



the oxbow parcel

site plan report

CLEAR CREEK COUNTY

open space

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EXECUTIVE SUMMARY

INTRODUCTION

The Oxbow Parcel presents a tremendous recreational opportunity for the residents of Clear Creek County, neighboring counties in the region, and visitors to Colorado. This site is of important regional significance in that it provides an important link for the Clear Creek Greenway between Clear Creek County and neighboring Jefferson County. At the same time, the Oxbow site is a destination unto itself; a site of breathtaking beauty, scenic wildlife, rich cultural history, and highly sought after recreation amenities like the Cat Slab climbing wall.

The Oxbow Parcel property was purchased with funding from Great Outdoors Colorado (GOCO) Open Space Funds. GOCO also contributed significantly to the development of this site plan.

The site plan sets out to enhance existing amenities, expand the range of recreational opportunities, and blend the needs of recreational users with the history and natural qualities of the site.

The Oxbow Parcel is located near Tunnel No. 5 on US Highway 6 in Clear Creek County, Colorado, and will one day be an important part of a much larger Greenway Trail that will connect Golden to Loveland Pass. The site has tremendous natural beauty marked by the roaring creek cutting through steep walls of the canyon and jagged stone outcrops. The site's vegetation ranges from the lowland floodplain up to the subalpine forest where bighorn sheep look over the canyon walls. This site is extremely unique for the County's Greenway Plan; it is one of very few reaches where the future greenway trail will not follow the I-70 corridor. Instead, it follows the Oxbow, removed from the view and noise of traffic and capturing the quiet natural beauty of the place.

PRODUCT

The Oxbow Parcel Site Plan Report represents a nine month long planning effort for Clear Creek County Open Space and the consultant team led by Wenk Associates, Inc. This document is intended to provide the County with a plan framework and phasing options that can be used to secure funds for future design, construction, and management of the resource. The report contains four primary chapters:

- Inventory and Analysis: summarizes the technical and environmental assessments that informed and shaped the final site plan
- Concept Development: summarizes the preliminary concepts, and all parking and trail studies that developed through the process with the clients, stakeholders, agencies, and consultant team.
- Final Plan: summarizes the program and primary elements of the physical plan as that evolved from the ideas and concepts.
- Phasing and Funding: outlines an opinion of probable construction costs for proposed improvements (and a suggested phasing scenario) that allows for development of the property over time as funding opportunities are secured.

PROCESS

A stakeholder group was formed that included representatives from several recreational user groups, safety organizations, and the Clear Creek County Open Space Commissioners. This group was integral to the visioning and goals that influenced the plan. Three community stakeholder and public meetings were held to provide continual updates on the planning process and to gather input that is reflected in the final site plan.

SITE PLAN GOALS

Collaborating with the County and the Stakeholders, key goals were identified that shaped the Final Plan:

- Connect the Oxbow Parcel to Future Greenway Trails
- Connect the Oxbow Parcel to the Elmgreen Homestead and other Clear Creek County Open spaces
- Improve Public Access and Safety
- Preserve Natural and Historic Qualities of the site
- Provide Recreational Amenities within the site's "carrying capacity"

RECREATIONAL OPPORTUNITIES

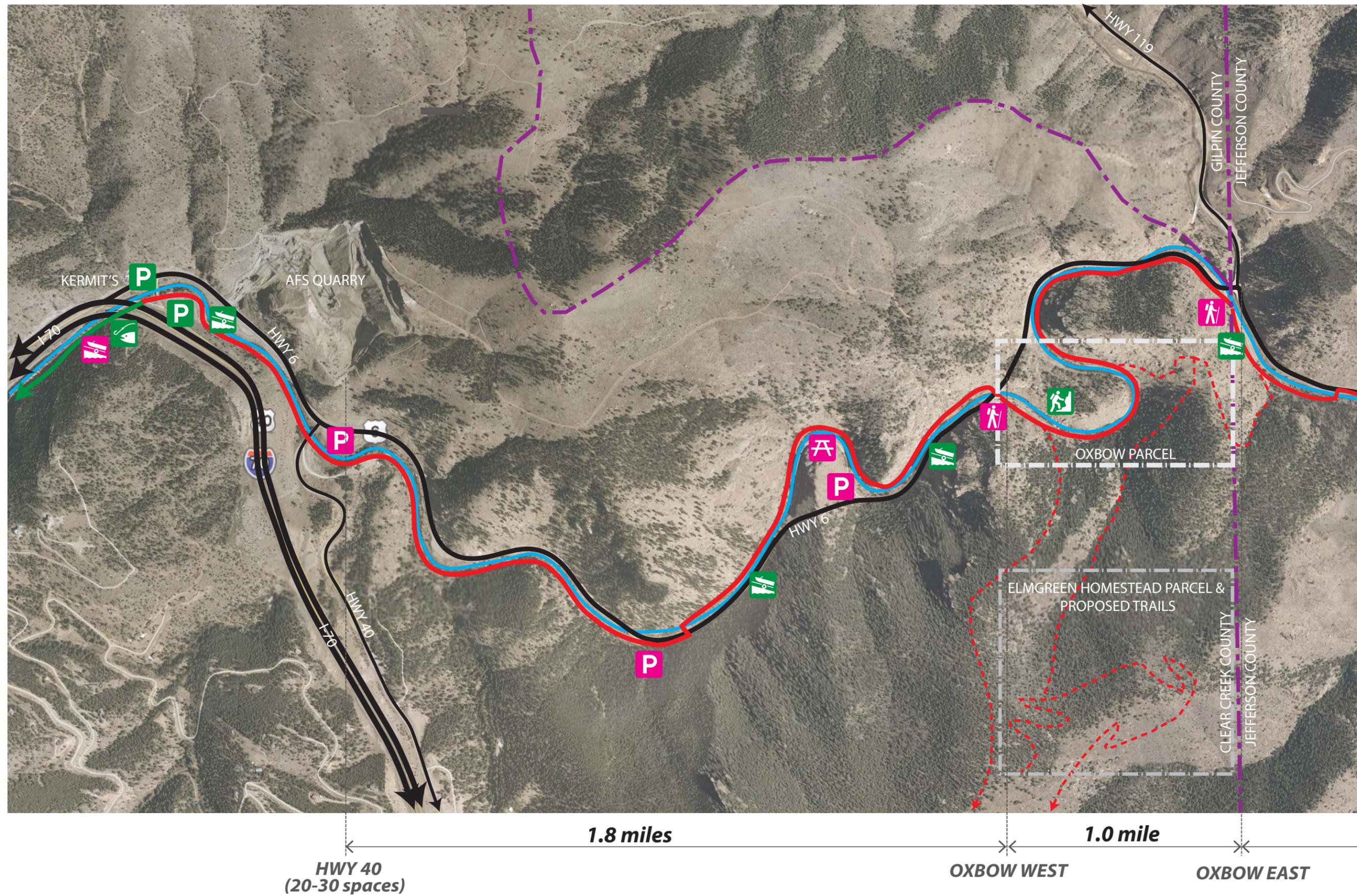
The parcel has an abundance of potential user groups and activities. The Site Plan sets out to accommodate the following user groups:

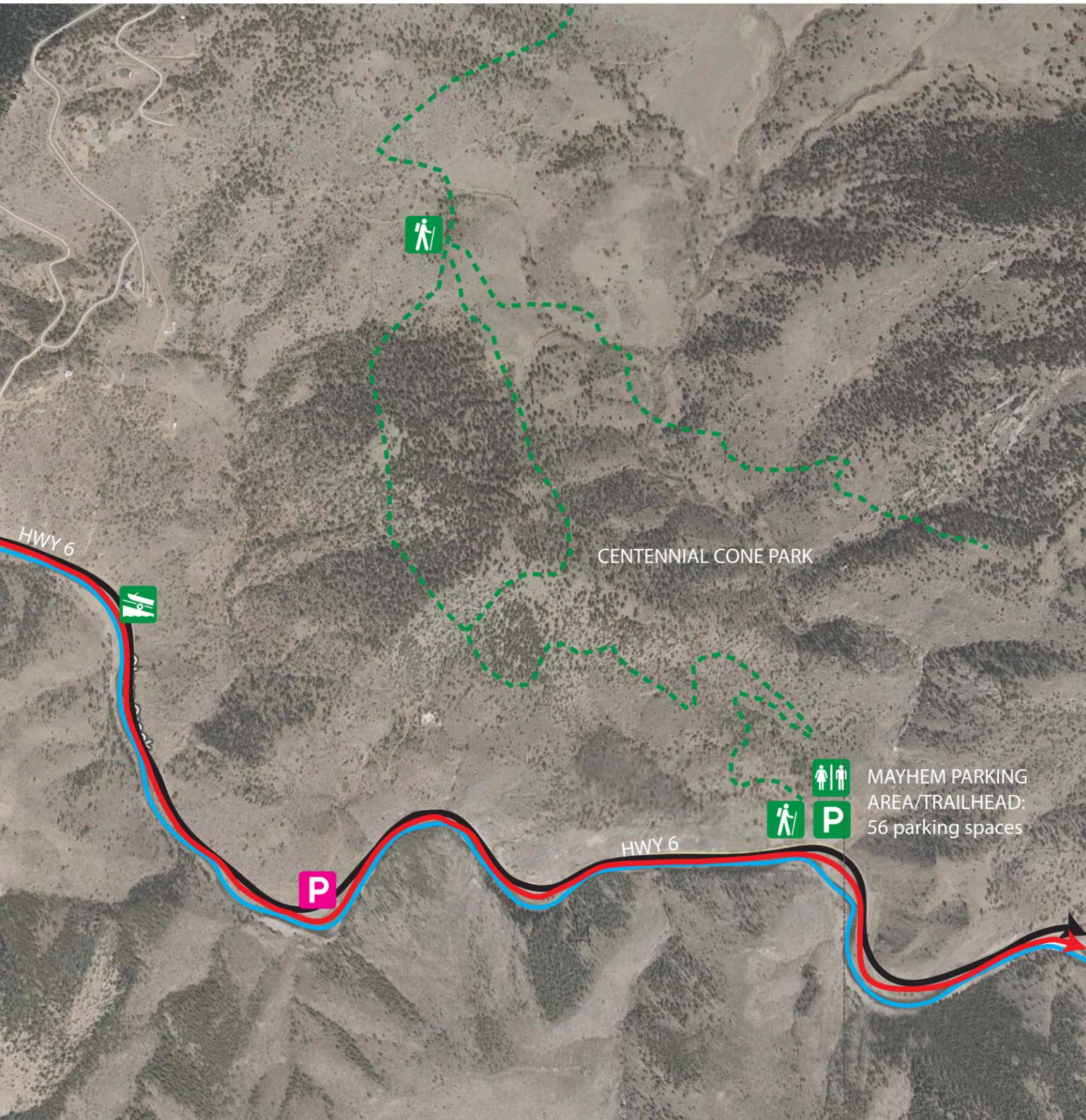
- Mountain biking
- Fishing
- Rafting & Kayaking
- Rock Climbing
- Hiking
- Picnicking
- Road Biking
- Walking & Running
- Wildlife Viewing

POTENTIAL AMENITIES

Early on in the process, stakeholders collaborated to identify potential enhancements to the parcel. The following amenities were considered in the Final Plan.

- Restroom Facility
- Parking
- Pedestrian Creek Crossing
- Improved Climbing Access
- Rafting Amenities – Day use picnic area
- Picnic areas near access
- Historic signage
- Interpretive / Educational signage
- ADA accessible trails
- Hiking trails (non-ADA)
- Trash Facilities (wildlife proof)
- Emergency Access
- Emergency Phone





LEGEND:

- Clear Creek
- Highways & Interstate
- County Lines
- Oxbow Parcel
- Homestead Parcel
- Proposed Greenway
- Proposed Trail
- Existing Greenway
- Existing Trail
- Future Boat Launch
- Future Fishing
- Future Parking
- Future Picnic Area
- Future Trailhead
- Existing Climbing
- Existing Boat Launch
- Existing Fishing
- Existing Parking
- Existing Trailhead
- Existing Restroom

1.7 miles

MAYHEM
(56 spaces)

The final site plan is guided by the understanding of existing conditions, key site features, and the site's conservation easement. Opportunities and constraints were identified in this process that provided a general framework for the development of a plan. Key issues included enhancing the experience of users while identifying strategies for preservation and management of the resource. Those factors are summarized in this chapter.

REGIONAL CONTEXT

The Oxbow Parcel is located in Clear Creek County, near the boundaries to Gilpin and Jefferson County. The future Greenway Trail will connect to Mayhem Gulch Trailhead, located 1.7 miles to the east of the site and to a future planned parking lot near Highway 40, approximately 1.8 miles to the west.

Existing and planned trails will connect to the Elmgreen Homestead Property and near I-70 access, south of the parcel. These trails may be future advanced mountain biking and hiking trails that connect to parking areas near I-70 access.

Due to visibility and tight constraints, access and parking along US Highway 6 are limited. Parking at the site is not intended to be for a regional trailhead, but for site users only. Cyclists and hikers will be able to access the site in the future along the greenway trail.

CONSERVATION EASEMENT

The Oxbow Parcel is governed by a conservation easement granted by Clear Creek Land Conservancy. The easement specifies allowable uses for the property with the overall goal to provide access and connections while protecting the canyon’s natural environment. Opportunities and constraints taken from the easement were used to develop guidelines for the site planning of the Oxbow Parcel.

Opportunities:

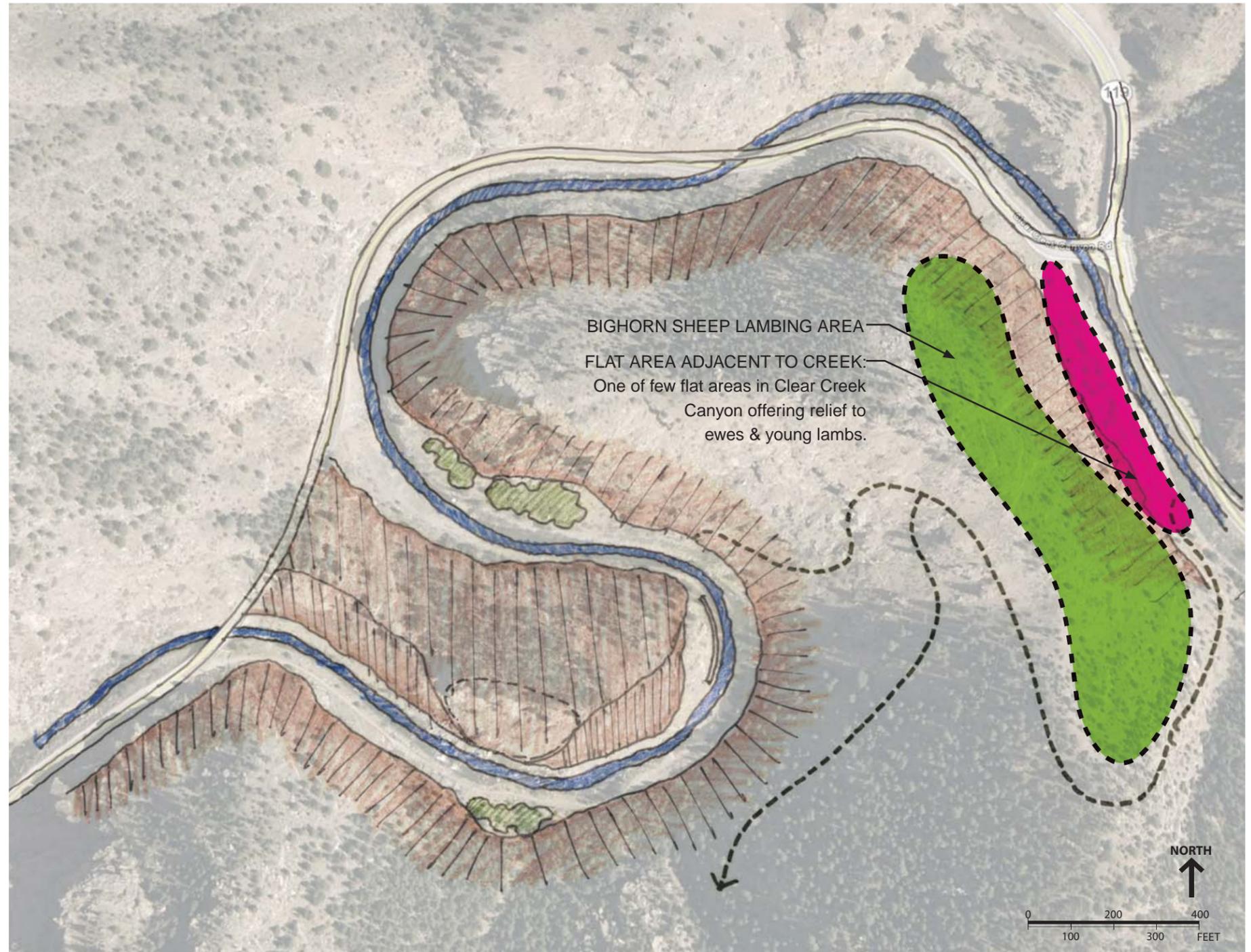
- Provide recreational activities for hikers, bikers, rock climbers, fishermen, rafters/kayakers, equestrian, picnicking, and other natural recreation uses.
- Allow rafters/kayakers to float through & have a place to stop.
- Maintain access to the Cat Slab for public use.
- Provide potential trails along both sides of creek, following old railroad beds.
- Reuse historic grade for use as a public trail.
- Protect and enhance habitat for elk, deer, bear, bighorn sheep, mountain goats, and birds.
- Provide up to two limited public parking areas.
- Provide signage customary in a national park setting, including trail markings, parking signs, no trespassing signs, signs to inform the public of ownership and rules.
- Site amenities allowed include fences, trails, picnic facilities, one bridge across clear creek, signs, historic markers, trash receptacles, toilets/ portable toilets, and water wells.
- Emergency Access around Tunnel 5.

