

DEED

downtown evergreen
economic district

REVITALIZING DOWNTOWN EVERGREEN



Evergreen Trails Master Plan

Final Plan
December 2015



Planning >>> Design >>> Action

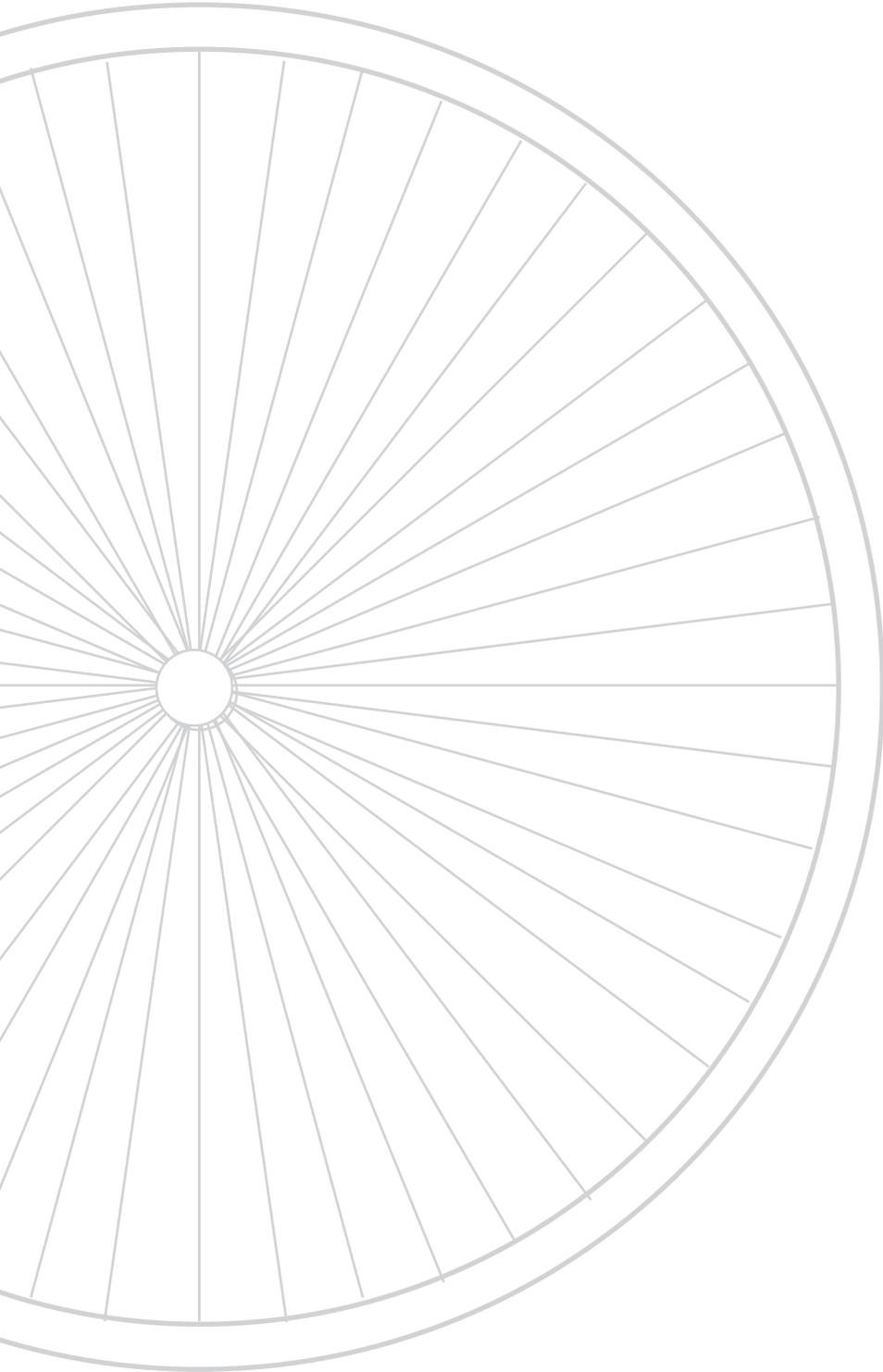




Table of Contents

ACKNOWLEDGEMENTS	i
A. INTRODUCTION	A-1
B. EXISTING CONDITIONS	B-1
C. COMMUNITY AND STAKEHOLDER ENGAGEMENT	C-1
D. RECOMMENDATIONS	D-1
Wayfinding Signage	D-32
E. IMPLEMENTATION AND MAINTENANCE	E-1
Appendix A. Jefferson County Open Space Trail Maps	a-i
Appendix B. Cost Estimates	b-i
Appendix C. Right-of-Way Mapping	c-i







Acknowledgements

The Evergreen Trails Master Plan was funded through Greater Outdoors Colorado funds (GOCO), and managed by the Greater Downtown Evergreen Economic District (DEED), in partnership with Jefferson County Transportation and Engineering staff. The Evergreen Parks and Recreation District provided in-kind contributions of staff time and meeting space.

Project Partners

Great Outdoors Colorado Grant Funding
 Downtown Evergreen Economic District
 Jefferson County Transportation and Engineering
 Jefferson County Planning and Zoning
 Jefferson County Open Space
 Jefferson County Public Health
 Evergreen Parks and Recreation District
 Denver Parks and Recreation (DPR)

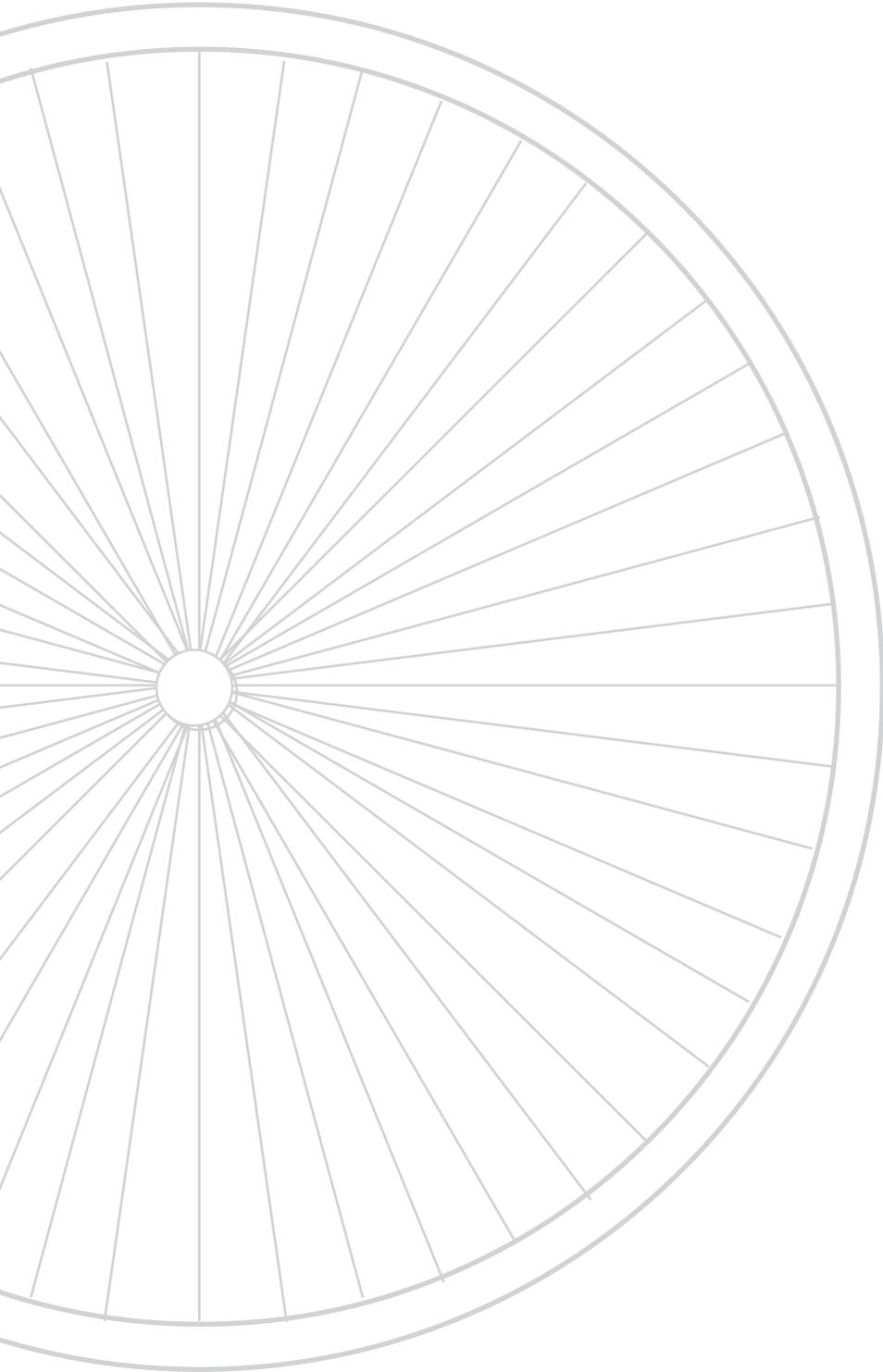
Project Team

Dean Dalvit, PE, AIA (DEED) – Client Project Manager
 Chris Vogelsang, PE (OV Consulting) – Consultant Project Manager
 Beth Vogelsang, AICP (OV Consulting) – Planning and Community Engagement
 Mark Kopatz, RLA, ASLA (Stanley Consultants) – Wayfinding and Trail Design
 Will Kerns, AICP (Open Plan Consultants) – Planning and Mapping

Technical Working Group

Kevin French, Jefferson County Transportation & Engineering Director
 Scott Burton, Planner, Jefferson County Transportation & Engineering
 Yelena Onnen, Planner, Jefferson County Transportation & Engineering
 Derek Schuler, Engineer, Jefferson County Transportation & Engineering
 Nancy York, Partnership Coordinator, Jefferson County Open Space
 Ellen O'Connor, Executive Director, EPRD
 Liz Cohen, Grants and Development Director, EPRD
 Brad Bednar, Lake House Supervisor, EPRD
 Dean Dalvit, Board President, DEED
 Eric Gill, Board Member, DEED
 Kathleen Davis, Board Member, DEED
 Rachel Emmer, Board Member, DEED
 Gail Riley, Board Member, DEED
 Brad Eckert, Mountain Parks Planner, Denver Mountain Parks
 Bob Finch, Director of Natural Resources, Denver Mountain Parks
 Russ Clarke, Jefferson County Planning & Zoning
 Erika Jerme, Jefferson County Public Health







A. Introduction

The Evergreen Trails Master Plan was funded through a grant from Great Outdoors Colorado to establish the vision of a connected, cohesive trail network in the core of the Evergreen community. The Plan details a network of trails and on-street bike and pedestrian facilities that link Evergreen’s parks, open space, schools, community assets, the Evergreen Lake and downtown Evergreen. The network and prioritized improvement projects increase mobility and recreational options for the community; improve access, safety and comfort; and retain the flexibility to facilitate near-term and long-term phased implementation of key projects.

The desired outcomes of the study were to:

- Build community understanding and support for bike, pedestrian and trail connectivity
- Identify feasible, implementable, fundable projects for improvement
- Prepare for construction funding opportunities

The Master Plan study process kicked-off in Spring of 2014 and ran through the summer of 2015. A Technical Working Group (TWG) consisting of staff from Jefferson County and Denver Mountain Parks, Evergreen Parks and Recreation District, Downtown Evergreen Economic District and key community stakeholders convened throughout the process and guided the development of the Plan. Public input was gathered through online questionnaires and comment tools, numerous stakeholder interviews and three public open houses.

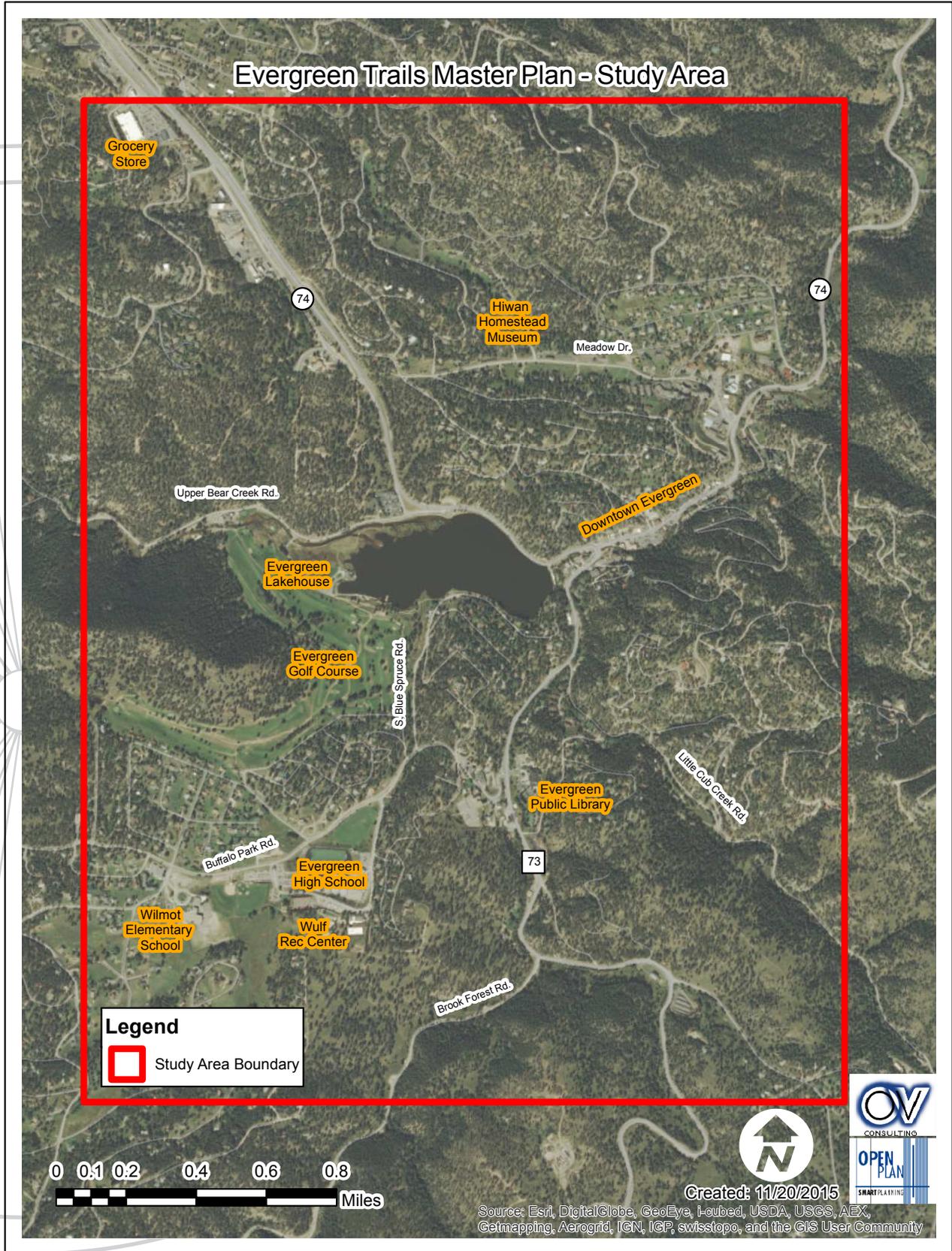
The project Study Area (Figure 1) extends from the Safeway on Hwy 74 on the north, along Hwy 73 past the Evergreen Library to the south, beyond Downtown Evergreen to the east and to the Evergreen Golf Course and Wilmot Elementary School to the west. The Study Area includes destinations such as the Evergreen Lake and Lake House, the Hiwan Homestead Museum, Downtown Evergreen, Evergreen High School, Wulf Recreation Center, Wilmot Elementary School and the Evergreen Library.

The Master Plan was reviewed by the members of the Downtown Evergreen Economic Development Board, the project Technical Working Group and Jefferson County staff and finalized in Fall of 2015. The Evergreen Trails Master Plan will assist the Downtown Evergreen Economic District and Jefferson County Staff with future grant opportunities to implement the project improvements and enable Evergreen to increase the number of safe, reliable community connections, enhance its recreational amenities and support the economic vitality of its downtown.





