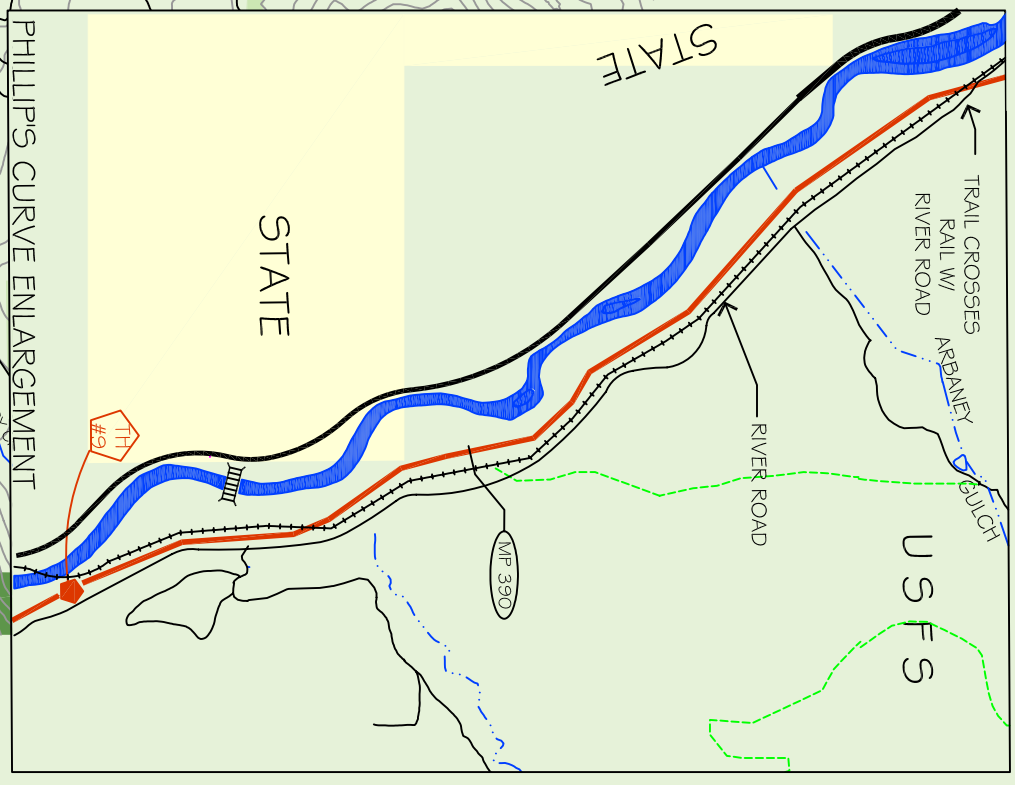
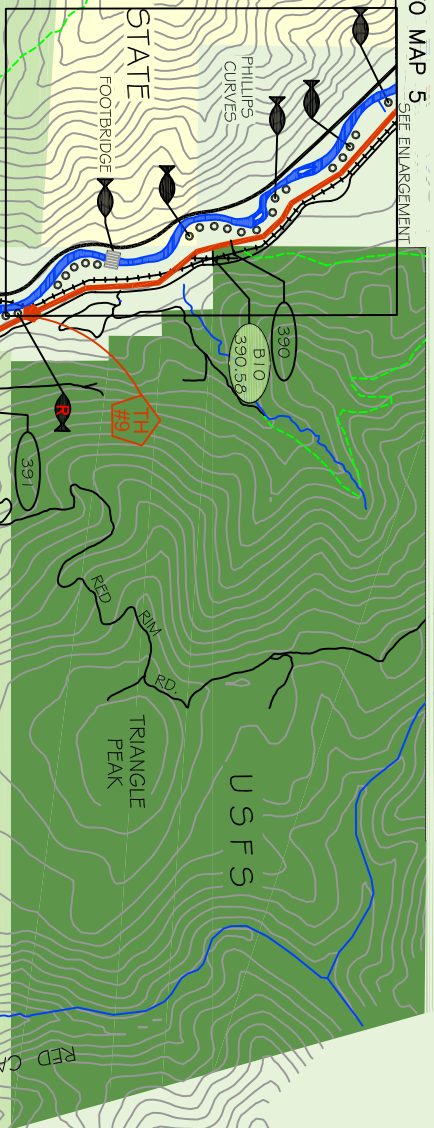