Constraints:

- Parking areas to be adjacent to highway six and not to exceed one acre each
- All trails must be for non-motorized access only
- No buildings, structures, commercial signs or billboards other than existing bridge abutments and retaining walls
- No manipulation of the creek
- Public access must be allowed and facilitated, including parking and trail improvements, as required by GOCO for assistance purchasing the parcel.
- Any impacts must be evaluated against Clear Creek County Open Space conservation values

ENVIRONMENTAL ASSESSMENT

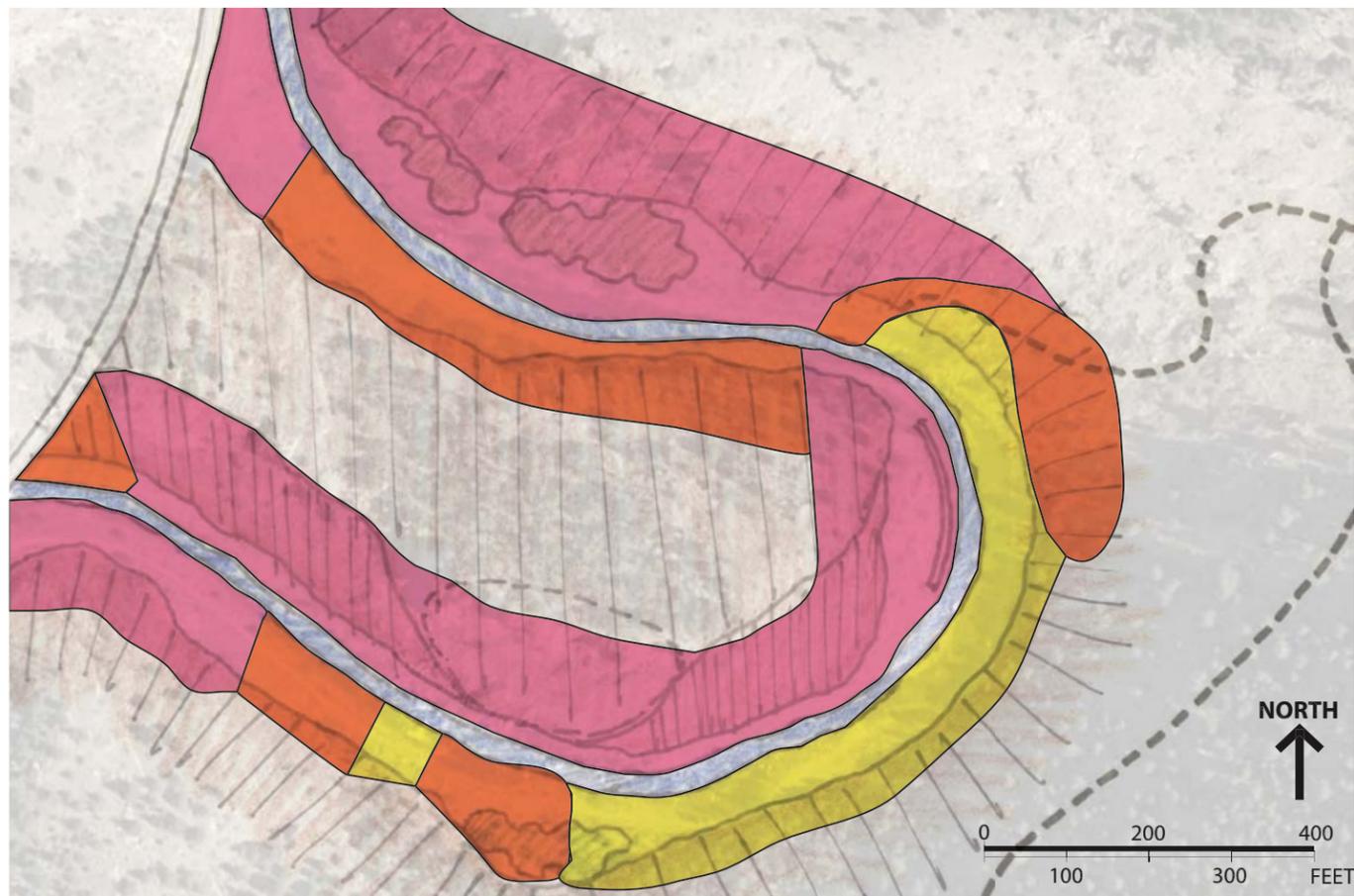
The canyon is home to the Georgetown Bighorn Sheep Herd. Over the years, the sheep population has been declining. Additional pressure on the population is not desired by the County or by the Department of Wildlife (DOW). According to the DOW, a lambing area is located on the ridge above US Highway 6 and Highway 119, on the Oxbow Parcel and adjacent parcel. The flat area at the intersection of US Highway 6 and Highway 119 is also a unique piece of land, valuable to the sheep because it is one of the only flat areas in the canyon and provides access to the water.



LEGEND:

	Bluff
	Vegetation
	Sensitive Wildlife Areas

ENVIRONMENTAL CONDITIONS DIAGRAM



GEOTECHNICAL HAZARD DIAGRAM

LEGEND:

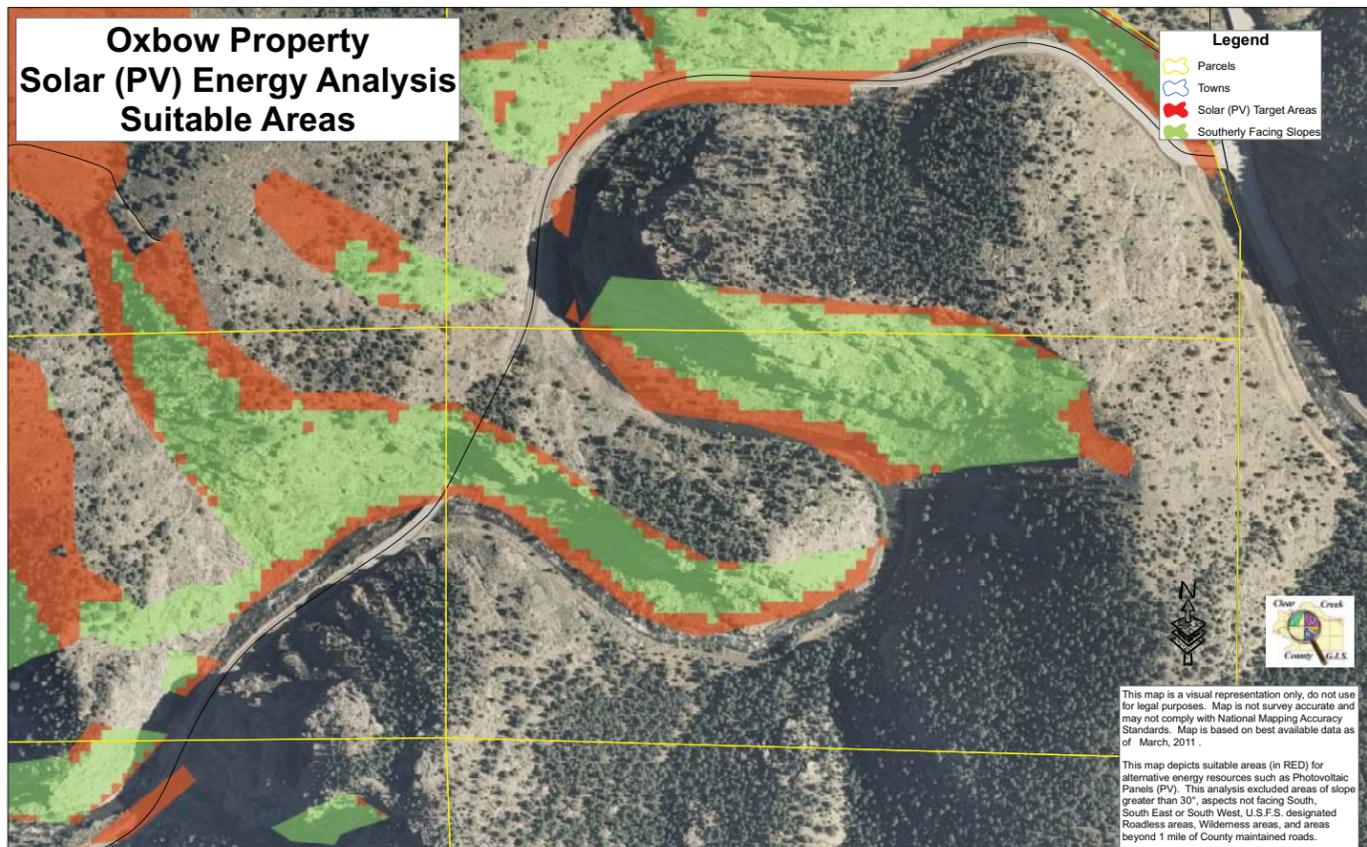
- Pink – Highest hazard zones that contain the steepest and highest slopes and least vegetation. Trails should generally be avoided in these areas if there is an alternative. Rock climbers must assume certain risks. The Cat Slab area is judged to be capable of a damaging rockfall at any time, as are the other high hazard areas.
- Orange – Moderate hazard zones that generally have somewhat less steep slopes above the river and/or have at least moderately thick forests of trees on the slopes.
- Yellow – Low risk zones with the least-steep slopes on the parcel. A risk of rockfall is still present.

GEOLOGIC HAZARD EVALUATION

A geotechnical hazard evaluation of the Oxbow Parcel was prepared based on conditions observed during site reconnaissance, review of pertinent geologic literature and aerial photographs, and experience with similar conditions and projects.

Rockfall is the most serious of the concerns on the site, although flooding, landslide, debris flow, unstable and potentially unstable slopes are also significant. A diagram was prepared in an effort to rank the relative hazard due to rockfall in the Oxbow Parcel.

Parking and picnicking spots should not be placed in high hazard areas. Low and possibly moderate risk areas should be selected for trails, picnicking areas, and parking lots, whenever possible. Park users should be informed of rockfall hazards.



SOLAR ENERGY ANALYSIS DIAGRAM

LEGEND:

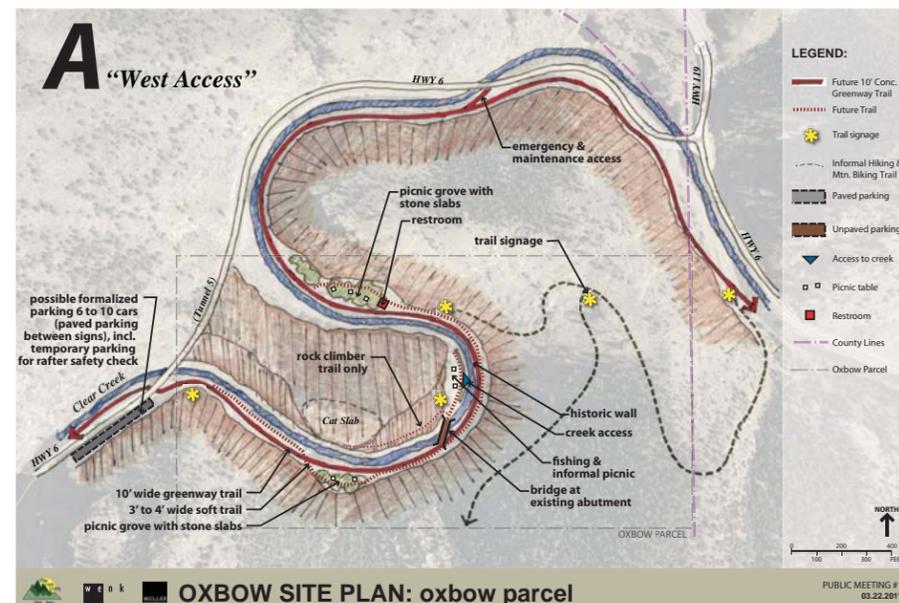
- Green - Southerly Facing Slopes
- Orange - Solar (PV) Target Areas
- Parcels
- Towns

SOLAR ENERGY ANALYSIS

A solar energy analysis of the Oxbow Parcel was provided by Clear Creek County. The diagram excludes aspects not facing south. It gives a general analysis of shade and sun patterns on the site.

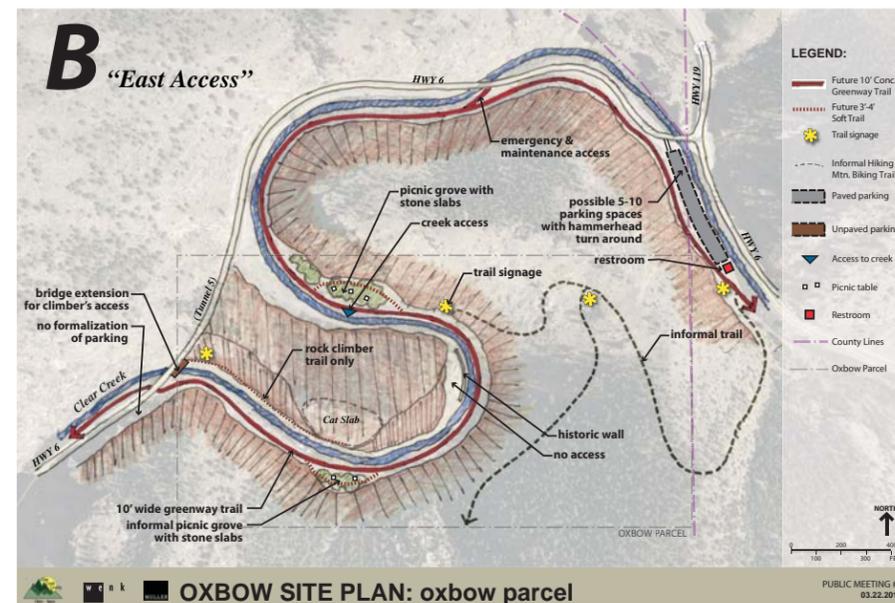
PRELIMINARY CONCEPTS

Three initial concepts were developed to explore the range of improvements on the site. Each option provides a different access point and level of improvements on the property. The concepts were presented to the stakeholders and public and evaluated for the appropriate balance between recreation uses and the natural landscape.