Figure 1: Study Area





B. Existing Conditions

A review of prior plans and studies, as well as an inventory and analysis of existing infrastructure was completed at the onset of the project. A field review of area roads, trails, sidewalks, social paths and bicycle facilities indicated several key conditions:

- An extensive network of off-street trails within the community are used by residents and visitors for recreational purposes throughout the year. Parking at trailhead lots can be congested, especially on weekends. (Evergreen Lake Area, Elk Meadow and Alderfer Three Sisters Park in particular)
- Roadway cyclists are often present in Downtown Evergreen, along Hwy 74 and Hwy 73, but there are no striped bicycle facilities on these major roadways into and out of the community. Additionally, there are no striped on-street bicycle facilities on local roadways or within the Downtown.
- Walking and biking activity around Evergreen Lake, and between the Lake and Downtown, is busy and trails along the lake can be crowded.
- Downtown Evergreen lacks continuous, accessible sidewalks and/or a designated, visible pedestrian zone. There are few pedestrian amenities and the location of on-street parking adjacent to store frontages limits visibility of the pedestrian.
- Main trails and existing linkages are not well marked or signed.
- Despite the number of trails within the community, there are few ways to safely walk or bike between residential areas, schools, community centers, shopping or the library. Trails often do not link destinations and there are few sidewalks or on-street bike facilities available.

Existing Plans and Studies

As part of the existing conditions analysis process, Jefferson County Open Space staff performed a Trail Planning Analysis review of existing plans and studies that include facilities in or near the project study area. The tables on the next several pages contain information found in those plans. Appendix A of this Plan includes a series of maps showing this information as well. The approximate alignments of existing and proposed trails identified in these Plans are shown on these maps.





Existing Plans & Studies	Plan Recommendations
<p>Evergreen/Bergen Park Multi-Use Trail</p>	<p>A total of four reaches extending approximately 5.6 miles. Reach 1: Bergen Park south along southeast side of Hwy 74; Reach 2: Elk Meadow to Lewis Ridge Road; Reach 3: Lewis Ridge Road to Palo Verde Road (Safeway Shopping Center); Reach 4: Palo Verde Road to Dedisse Mountain Park. Reach 5: Dedisse Park to intersection of Valley View and Buffalo Park Road, utilizing right-of-way. Reaches 1-4 are completed; Reach 5 is uncompleted with approximately 0.6 miles of trail construction remaining.</p>
<p>Bear Creek Trail Master Plan (JCOS) 1997</p>	<p>Vision for a Bear Creek Canyon Greenway with a spine trail along Bear Creek that ultimately connects Morrison to Evergreen. This plan focuses on 8 potential segments with 2 optional alignments to link Morrison and Lair o’ the Bear Park. Segment 100: Lair o’ the Bear Park to Little Park; Segment 101 High: Little Park through Idledale via the roadway shoulder; Segment 101 Low: Little Park through Idledale following Bear Creek; Segment 102: Continuation of trail east of Idledale along Bear Creek; Segment 103: Oxbow Park trailhead connection is a continuation of the trail from segment 102 to 104 utilizing the oxbow leftover from the old highway construction; Segment 104: Continuation of trail along Bear Creek to downstream of the Morrison Water Diversion; Segment 105: Follows existing ditch road from the City of Morrison treatment plant facility just west of town to the narrowest part of the canyon; Segment 106: Connects east of the City of Morrison to the existing lot at Mt. Falcon Park; Segment 107: Trail would begin at the CCC Camp connection, cross a bridge above the valley and follow the highway ditch terrace to the intersection at SH 74 and SH 8; Segment 107 Low: Trail follows within the channel bottom, under SH 8 bridge to connect at SH 74; Segment 108: Downtown Morrison to C-470.</p>
<p>Trail 2000 Priorities (JCOS) 2000</p>	<p>For Bear Creek: Extend west from Kipling Street to Evergreen Lake approximately 25 miles; 2 miles exist within JCOS Lair o’ the Bear Park; 5 miles extending west from Lair o’ the Bear Park to Pence Park (DMP); For Evergreen to Conifer: Extends south from Evergreen Lake to Aspen Park/Conifer area and Meyer Ranch Park (JCOS) for approximately 8 miles; An additional connection to Flying J Ranch (JCOS) has also been contemplated; Meyer Ranch Park south to Newton Park (DMP) and Bear Ranch (JCOS/managed by Beaver Ranch Community, Inc., nonprofit) is approximately 2 miles; overall project is approximately 11 miles; Approximately 3.5 miles located within DMP; Approximately 1 mile possible in Cub Creek Ranch through developer dedication.</p>



Existing Plans & Studies	Plan Recommendations
<p>Evergreen Area Community Plan (Jeffco Planning & Zoning) (currently being updated) 2005</p>	<p>Beaver Brook Trail: Extend existing trail from Stapleton Drive through Beaver Brook Canyon to connect with Beaver Brook watershed lands and National Forest Land near Squaw Pass; Cold Spring Gulch Trail: Connect Beaver Brook Trail and Genesee Park with Bear Creek near Cold Spring Gulch. Connection should proceed south to Kittredge, Little Park, and Lair o’ the Bear Park; Kittredge Wagon Trail: Create connection northeast of downtown Kittredge to O’Fallon and Pence Park; Mount Falcon Park: Create connection between Mount Falcon and Foothills Trail, Lair o’ the Bear, Little, O’Fallon, and Pence parks and south to Denver Mountain Park Site in Lone Peak area. Last segment to extend south to Meyer Ranch; Bell Park: Connect Pence Park trail to Cub Creek Park. Extend trail in Bell Park south to Denver Mountain Park site and trail corridor to the north and east of Marshdale Elementary School. Extend this connection south through Berrian Mountain to Meyer Ranch; Elephant Butte: Create loop trail in Denver Mountain Park site near Elephant Butte, connect this system to a trail through Palo Verde Gulch. Extend trail from Elephant Butte west into Clear Creek County to connect with trail that begins at Golden Willow Road. Create southern connection to National Forest Land south of Brook Forest Road; Elk Meadow/Bergen Peak: Connect existing park trail to Kittredge via Troublesome Gulch, create connection south to Alderfer-Three Sisters Park, create connection from Bergen Peak along Snyder Mountain and Mount Pence to provide access to Squaw Pass area, National Forest lands, and Denver Mountain Parks; Fillius Park: Create connection along original wagon road north and east to I-70 and south and west to Pioneer Trail in Bergen Park; Bear Creek Trail: Connect trail around Evergreen Lake with Bear Creek Trail of Morrison via Downtown Evergreen, Kittredge and Ideldale; Evergreen to Conifer Trail: Create connection from Evergreen Lake to Conifer/Aspen park with linkages to Cub Creek Park, Bell Park, Marshdale Elementary and Flying J Ranch Open Space; O’Fallon Park Trail: Create connection near Downtown Evergreen west to O’Fallon, through the park then north to Corwina and connect to Bear Creek Trail; Cub Creek Trail: Create connection from Cub Creek Park south and east to Cub Creek.</p>
<p>Bear Creek Greenway & Trail Plan 2005</p>	<p>A total of six segments extending 5.5 miles. Segment 1: Bear Lake Dam to Hwy 73 (850 feet); Segment 2: Hwy 73 to Evergreen Bank Drive (950 feet); Segment 3: Evergreen Bank Drive to Hendryx Drive (800 feet); Segment 4: Hendryx Drive to Independence Trail (1,020 feet); Segment 5: Independence Trail Road to Trailhead and Creek Crossing (1,450 feet); Segment 6: Creek Crossing to Lair o’ the Bear Park via Corwina, O’Fallon and Pence parks.</p>



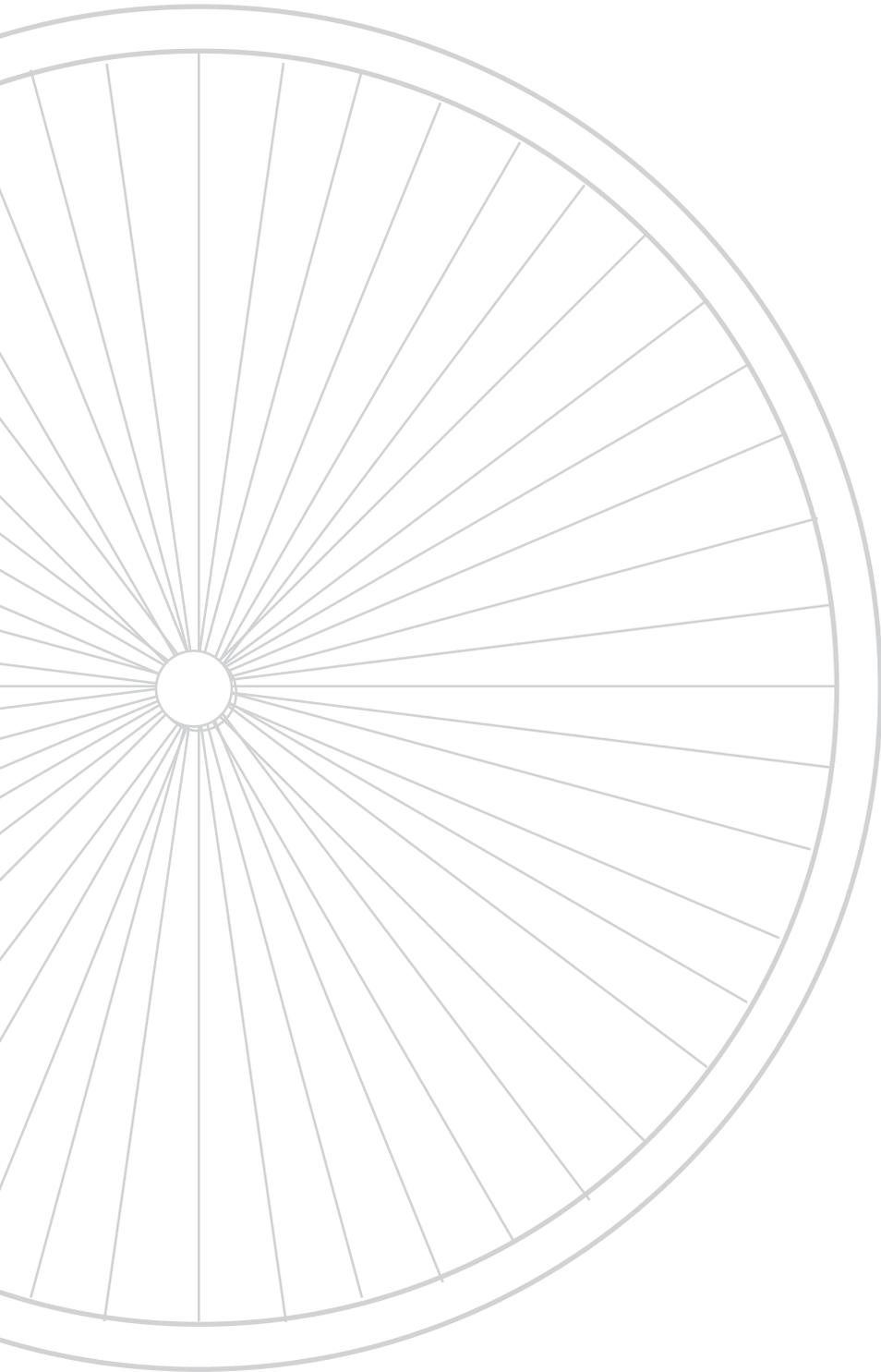


Existing Plans & Studies	Plan Recommendations
Regional Cooperative Trails Master Plan (Denver Mountain Parks) 2008	Provide regional trail connections to adjacent open space lands by adding new multiple-use trails and work with other agencies to implement the regional trail system; Develop multiple use trails to connect the Denver Mountain Parks to the regional open space system.
Trail Corridors Management Plan (JCOS) 2010	Bear Creek: Future connection from Evergreen Lake Dam to the east side of the Church of the Transfiguration where a trailhead is proposed. This segment is approximately 1 mile in length and is proposed to be hard surface. Evergreen to Conifer: Future trail extending south from Evergreen Lake to Aspen Park (Meyer Ranch Park) and the Conifer area (Beaver Ranch). An additional connection to Flying J Ranch Park is also planned. Overall project is approximately 11 miles of natural surface trail. Pioneer Trail: Bergen Park to Evergreen Lake (completed). Gudy Gaskill Trail: Located on south side of Clear Creek Canyon in the vicinity of Mt. Vernon Country Club and Genesee Park. Trail is 2.5 mile, hiker-only, natural surface trail (completed).
Evergreen Park and Recreation District Master Plan 2011	Improve the trail connection of North Evergreen Activity Trail at Bergen Valley Elementary School (completed); Evergreen Lake Trail extension to the downtown area; Trail from Dedisse Park to Evergreen Lake Park at Colorado Road 74 (Upper Bear Creek Road) (completed); Trail connection from Evergreen High School to the Library through Denver Mountain Park’s Cub Creek Park; Connection from Stagecoach Park to Pioneer Path.
Jefferson County Bicycle Plan (Jeffco Transportation & Engineering) 2012	Intersection of Hwys 74 & 73 to approximate end of downtown Evergreen, noted as “Sidewalk”: A hard surface path between four and eight feet in width for use by bicyclists and pedestrians and is physically separated from motor vehicle traffic on at least one side of the street; North side of Evergreen Lake listed as “Loose Surface Trail”; Hwy 73 to Buffalo Park Road: “Proposed Shared Use Path” and Buffalo Park Road from intersection of Hwy 73 to Wilnot Elementary/path to Alderfer/Three Sisters Park (JCOS): “Proposed Shared Use Path”; Hwy 73 south to N. Turkey Creek Road listed as “Proposed Paved Shoulder”: A paved shoulder of at least 4 feet in width; Squaw Pass Road from intersection of Hwy 74 listed as “Proposed Paved Shoulder”.
Jefferson County Pedestrian Plan (Jeffco Transportation & Engineering) 2012	Same as Bicycle Plan



Existing Plans & Studies	Plan Recommendations
<p>Jefferson County Open Space Master Plan (Trails Map of Existing & Potential Connections) 2014</p>	<p>Increase trail system by 25 miles in 5 years. Conifer to Evergreen Regional Trail: "Potential Connection or Gap in Existing Network", only conceptual alignments have been developed to date; plan to utilize connections from Flying J Ranch to Meyer Ranch Park (both JCOS); head north from Meyer Ranch through Berrian Mountain Park (Denver Mountain Parks) to Cub Creek; approximately 1 mile possible in Cub Creek Ranch through developer dedication. Two of the six criteria used in determining acquisition priorities include providing nature-based experiences, and contiguity and buffers. These can be accomplished through regional trails that link multiple jurisdictions, park to park trails that connect Jeffco Open Space and other public parks; and contiguity and buffers by creating connections between Jeffco Open Space and other preserved lands.</p>







C. Community & Stakeholder Engagement

A key component of the Evergreen Trails Master Plan process was to gather input and build support from the community for a cohesive and connected trail network and for the physical changes or improvements to move Evergreen in that direction. Public outreach began with a strategy to engage a broad cross-section of the community and ensure that local needs were identified and addressed through the planning process. Outreach components included the development of a Technical Working Group (TWG) comprised of representatives from multiple agencies and community groups to guide and inform the development of the plan, stakeholder presentations and interviews, public meetings and web-based communications.

Technical Working Group

A Technical Working Group (TWG) was established to inform the planning process and to provide feedback throughout the Plan development. The TWG responsibilities were to affirm the goals and direction of the study, to identify issues, needs and opportunities and to share information with the broader community and the groups they represented. Members of the group participated in four meetings.