LEGEND

- 2010 TRAIL ALIGNMENT (CONSTRUCTED) —
- 2010 TRAIL ALIGNMENT (PENDING CONSTRUCTION) - - -
- OTHER EXISTING HIKING TRAILS - - -
- OTHER EXISTING BIKE TRAILS —
- PUBLIC LAND BOUNDARY (BLM)
- RIVER ACCESS EASEMENT (SEE REC. STUDY) ○ ○ ○ ○ ○
- RFTA RIVERBANK —
- BOAT ACCESS (SEE REC. STUDY) ⚓
- PROPOSED TRAILHEAD #
- POTENTIAL PUBLIC LAND ACCESS ➔
- MILE POST 365
- CONSERVATION AREA B1 365 E1 365
- TRAIL SECTION A MP 361.7

MATCHLINE TO MAP 5
SEE ENLARGEMENT



2005
RIO GRANDE TRAIL PLAN
GLENWOOD SPRINGS TO WOODY CREEK
ROARING FORK TRANSPORTATION AUTHORITY
MAP 6

DESIGN WORKSHOP

1" = 2500'

0 100 200 300 400 500 600 700 800 900 1000

NORTH

Appendix A

Estimated Construction Costs 2004 Dollars		Catherines Store to Rock Bottom Ranch	Rock Bottom Ranch to Hooks Lane	23rd Street to Buffalo Valley	Buffalo Valley to CMC exit	CMC Through Bair Chase	Bair Chase to Carbondale	Total - Feet	Miles
Year	2006	2006	2007	2008	TBD	2009	2009	Total - Feet	Miles
Total Length of Trail Segment (feet)	14,700.00	9,500	11,100	16,100.00	11600	17,300.00	80,300.00		15.21
ESTIMATED Cost of Trail Alignment:									
Mobilization and General Conditions	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 10,000.00	\$ 20,000.00	\$ 20,000.00		
Engineering Cost Alignment B 7% of total cost	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Clearing and Grubbing	\$ -	\$ -	\$ 38,000.00	\$ 21,800.00	\$ -	\$ -	\$ 21,000.00		
Topsoil Strip and Stockpile	\$ -	\$ -	\$ 9,500.00	\$ 10,900.00	\$ -	\$ -	\$ 10,500.00		
Hillside Excavation:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Easy Slopes	\$ -	\$ -	\$ 117,500.00	\$ 247,500.00	\$ -	\$ -	\$ 232,500.00		
Moderate Slopes	\$ -	\$ 0	\$ 163,400.00	\$ -	\$ -	\$ -	\$ 45,600.00		
Steep Slopes	\$ -	\$ 0	\$ 0	\$ -	\$ -	\$ -	\$ -		
Concrete Retaining Wall	\$ -	\$ 0	\$ 0	\$ -	\$ -	\$ -	\$ -		
Pit Run	\$ 147,000.00	\$ 93,000.00	\$ 100,000.00	\$ 109,000.00	\$ -	\$ -	\$ 173,000.00		
Elevate/drain trail platform in wetlands	\$ -	\$ 0	\$ -	\$ -	\$ -	\$ -	\$ -		
Road base	\$ 147,000.00	\$ 93,000.00	\$ 110,000.00	\$ 161,000.00	\$ 100,600.00	\$ -	\$ 173,000.00		
Geotextile fabric	\$ 24,990.00	\$ 15,810.00	\$ 18,870.00	\$ 27,370.00	\$ 18,200.00	\$ -	\$ 29,410.00		
3" x 10' Asphalt Trail Surface	\$ 176,400.00	\$ 111,600.00	\$ 133,200.00	\$ 193,200.00	\$ 127,200.00	\$ -	\$ 207,600.00		
Crusher Fines	\$ -	\$ -	\$ 16,650.00	\$ 24,150.00	\$ 15,900.00	\$ -	\$ 25,950.00		
Erosion Control/Wetland Protection	\$ 14,700.00	\$ 9,300.00	\$ -	\$ 16,100.00	\$ -	\$ -	\$ 17,300.00		
Topsoil Replacement	\$ -	\$ -	\$ 19,000.00	\$ 21,800.00	\$ -	\$ -	\$ 21,000.00		
Revegetation	\$ 22,050.00	\$ 1,425.00	\$ 16,650.00	\$ 24,150.00	\$ -	\$ -	\$ 15,750.00		
Intersection Safety	\$ -	\$ -	\$ 30,000	\$ 40,000.00	\$ -	\$ -	\$ 20,000.00		
Permits and fees	\$ 400.00	\$ 400.00	\$ 400.00	\$ 400.00	\$ -	\$ -	\$ 400.00		
Survey costs where track is removed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Wetland Mitigation	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00		
Signage Contingency	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ 5,000.00		
Safety fencing -steep slopes & other hazards	\$ 9,000.00	\$ 9,000.00	\$ 16,200.00	\$ 45,000.00	\$ -	\$ -	\$ 68,400.00		
Fence relocation - Ranches	\$ -	\$ 0	\$ -	\$ 71,100.00	\$ -	\$ -	\$ -		
Irrigation ditch relocation -Ranches	\$ -	\$ 0	\$ -	\$ 79,000.00	\$ -	\$ -	\$ -		
Culverts/ cost per	\$ 20,000.00	\$ 16,000.00	\$ -	\$ 28,000.00	\$ -	\$ -	\$ 8,000.00		
Sub-Total:	\$ 591,540.00	\$ 379,535.00	\$ 814,370.00	\$ 1,145,470.00	\$ 276,900.00	\$ 1,099,410.00	\$ 1,099,410.00		
Contingency (10%) of sub total	\$ 59,154.00	\$ 37,953.50	\$ 81,437.00	\$ 114,547.00	\$ 27,690.00	\$ 109,941.00	\$ 109,941.00		
Decking and railing for Bridge over Roaring Fork alignments 1&2							\$ 75,000.00		
Catherine Store to Rock Bottom Ranch-10% cost increase due to lack of accessibility to site.	\$ 59,154.00								
Total	\$ 709,848.00	\$ 417,488.50	\$ 895,807.00	\$ 1,260,017.00	\$ 310,420.00	\$ 1,284,351.00	\$ 4,877,931.50		