CONCEPT A- WEST ACCESS

- Formalized parking on west end of parcel, interior only
- 10' wide greenway trail with 3'-4' wide soft trail that is separated from Greenway Trail where possible
- New bridge at historic railroad bridge abutment
- Fishing and informal picnic grove on inside of the Oxbow (west side of creek)
- Restroom and picnic grove near existing cottonwood grove (north-center of parcel)



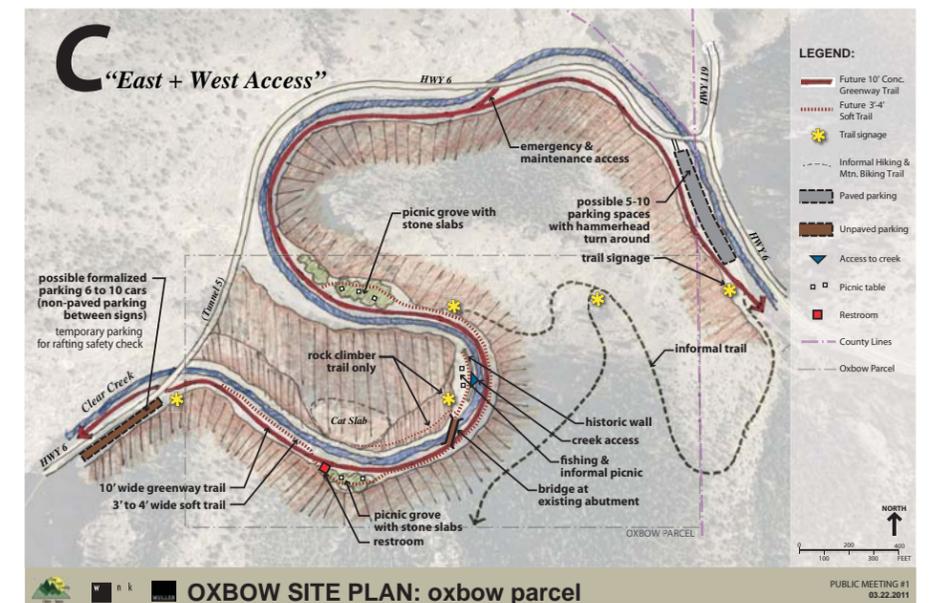
CONCEPT B- EAST ACCESS

- Formalized parking on east end of parcel only
- Restroom adjacent to parking lot on east end of project
- Creek access & picnic area on outside of Oxbow near existing cottonwood grove
- No bridge over creek for access to inside of oxbow
- Bridge extension adjacent to US Highway 6 near Tunnel 5 for safer climber access to the Cat Slab

PREFERRED CONCEPT

At the second public meeting, it was agreed to further pursue the following elements:

- Parking at the east and west sides
- Restroom placed with closest maintenance access and optimum solar potential
- Bridge at the historic abutment for pricing/phasing discussions at the next meeting



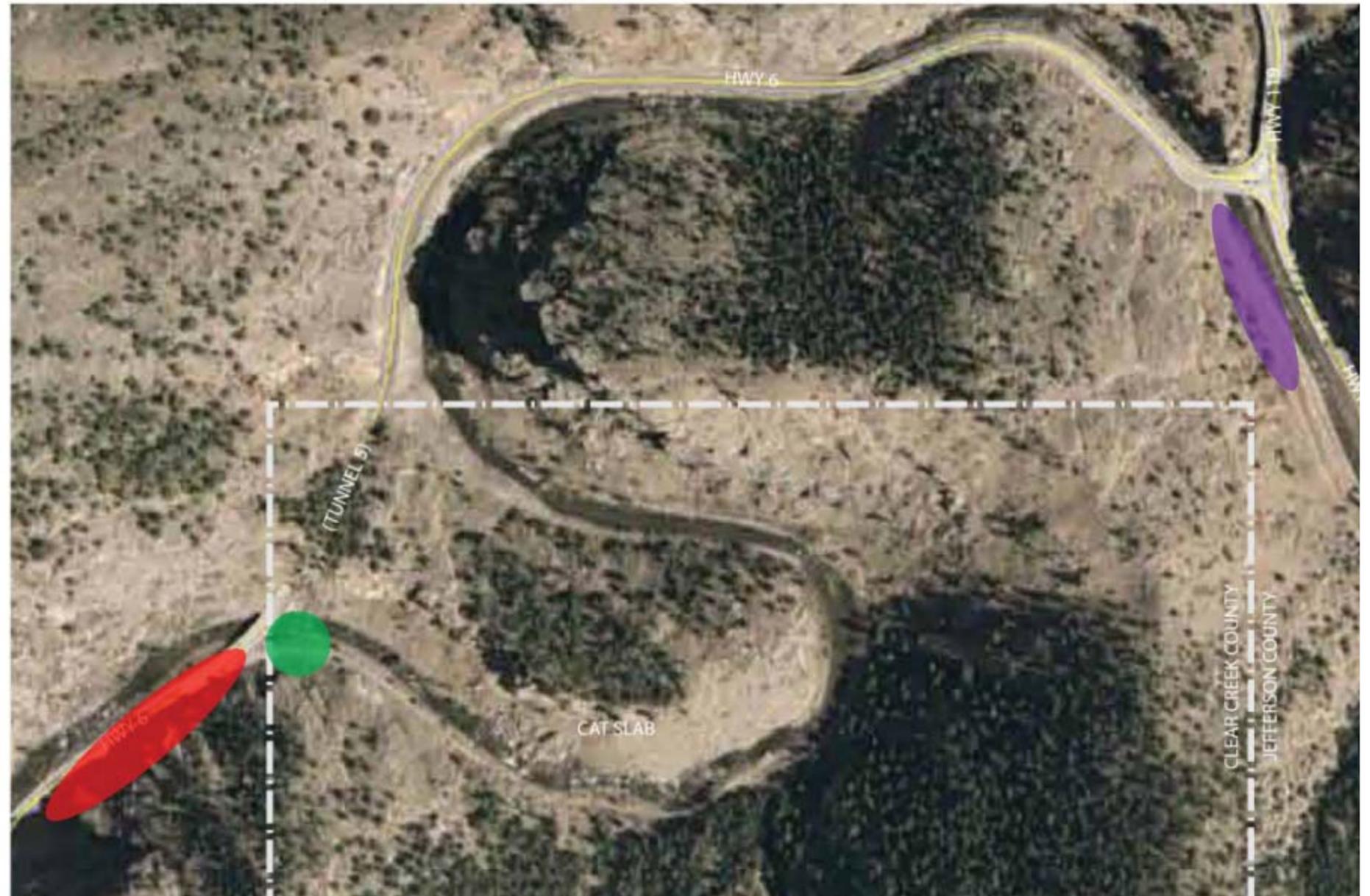
CONCEPT C- EAST+ WEST ACCESS

- Possible formalized parking at west end of parcel where informal parking currently occurs (6-10 spaces, non-paved, signed, including temporary parking for rafter safety check)
- 10' wide greenway trail with 3-4' wide soft trail that is separated from greenway where possible
- Restroom and picnic grove across creek from the Cat Slab, near west entrance
- New bridge at historic railroad bridge abutment
- Creek access and picnic area on inside of Oxbow, accessible via bridge

PARKING LOCATIONS

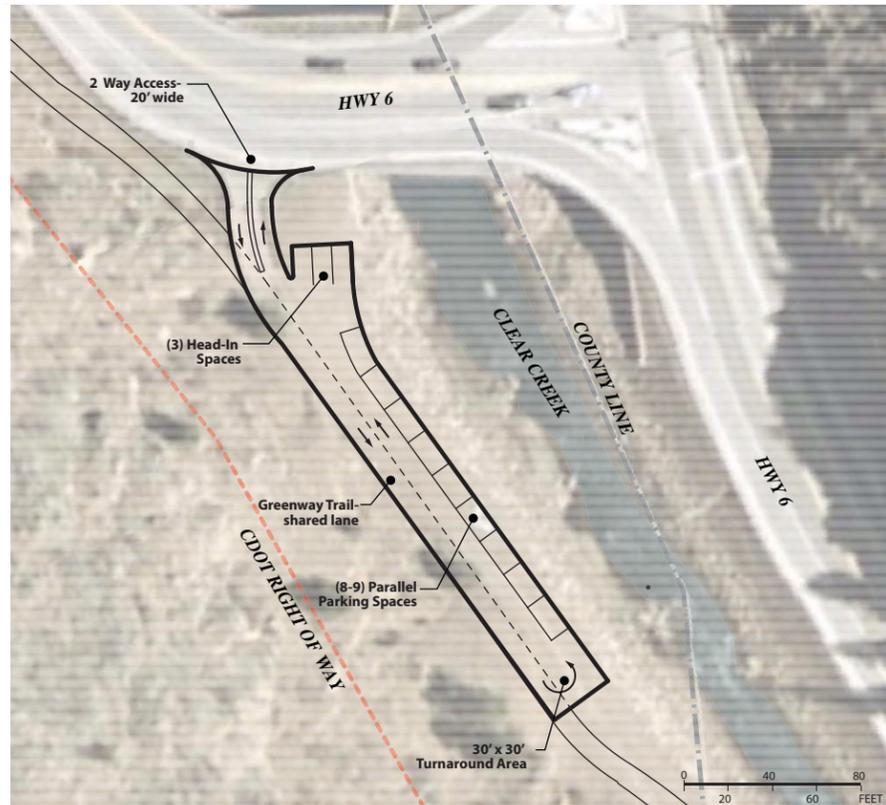
In the initial concepts, three areas were identified as potential on-site parking locations, shown on the diagram. Based on further studies, the parking area on the west side of Tunnel 5 on the Oxbow property became the preferred option.

Currently informal parallel parking exists west of Tunnel 5 along US Highway 6. Colorado Department of Transportation did not recommend formalization of the parking because of the rockfall area above it.

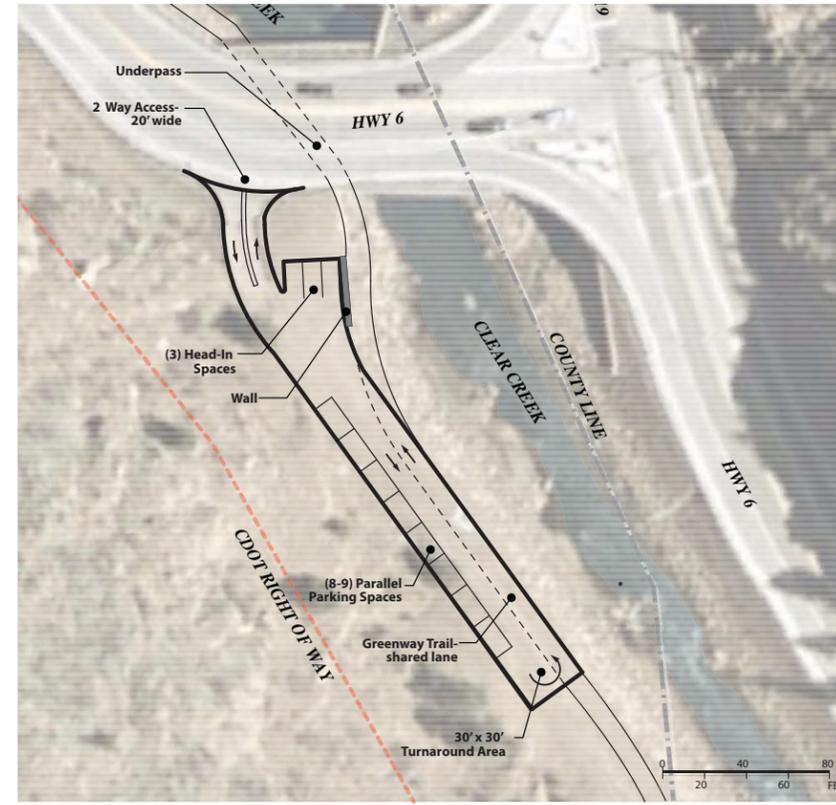


PARKING LOCATION DIAGRAM

	LOCATION:	CONSENSUS:
	west, inside site	potential
	west, parallel to hwy 6	unsafe
	east	environmental concerns



EAST SIDE: OPTION 1



EAST SIDE: OPTION 2

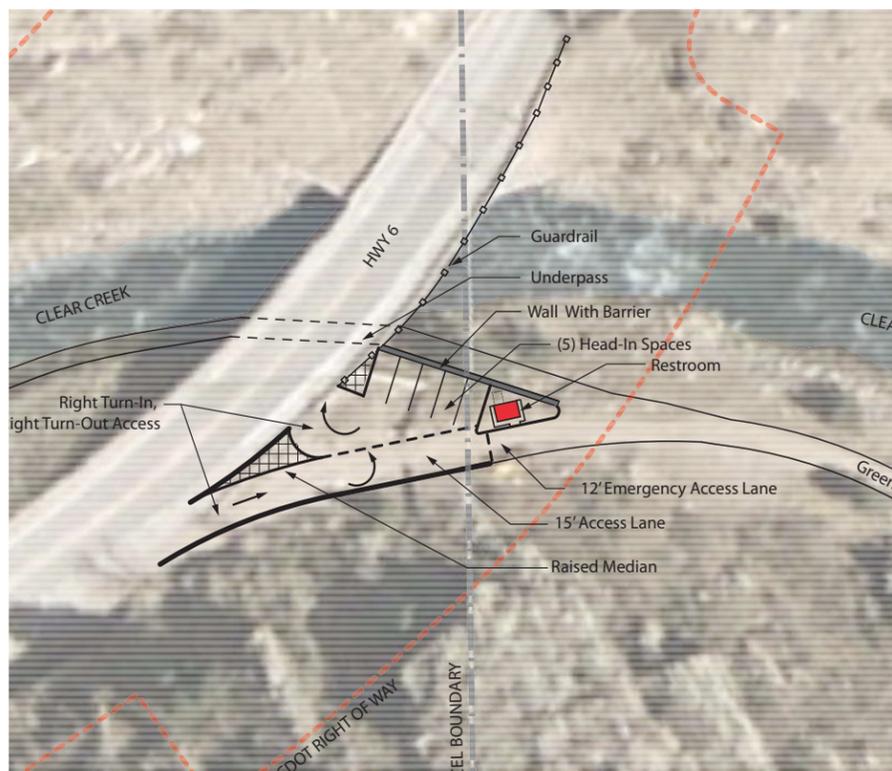
EAST SIDE PARKING STUDY

An east side parking location, near the intersection of Highway 119 and US Highway 6, was pursued as an option. It is a relatively flat location that could provide 10-12 parking spaces off of the highway. The greenway trail connection along US Highway 6 to the Oxbow Parcel would have to be built to access this parking location.

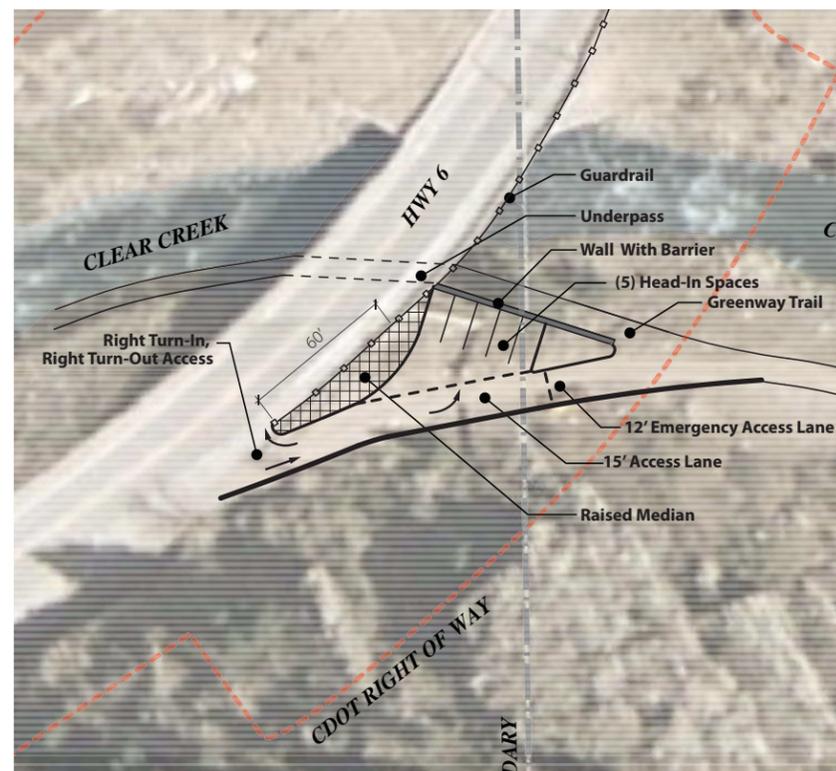
- Option 1 - Trail access along US Highway 6
- Option 2 - Trail access along Clear Creek

CONCLUSION

Not preferred due to the environmental impact on the bighorn sheep herd.



WEST SIDE: OPTION 1



WEST SIDE: OPTION 2

WEST SIDE PARKING STUDY

A west side location, on the Oxbow property, was also pursued that provides 5 parking spaces. Turning patterns at this location are limited to "right in, right out" only due to sight distances because of the tunnel and curves in the road. Two feasible options were developed.

- Option 1 – One way traffic with an entry and exit
- Option 2 – Two way traffic with one entry/exit point

CONCLUSION

Parking on the west became the preferred option. West Side Parking Option 2 provides the best means of ingress/egress to the parking area. Egress on Option 1 may create traffic conflicts. The options should be further reviewed to determine the safest access during final design.

PARKING GUIDELINES/CONSIDERATIONS

- An access permit from CDOT is required for the improvements.
- Parking spaces should be a minimum of 9'x 19' to meet Clear Creek County standards.
- Excavation/earth disturbing activities greater than 50 cubic yards will require an excavation permit from Site Development.
- Development in the 100 year flood plain may require a Site Development Permit.

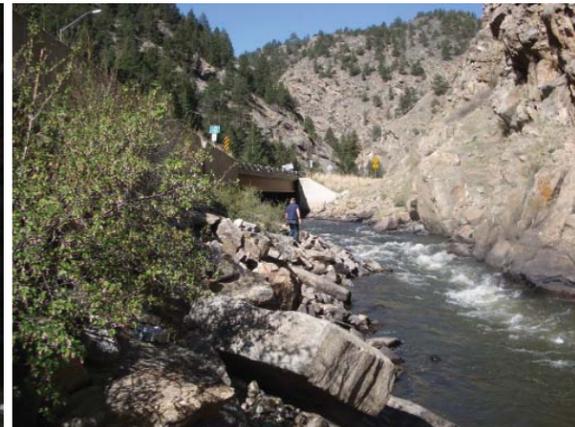
PROCESS

A preliminary assessment of the trail alignment was performed to determine the impact of the trail improvements, such as identifying potential locations of rock cut, walls, and stabilization. This assessment guided the development of five prototypical trail sections that are described with the Final Plan.