TWG meetings were organized as follows:

Meeting 1 - Project kick-off, project goals, schedule, public engagement strategy and issues identification

Meeting 2 – Infrastructure analysis, review and refine concepts for early action projects; initial plan recommendations

Meeting 3 – Refinement of Plan recommendations and preparation of draft Plan

Meeting 4 – Review of Final Draft Plan and implementation program

Members of the TWG included:

- Kevin French, Jefferson County Transportation & Engineering Director
- Scott Burton, Planner, Jefferson County Transportation & Engineering
- Yelena Onnen, Planner, Jefferson County Transportation & Engineering
- Derek Schuler, Engineer, Jefferson County Transportation & Engineering
- Nancy York, Partnership Coordinator, Jefferson County Open Space
- Ellen O'Connor, Executive Director, Evergreen Parks & Recreation District
- Liz Cohen, Grants and Development Director, Evergreen Parks & Recreation District
- Brad Bednar, Lake House Supervisor, Evergreen Parks & Recreation District
- Dean Dalvit, Board President, Downtown Evergreen Economic District
- Eric Gill, Board Member, Downtown Evergreen Economic District
- Kathleen Davis, Board Member, Downtown Evergreen Economic District
- Rachel Emmer, Board Member, Downtown Evergreen Economic District
- Gail Riley, Board Member, Downtown Evergreen Economic District
- Brad Eckert, Mountain Parks Planner, Denver Mountain Parks
- Bob Finch, Director of Natural Resources, Denver Mountain Parks
- Russ Clarke, Jefferson County Planning & Zoning
- Erika Jerme, Jefferson County Public Health





Stakeholder Outreach

Presentations and interviews were conducted throughout the project process to clarify current issues and to develop solutions for improved trail or on-street linkages. Interviews or meetings were held with the following organizations and agencies:

- Evergreen Rotary Club
- Evergreen Pathfinders
- Evergreen Downtown Business Association Board
- Evergreen Downtown Business Association General Meeting
- Highland Haven area meeting with local property owners
- Evergreen High School Administration
- Wilmot Elementary School Administration and Parent Teacher Association
- Church of the Hills
- Team Evergreen Bicycle Club
- Local residents and property owners

Web-based Communication

Project materials, meeting notes, public meeting announcements and materials were posted to the Greater Downtown Evergreen Economic District website, the Jefferson County web page and the project website (www.trails4evergreen.org). Information and meeting notices were shared with Team Evergreen, the Canyon Courier, Yourhub, Justaroundhere.com, and mymountaintown.com.

Public Meetings

Three public meetings were held during the planning process at key milestones: issues identification, concept development and final recommendations. At each of the public meetings, attendees were given an opportunity to review project boards and maps, talk with members of the project team and listen to presentations on the project. Key community interests that emerged were addressed throughout the planning process.



Key Community Interests

Downtown

- Way-finding signage to and through the downtown area
- Increased awareness of downtown from the lake
- Pedestrian friendliness - Increase walkability by widening sidewalks, improving lighting, adding benches and public restrooms, creating south side river walk
- Better parking infrastructure and less parking congestion within downtown
- Improved and visible pedestrian crossing at 73

Evergreen Lake

- Dismount zone on north side trail for safety of walkers
- Recognize and manage a variety of users through paths and signage
- Better parking infrastructure
- Increased bicycle access from roadway – alternative to paths around lake

Meadow Drive & Hwy 74

- Divert cyclists to Meadow Drive as alternative to Hwy 74
- Roadway improvements on Meadow Drive to establish bicycle lanes or separate bike facility
- Increased visibility of Hwy 74 pedestrian crossing
- Trail signage

Buffalo Park Road & School Crossings

- Improve the trail from Evergreen High School to the Lake House; add provide signage
- Improve the trail connection from the high school to the library; add signage
- Improve the connection between Wilmot Elementary School and Wulf Recreation Center
- Establish a new and safe crossing of Buffalo Park Road, create a shared use path for students along Buffalo Park Road
- Street light at Hwy 73/148 intersection

Other

- Better way-finding through the community
- Overall, an improved pedestrian environment
- Safe, shared use bike/walk trails throughout town and to Conifer, to Marshdale on 73, Denver Mountain Parks
- Prioritize CR-73 to connect the Library to Downtown





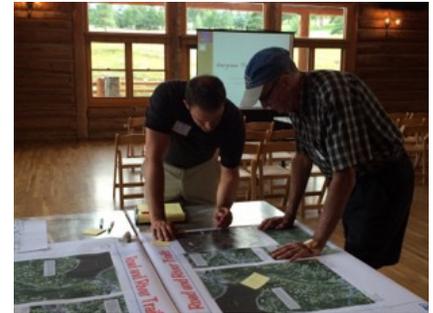
Meeting #1 | Community Concerns and Connectivity Needs | May 20, 2014

The first public meeting was held in May of 2014 and roughly 60 attendees provided input on the key biking, walking and trail challenges facing the community. They highlighted trail and street connections that would improve safety and increase opportunities for walking, biking and connecting to trails. They identified issues such as way-finding signage and visibility of amenities within the community. The meeting was an open house format with a presentation by the project team.



Meeting #2 | Concept Alternatives and Visual Preference Survey | August 19, 2014

The second public meeting was held in August and was focused on a review of concept alternatives. Large-scale area maps highlighting recommended connections were shared with the community and attendees noted issues or agreement. Additionally, a visual preference survey was conducted to gather input on the character, style and interests in branding and way-finding signage.



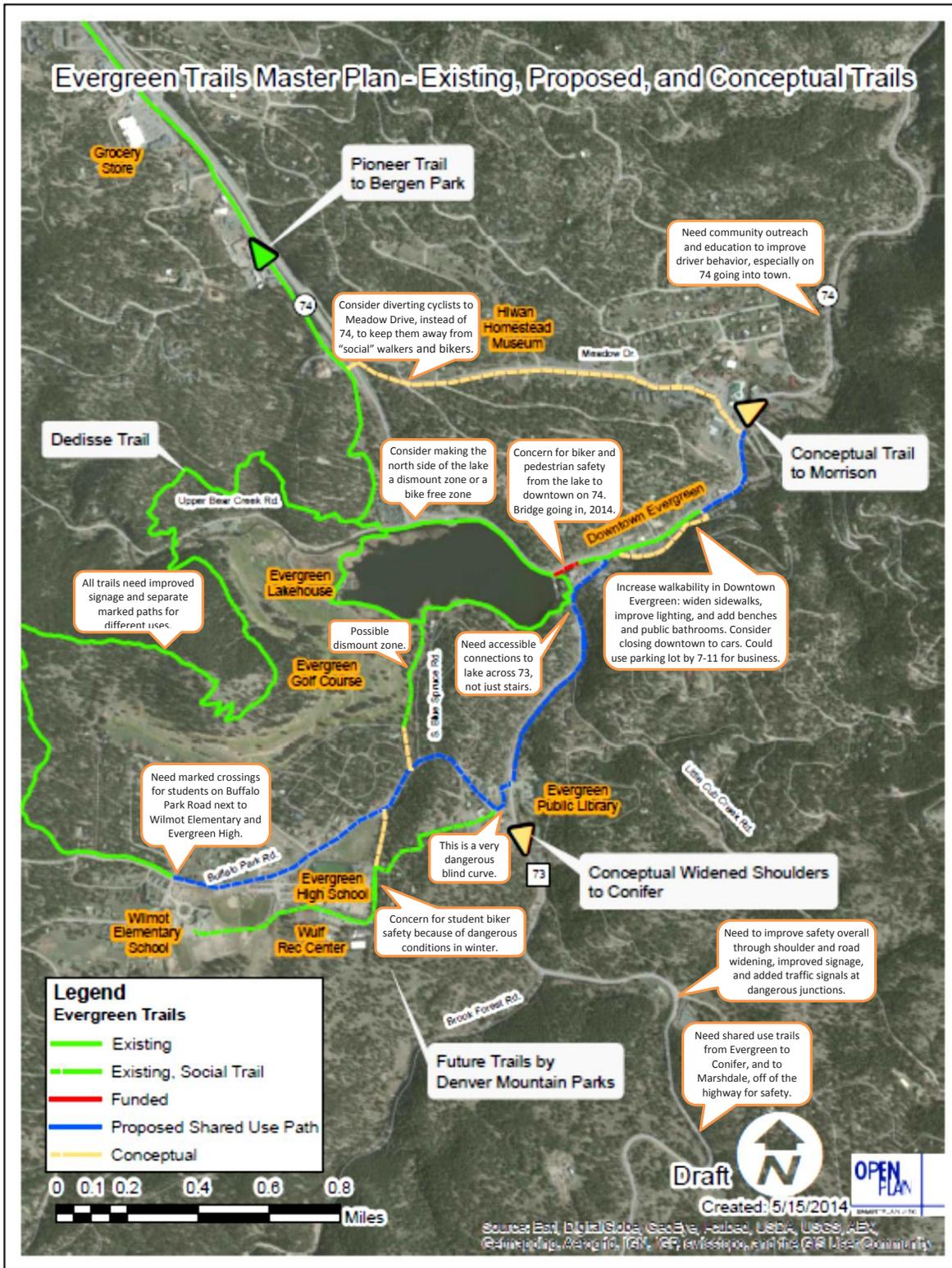
Meeting #3 | Plan Recommendations | December 10, 2014

The third and final public meeting addressed the plan recommendations and identified any modifications or concerns on the part of the community. In addition to the network connections, trail improvements and recommended projects, a way-finding package was presented for input. Comments from the public were very positive and recommendations were moved forward for finalization.



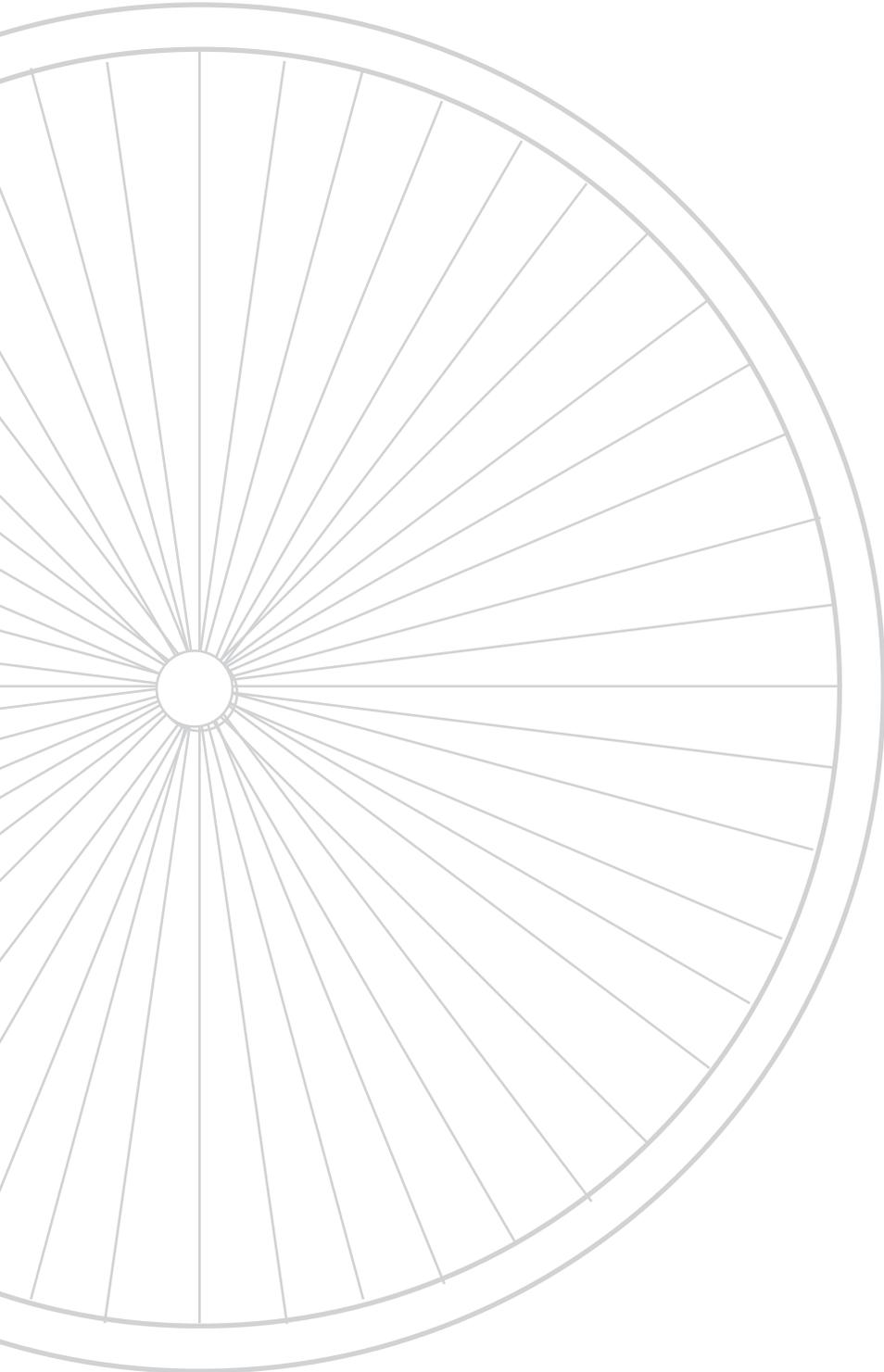


Figure 2: Public Meeting Comment Summary



= Comment made by a Meeting Attendee







D. Recommendations

Recommendations for trail improvements were made based on field investigations and existing conditions, public input and the project goals of creating an interconnected trail system in the project area that links important destinations in and around Downtown Evergreen. The Trail Overview Map on the following page shows the recommendations in the project area and how they related to the existing and proposed trail network. As shown in this map, there are currently significant gaps in the trail system that need to be filled in order to form a comprehensive trail network in the area.

The pages following the Trail Overview Map (Figure 3) provide information about each individual recommendation. Each overall recommendation is broken into logical segments to allow for phased implementation if desired. Information provided for each recommendation includes a detailed conceptual alignment map, tables outlining implementation details by project segment, and a conceptual level cost estimate¹ for each segment. The intent of this information is to provide enough detail about each recommendation to facilitate future pursuit of grant funding and to set the stage for future preliminary and final design.

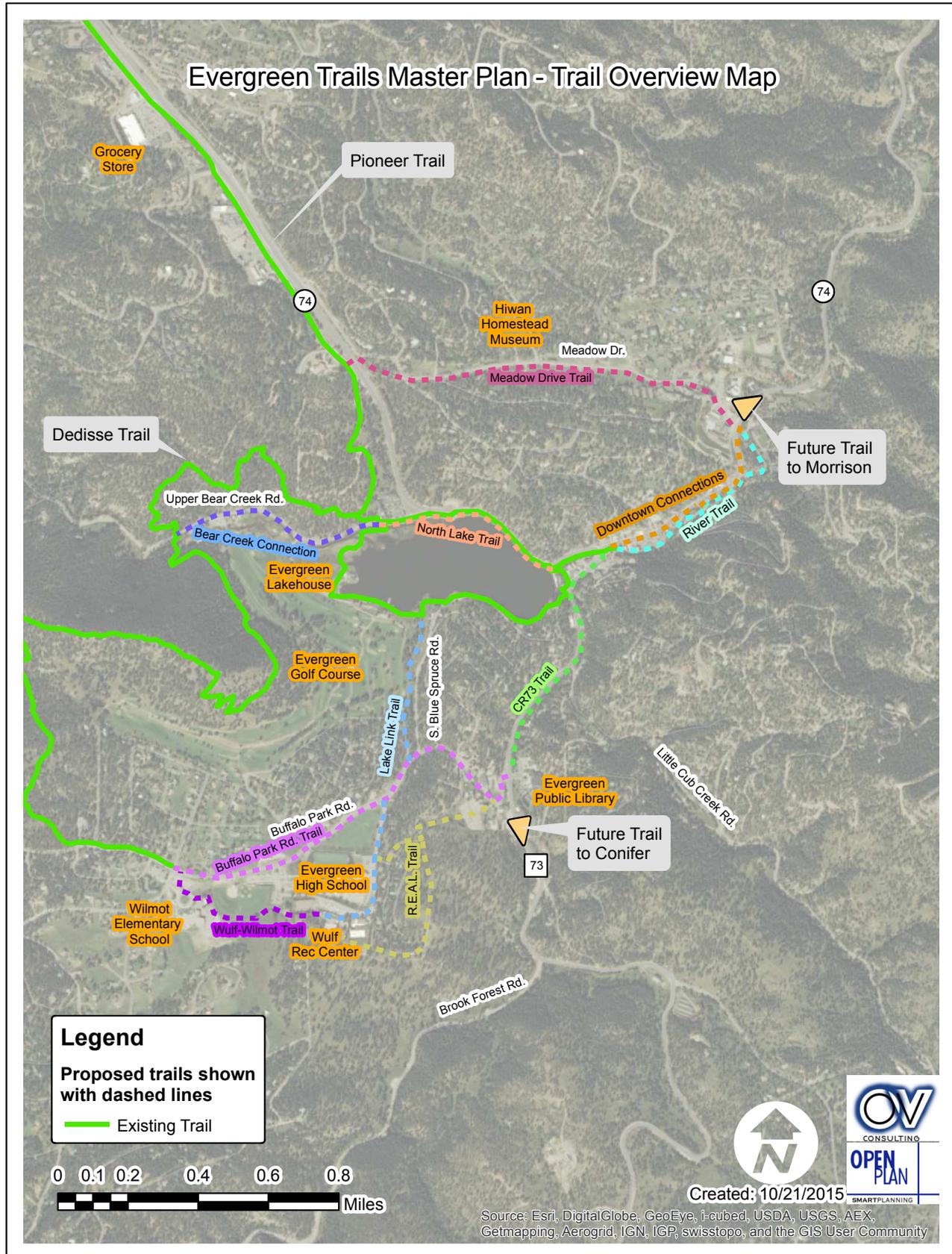
PLAN SUMMARY	
Existing Trails	8.0 miles
New Trails	7.1 miles
Improve Existing Trails	1.1 miles
On-street Striped Facilities	1.7 miles
Total Proposed Improvements	9.9 miles
Total System Length with Improvements	16.8 miles (110% increase)
Number of Improved Intersections and Roadway Crossings	19

¹. In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor’s method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.