Appendix B

Signage and Markings for Trail and Low-Volume Roadway/ Driveway Intersections

Note: Descriptions apply to both approaches unless indicated.

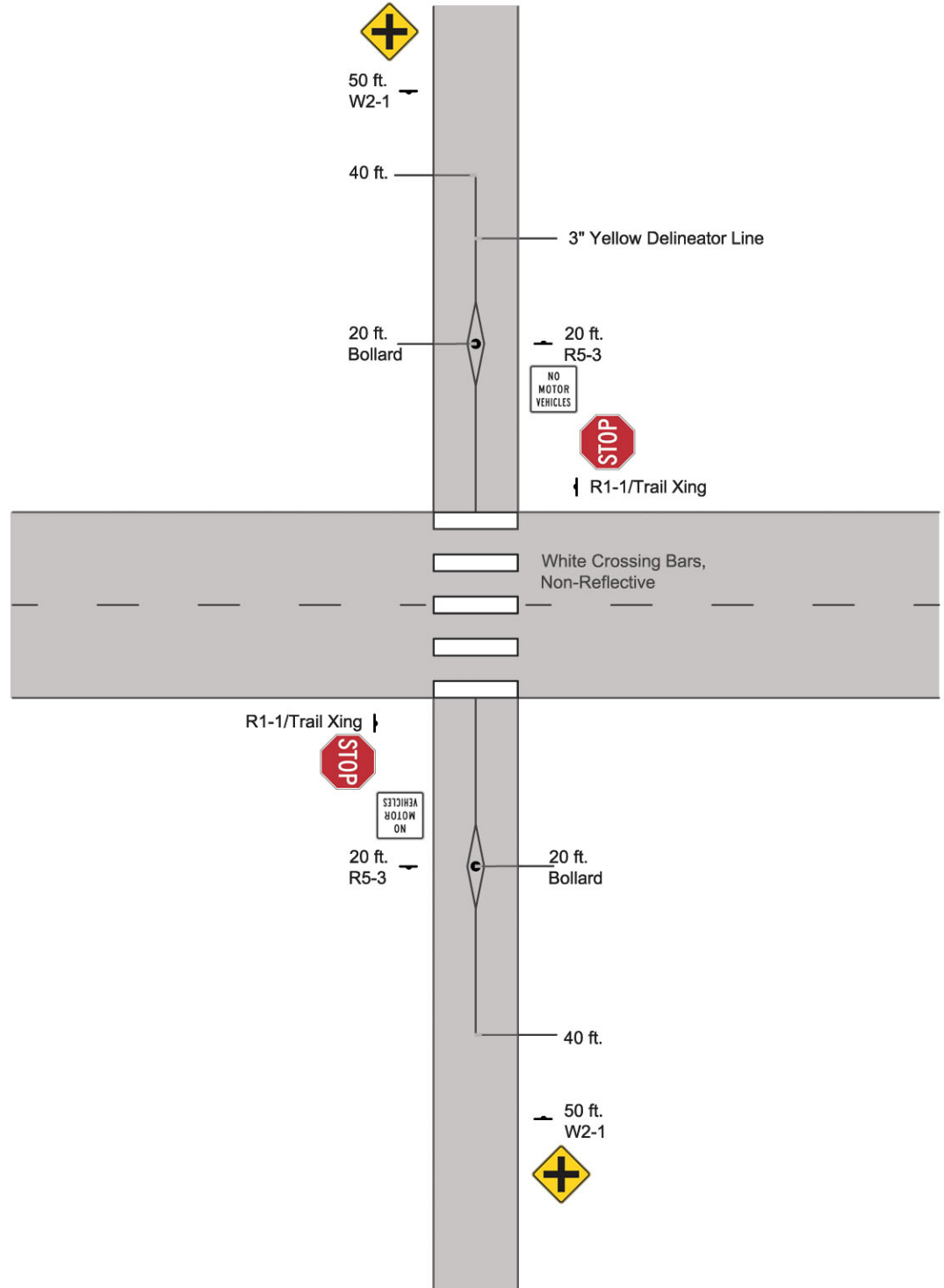
<u>Sign</u>	<u>Marking</u>	<u>Location/Comments</u>
On Trail:		
W2-1	50 ft.	18" x 18" Symbolic crossroads
*Pets on Leash Sign	50 ft.	12" x 18" Mounted on back of W3-1a, OR
*Trail User Yield	50 ft.	12" x 12" Mounted on back of W3-1a, OR
R5-3	20 ft.	18" x 18" "No Motor Vehicles"
42" Yellow Bollard	15-25 ft.	Impact Recovery Systems traffic delineator
No Motor Vehicles	On bollard	3" x 11" Rockart reflective decal
3" Yellow Separator Line	0-20' beyond bollard	Forms 2" ft. by 10" ft. diamond at bollard
On Road:		
Crossing Bars	Centered @ 0 ft.	2' x 10' white thermal plastic (90 mil) crossing bars
R1-1	Edge of trail tread	24" x 24" stop, on top of post
Trail Xing Sign	Shares post w/ R1-1	24" x 18" fluorescent yellow/green below R1-1

*optional items

Notes:

- Trail signs are mounted on 96" unpeeled juniper fence posts, 24"-27" in the ground and set in a compacted soil cement mixture. Posts are typically 4"-6" at the top. Road signs are mounted on 10 ft. tall, 3 lb./ft. U-channel.
- Trail sign substrates are either 0.080" aluminum, Hi-density overlay plywood, or Altree composite. Road signs are 0.080" aluminum substrate.
- Sheating for all MUTCD-compliant signs are 3M DG3. Other signs will vary.
- Dog Stations consist of a two-roll metal or polyethylene dispenser box and aluminum open mesh cylindrical covered trash receptacle, both mounted to a juniper post on the "trail" side. Trail Regulations sign is mounted above the dispenser.
- Bollards all have a reflective "No Motor Vehicles" decal on the side facing motor vehicle traffic. A vertical 3" x 12" yellow reflective strip is affixed to the opposite side.

Signage and Markings for Trail and Low-Volume Roadway/Driveway Intersections



Signage and Markings for Trail and Medium-Volume Roadway/ Driveway Intersections

Note: Descriptions apply to both approaches unless indicated.