EAST TRAIL CONNECTION



NORTH SIDE CREEK TRAIL →



A

B

C

SOUTH SIDE CREEK →



D

E

F

G



H



I



J



K



L



M



N



O

WEST PARKING



P



OVERVIEW

The Oxbow Parcel Site Plan expands the site’s recreational activities while preserving its natural beauty and historic qualities. Climbers, anglers, wildlife watchers, cyclists, hikers, mountain bikers, and rafters all have an interest in the site. The plan provides a small parking lot for on-site day users, such as climbers and anglers. A future Greenway Trail will connect to larger trailheads in the canyon, such as those at Mayhem Gulch and the proposed trailhead at US Highway 40. These will bring other users to the site, and limit large scale construction which would distract from the site’s natural beauty.

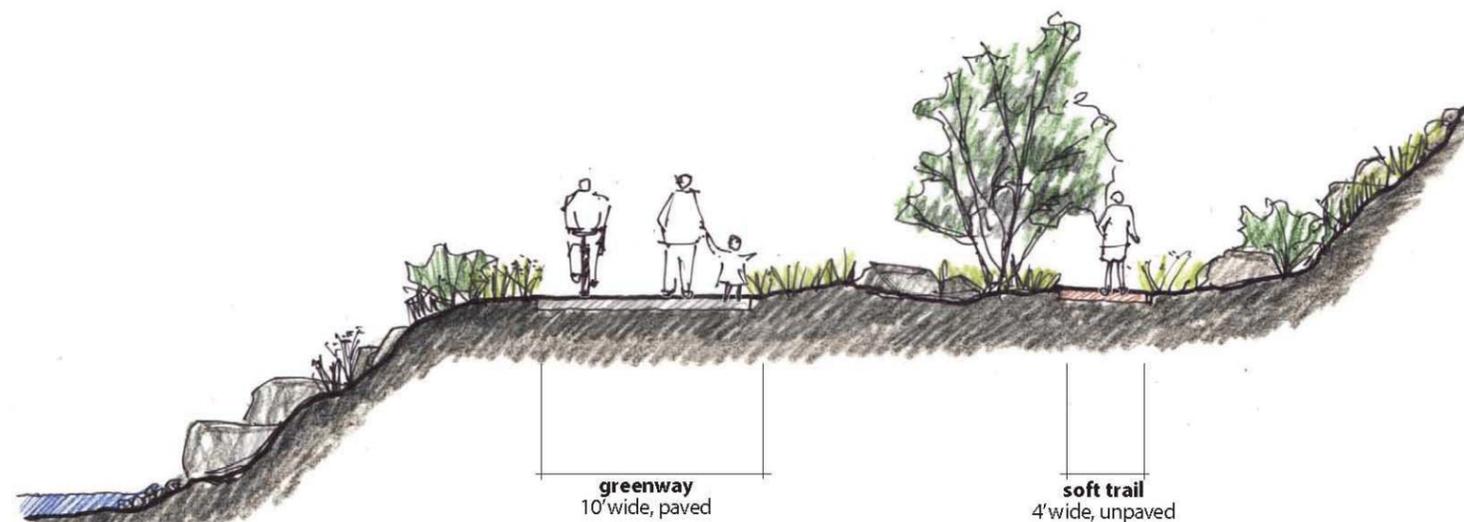
The small parking lot is located west of Tunnel 5 and can accommodate five vehicles. A solar and waterless restroom is proposed next to the parking area providing easy access for maintenance. The 10’ wide greenway trail provides emergency and maintenance vehicle access and is wide enough to provide striping to designate cycling and walking lanes or east and west bound lanes.

The greenway trail will provide a future connection under US Highway 6 going upstream towards Loveland Pass. On the Oxbow Parcel, the trail follows the historic railroad grade to the historic bridge abutment located on the interior of the site. The Greenway Trail will also follow the historic railroad grade around the outside of the Oxbow. A new bridge, based on the historic design, may connect to the interior of the Oxbow, providing a “Climbers Only” trail to the Cat Slab, and a rest area and fishing access on the historic railroad grade for all users.

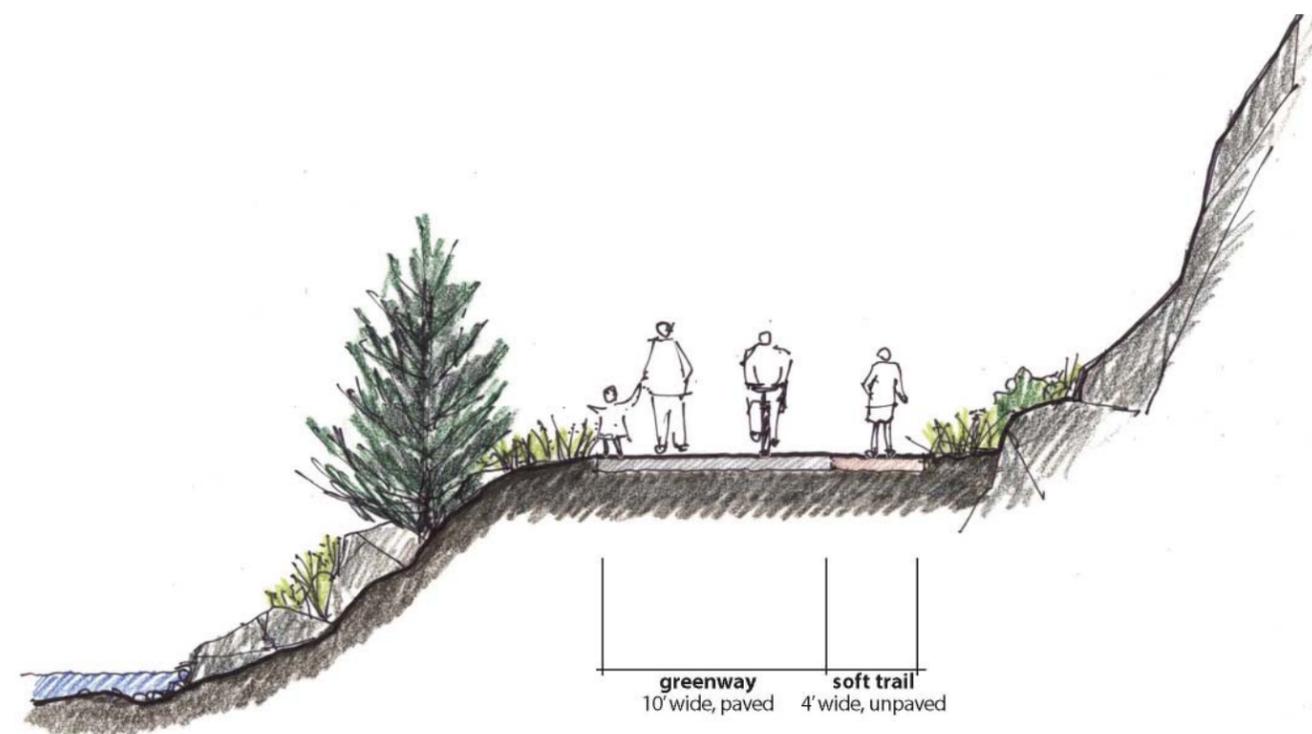
A 3-4’ soft trail is located adjacent to the Greenway Trail where the existing flat grade is wide enough. This path allows users closer access to the creek and a place to stop without conflicting with the greenway users. The soft trail provides a linkage over the ridge and to the Elmgreen Homestead Parcel and other Clear Creek County Open Space property to the south. The trail connections should be sited to avoid the sheep lambing area by connecting over the southern part of the ridge.

Stone slabs are placed at clearings and tree groves located in the low to moderate rockfall hazard zones. These slabs can be used as informal resting areas along the trail.

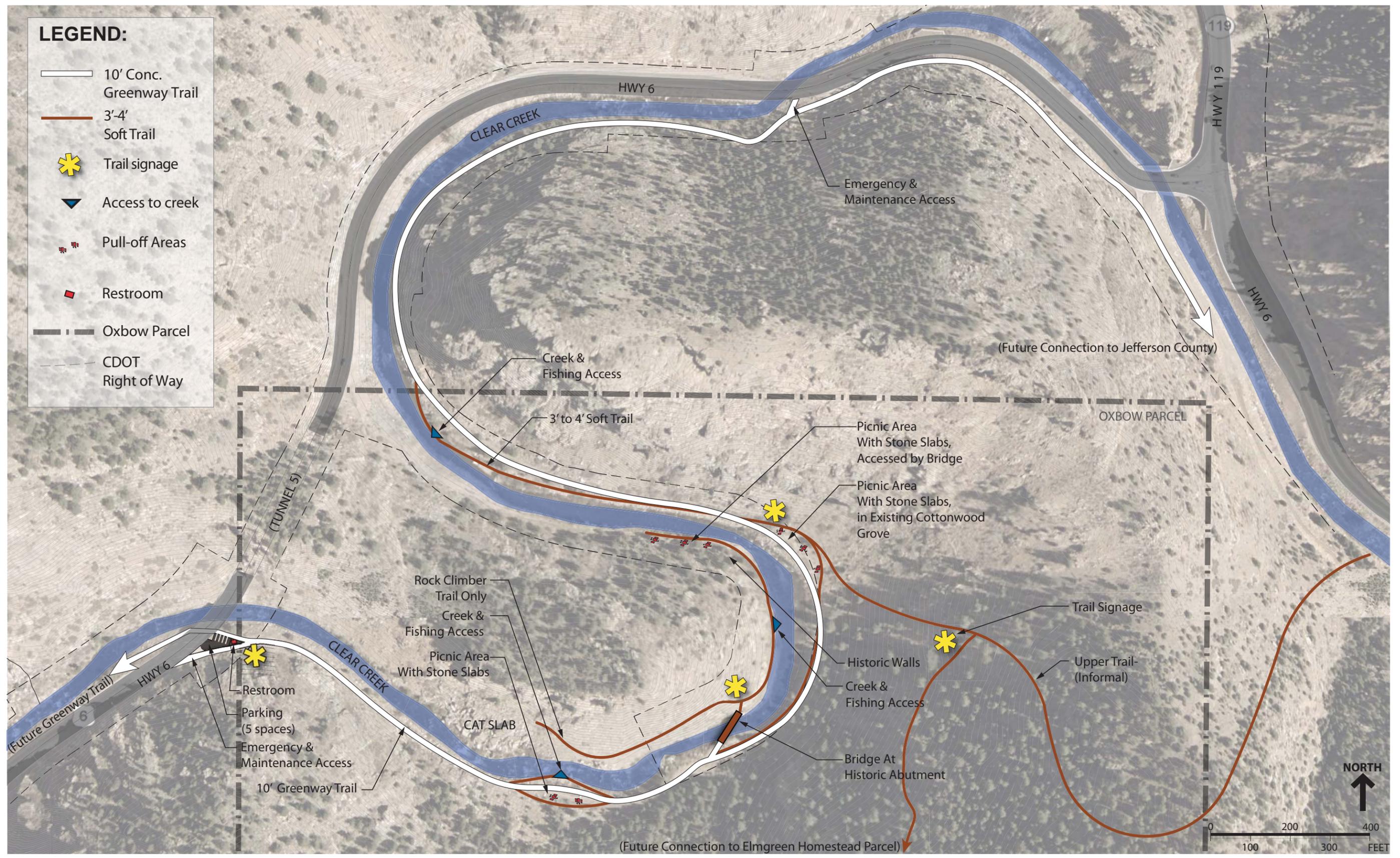
Signage is an important component of the plan. Users of the site should be knowledgeable about the remoteness and hazards of the canyon. Appropriate signage should educate visitors about the potential of rock slides, creek and flash flooding, lack of cell phone coverage, and other potential dangers.



SEPARATED TRAILS

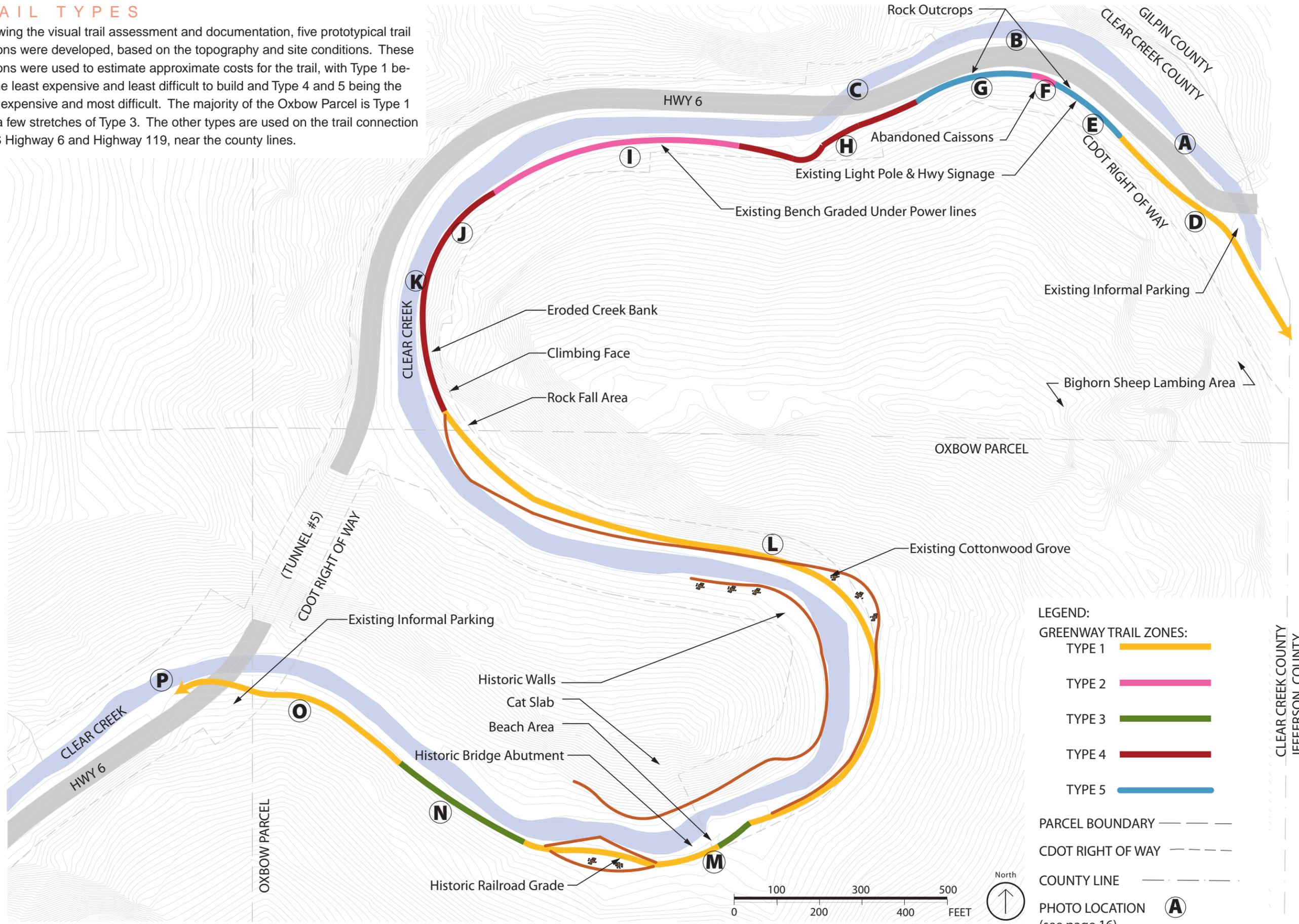


ADJACENT TRAILS



TRAIL TYPES

Following the visual trail assessment and documentation, five prototypical trail sections were developed, based on the topography and site conditions. These sections were used to estimate approximate costs for the trail, with Type 1 being the least expensive and least difficult to build and Type 4 and 5 being the most expensive and most difficult. The majority of the Oxbow Parcel is Type 1 with a few stretches of Type 3. The other types are used on the trail connection to US Highway 6 and Highway 119, near the county lines.