Figure 3: Evergreen Trails Master Plan - Trail Overview Map

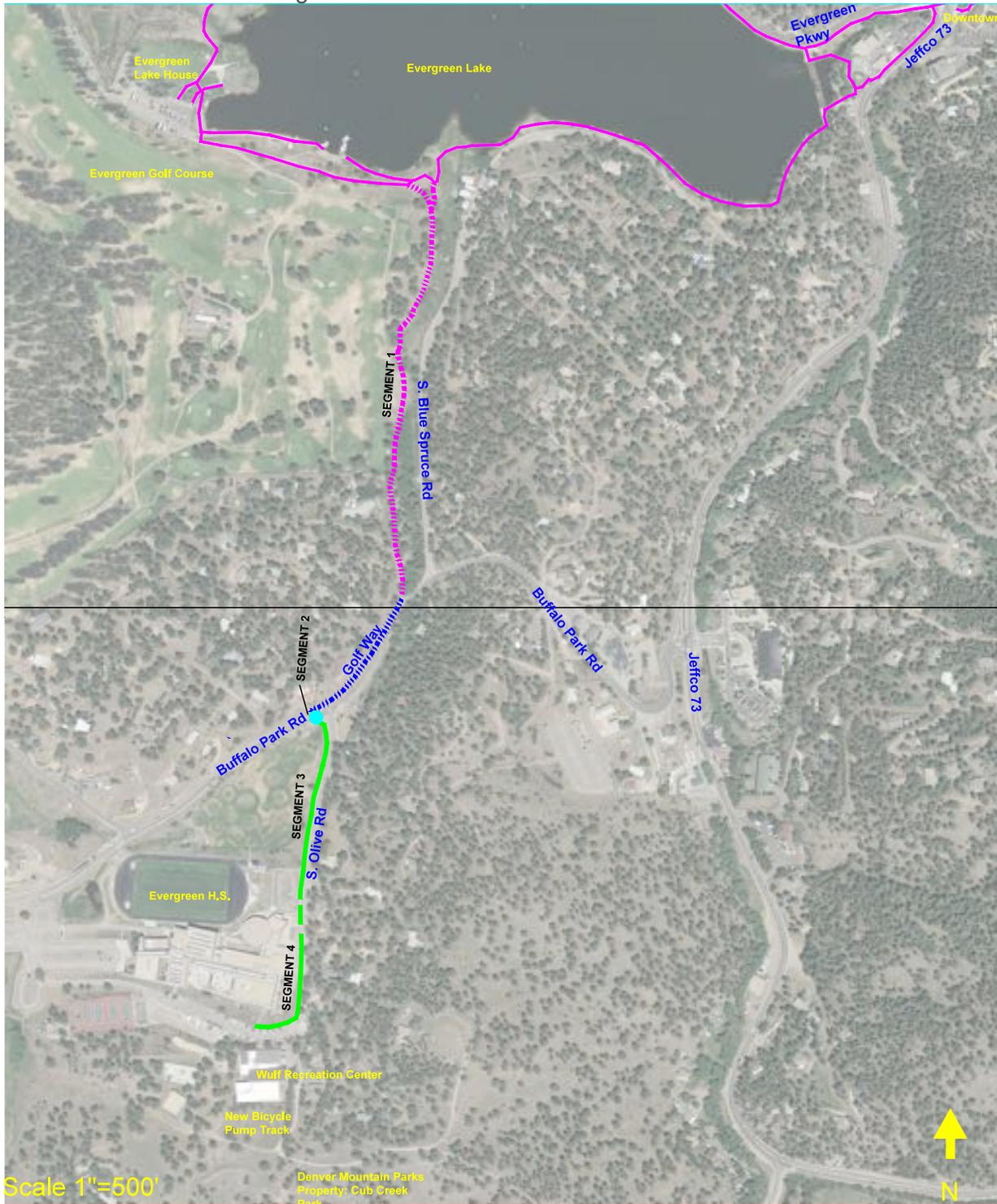






Lake Link Trail

EVERGREEN LAKE LINK TRAIL EXHIBIT



Scale 1"=500'

- Legend**
- Existing Trail ———
 - Existing Trail to be Improved - - - - -
 - New Trail ———
 - Crossing Improvement ●
 - Existing Road Used as Trail - - - - -

FINAL Recommendation
 Created by OV Consulting
 September 28, 2015





Description of Project

The purpose of this trail is to connect the Evergreen Lake Area to the Evergreen High School/Wulf Recreation Center Area. This improvement would serve both students and the community. The High School currently conducts several outdoor lab classes in the Evergreen Lake Area and they have no dedicated facilities along a majority of this route today. Also, community members often travel between the Wulf Recreation Center and the Evergreen Lake Area for recreation. The implementation of this trail would also complete a trail connection between the Downtown Evergreen Area and the High School area that is urgently needed.

Project Segments for Implementation

Project Segment	Notes
Segment 1: Existing Trail Improvements (widen, grade, and add gravel surface)	Important connection from Evergreen HS to Evergreen Lake and Downtown. Grade the existing trail surface to remove humps and dips and add crushed aggregate for an all weather surface.
Segment 2: Improved Road Crossing at Buffalo Park Road	Key improvement for project implementation. Requires detailed traffic study to evaluate sight distance and appropriate treatments. Modifications to the low wall on the north side of Buffalo Park Road may be required but are not included in the cost estimate.
Segment 3: New Trail Along Olive Road from Buffalo Park Road to East HS Entrance (on existing pavement with striping/markers)	This could be implemented quickly and with low cost on the existing pavement surface by placing portable curb and/or flexible vertical post elements.
Segment 4: New 6' Wide Sidewalk along Olive Road from East HS Entrance to Wulf Rec Center	Constructing a trail/sidewalk along the west side of Olive Road between the east High School entrance and Wulf Rec Center will require some retaining wall construction to support a sidewalk behind the existing curb and gutter.

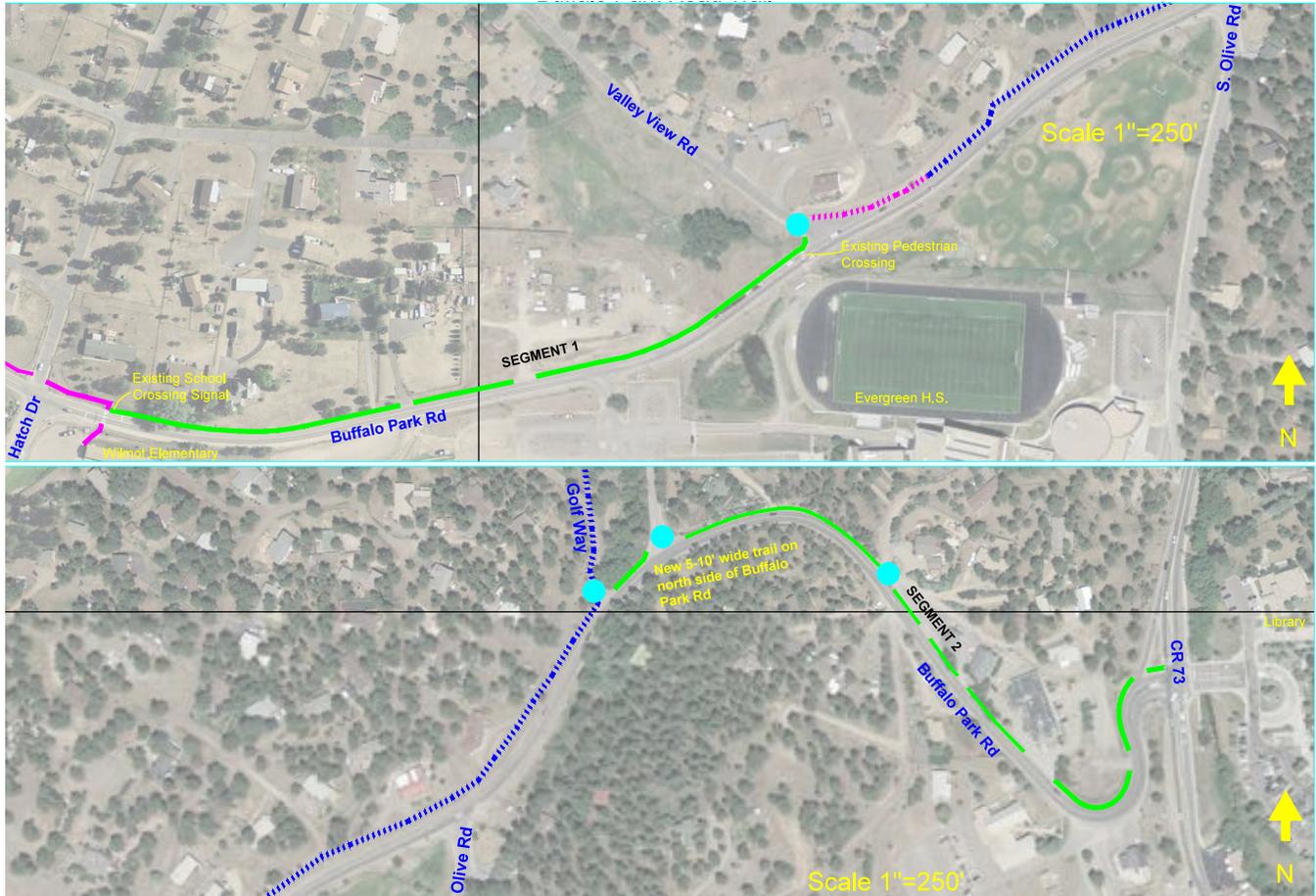
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: Existing Trail Improvements (widen, grade, and add gravel surface)	Short	Low	\$42,000
Segment 2: Improved Road Crossing at Buffalo Park Road	Short	Medium	\$39,000
Segment 3: New Trail Along Olive Road from Buffalo Park Road to East HS Entrance (on existing pavement with striping/markers)	Short	Low	\$14,000
Segment 4: New 6' Wide Sidewalk along Olive Road from East HS Entrance to Wulf Rec Center	Medium	Medium	\$200,000





Buffalo Park Road Trail



- Legend**
- Existing Trail —
 - Existing Road Used as Trail - - - -
 - Existing Trail to be Improved - - - -
 - New Trail —
 - Crossing Improvement ●

FINAL Recommendation
 Created by OV Consulting
 September 28, 2015



Description of Project

There are two segments to this project. In the eastern half there are currently no dedicated pedestrian facilities that connect the Evergreen Library area with the Evergreen High School and surrounding neighborhood area. Pedestrians walking along Buffalo Park Road between CR 73 and South Olive Road must walk either in the travel lane or on a narrow shoulder adjacent to auto traffic. The project in this area envisions a minimum 6’ wide sidewalk connecting those areas to provide a safe and convenient pedestrian connection. If possible, an 8-10’ wide sidewalk would allow enough width for bicycle and pedestrian traffic. West of South Olive Road the desire is to connect the Wilmot Elementary area and the Alderfer Three Sisters trail to the improvements to the east and to the proposed Lake Link Trail. The improvements envisioned here consist of an 8’ wide soft surface trail.

Project Segments for Implementation

Project Segment	Notes
Segment 1: New 8' Wide Soft Surface Trail from Wilmot Elementary to Olive Road	Provides good connectivity to Lake Link Trail. Develop a soft surface trail between the pedestrian crossing traffic signal near Wilmot Elementary to Valley View Road. Better define the existing trail along the dirt frontage road between Valley View Road and Golf Way.
Segment 2: New 6' Wide Sidewalk from Olive Road to CR 73	Difficult to construct. Current concept is to construct a 6' wide concrete sidewalk and curb and gutter along the north side of Buffalo Park Road in this segment. If possible, an 8-10' wide sidewalk is preferred. It is likely that earthwork and retaining walls will be required to implement both options.

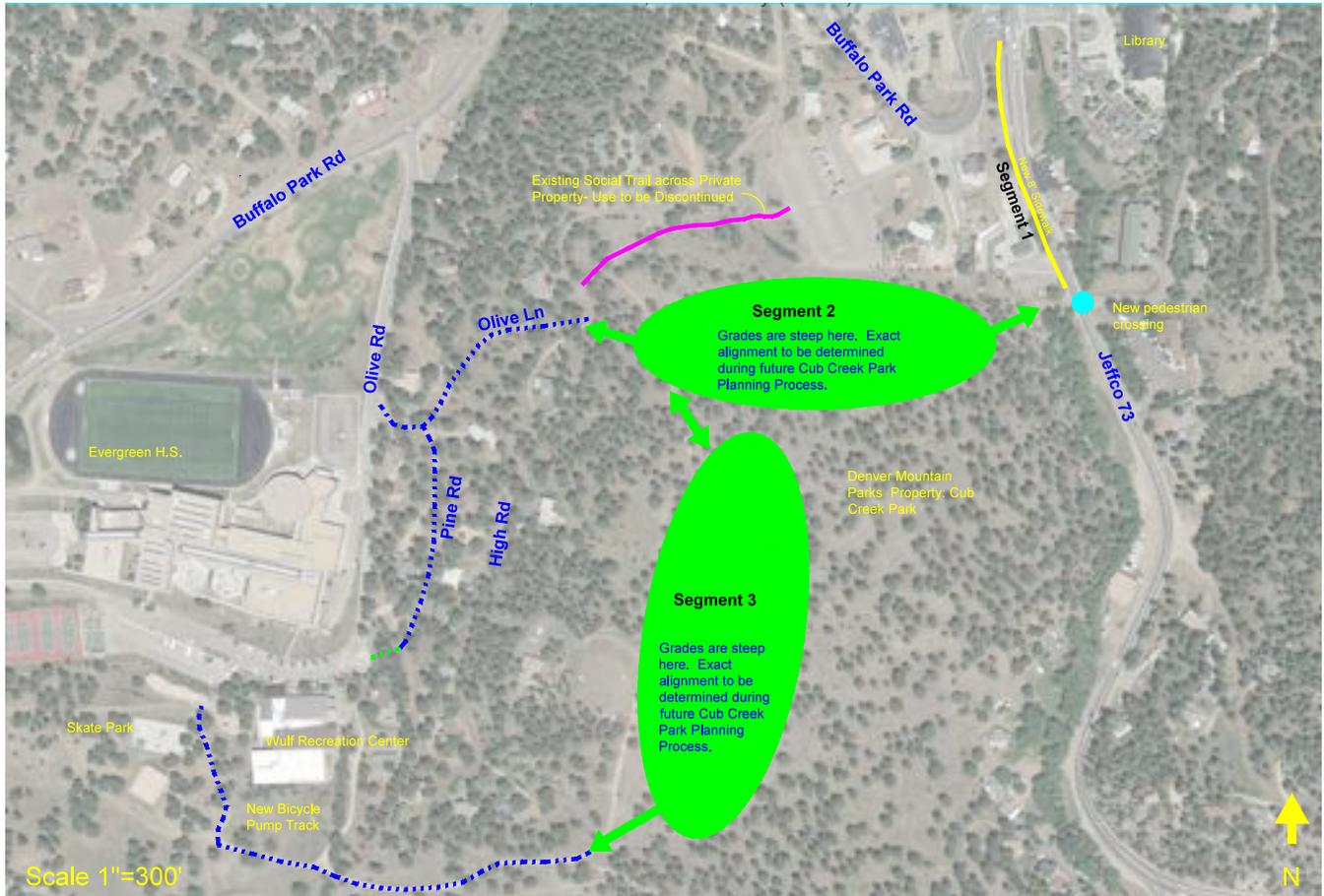
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: New 8' Wide Soft Surface Trail from Wilmot Elementary to Olive Road	Medium	Low	\$57,000
Segment 2: New 6' Wide Sidewalk from Olive Road to CR 73	Long	High	\$750,000





Recreation Education & Library (R.E.A.L.)