<u>Sign</u>	<u>Marking</u>	<u>Location/Comments</u>
On Trail:		
R1-1	0 ft. (@ stop bar)	18" x 18" Stop sign
Stop Bar	0 ft.	12" x 60" white stop bar - non-reflective
"Good Neighbor"	75-85 ft.	White painted stencil on pavement
Dog Station	75-85 ft.	Optional component - 1 per mile
Trail Regs	@ Dog Station	Shares post w/ bag dispenser & trash can
W3-1a	100 ft.	18" x 18" Symbolic "Stop Ahead"
Pets on Leash sign	100 ft.	12" x 18" Mounted on back of W3-1a OR
Trail User Yield sign	100 ft.	Rockart, 12" x 12" Mounted on back of W3-1a
R5-3	20 ft.	18" x 18" "No Motor Vehicles"
42" Yellow Bollard	15-25 ft.	Impact Recovery Systems traffic delineator
No Motor Vehicles	On bollard	3" x 11" Rockart reflective decal
3" Yel. Separator Line	0-20 ft. after bollard	Forms 2 ft. by 10 ft. diamond at bollard

On Road:

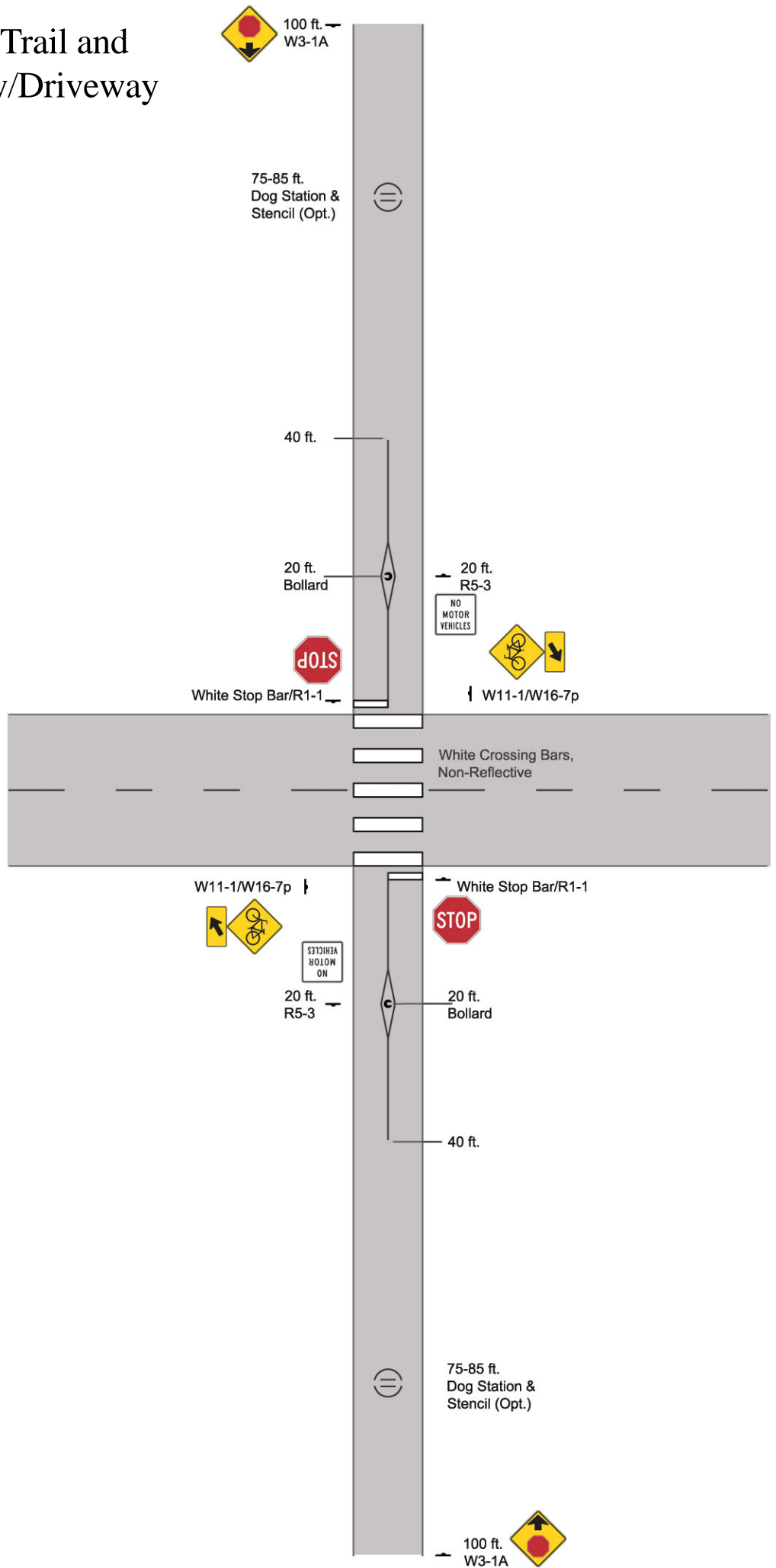
Crossing Bars	Centered @ 0 ft.	2' x 10' white thermal plastic (90 mil) crossing bars
W11-1	Edge of trail tread	24" x 24" fluorescent yellow/green bicycle symbol
W16-7p	Edge of trail tread	18" x 24" diagonal arrow; shares post w/ W11-1