LEGEND:

GREENWAY TRAIL ZONES:

- TYPE 1
- TYPE 2
- TYPE 3
- TYPE 4
- TYPE 5

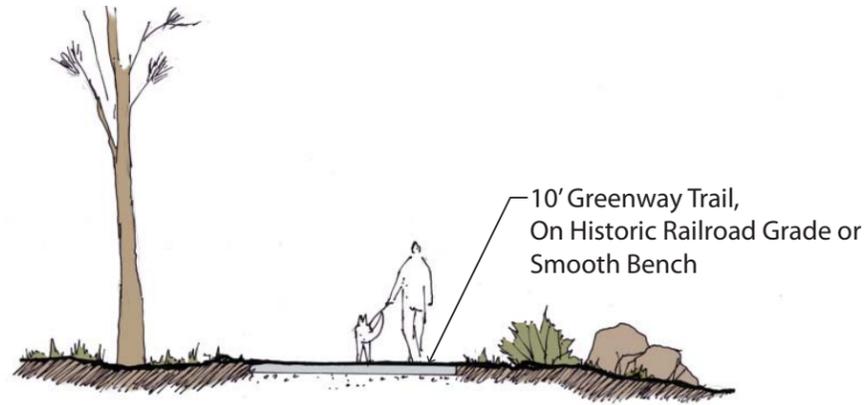
PARCEL BOUNDARY

CDOT RIGHT OF WAY

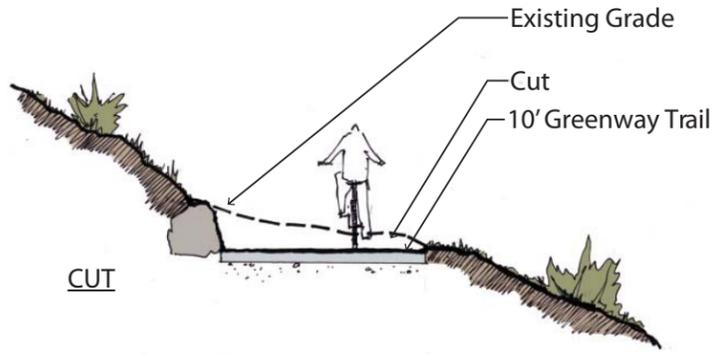
COUNTY LINE

PHOTO LOCATION **A** A

TYPICAL TRAIL SECTIONS

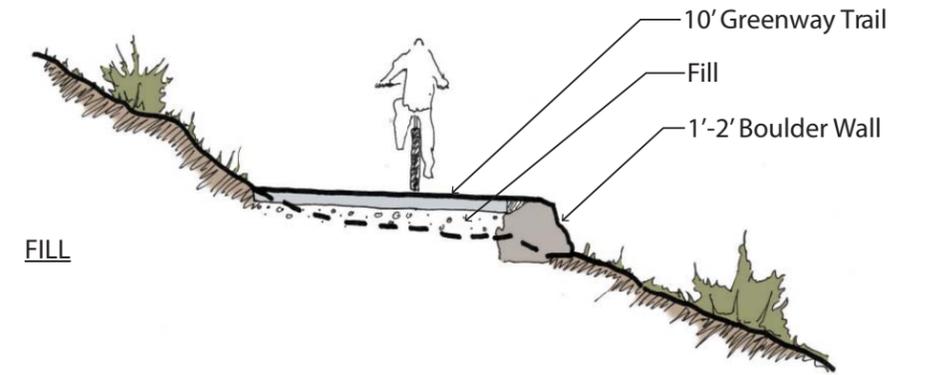


TYPE 1

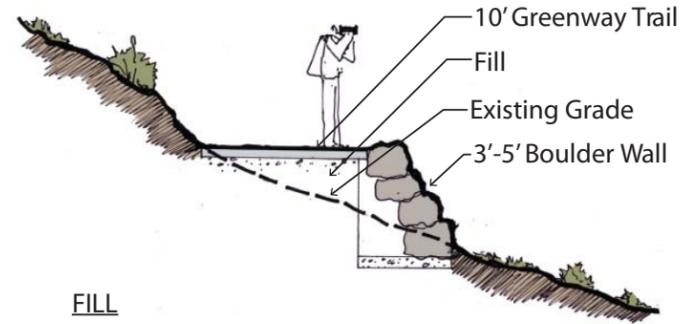


2' MAX. WALL

TYPE 2

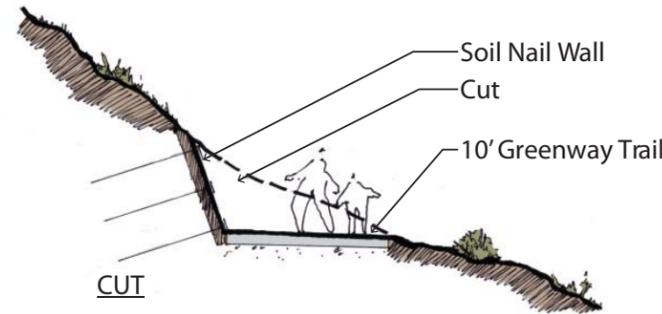


FILL

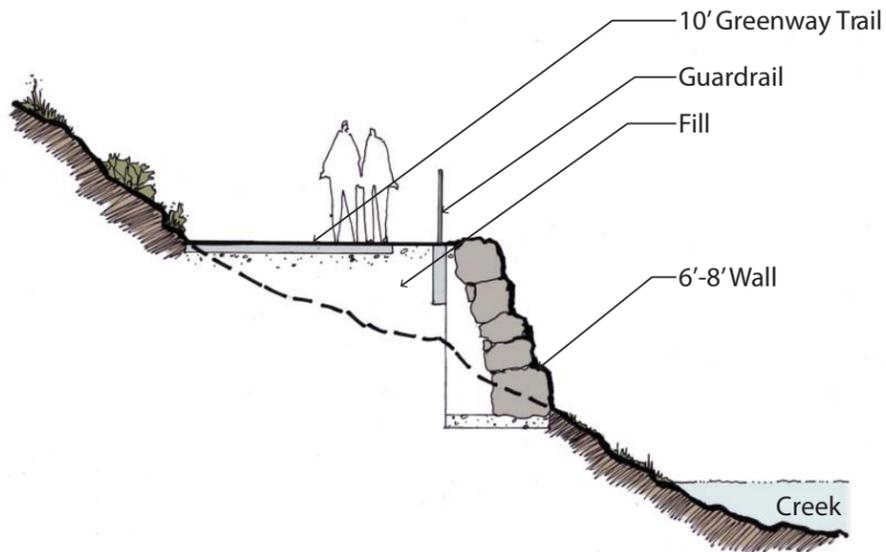


FILL
5' MAX. WALL

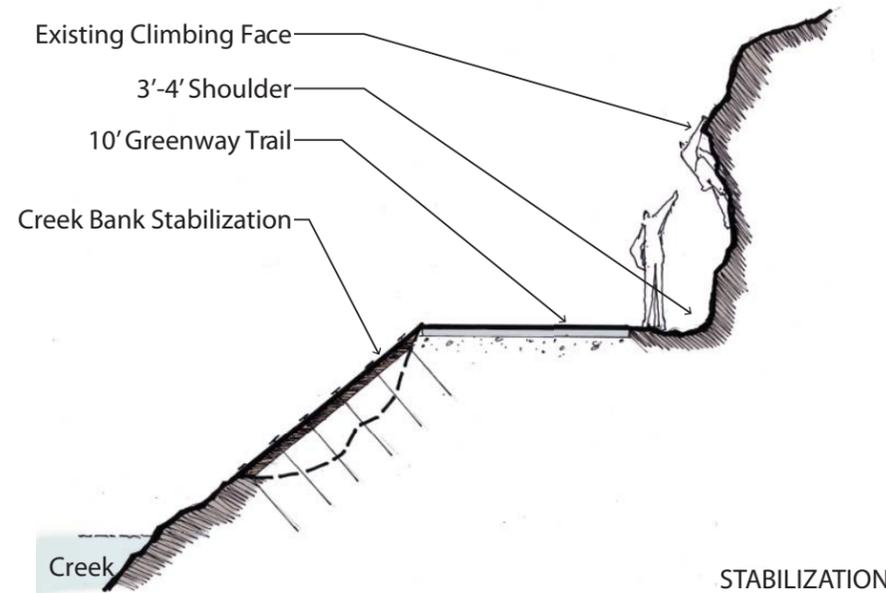
TYPE 3



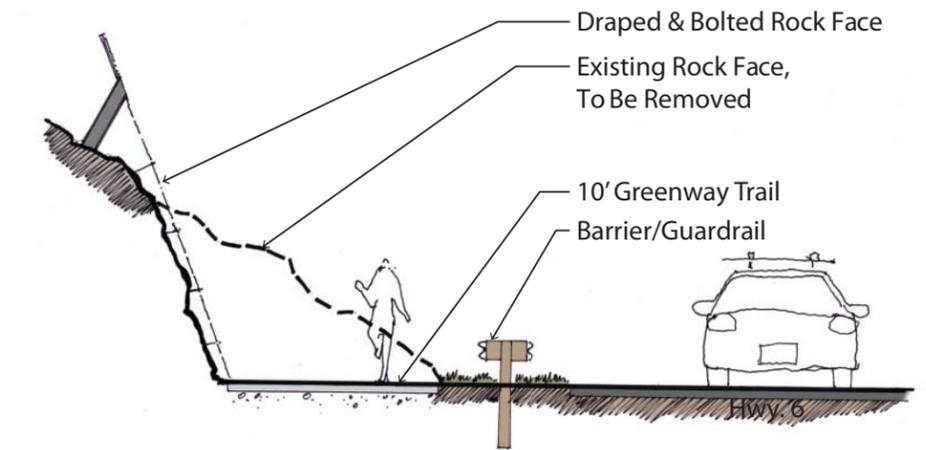
CUT



TYPE 4



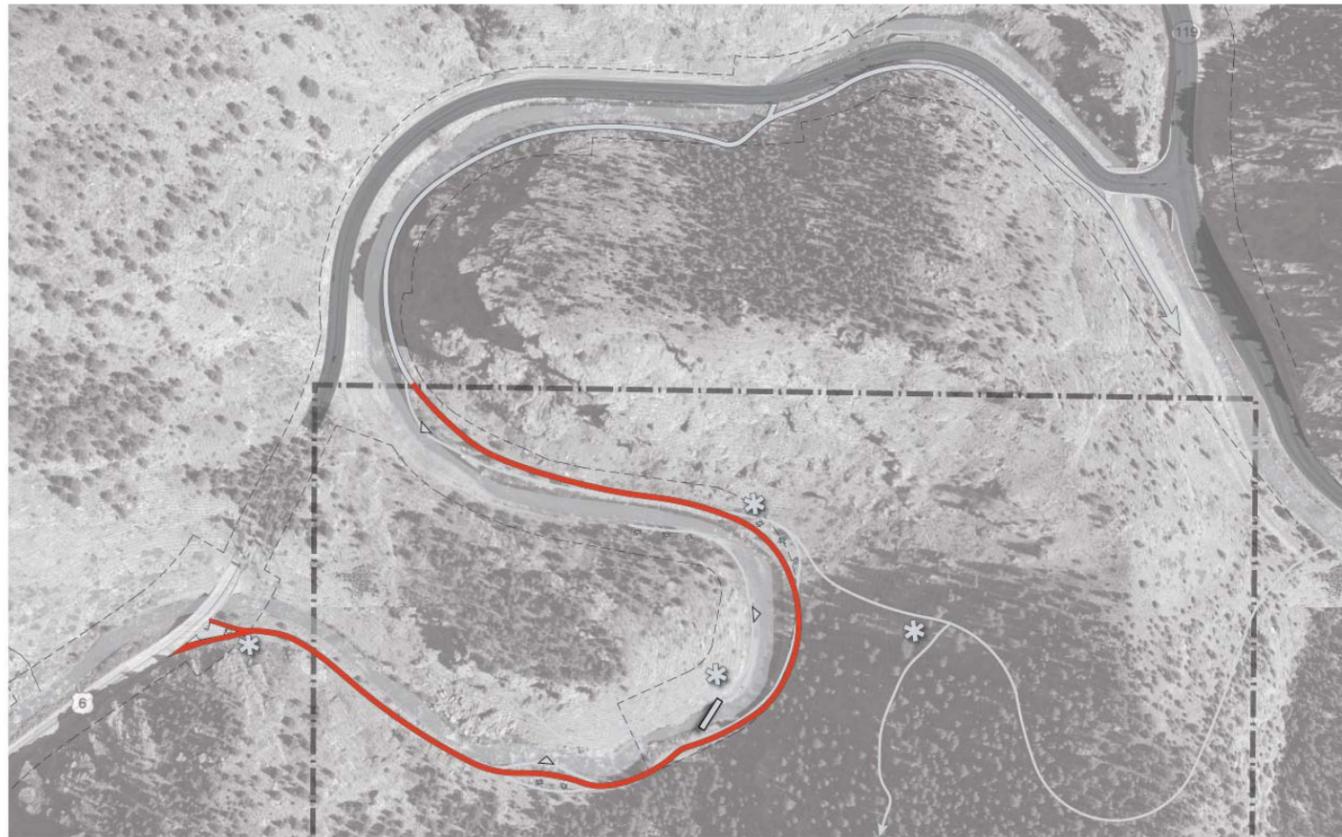
STABILIZATION



TYPE 5

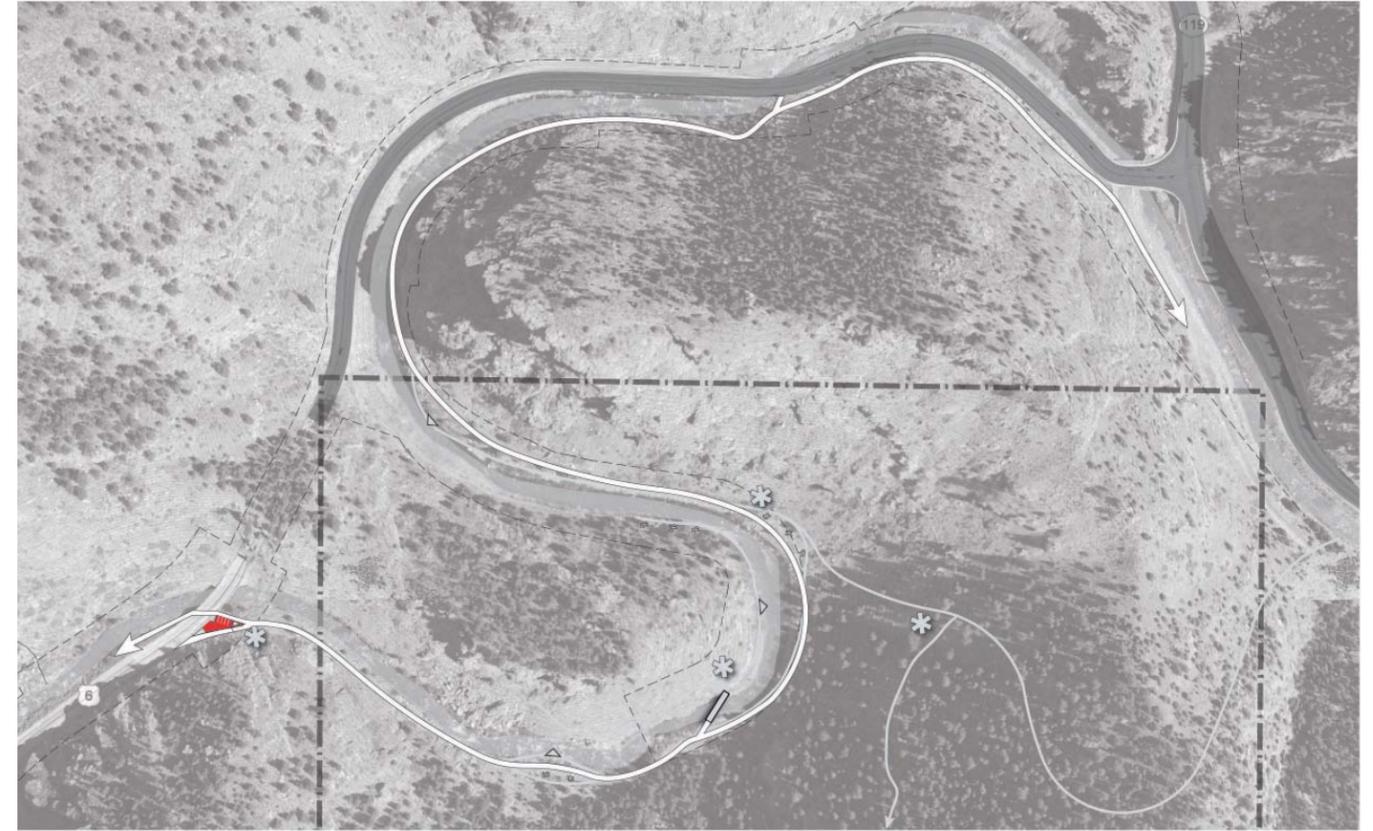
PHASING

The Oxbow Parcel Site Plan will likely be phased over several years as funding becomes available. Early phases should focus on the Greenway Trail and improved parking. Each phase can be implemented incrementally depending on available funding. An estimated cost of construction is provided for each proposed phase.