- Legend**
- Existing Trail ———
 - Existing Road Used as Trail - - - - -
 - New Pedestrian Crossing ●
 - Existing Social Trail across Private Property - Not to be Discontinued ———
 - New Trail ———
 - New Sidewalk ———

FINAL Recommendation
 Created by OV Consulting
 September 28, 2015



Description of Project

The purpose of this trail is to connect the Library area and neighborhoods east of CR 73 to the Evergreen High School/Wulf Recreation Center area by constructing a Jefferson County Open Space type soft surface trail through the Denver Mountain Parks Cub Creek Park property. This trail would also connect to the new Wulf Recreation Center outdoor improvements and a proposed bicycle pump track located behind the Wulf Recreation Center. There is currently a social trail across private property connecting Olive Lane to the church parking lot to the east that Evergreen High School students use to travel to and from the school. The use of this trail has resulted in neighborhood issues such as noise, trash, trespassing, and conflicts. The future trail is envisioned to be on Denver Mountain Parks property and the final alignment must consider alternatives to minimize/mitigate the existing issues through location of the trail, fencing, visual barriers, etc. Denver Mountain Parks would be heavily involved in the planning and design for this trail but currently would not lead the project in terms of funding or operations/maintenance costs. An intergovernmental agreement between the City and County of Denver and some other entity would be required to implement this trail.

Project Segments for Implementation

Project Segment	Notes
Segment 1: New 8' Wide Sidewalk Along CR 73 from Buffalo Park Road to Denver Mountain Parks Boundary	Serves pedestrians going between Library, transit stop, and retail area as well as a key link for the REAL trail.
Segment 2: New 8' Wide Soft Surface Trail on Denver Mountain Parks Property - CR 73 to Olive Road	Provides a safe alternate route for HS Students to walk to school from the neighborhoods to the east. Requires IGA with Denver Mountain Parks. Assumed soft surface trail for cost estimate. Steep slope requires switchbacks and additional earthwork/erosion control. Neighborhood concerns about noise, trash, and trespassing need to be addressed through alignment, grading, fencing, etc.
Segment 3: New 8' Wide Soft Surface Trail on Denver Mountain Parks Property- Olive Road to Wulf Rec Center	Connects to the Wulf Rec Center and the bicycle pump track/skate park. Lower Priority than Segment 1. Requires IGA with Denver Mountain Parks. Soft surface trail with gentle grade.

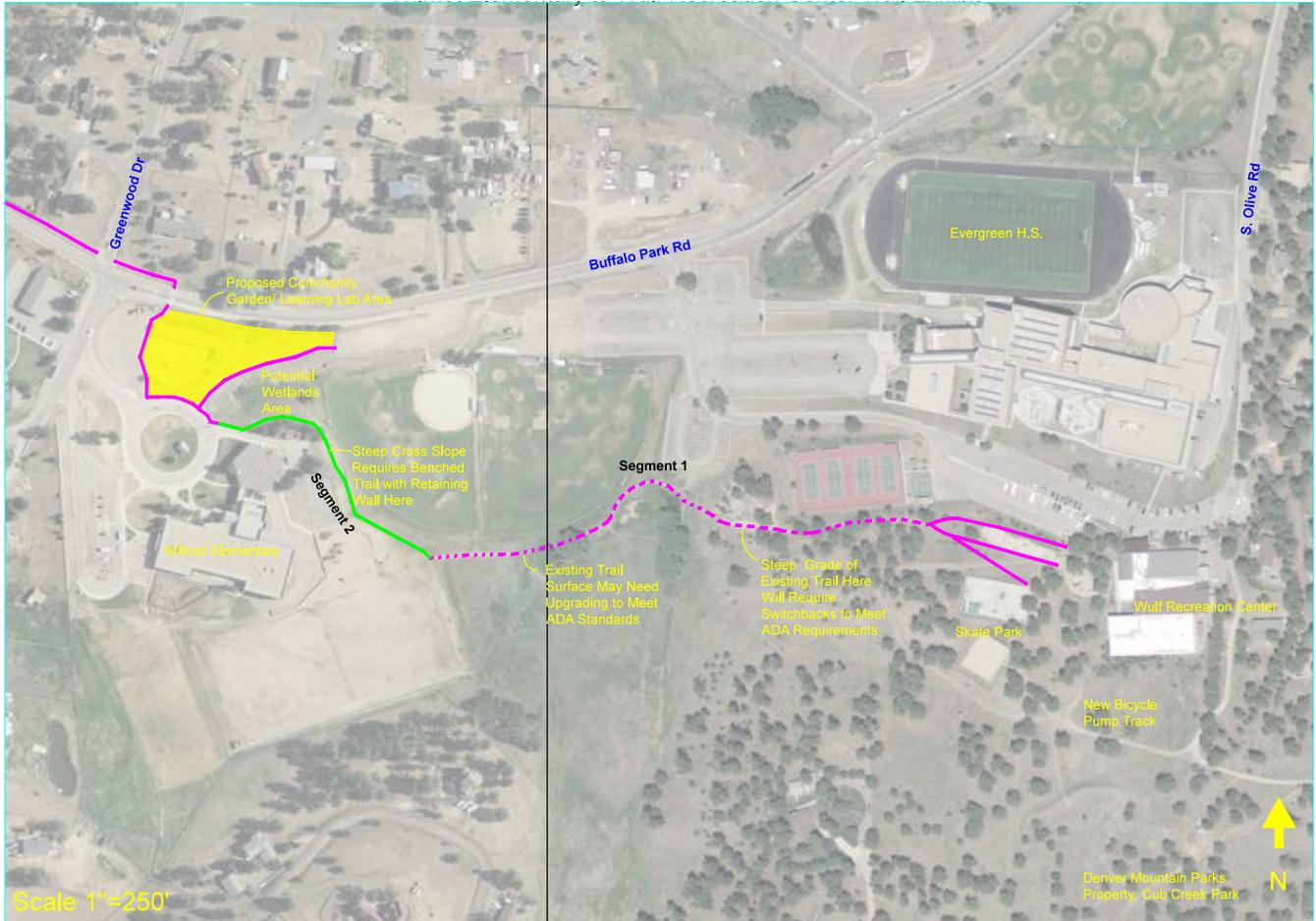
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: New 8' Wide Sidewalk Along CR 73 from Buffalo Park Road to Denver Mountain Parks Boundary	Short	Low	\$175,000
Segment 2: New 8' Wide Soft Surface Trail on Denver Mountain Parks Property - CR 73 to Olive Road	Short	Medium	\$100,000
Segment 3: New 8' Wide Soft Surface Trail on Denver Mountain Parks Property- Olive Road to Wulf Rec Center	Medium	Medium	\$90,000





Wilmot-Wulf Trail



Legend
 Existing Trail ——
 Existing Trail to be Improved - - - -
 Proposed Trail ——

DRAFT Recommendation
 Created by OV Consulting
 September 28, 2015



Description of Project

This trail connects Wilmot Elementary, the Alderfer Three Sisters Trail, and the proposed outdoor learning lab area to the Wulf Recreation Center. A portion of this trail currently exists but will require upgrading to make it an all weather soft surface trail. The primary purpose of this trail is to connect the special needs programs at Wilmot Elementary with the special needs programs at Wulf Recreation Center. This improvement would allow for the students to move between the two sites without needing to be transported by van. The grades and surface material of the future trail would need to be designed to meet ADA standards to serve this audience. If built properly, crushed stone trails can meet the American with Disabilities Act (ADA) Accessibility Guidelines, although proper installation and maintenance is critical to achieving this goal. Accessible crushed stone trails should be designed and constructed at grades less than 8% grade to promote accessible use. Trail tread grades of up to 10% for short distances are allowed but difficult for most visitors seeking an ADA trail to enjoy. Overall, trail grade averages of less than 6% will provide the most user-friendly experience and offer the most sustainable natural trail surface if compacted crusher fines are to be used.

Project Segments for Implementation

Project Segment	Notes
Segment 1: Existing Trail Improvements from Wulf Rec Center to Wilmot Elementary Back Fence	Good starter project. Land is under lease to EPRD from Jeffco School District. There are three options for trail improvement to this segment; adding a stabilized soft surface to the existing alignment and doing minor earthwork to prevent erosion, improving the trail to be ADA compliant with a compacted soft surface, or improving the trail to be ADA compliant with a concrete surface. Making the trail ADA compliant would involve building switchbacks and potentially walls to lessen the running grade of the trail to 5-6%.
Segment 2: New 8' Wide Trail from Wilmot Elementary Back Fence to Learning Lab location on north side of school	Steep side slopes make this more difficult to construct. Discussion with the school raised the possibility of several modified alignments to minimize constructability issues and to maximize usefulness of the trail.

Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: Existing Trail Improvements from Wulf Rec Center to Wilmot Elementary Back Fence	Short	Low	\$50,000 (minimal improvement) \$107,000 (ADA Soft Surface) \$230,000 (ADA Concrete Surface)
Segment 2: New 8' Wide Trail from Wilmot Elementary Back Fence to Learning Lab location on north side of school	Short	Medium	\$175,000 (ADA Soft Surface) \$230,000 (Concrete Surface)





C.R. 73 Trail



- Legend**
- Existing Sidewalk to be Widened |||||
 - New Trail ———
 - Existing Trail ———
 - Crossing Improvement ●

FINAL Recommendation
 Created by OV Consulting
 September 28, 2015





Description of Project

This trail forms a critical link between the southern part of the study area and Downtown Evergreen. This trail provides a non-motorized alternative for residents in the nearby neighborhoods to visit Downtown and other destinations connecting to this trail. This trail is envisioned as a 10' concrete multi-use path to accommodate both bicycles and pedestrians. There are significant challenges to implementation including overhead utilities, narrow available width in many areas, and several bridges over the creek that may need to be modified to accommodate the trail. Jefferson County has plans to improve CR 73 in this area and a good strategy for implementation would be to include these improvements in that project.

Project Segments for Implementation

Project Segment	Notes
Segment 1: New 10' Wide Concrete Trail from Buffalo Park Road to Little Cub Creek Road	High Priority Project. Provides key community linkages. Consider linking this project with the proposed roadway improvement project Jefferson County is pursuing in this area. Existing ROW is very narrow.
Segment 2: New 10' Wide Concrete Trail from Little Cub Creek Road to Downtown	High Priority Project. Provides key community linkages. Consider linking this project with the proposed roadway improvement project Jefferson County is pursuing in this area. Existing ROW is very narrow. If segments 1 and 2 are not constructed concurrently, constructing segment 2 would be a higher priority to connect the neighborhoods on Little Cub Creek Road to Downtown and the Lake.

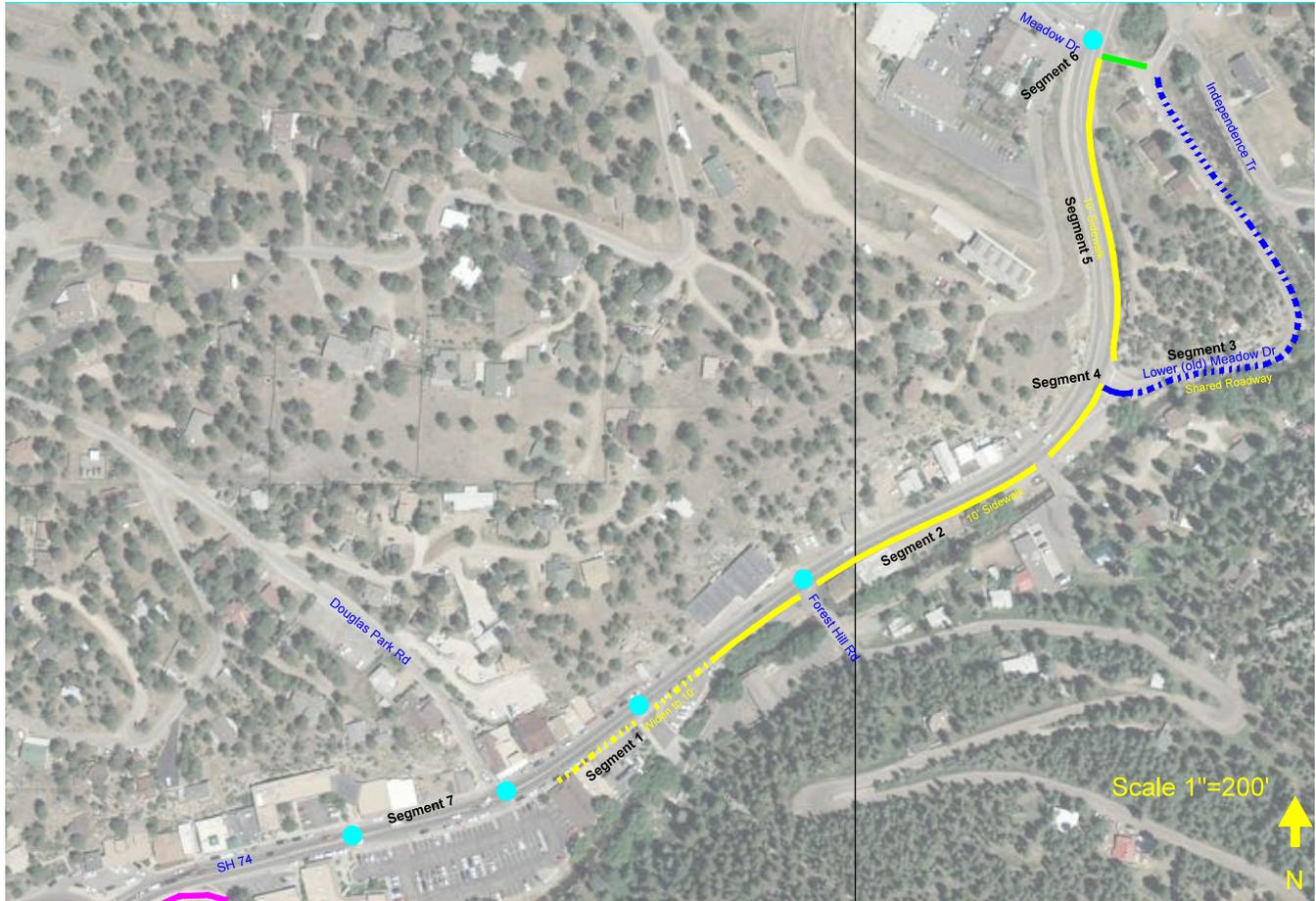
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: New 10' Wide Concrete Trail from Buffalo Park Road to Little Cub Creek Road	Short	High	\$2,300,000
Segment 2: New 10' Wide Concrete Trail from Little Cub Creek Road to Downtown	Short	High	\$2,800,000





Downtown Area Connections



- Legend**
- Existing Trail —
 - Existing Road Used as Trail - - - -
 - Existing Sidewalk to be Widened - - - -
 - New Trail —
 - New Sidewalk —
 - Crossing Improvement ●

FINAL Recommendation
 Created by OV Consulting
 September 28, 2015



Description of Project

This project includes several elements intended to make Downtown Evergreen a more walkable area and to emphasize pedestrian connectivity. One of the improvements is to construct an 8-10' wide sidewalk on the south side of SH 74 that connects to the Meadow Dr intersection east of Downtown. There is currently no way to safely walk between these two areas of Downtown and this improvement would allow for pedestrian and bicycle traffic to safely travel between them. The other project included here adds and improves pedestrian crossings in the Downtown area through intersection improvements and the implementation of bulbouts and raised table crossings.