*optional items

Notes:

- Trail signs are mounted on 96" unpeeled juniper fence posts, 24"-27" in the ground and set in a compacted soil cement mixture. Posts are typically 4"-6" at the top. Road signs are mounted on 10 ft. tall, 3 lb./ft. U-channel.
- Trail sign substrates are either 0.080" aluminum, Hi-density overlay plywood, or Altree composite. Road signs are 0.080" aluminum substrate.
- Sheating for all MUTCD-compliant signs are 3M DG3. Other signs will vary.
- Dog Stations consist of a two-roll metal or polyethylene dispenser box and aluminum open mesh cylindrical covered trash receptacle, both mounted to a juniper post on the "trail" side. Trail Regulations sign is mounted above the dispenser.
- Bollards all have a reflective "No Motor Vehicles" decal on the side facing motor vehicle traffic. A vertical 3" x 12" yellow reflective strip is affixed to the opposite side.

Signage and Markings for Trail and Medium-Volume Roadway/Driveway Intersections



Signage and Markings for Trail and High-Volume Roadway/ Driveway Intersections

Note: Descriptions apply to both approaches unless indicated.

<u>Sign</u>	<u>Marking</u>	<u>Location/Comments</u>
On Trail:		
R1-1	0 ft. (@ stop bar)	18" x 18" Stop sign
Stop Bar	0 ft.	12" x 60" white stop bar - non-reflective
"Good Neighbor"	75-85 ft.	White painted stencil on pavement
Dog Station	75-85 ft.	Optional component - 1 per mile
Trail Regs	@ Dog Station	Shares post w/ bag dispenser & trash can
W3-1a	100 ft.	18" x 18" Symbolic "Stop Ahead"
Pets on Leash sign	100 ft.	12" x 18" Mounted on back of W3-1a OR
Trail User Yield sign	100 ft.	Rockart, 12" x 12" Mounted on back of W3-1a
R5-3	20 ft.	18" x 18" "No Motor Vehicles"
42" Yellow Bollard	15-25 ft.	Impact Recovery Systems traffic delineator
No Motor Vehicles	On bollard	3" x 11" Rockart reflective decal
3" Yel. Separator Line	0-20 ft. after bollard	Forms 2 ft. by 10 ft. diamond at bollard

On Road:

Crossing Bars	Centered @ 0 ft.	2' x 10' white thermal plastic (90 mil) crossing bars
W11-1	Edge of trail tread	24" x 24" fluorescent yellow/green bicycle symbol
W16-7p	Edge of trail tread	18" x 24" diagonal arrow; shares post w/ W11-1
W11-1	300 ft. from tread	Shares post with W16-2a
W16-2a	300 ft. from tread	"300 feet"

*optional items

Notes:

- Trail signs are mounted on 96" unpeeled juniper fence posts, 24"-27" in the ground and set in a compacted soil cement mixture. Posts are typically 4"-6" at the top. Road signs are mounted on 10 ft. tall, 3 lb./ft. U-channel.
- Trail sign substrates are either 0.080" aluminum, Hi-density overlay plywood, or Altree composite. Road signs are 0.080" aluminum substrate.
- Sheating for all MUTCD-compliant signs are 3M DG3. Other signs will vary.
- Dog Stations consist of a two-roll metal or polyethylene dispenser box and aluminum open mesh cylindrical covered trash receptacle, both mounted to a juniper post on the "trail" side. Trail Regulations sign is mounted above the dispenser.
- Bollards all have a reflective "No Motor Vehicles" decal on the side facing motor vehicle traffic. A vertical 3x12 yellow reflective strip is affixed to the opposite side.

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