PHASE 1A: GREENWAY TRAIL (PRELIMINARY)

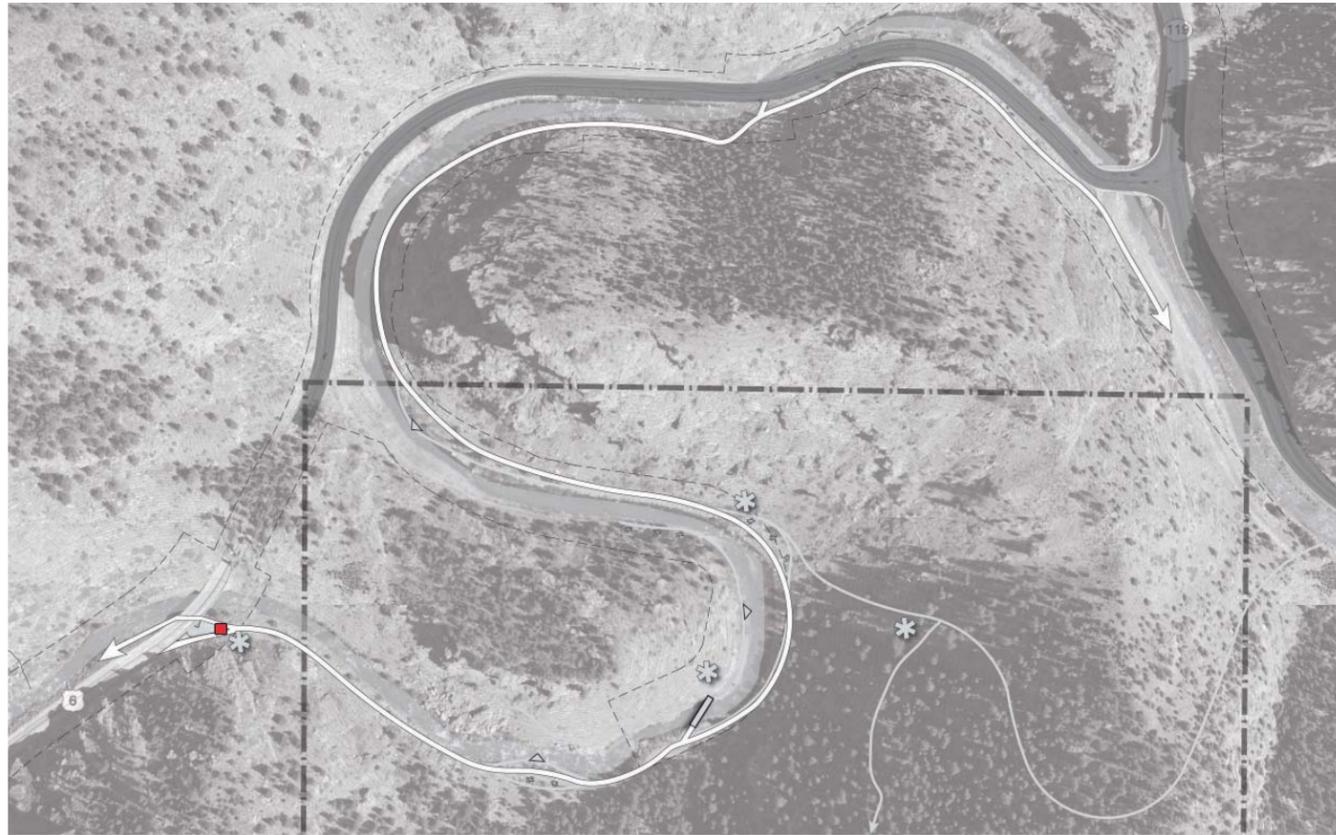
CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
ABC* 6" deep 10' wide, TYPE 1 TRAIL	2526	LF	\$4.22	\$10,670	
ABC* 6" deep 10' wide, TYPE 3 TRAIL	601	LF	\$4.22	\$2,540	
GENERAL CONDITIONS -7%	1	LS	\$923.72	\$925	
CONTINGENCY- 15%	1	LS	\$1,979.39	\$1,980	
SUBTOTAL, PHASE 1 A					\$16,115



PHASE 1B: PARKING AREA

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Rules / Reg SIGNAGE	1	LS	\$3,000.00	\$3,000	
Parking Lot	1	LS	\$208,920.00	\$208,920	
Guardrail (below Parking Lot)	90	LF	\$150.00	\$13,500	
GENERAL CONDITIONS -7%	1	LS	\$15,779.40	\$15,780	
CONTINGENCY- 15%	1	LS	\$33,813.00	\$33,815	
SUBTOTAL, PHASE 1 B					\$275,015

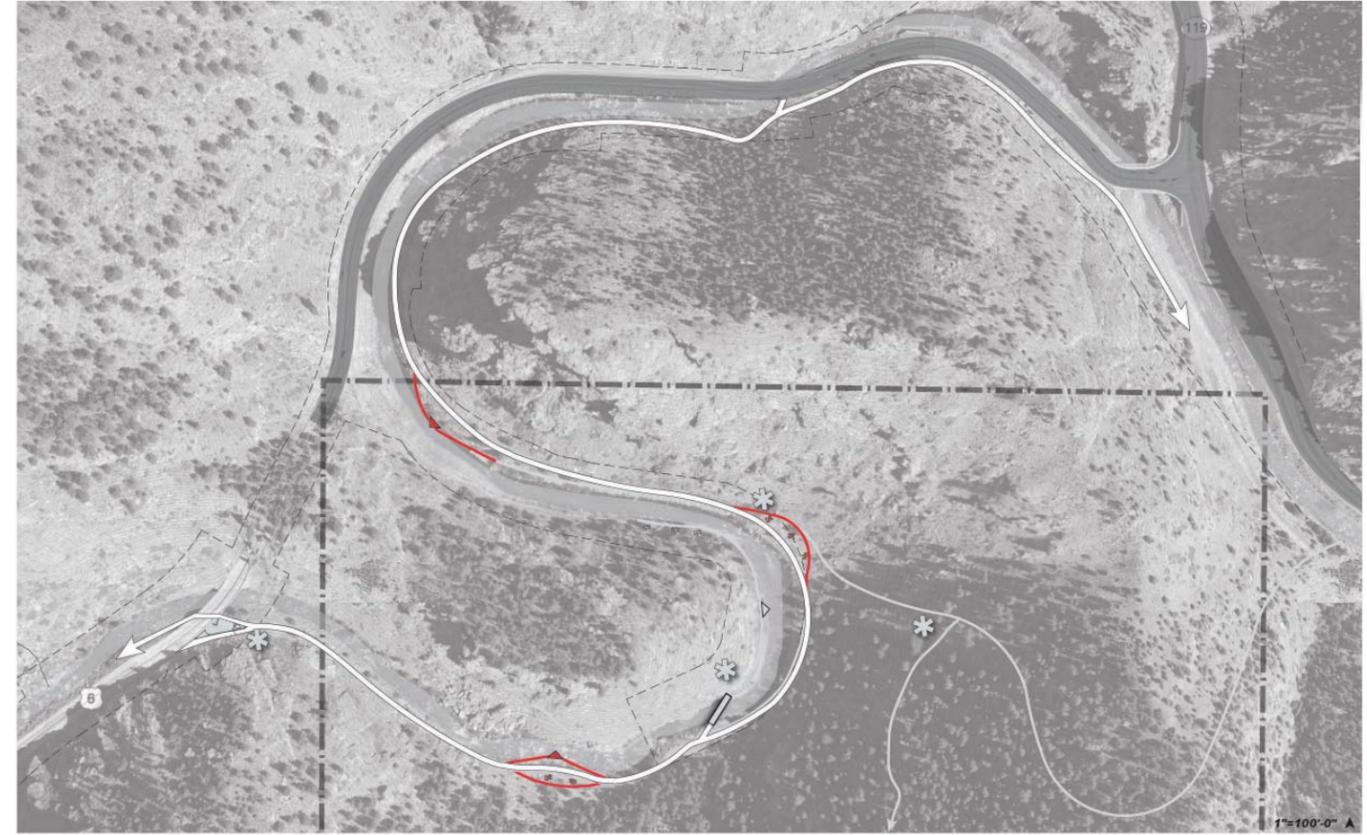
*ABC: Aggregate Base Course (Roadbase)



PHASE 1C: RESTROOM & TRASH ENCLOSURE

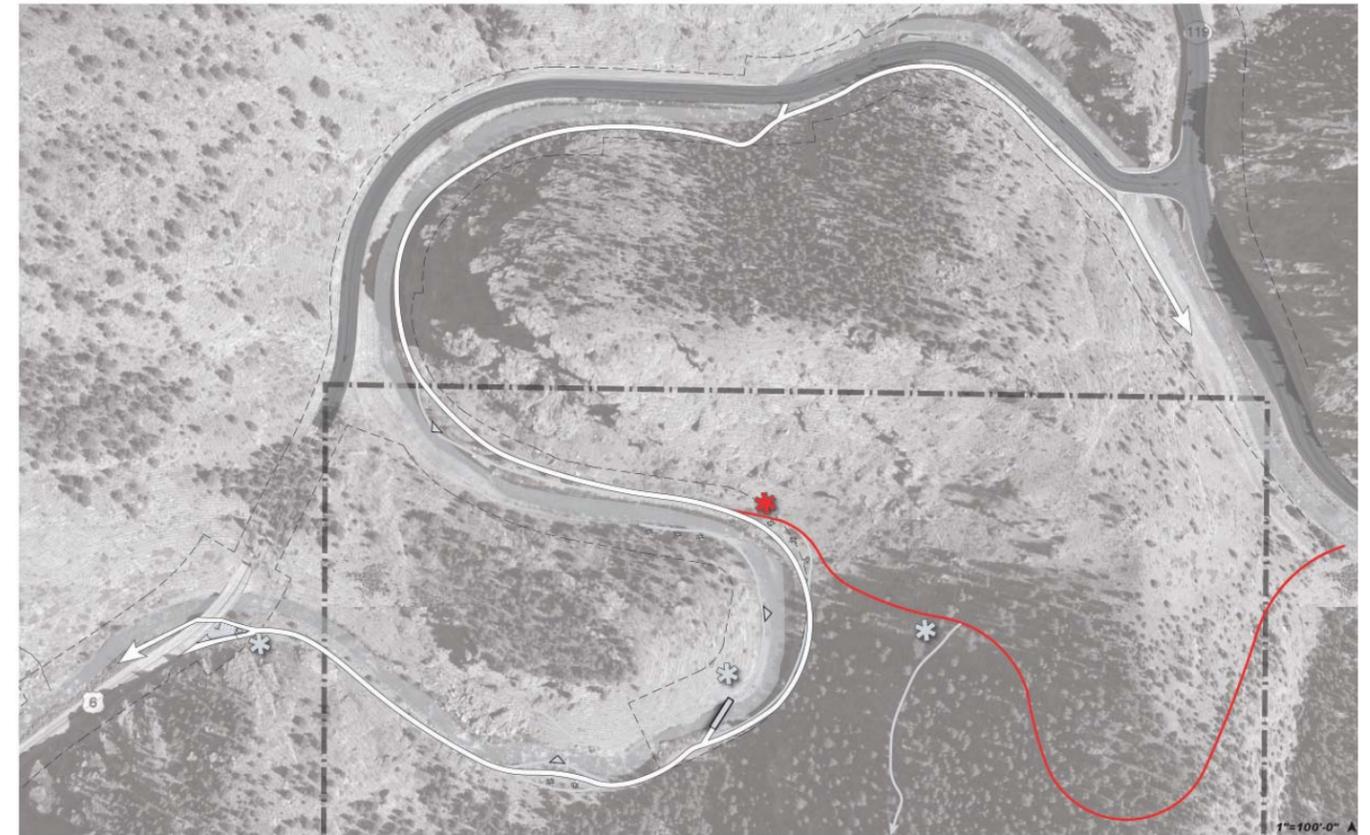
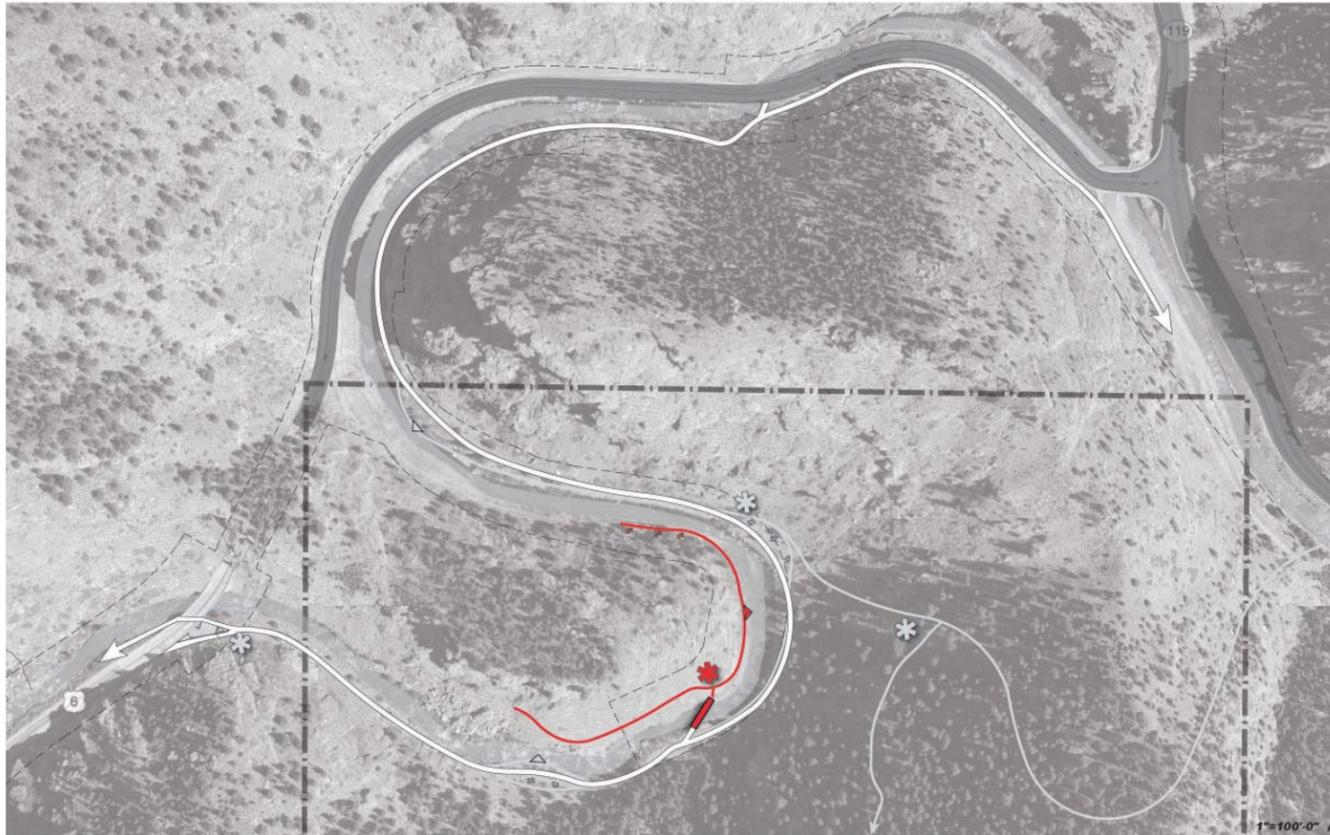
CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Restroom (custom)	1	LS	\$35,000.00	\$35,000	
Trash Enclosure (bear proof)	1	LS	\$1,100.00	\$1,100	
GENERAL CONDITIONS -7%	1	LS	\$2,527.00	\$2,530	
CONTINGENCY- 15%	1	LS	\$5,415.00	\$5,415	
SUBTOTAL, PHASE 1 C					\$44,045

TOTAL, PHASE 1: \$335,175



PHASE 2: SITE AMENITIES

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Crusher Fines Path 3' wide-PULL-OFF AREAS	1,136	LF	\$4.50	\$5,115	
Stone Slab	5	EA	\$500.00	\$2,500	
Crusher Fines Path 3' wide-CREEK ACCESS	1,194	LF	\$4.50	\$5,375	
GENERAL CONDITIONS -7%	1	LS	\$908.95	\$910	
CONTINGENCY- 15%	1	LS	\$1,947.75	\$1,950	
TOTAL, PHASE 2:					\$15,850