Project Segments for Implementation

Project Segment	Notes
Segment 1: Widen Existing Sidewalk to 10' Wide along South Side of SH 74 from CR 73 to Evergreen National Bank	Sidewalk already exists here. Widen to 10' wide.
Segment 2: New 10' Wide Sidewalk along South Side of SH 74 from Evergreen National Bank to Lower (old) Meadow Dr	There is an immediate need for better pedestrian connections in this section of Downtown Evergreen. Assumed 10' wide sidewalk. Some sections may need to be narrower due to building locations but overall goal is 10' wide.
Segment 3: New Signed and Marked Trail along Lower (old) Meadow Dr from SH 74 to Independence Trail	Temporary improvements can be achieved with striping and minor paving while permanent improvements are designed. Conversion of this section of roadway from two-way to one-way operation would greatly improve its ability to handle higher levels of bicycle and pedestrian traffic and reduce auto volumes providing a more bicycle and pedestrian focused facility. Good starter project.
Segment 4: Intersection Modification at Lower (old) Meadow Dr/SH 74	Redesign this intersection to provide compact right angle configuration. This will reduce auto speeds and provide more space for pedestrians, bicycles, landscaping, etc. Converting Lower Meadow Dr from two-Way to One-Way operations would also influence the final design of this improvement. Requires coordination with CDOT but the modifications are relatively straightforward. This project improves traffic and pedestrian safety and provides a sense of community investment in the east side of Downtown.
Segment 5: New 10' Wide Sidewalk Along SH 74 from Lower (old) Meadow Dr to Meadow Dr.	Requires CDOT coordination and modification of the Meadow Drive/SH 74 intersection before implementation. Guardrail on south side of SH 74 could be removed to provide additional width for sidewalk. Assumed 10' wide sidewalk with 6" barrier curb.
Segment 6: SH 74/Meadow Dr Intersection Improvements	Key improvement that needs to be implemented prior to adding sidewalk along south side of SH 74. Sidewalk could be added to the north side of SH 74 instead of the south side if intersection improvements prove difficult. Cost estimate assumes traffic signal type improvements but a roundabout could be investigated. Our preliminary investigation of a roundabout indicated significant additional ROW would be required.





Project Segment	Notes
Segment 7: Improved Pedestrian Crossings Downtown- Bulbouts with raised table crossings and activated crossing devices	Easy to implement and has little or no impact to parking. Improves pedestrian visibility, shortens pedestrian crossing distance, calms traffic, and communicates downtown as a place where all modes share the space. There are two existing marked crosswalks in the western end of Downtown that are good candidates for this treatment and one more in the eastern part of downtown that may be a candidate for all or part of this treatment. Cost estimate is per location.

Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: Widen Existing Sidewalk to 10' Wide along South Side of SH 74 from CR 73 to Evergreen National Bank	Medium	Medium	\$140,000
Segment 2: New 10' Wide Sidewalk along South Side of SH 74 from Evergreen National Bank to Lower (old) Meadow Dr	Short	Medium	\$380,000
Segment 3: New Signed and Marked Trail along Lower (old) Meadow Dr from SH 74 to Independence Trail	Short	Low	\$17,000
Segment 4: Intersection Modification at Lower (old) Meadow Dr/SH 74	Short	Medium	\$90,000
Segment 5: New 10' Wide Sidewalk Along SH 74 from Lower (old) Meadow Dr to Meadow Dr.	Medium	Medium/High	\$265,000
Segment 6: SH 74/Meadow Dr Intersection Improvements	Medium	Medium/High	\$375,000
Segment 7: Improved Pedestrian Crossings Downtown- Bulbouts with raised table crossings and activated crossing devices	Short	Medium	\$70,000



SH 74 and Lower Meadow Drive Intersection



SH 74 and Lower Meadow Drive Intersection Looking East from Cozy Cleaners Driveway





Downtown Evergreen Pedestrian Crossing

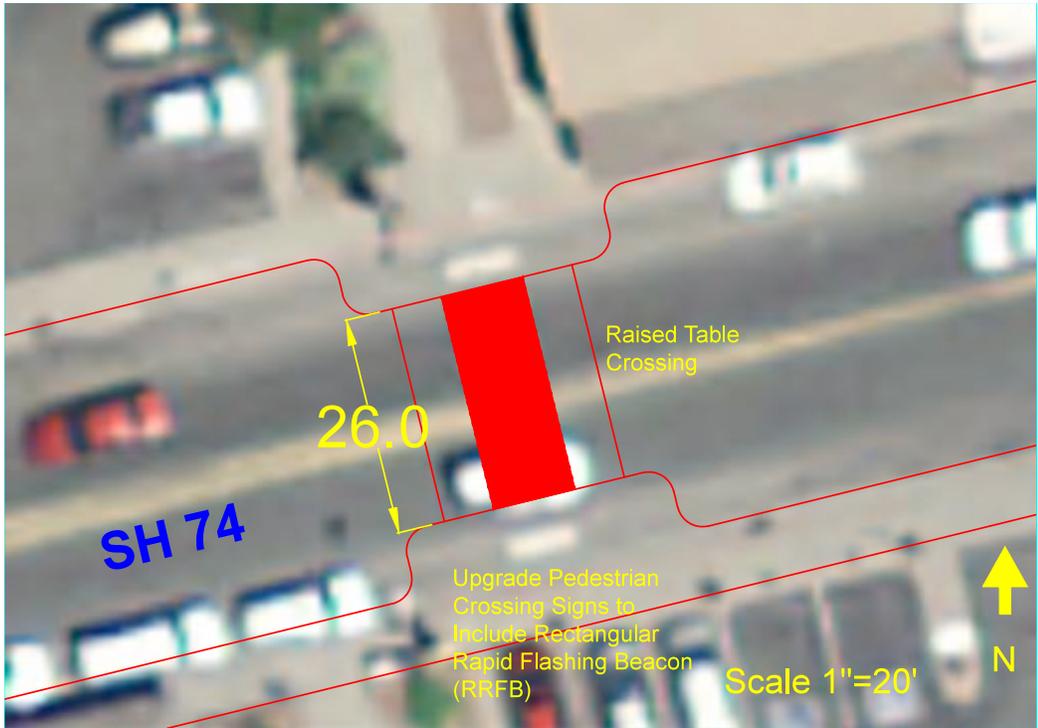


Downtown Evergreen Pedestrian Crossing: Abbey Road Remix

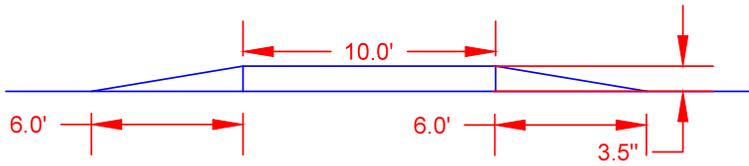




Downtown Bulbout with Raised Crossing



Raised Table Crossing Detail

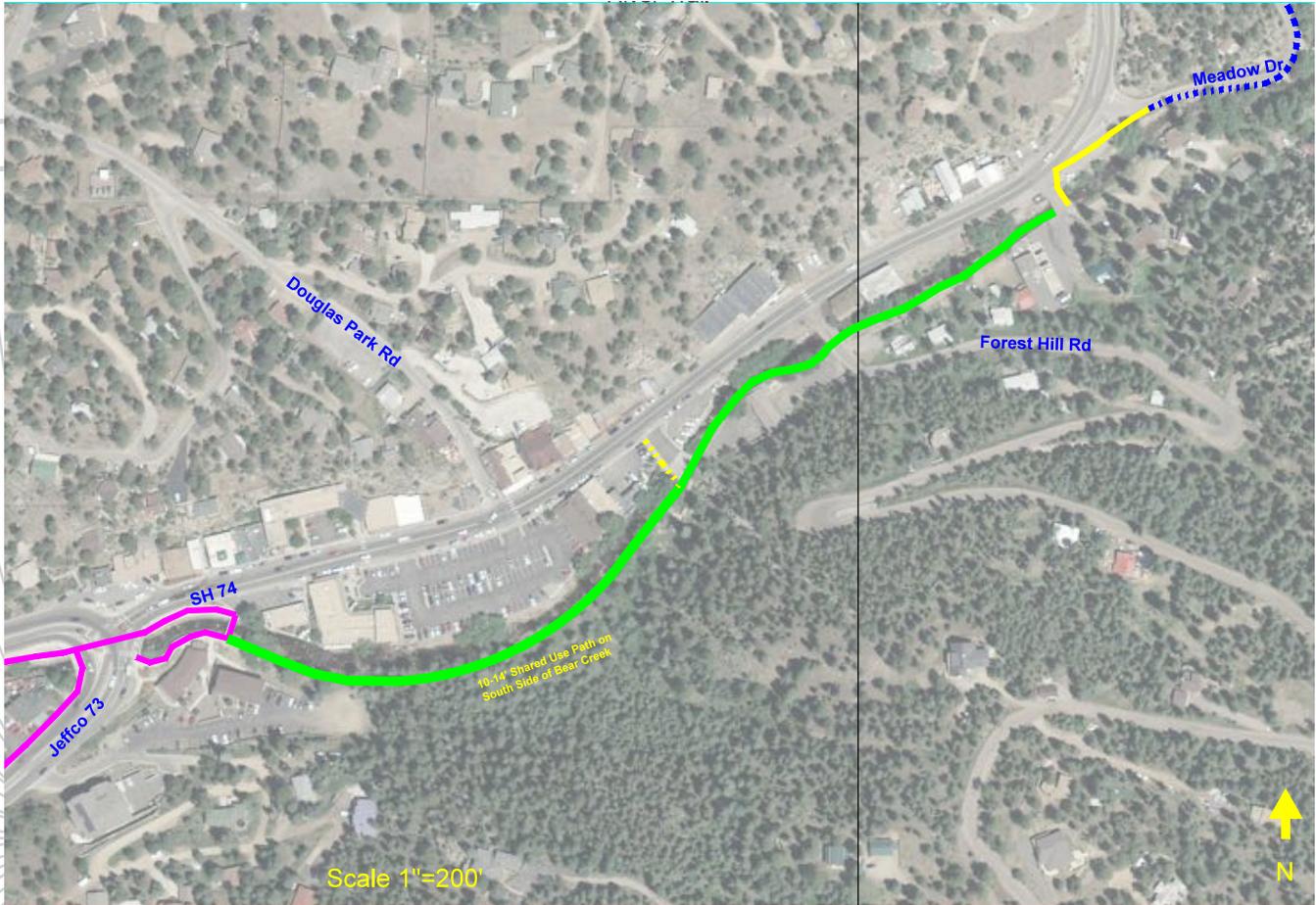


FINAL Recommendation
Created by OV Consulting
June 30, 2015





River Trail



Legend

- Existing Trail (pink line)
- New Trail (green line)
- New Sidewalk (yellow line)
- Shared Roadway (blue dashed line)

FINAL Recommendation
Created by OV Consulting
September 28, 2015





Description of Project

This trail has been a high priority for Evergreen for many years and would provide a low stress facility to connect the underpass that leads to Evergreen Lake to the eastern part of Downtown. Plans exist for a future extension of this trail down SH 74 to Morrison creating a regional trail connection. Property ownership and cost remain hurdles to implementation of this trail.

Project Segments for Implementation

Project Segment	Notes
New Concrete Trail on South Side of Bear Creek from CR 73 to Driveway Just West of Lower (old) Meadow Dr Where Cozy Cleaners is Currently Located	Important improvement to the community. Requires private property owner cooperation and participation. Assumed 10' concrete trail with major earthwork and retaining wall in western section. Connects the end of the existing trail on the west end with the Lower Meadow Drive Trail on the east end.

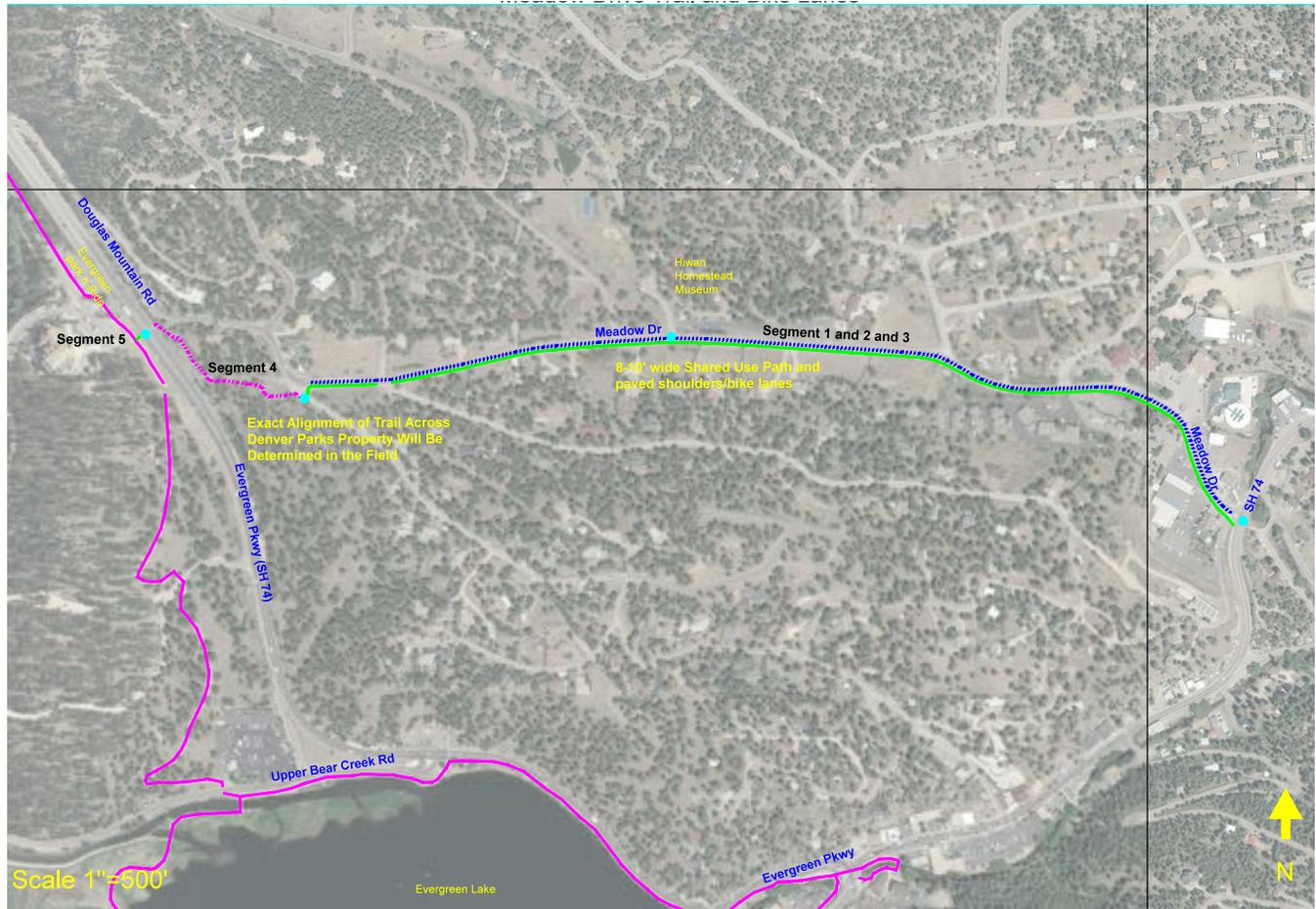
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
New Concrete Trail on South Side of Bear Creek from CR 73 to Driveway Just West of Lower (old) Meadow Dr Where Cozy Cleaners is Currently Located	Long	High	\$2,000,000





Meadow Drive Trail



- Legend**
- Existing Trail ——
 - Existing Trail to be Improved - - - -
 - New Trail ——
 - New Paved Shoulders/Bike Lanes |||||
 - Crossing Improvement ●

FINAL Recommendation
 Created by OV Consulting
 September 28, 2015



Description of Project

Meadow Drive is frequently used by bicyclists to bypass the Downtown Evergreen and Lake area due to their narrow widths and higher traffic volumes. The Hiwan Homestead Museum is also located on Meadow Drive and generates significant visitor traffic that could walk or bike to this Jefferson County Open Space property. This project envisions several phases of improvement to Meadow Drive including adding signage and striping for bicycles, widening the shoulder areas, providing a trail adjacent to Meadow Drive, and connecting the west end of Meadow Drive more directly to Evergreen Parkway. Implementation of the adjacent parallel trail would require easements or ROW purchase.

Project Segments for Implementation

Project Segment	Notes
Segment 1: New Signing/Sharrows along Meadow Drive	Good starter project. MUTCD specifies no more than 250' between shared lane markings.
Segment 2: New 5' Wide Paved Shoulders/Bike Lanes along Meadow Drive	Good bicycle bypass route of narrow sections of Evergreen Parkway near Evergreen Lake. Requires widening and new paving. Implementing westbound (uphill) shoulder paving would be first priority. Cost estimate assumes 5' widening on both sides of Meadow Drive.
Segment 3: New 10' Wide Concrete Trail on South Side of Meadow Drive from Douglas Park Road to SH 74	Improves pedestrian and bicycle connectivity by providing a low stress connection. Would likely require ROW/easement. Cost estimate assumes a concrete surface similar to the Pioneer Trail. The trail on the east end is assumed to be next to the roadway with vertical elements separating the trail from the roadway.
Segment 4: New 10' Wide Trail from Evergreen Parkway to Douglas Park Road	Forms a direct connection between the bicycle and pedestrian facilities planned along Meadow Drive and the Pioneer Trail along Evergreen Parkway. Assumes a concrete trail with a different alignment than the existing asphalt trail connection. The existing pedestrian crossing of Evergreen Parkway should be improved before this project is implemented.
Segment 5: Improved Evergreen Parkway Crossing	Improvement consists of relocating the existing crossing further south to the frontage road intersection where speeds are lower and sight distance appears to be better. Crossing would consist of a raised median in the center of the roadway with marked and signed crosswalks with activated crossing devices or signalization. Lighting would also either be relocated from the existing crossing or new lighting would be installed. Impacts to turning movement access at the intersection may be impacted depending on the median design chosen. A high level of CDOT coordination is required for this project. Cost estimate does not include signalization.





Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: New Signing/Sharrows along Meadow Dr	Short	Low	\$30,000
Segment 2: New 5' Wide Paved Shoulders/Bike Lanes along Meadow Dr	Medium	Medium	\$1,000,000
Segment 3: New 10' Wide Concrete Trail on South Side of Meadow Dr from Douglas Park Road to SH 74	Medium	Medium	\$890,000
Segment 4: New 10' Wide Trail from Evergreen Pkwy to Douglas Park Road	Medium	Medium	\$190,000
Segment 5: Improved Evergreen Pkwy Crossing	Medium	High	\$120,000

Meadow Drive Trail and Bike Lanes



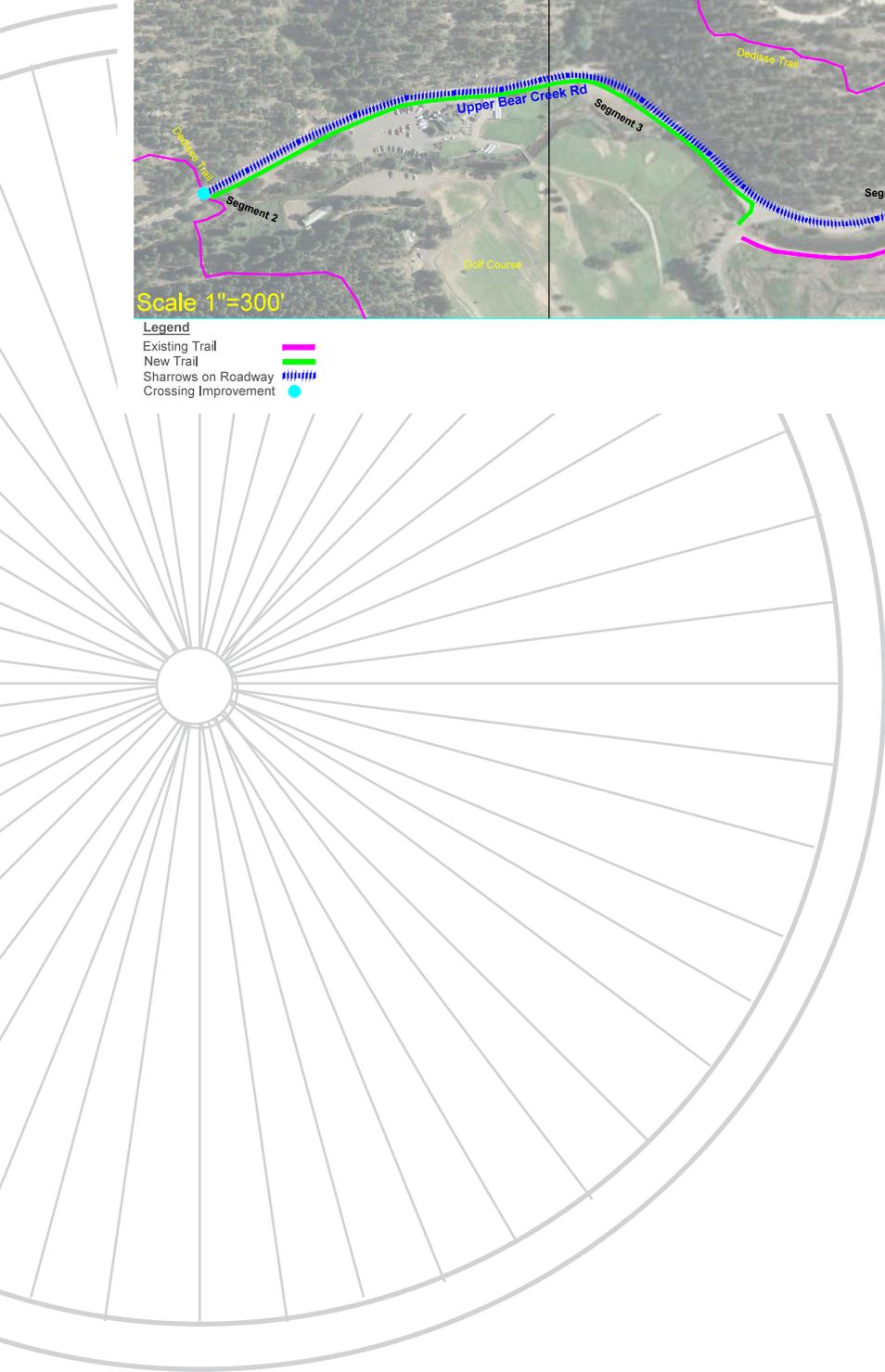
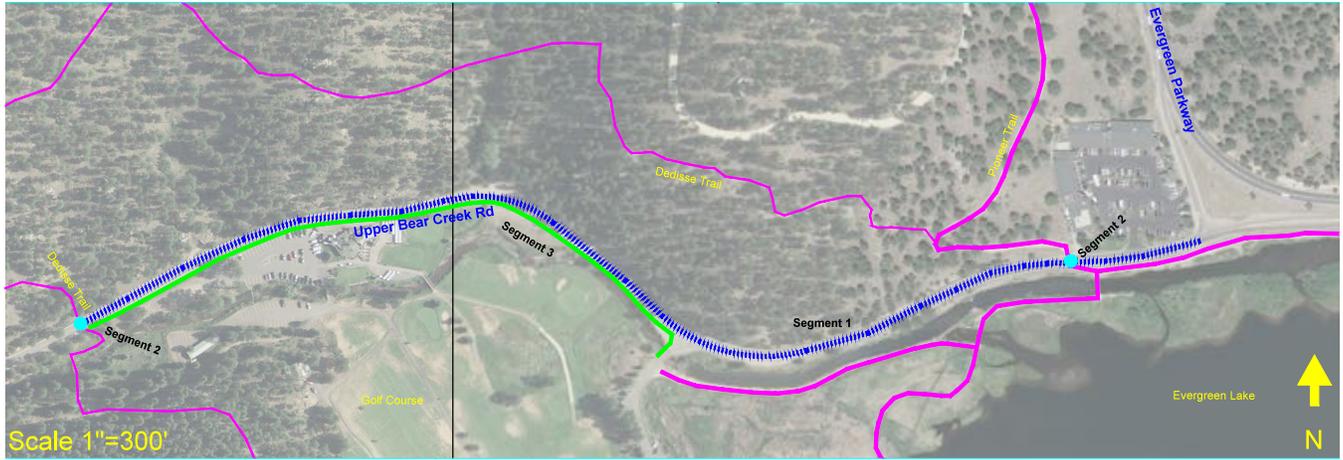


Evergreen Parkway Crossing Improvements Looking North





Bear Creek Connection





Description of Project

This area is heavily used by visitors and residents and there are currently no pedestrian or bicycle facilities along Upper Bear Creek Road for them to safely travel along the roadway. This project has two areas of focus. The first is to add bicycle shared lane markings and signage to Upper Bear Creek Road between the Dedisse Trail and the Pioneer Trail. The second is to provide for a sidewalk between the Dedisse Trail and the entrance to the Evergreen Lake House. Denver Mountain Parks would be heavily involved in the planning and design for this trail but currently would not lead the project in terms of funding or operations/maintenance costs.

Project Segments for Implementation

Project Segment	Notes
Segment 1: Add Sharrows and Signing to Upper Bear Creek Road Between Dedisse Trail and Pioneer Trail Crossings	Improves bicycle visibility and safety in this section of Upper Bear Creek Road. Relatively inexpensive to implement.
Segment 2: Improve Crossing of Upper Bear Creek Road at Dedisse Trail and Pioneer Trail (marked crosswalks, signing, activated crossing devices)	Improves pedestrian safety at these crossings. Becomes more important if additional parking area to the north is implemented. First location implemented should be the Pioneer Trail. Crossing currently has crosswalk markings and some signage but an activated crossing device would significantly improve crossing visibility. A raised table crossing could also be implemented at the Pioneer Trail location but is not included in the cost estimate.
Segment 3: Add 10' Wide Concrete Trail on South Side of Upper Bear Creek Road from the Dedisse Trail Crossing to the Lake House Entrance Driveway	Could be completed as part of the Lake House entrance bridge replacement. Width could be reduced especially in the eastern section where available space is narrow.

Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Segment 1: Add Sharrows and Signing to Upper Bear Creek Road Between Dedisse Trail and Pioneer Trail Crossings	Short	Low	\$17,000
Segment 2: Improve Crossing of Upper Bear Creek Road at Dedisse Trail and Pioneer Trail (marked crosswalks, signing, activated crossing devices)	Short	Medium	\$75,000
Segment 3: Add 10' Wide Concrete Trail on South Side of Upper Bear Creek Road from the Dedisse Trail Crossing to the Lake House Entrance Driveway	Short	High	\$590,000





North Lake Trail



Legend
Existing Trail ———
Existing Trail to be Improved - - - -
Crossing Improvement ●

FINAL Recommendation
Created by OV Consulting
September 28, 2015



Description of Project

This long term improvement would enhance and improve the existing trail along the north side of Evergreen Lake by widening and paving it. There are several benefits envisioned with this improvement:

- As traffic increases on this trail, more user conflicts will result leading to a need to manage modal interactions more aggressively. With a wider trail area, those conflicts can be minimized.
- Fishing platforms and piers could be built into this design to provide sustainable fishing opportunities while minimizing bank erosion caused by the current fishing uses and improving water quality.
- Handicap accessible facilities could be included in the design to provide accessible outdoor recreation opportunities.

Project Segments for Implementation

Project Segment	Notes
Widen Existing Soft Surface Trail to 14' Wide from the Pioneer Trail to the Dam and Pave in Concrete	As activity levels grow in this area, improvements to the existing soft surface trail may be needed. These improvements range from paving over the existing trail to accommodate more types of users to widening the existing trail, paving it, and providing fishing bulbout locations. Major benefits could be realized in water quality, reduced bank erosion, accommodations of persons with disabilities, and system level connectivity with this improvement. Monitor activity and conflicts before pursuing this project.

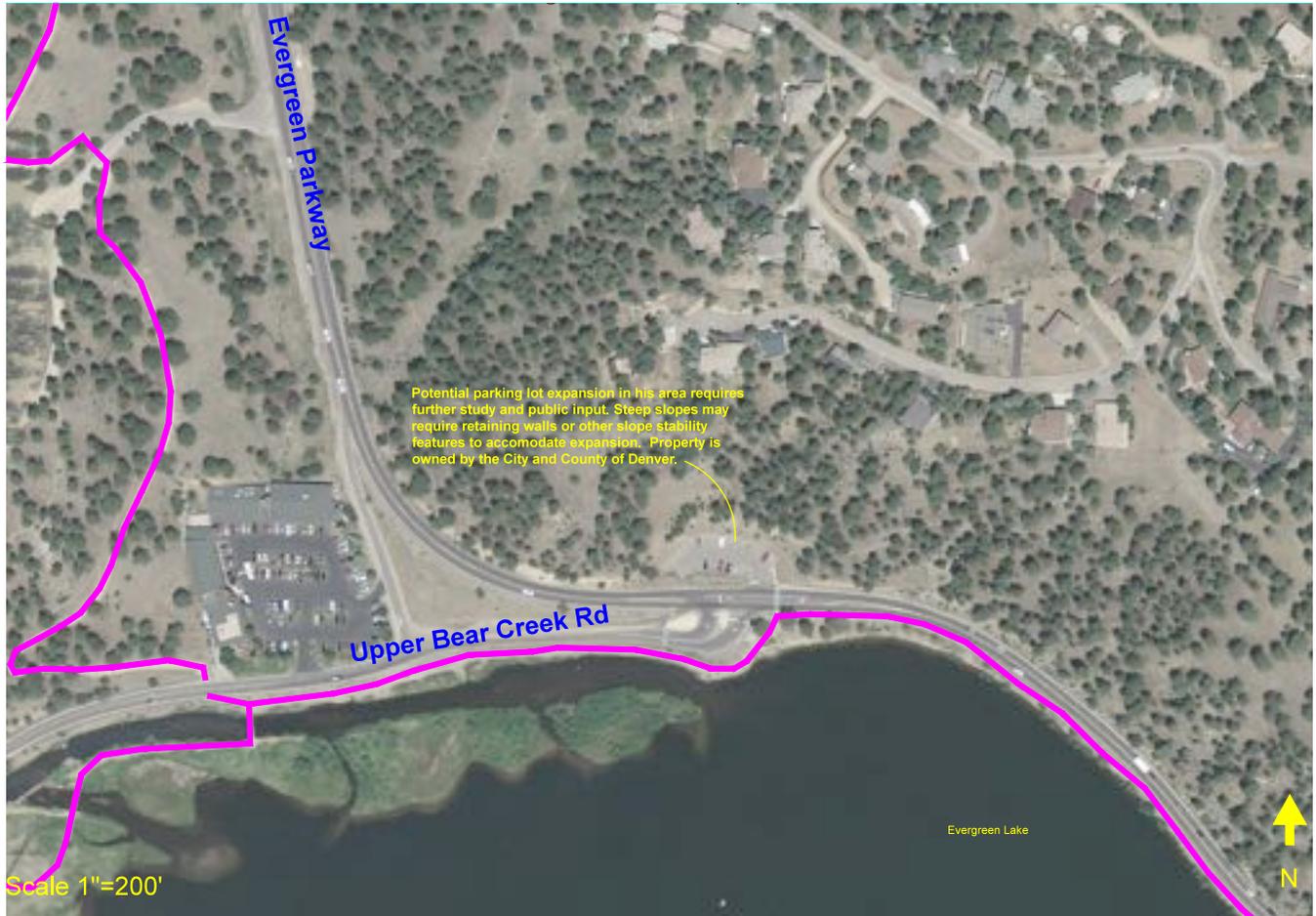
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Widen Existing Soft Surface Trail to 14' Wide from the Pioneer Trail to the Dam and Pave in Concrete	Long	High	\$3,500,000





Additional Parking Area



FINAL Recommendation
Created by OV Consulting
November 20, 2015



Description of Project

Parking near the Evergreen Lake Area is often at or over capacity and sources of additional parking are needed. This existing parking lot located north of the Lake was identified as a potential location for improvements. There is already a signed and marked pedestrian crossing of SH 74 between the parking lot and Evergreen Lake and adding parking to this site does not conflict with other uses in different areas of Dedisse Park. The existing lot currently accommodates approximately 30 vehicles at one time. It is possible that the size of this lot could be increased with an efficient layout to accommodate 60-90 vehicles depending on the level of investment willing to be made. There are steep slopes to the north of the lot that would likely require retaining walls or other slope stabilization methods. The exact sizing, location, configuration, and amenities that could be provided here are not determined at this time. A separate public process and concept design effort would be required to determine the viability of making changes to this area and CDOT Access Code Requirements would need to be met for ingress and egress infrastructure. In addition, an intergovernmental agreement with the City and County of Denver would be necessary to define how construction funds would be procured and managed. It is assumed that the operations and maintenance responsibilities for an improved lot would be performed under a similar agreement as exists today.