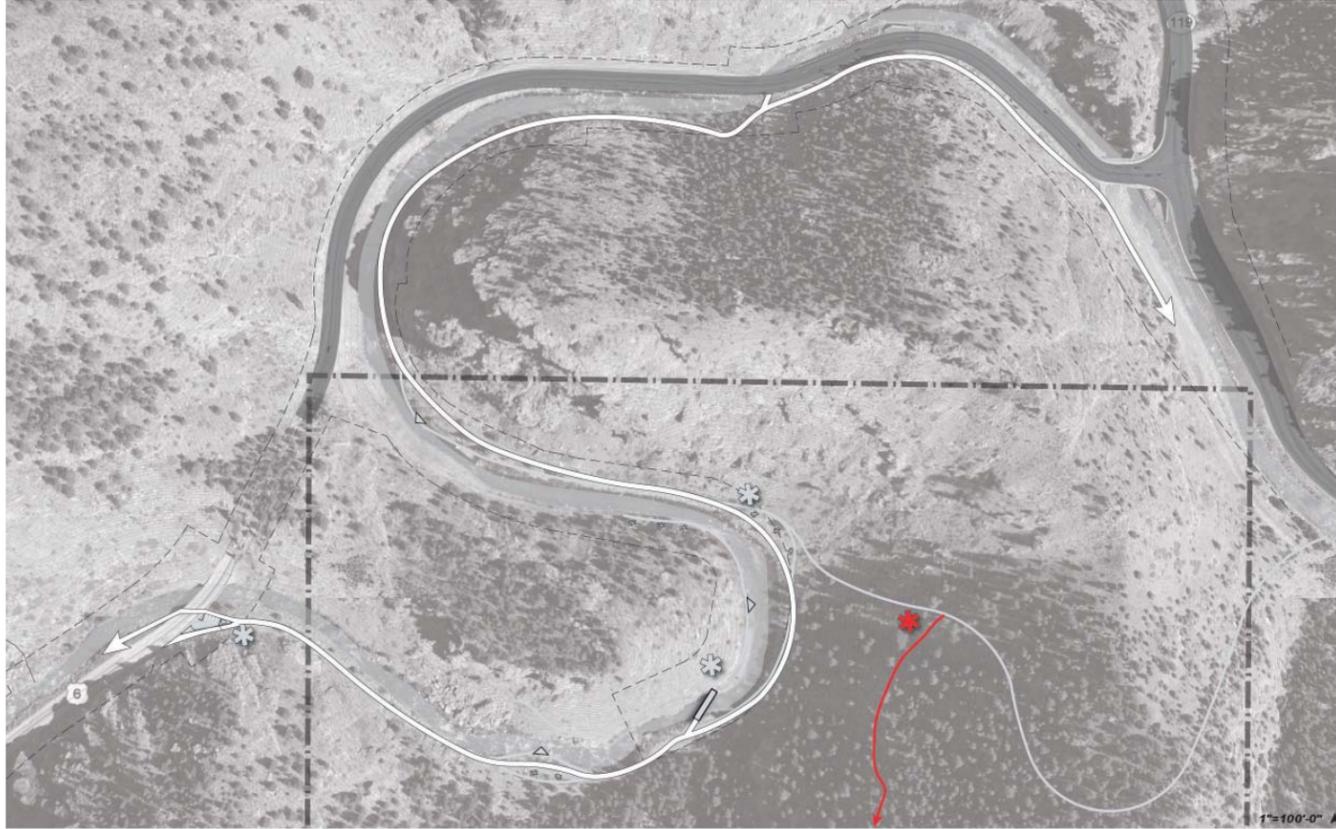


PHASE 3A: INSIDE OXBOW

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
CF 3' wide-INSIDE OXBOW	1,257	LF	\$4.50	\$5,660	
Stone Slab-INSIDE OXBOW	3	EA	\$500.00	\$1,500	
Interpretive / Info-INSIDE OXBOW	1	EA	\$3,000.00	\$3,000	
Bridge	1	LS	\$105,500.00	\$105,500	
Headwalls/foundations for Bridge	65	CY	\$500.00	\$32,500	
GENERAL CONDITIONS -15%	1	LS	\$22,223.48	\$22,225	
CONTINGENCY- 15%	1	LS	\$22,223.48	\$22,225	
SUBTOTAL, PHASE 3A					\$192,610

PHASE 3B: UPPER TRAIL

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Mtn bike -UPPER TRAIL	2,181	LF	\$7.00	\$15,270	
Interpretive / Info-UPPER TRAIL	1	EA	\$3,000.00	\$3,000	
GENERAL CONDITIONS -7%	1	LS	\$1,278.69	\$1,280	
CONTINGENCY- 15%	1	LS	\$2,740.05	\$2,740	
SUBTOTAL, PHASE 3B					\$22,290



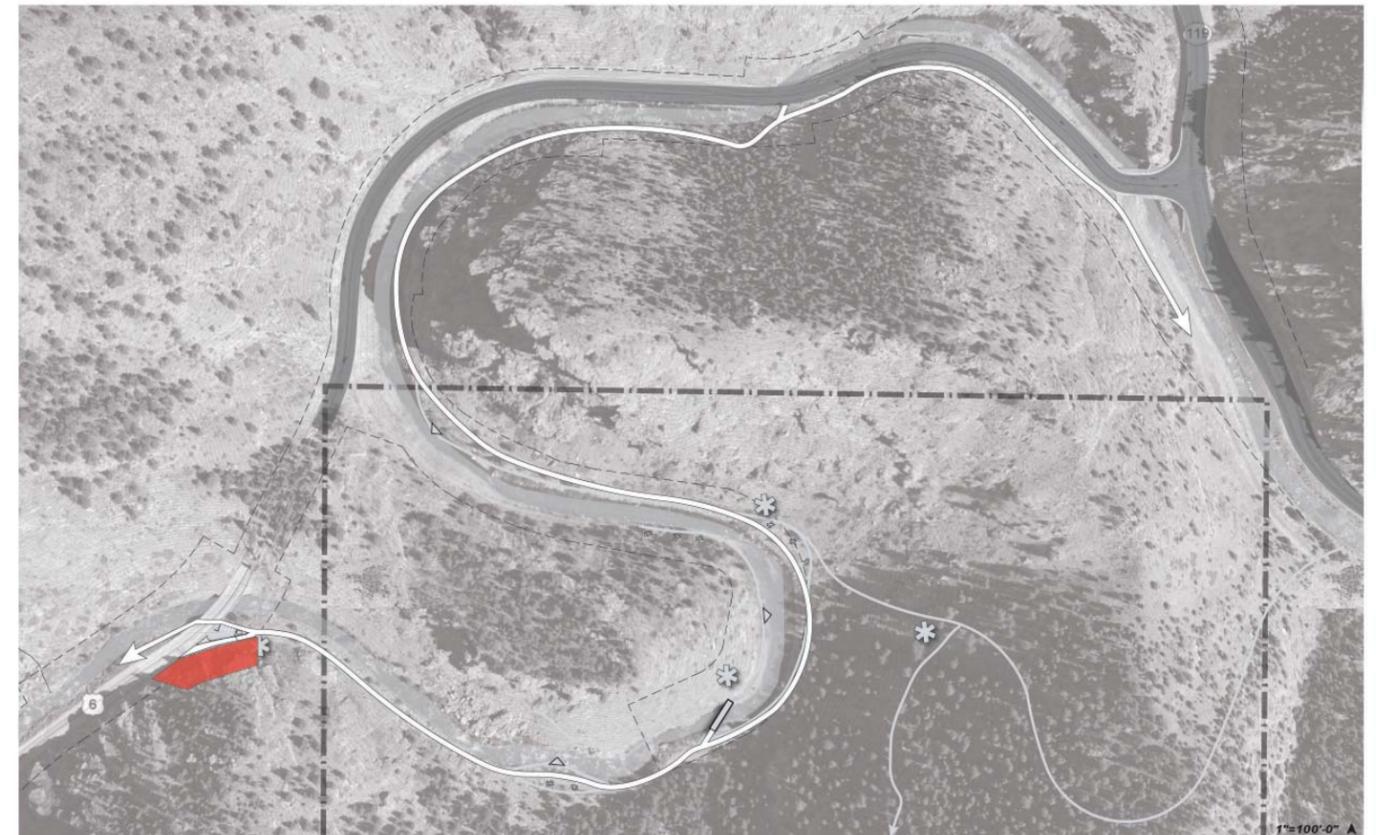
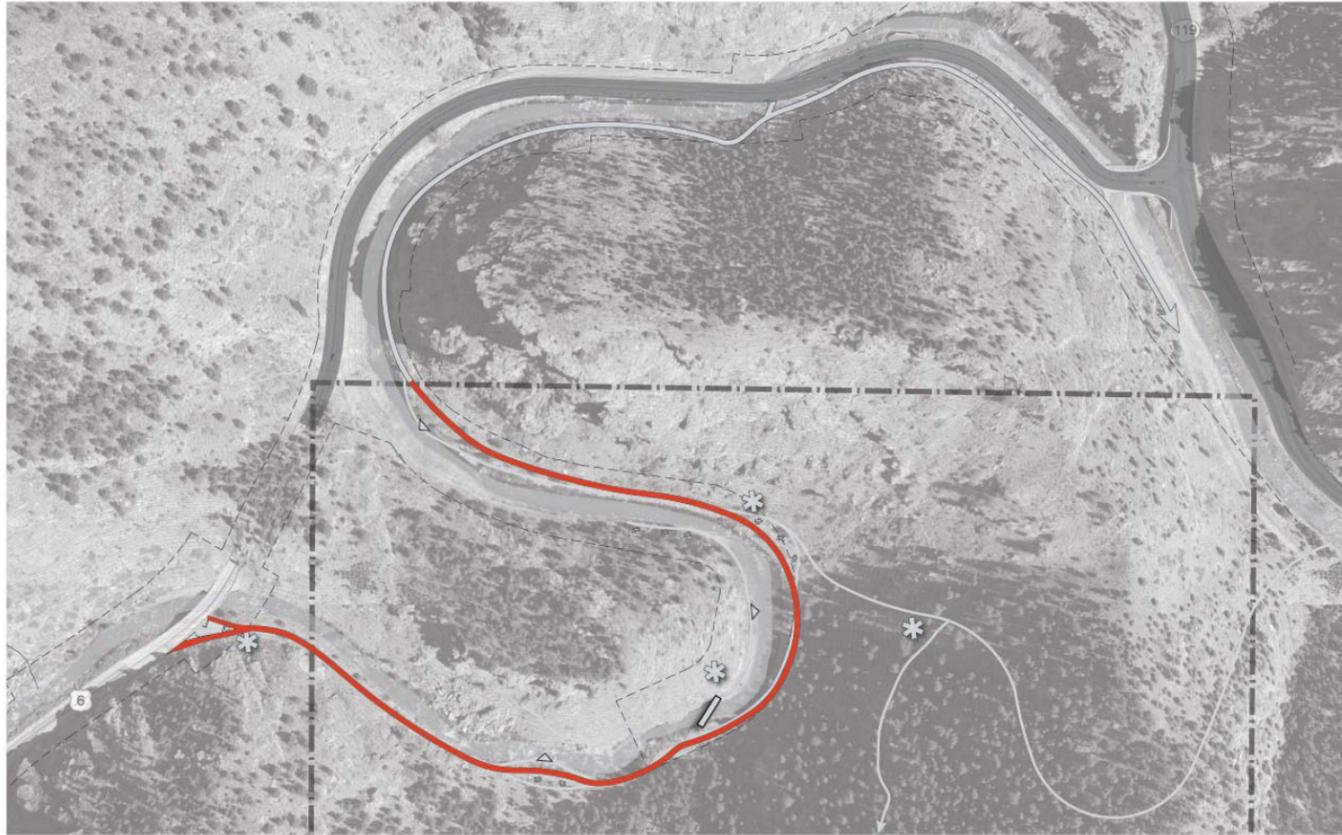
PHASE 3C: CONNECTION TO ELMGREEN HOMESTEAD PARCEL

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
mountain bike-trail	770	LF	\$7.00	\$5,400	
Interpretive / Info-	1	EA	\$3,000.00	\$3,000	
GENERAL CONDITIONS -7%	1	LS	\$587.30	\$590	
CONTINGENCY- 15%	1	LS	\$1,258.50	\$1,260	
SUBTOTAL, PHASE 3 C					\$10,2350
TOTAL, PHASE 3:					\$225,150



PHASE 4A: GREENWAY TRAIL-FINAL

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Concrete Pavement TYPE 1 TRAIL	2,526	LF	\$30.00	\$75,780	
Concrete Pavement TYPE 3 TRAIL	601	LF	\$30.00	\$18,030	
GENERAL CONDITIONS -7%	1	LS	\$6,566.70	\$6,570	
CONTINGENCY- 15%	1	LS	\$14,071.50	\$14,075	
SUBTOTAL, PHASE 4A					\$114,455

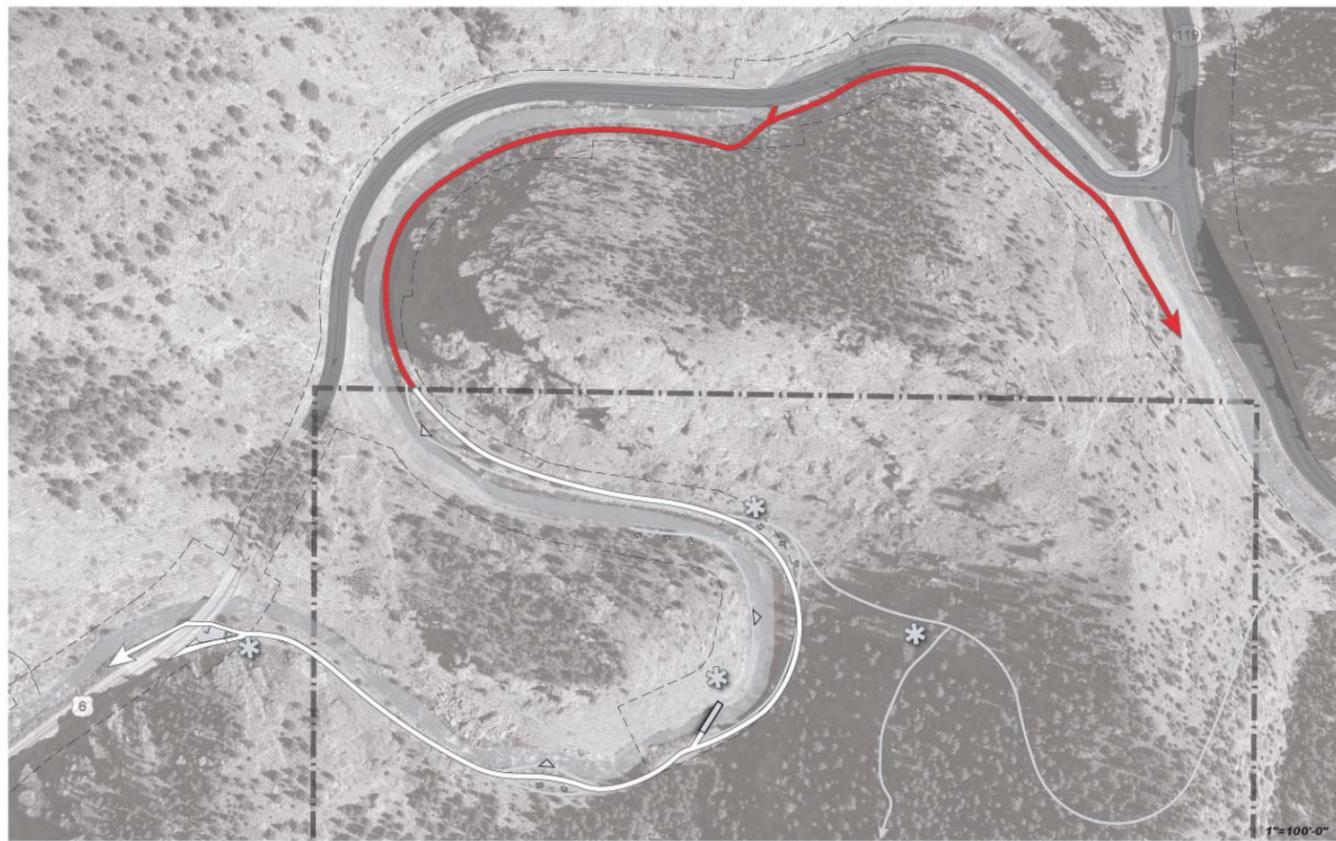


PHASE 4B: GREENWAY TRAIL- WALLS/WIDENING

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
1-2' Boulder Wall (below Parking Lot)	90	LF	\$75.00	\$6,750	
3-5' Boulder Wall	601	LF	\$125.00	\$75,125	
Soil Nail	601	LF	\$700.00	\$420,700	
GENERAL CONDITIONS -7%	1	LS	\$35,180.25	\$35,180	
CONTINGENCY- 15%	1	LS	\$75,386.25	\$75,390	
SUBTOTAL, PHASE 4 B					\$613,145
TOTAL, PHASE 4:					\$727,600

PHASE 5: ROCK STABILIZATION AT PARKING AREA (ALTERNATIVE)

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Rock Cut / Stabilization (60' HT X \$50/SF)	263	LF	\$3,000.00	\$789,000	
TOTAL, PHASE 5:					\$789,000



PHASE 6: GREENWAY TRAIL CONNECTION TO HWY 119 (INCLUDING WALLS, TRAILS, & ROCK EXCAVATION)

CONSTRUCTION ITEM	QTY	UNIT	UNIT COST	TOTAL COST	SUBTOTAL
Type 1					
Concrete Pavement 6" deep 10' wide	295	LF	\$30.00	\$8,850	
ABC 6" deep 10' wide	295	LF	\$4.22	\$1,245	
Type 2					
Concrete Pavement 6" deep 10' wide	665	LF	\$30.00	\$19,950	
ABC 6" deep 10' wide	665	LF	\$4.22	\$2,810	
1-2' Boulder Wall	665	LF	\$75.00	\$49,875	
Type 4					
Concrete Pavement 6" deep 10' wide	1,053	LF	\$30.00	\$31,590	
ABC 6" deep 10' wide	1,053	LF	\$4.22	\$4,445	
Concrete Wall 4-6' Tall (18"thick)	731	CY	\$450.00	\$328,950	
Creek Edge Stabilization	1,053	LF	\$75.00	\$78,975	
Type 5					
Concrete Pavement 6" deep 10' wide	481	LF	\$30.00	\$14,430	
ABC 6" deep 10' wide	481	LF	\$4.22	\$2,030	
Rock Cut	200	LF	\$2,500.00	\$500,000	
Stabilized Rock Face (60' HT X \$50/SF)	481	LF	\$3,000.00	\$1,443,000	
Vehicle Barrier - CDOT Guardrail Type 7	0	LF	\$43.00	\$0.00	
Vehicle Barrier - Transition Type 3G	1	EA	\$1,200.00	\$1,200	
Vehicle Barrier - End Anchorage	1	EA	\$1,800.00	\$1,800	
GENERAL CONDITIONS -7%	1	LS	\$174,240.13	\$174,240	
CONTINGENCY - 15%	1	LS	\$399,507.72	\$399,510	
TOTAL, PHASE 6:				\$3,062,900	

GRAND TOTALS:

GRAND TOTAL PHASES 1-4, with contingency	\$1,303,775
GRAND TOTAL PHASES 1-6, with contingency	\$5,155,675

ASSUMPTIONS & NOTES:

- 1) Soft costs are not included in phasing cost estimates.
- 2) Assume all stone slabs will be salvaged and re-used from on site excavation or tagging.
- 3) Add alternates are not included in Grand Total costs
- 4) Restroom price is an estimate for a custom building, a catalog building could cost approx \$15,000.
- 5) Bridge estimate is based on an Engineer's Cost estimate for a pre-fabricated Contech Construction Products, Inc. pedestrian bridge.(110'x6', ipe deck, no vehicle load), including installation.
- 6) Assume ABC bedding used in Phase 1 may be used in future phasing as concrete subgrade. Concrete estimates do not account for re-using ABC installed in earlier phases.
- 7) Re-seeding and other restoration efforts are not included in this estimate.
- 8) Erosion control and other precautions required during construction are not included in this estimate.
- 9) Mountain Bike trail estimates assume no volunteer labor.
- 10) Assume Vehicle Barrier end anchorage will be non-flared.
- 11) Phase 6: Greenway Trail Connection to Hwy 119 is not in the scope of this site plan. Quantities provided for future planning purposes only.

FUNDING

As noted previously, the Oxbow Parcel Master Plan will likely be phased over several years, with early phases focused on the Greenway Trail, improved parking, and public access. Each phase will be implemented over shorter time periods, depending on available funding. The funding analysis herein explores potential revenue sources and partnerships (both public and private), which provide a framework for implementation. Each of these items is presented in the paragraphs which follow.

REVENUE SOURCES

Historically, in Colorado and throughout the Western U.S., the acquisition and ongoing maintenance of open space amenities have been primarily funded through governmental revenues. Dedication of property and sales taxes and bond financing have been the most common public mechanisms used, while private sources have included foundation grants, donations and significant levels of volunteerism. According to data provided by the Trust for Public Land (TPL), over the past 15 years, Colorado has approved more ballot initiatives (96 of 127, or 76%) related to conservation funding than any state west of the Mississippi. In that time, Colorado voters approved over \$2.6 billion in funding for the conservation, acquisition and maintenance of open space. Most of these initiatives, including Clear Creek County's, dedicated either property tax mill levies, ranging from 1 mill to 4 mills, or sales tax increases, most ranging between ¼-cent and ½-cent.

While Clear Creek County's 1 mill property tax levy generates approximately \$500,000 annually, it is not likely to be sufficient to cover operating and maintenance (O&M) costs for other County open space amenities and contribute to funding for the Oxbow Master Plan. Therefore, other public and private revenue sources could include, but not be limited, to the following:

PUBLIC

- **Bond financing:** General obligation bonds could be used to fund Oxbow capital improvements. Requiring a County-wide vote, funding could be in the form of a single issue (for all improvements) or multiple issues, phased over time.
- **Increase in property tax mill levy:** for example, an increase of .5 mills could generate an additional \$250,000 in annual revenues, which could support approximately \$2.2 million in revenue bond financing)
- **Increase in sales tax rate:** for example, a ¼-cent increase in sales tax could generate an additional \$150,000 in annual revenues, which could support approximately \$1.4 million in revenue bond financing)
- **Continue to apply for Grants and Loans:** Great Outdoors Colorado (GOCO) and the Colorado Department of Transportation (CDOT) have been, and will continue to be, good sources of grant and loan revenue for needed Oxbow improvements. The Colorado Historical Society could assist in funding improvements that have historical significance.

PRIVATE

- **Private foundations:** Groups such as the Trust for Public Lands and the Clear Creek Land Conservancy, have stated missions to protect and maintain open space amenities. In addition, Colorado foundations such as El Pomar and Gates, could be potential funding partners.
- **User fees/charges:** Experience has shown that amenities located on the Oxbow parcel have a regional draw. This "visitor/tourist" market could contribute revenue in the form of user fees or charges. This type of revenue source could be used to offset maintenance costs.
- **Leases/preferred user agreements:** This would be a more formalized user fee agreement, whereby a group could "lease" preferred access to the property (or a portion thereof). Common user groups who access the Oxbow parcel on a regular basis include: the Colorado Mountain Bike Association (COMBA); International Mountain Bicycling Association (IMBA); Trout Unlimited; Rock Climbing community; and Rafting groups. While it may be difficult to identify "preferred access" to an open space amenity like Oxbow, any, or all, of these groups could enter into a formal agreement to pay an annual "lease" fee (discounted) for its members. These groups could also be enlisted for volunteer activities ("in-kind" services) such as trail maintenance and construction.
- **Privatization/commercialization:** The economic benefits of an open space amenity, particularly one which has the regional attraction that Oxbow does, can be significant and widespread. Visitors to these amenities not only bring retail and lodging spending, but support business expansion in tourism-related industries. Local businesses which benefit from this visitor spending could be enlisted as project "sponsors" and provide funding for maintenance and/or facilities (e.g., restrooms, signage).
- **"Grass roots" fund-raising:** Perhaps the most difficult of all revenue sources to rely on, unless an advocacy entity is identified and leads the effort.

As with any effort involving public amenities, identifying and implementing various funding mechanisms requires careful consideration. Having established criteria for selecting revenue sources will be necessary to ensure a defensible decision-making process. As noted in the Clear Creek Greenway Plan, criteria for phasing and prioritizing improvements included: safety; cost effectiveness; fundable increments; high visibility; connections between destinations or development activity nodes; resolving community needs; and political expediency. Similar criteria should be used to identify and prioritize potential funding mechanisms.

POTENTIAL PARTNERSHIPS

Through the formation of the Clear Creek County Open Space Commission, County residents provided the important first step in establishing an institutional framework for open space protection and enhancement. The benefit of an entity such as this is its capacity to partner with like-minded organizations to create synergistic opportunities for advancement of their missions. These partnerships create a "whole is greater than the sum of its parts" opportunity, particularly when it is applied to funding. Potential partnerships, both public and private, that could be explored with respect to funding improvements and/or operations/maintenance on the Oxbow parcel include, but are not limited to, the following:

- **Public partners:** Clear Creek County towns, Clear Creek Recreation District, Jefferson County Open Space, Gilpin County, Clear Creek County School District
- **Private partners:** User groups (discussed previously), private foundations, Clear Creek Land Conservancy, Clear Creek Economic Development Corporation, Clear Creek County Chamber of Commerce, local businesses/merchants' associations.

As in identifying and implementing potential revenue sources, establishing defensible criteria for entering into partnerships with public and private entities is essential. The advantages the County brings to any of these partnerships are an established organizational framework, a consistent revenue stream, and a region-serving amenity. This combination of assets could allow the County to "leverage" its funding capabilities to secure greater resources for the Oxbow project. Critical to advancing potential partnerships will be "telling the right story" regarding the benefits (both qualitative and quantitative) and opportunities provided by the Oxbow parcel, both locally and regionally.

The greatest challenge to realizing a greenway/trail vision lies in funding not only initial capital improvements, but ongoing maintenance as well. The experiences of other greenway/trail projects in Colorado highlight the need for innovation and long-term commitment. Following are examples of how other greenway/trail projects have funded both capital and O&M expenses:

- **City of Salida:** funded the completion of the Arkansas River Whitewater Park and Greenway project using a Great Outdoors Colorado grant (GOCO) of \$433,844 and Lottery-funded Conservation Trust Fund dollars (\$264,640). A portion of project costs were also covered by private contributions. The project was recently awarded a Colorado Lottery Starburst Community Award. Salida's "Adopt a Trail" program has been successful in finding local community groups to volunteer time and materials for both maintenance and construction projects. Groups participating include local businesses, Trout Unlimited, Boy and Girl Scouts, the Cystic Fibrosis Association, the Pregnancy Center, the Salida Tree Board and the Buena Vista Youth Correctional Facility.
- **Sand Creek Regional Greenway:** a 14-mile public greenway connecting the High Line Canal in Aurora with the South Platte River Greenway in Commerce City, and passing through Denver and the Stapleton neighborhood. The \$35 million greenway is a cooperative project of the cities of Aurora, Commerce City, and Denver and non-profit organizations Sand Creek Regional Greenway Partnership and Stapleton Development Corporation. To date, the greenway has received \$9 million from public sources including: the 3 participating cities; Great Outdoors Colorado; U.S. Department of Transportation; Colorado State Trails; Adams County Open Space; the Colorado Department of Public Health and Environment. Private sources of funding include: Xcel Energy; Suncor Energy, Inc.; Forest City; REI; the Gates Family Foundation; the Pauline A. and George R. Morrison Charitable Trust; the Boettcher Foundation; the El Pomar Foundation; the Helen K. and Arthur E. Johnson Foundation; the Xcel Energy Foundation; The Denver Foundation; and the Berger Foundation. The greenway has also benefited from over \$100,000 from individuals, over \$200,000 from small businesses and nearly \$300,000 in donations of land or services. Most recently, grants from Xcel Energy and REI were awarded to fund youth outreach programs, neighborhood volunteer campaigns and streambank improvements.
- **The Colorado Trail:** a 500-mile public trail/greenway between Denver and Durango. The greenway is operated and maintained by the Colorado Trail Foundation, a non-profit corporation almost entirely funded through private contributions. Annual maintenance of the trail is completed through volunteer crews and adopt-a-trail programs
- **The Poudre River Trail Corridor:** a 21-mile public trail/greenway between Greeley and the Weld/Larimer County line, along the Cache La Poudre River. The Trail is owned and operated by a nonprofit organization, PRTC Inc., which is comprised of a group of volunteers and local government staff members. The trail has been funded through monies raised from individual contributions, in-kind donations, and matching grants. An intergovernmental agreement between the Town of Windsor, Weld County, and the City of Greeley allows for funds to maintain the trail. A portion of the monies raised has been set aside in an endowment to help fund perpetual maintenance of the trail. This fund will also assist with ongoing capital replacement needs.
- **Southwest Colorado Community Trails:** Purgatory at Durango Mountain Resort funded Trails 2000 as the 2005 Benefit Day recipient to receive all proceeds from the Colorado ski area's annual pre-opening event. Trails 2000 supports southwest Colorado community trails for hiking, biking and horseback riding, and making trails accessible for all people from children to seniors. The funds were used to help lease a new trail machine to help maintain and construct paths that are user friendly, sustainable, and environmentally sensitive.
- **The Colorado Trail:** a 500-mile public trail/greenway between Denver and Durango. The greenway is operated and maintained by the Colorado Trail Foundation, a non-profit corporation almost entirely funded through private contributions. Annual maintenance of the trail is completed through volunteer crews and adopt-a-trail programs
- **Colorado Springs Trails and Open Space Coalition:** Bristol Brewing Company and Palmer Lake Brewing hosted the first annual craft lager beer festival featuring beers from over 25 breweries from New Mexico, Wyoming and Colorado, with profits going to the Trails and Open Space Coalition of the Colorado Springs region.
- **International Mountain Bicycling Association's National Mountain Bike Leadership Fund:** Koobi, a Colorado Springs maker of bicycle saddles, gave \$24,000 to the organization. The two-year commitment will award \$500 cash grants to 16 local clubs to help preserve trail opportunities. In addition, Sutter Equipment Company donated a new SWECO 480 Trail Dozer to the IMBA for trail building and maintenance.
- **Roaring Fork Outdoor Volunteers (RFOV):** The Hub Bike Shop of Aspen, Colorado, gives people an incentive to volunteer on RFOV projects. Each day a person volunteers on a project, their name goes into a jar for a drawing to win a mountain bike at the end of the season. Basalt Mini Storage also provides free space to store tools used by volunteers.
- **Platte River Greenway Preservation Trust:** As a benefit, hosted the First Annual Denver Duck Derby as part of the Riverfest Festival, which also includes a trail relay race using different travel modes.
- **Animas River Trail:** being supported by part of a 1/2 cent sales tax increase in Durango. City voters approved the tax to fund a new recreation center as well as the trail and greenway rehabilitation along the river.
- **The Continental Divide Trail Alliance:** received \$1,500 from Mountains & Rivers, an outdoor retail store in Albuquerque, from the proceeds of the Banff Mountain Film Festival. This is the third consecutive year the store has hosted the event and made CDTA the beneficiary. CDTA also received a \$100,000 grant from the Gates Foundation after meeting a challenge of raising \$1 million for trail work in Colorado. Gates awarded the funds on the basis of CDTA's Ten Year Strategic Plan to complete over 50 trail projects.
- **Mineral Belt Trail:** In Leadville, the local Boomtown Brewpub brought kegs of a new beer to the grand opening of the Trail. Part of the proceeds from the ongoing sale of the Mineral Belt Pale Ale will be donated for future trail improvements.
- **The Share the Trails Team Triathlon:** an annual event that brings equestrians, bicyclists, and hikers together in southwestern Colorado. The Steamworks Brewing Co. in Durango brewed a special "Share the Trails Ale" for the event. Proceeds from sales of the golden raspberry wheat beer, will benefit the San Juan Mountains Association, sponsor of the Triathlon.
- **Eagle County Trail System and the Poudre River Trail:** use "gift catalogues" as one way to publicize the many ways that trail projects need money. Contributors can purchase drinking fountains, interpretive signs, trees, wildflowers, or give to an endowment fund. Patrons can also buy a foot of paved trail or a mile of parallel equestrian trail. Those who would like to make a bigger impact can restore an old railroad trestle or build a missing link of trail.
- **Eagle County and Colorado Springs:** Eagle County voters passed a transportation tax that earmarks 10% for trails, about \$300,000 a year. In Colorado Springs, 20% of a new open space sales tax is designated for trail acquisition and development.
- **San Luis Valley:** the Juvenile Restitution Program has become a key source of labor for trail projects. Mountain Trails Youth Ranch supervises the young people, who have committed crimes and are required to earn money owed for damages. Several community agencies and the State Off-Highway Vehicle Program combine to support the program.
- **Rock Island Rail Trail:** In Colorado Springs, the trail is being partly funded by the Rustic Hills Improvement Association, an adjacent homeowners group. Other work on the trail was done by a Boy Scout troop who cleaned up ten miles of left-over railroad ties in the corridor.

In summary, the challenge of securing revenue sources for both initial capital improvements and ongoing operations and maintenance will be considerable and ongoing. While the County has achieved an important first step in establishing a "baseline" revenue source for open space amenities, a combination of multiple revenue sources, both public and private, will be required to fully implement the Oxbow Site Plan. In addition, the engagement and enlistment of public and private partners to share the costs and benefits of this important region-serving amenity needs to be an immediate priority. Only then will the long-term community vision articulated in the Site Plan be realized.