Project Segments for Implementation

Project Segment	Notes
Provide Additional Parking	Timeframe depends on funding availability and the results of an in-depth public planning process specific to the improvements. This project would help with parking issues at Evergreen Lake. The size, included amenities, and exact siting of the improvements would be determined through the County planning process with Denver Mountain Parks making the final decision for any improvements on its property.

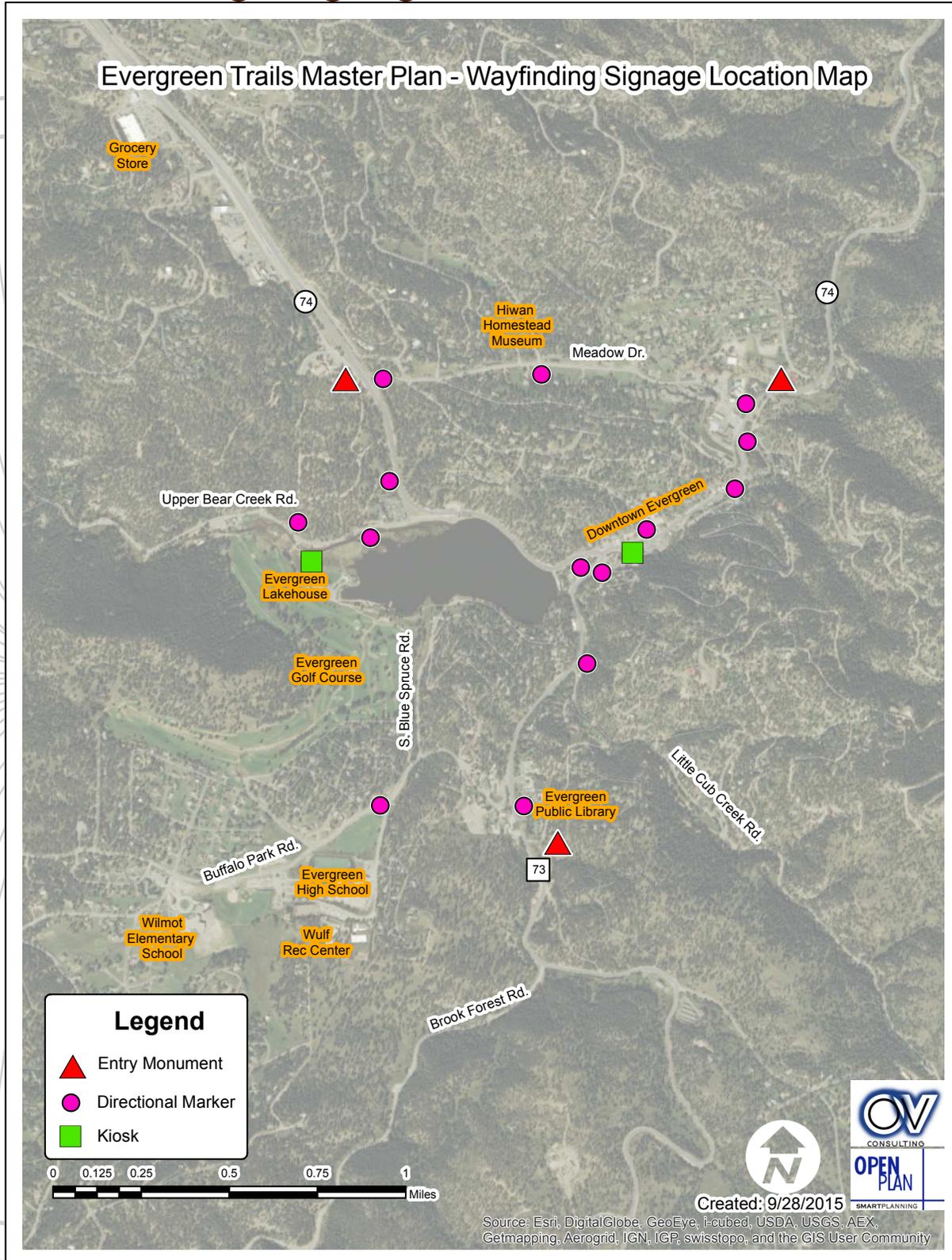
Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
Provide Additional Parking	Medium	High	TBD





Wayfinding Signage





Description of Project

The Evergreen area currently lacks comprehensive and cohesive wayfinding signage. With improvements in the trail system and multi-modal connectivity, the need for good wayfinding signage that addresses auto, bicycle, and pedestrian travel greatly increases. The map on the previous page shows a high level picture of key decision points for wayfinding signage. The design details included on the following pages are advisory only. A collective effort between all agencies that would have signs on their property needs to be performed to arrive at the final design details and locations so a consistent signage program can be implemented across all the agencies.

Project Segments for Implementation

Project Segment	Notes
New Wayfinding Signage at Various Locations	These improvements have minor construction impacts and are relatively inexpensive. A more detailed branding and design process needs to be undertaken before moving forward. Wayfinding signs should have destination distance and time information on them where applicable.

Conceptual Cost Estimate

Project Segment	Timeframe	Complexity	Planning Level Cost Estimate
New Wayfinding Signage at Various Locations	Short	Low	\$42,000





Wayfinding System

A wayfinding system is a family of signs that can establish the character and identity for an area or town. The system can provide automobiles and pedestrians with directional information so they can travel more confidently knowing they can find their destinations. The signs also increase the visibility of key destinations while giving visitors clear directions to popular scenic locations.

Signage Families

Signage families are a group of similarly designed signs that can be used for different locations and destinations. The different types are:

- Gateway
- Identification
- Informational/Directional
- Kiosk
- Markers (Trail/Pedestrian Signs)



Evergreen Parkway Gateway





Gateway



- establishes identity
- creates monument entryway and welcome
- addresses visitor audience

Identification



- identifies location
- addresses visitor audience

Informational/Directional



- continues identity
- highlights key destinations
- addresses local and visitor audiences

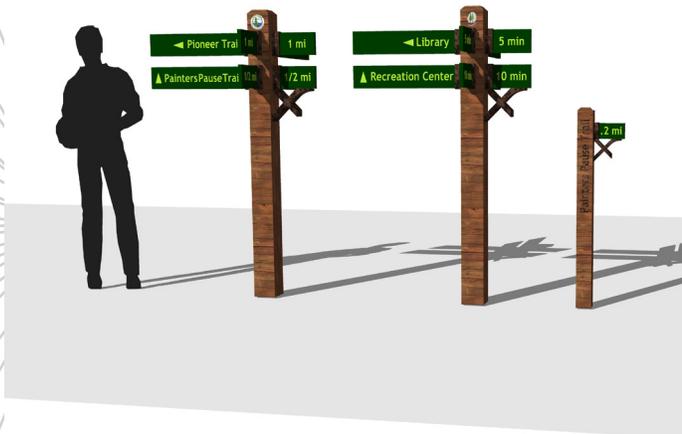


Kiosk

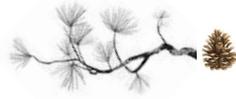


- location for town information
- addresses local and visitor audiences

Markers (Trails/Pedestrian Signs)



- identifies trail name
- provides direction & distance or time to destination
- pedestrian scale/trail users
- Other: interpretive signage around lake

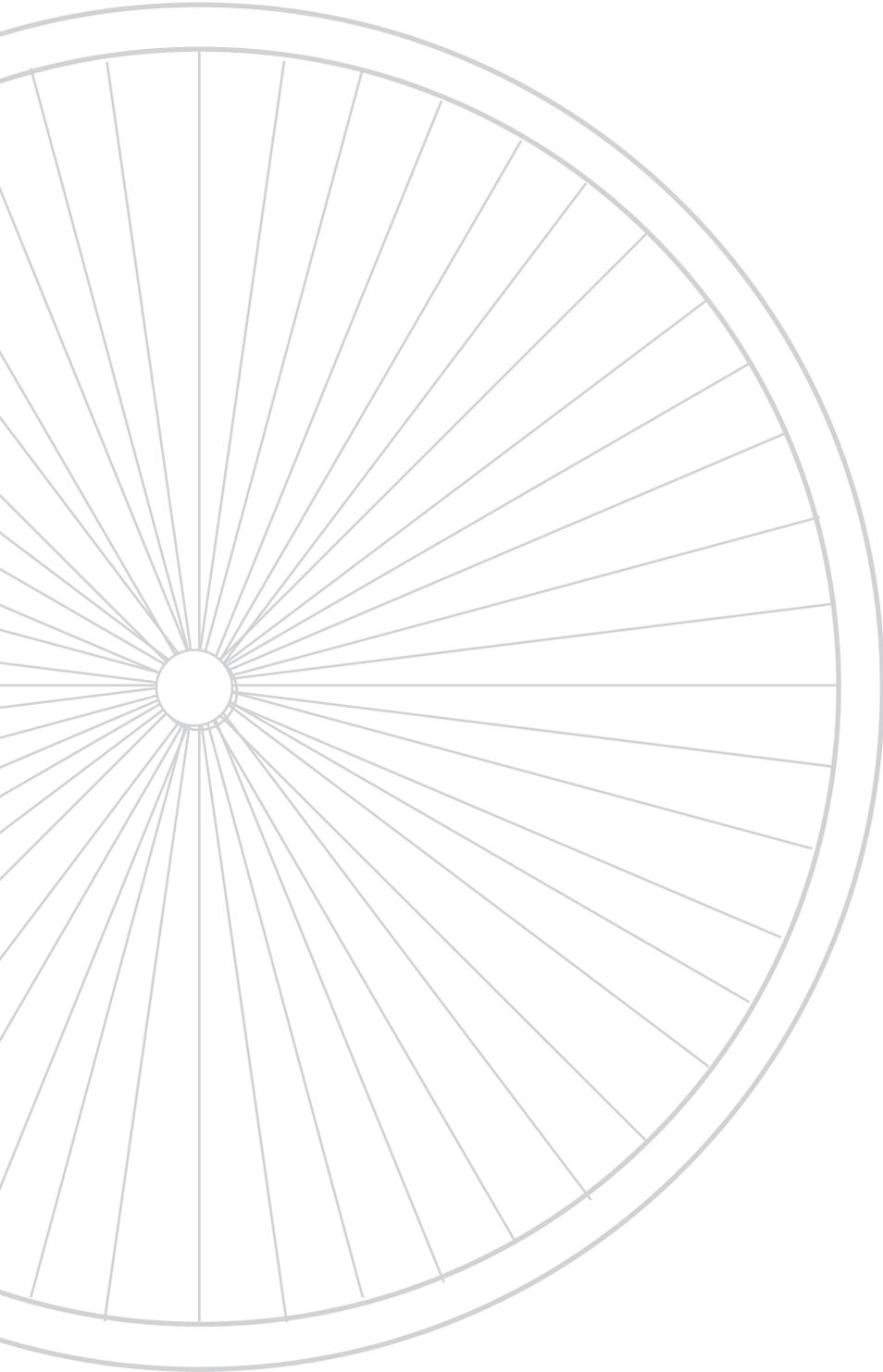


Other Recommendations

A few other key recommendations that are not related to infrastructure were developed during the planning process.

- Form an official District or governmental entity in the Downtown Evergreen Area: Evergreen is currently unincorporated and the Downtown Evergreen Economic District and the Evergreen Legacy Fund are voluntary programs with not for profit status. This arrangement means that Evergreen cannot enter into intergovernmental agreements with other agencies to partner on construction or operations/maintenance of facilities. Implementation of many of the projects described in this Plan will require inter agency cooperation and agreements that Evergreen cannot directly participate in. Being able to officially partner with other agencies would greatly improve implementation opportunities in the area.
- Complete a right-of-way survey or investigation in Downtown Evergreen: Due to the timing of improvements and land ownership in the area, there is a lack of clarity about property ownership boundaries and rights-of-way. This presents a large obstacle to implementing improvements in the area. Developing right-of-way information that can be used for planning purposes would assist in meeting the goals of this plan and help other partner agencies determine project viability and support.
- Institute regular meetings with key stakeholders about Plan projects, progress, and opportunities: Having official quarterly meetings between all the agencies and key stakeholders identified in the Plan will facilitate collaboration and coordination on prioritizing and implementing improvements in this Plan.







E. Implementation & Maintenance

The Implementation Plan organizes each of the trail segment recommendations into a table that lists the project elements and several factors affecting implementation of the specific recommendation. Implementation factors include time frame, complexity, cost estimates, and any project dependencies. The Implementation Plan provides high level guidance on where to focus implementation efforts. The Implementation Plan is not intended to be a stand-alone document; conceptual illustrations of trails, access points, way finding signage, maps, and detailed segment descriptions are found in the body of this document.





Implementation Table

Project Name	Project Segment Description	Timeframe	Complexity	Factors Affecting Implementation	Dependencies	Planning Level Cost Estimate
Lake Link Trail (Evergreen HS to Evergreen lake)	Segment 1: Existing Trail Improvements (widen, grade, and add gravel surface)	Short	Low	Denver Coordination	None	\$42,000
	Segment 2: Improved Road Crossing at Buffalo Park Road	Short	Medium	Traffic study needs to be completed	None	\$39,000
	Segment 3: New Trail Along Olive Road from Buffalo Park Road to East HS Entrance (on existing pavement with striping/markers)	Short	Low	None	Completion of Segment 2	\$14,000
	Segment 4: New 6' Wide Sidewalk along Olive Road from East HS Entrance to Wulf Rec Center	Medium	Medium	Narrow existing width, right-of-way	Completion of Segment 3	\$200,000
Buffalo Park Road Trail (Library to Wilmot Elementary)	Segment 1: New 8' Wide Soft Surface Trail from Wilmot Elementary to Olive Road	Medium	Low	right of way	None	\$57,000
	Segment 2: New 6' Wide Sidewalk from Olive Road to CR 73	Long	High	Narrow existing width, right-of-way	Completion of Lake Link Trail Segment 2	\$750,000
REAL Trail (Library to Evergreen HS and Wulf Rec Center through Cub Creek Park)	Segment 1: New 8' Wide Sidewalk Along CR 73 from Buffalo Park Road to Denver Mtn Parks Boundary	Short	Low	None	None	\$175,000
	Segment 2: New 8' Wide Soft Surface Trail on Denver Mountain Parks Property - CR 73 to Olive Road	Short	Medium	IGA with Denver, steep grades, user conflict mitigation	None	\$100,000
	Segment 3: New 8' Wide Soft Surface Trail on Denver Mountain Parks Property- Olive Road to Wulf Rec Center	Medium	Medium	IGA with Denver	Completion of Segment 2	\$90,000
Wilmot-Wulf Trail (Wulf Rec Center to Wilmot Elementary)	Segment 1: Existing Trail Improvements from Wulf Rec Center to Wilmot Elementary Back Fence (widen, grade, add gravel surface)	Short	Low	Determination of construction and maintenance responsibilities. Potential IGA required.	None	\$50,000
	Segment 2: New 8' Wide Soft Surface Trail from Wilmot Elementary Back Fence to Learning Lab location on north side of school	Short	Medium	Steep side slopes, coordination with Wilmot Elementary and Jeffco School District, ADA compatibility. Potential IGA required	Completion of Segment 1	\$175,000
CR 73 Trail (Downtown Evergreen to Library)	Segment 1: New 10' Wide Concrete Trail from Buffalo Park Road to Little Cub Creek Road	Short	High	Narrow existing width, right-of-way, coordination with Jefferson County	None	\$2,300,000
	Segment 2: New 10' Wide Concrete Trail from Little Cub Creek Road to Downtown	Short	High	Narrow existing width, right-of-way, coordination with Jefferson County, utility coordination	None	\$2,800,000



Project Name	Project Segment Description	Timeframe	Complexity	Factors Affecting Implementation	Dependencies	Planning Level Cost Estimate
Downtown Area Connections (Evergreen Pkwy to Meadow Dr)	Segment 1: Widen Existing Sidewalk to 10' Wide along South Side of SH 74 from CR 73 to Evergreen National Bank	Medium	Medium	Clarification of right-of-way and property ownership	None	\$140,000
	Segment 2: New 10' Wide Sidewalk along South Side of SH 74 from Evergreen National Bank to Lower (old) Meadow Dr	Short	Medium	Clarification of right-of-way and property ownership	None	\$380,000
	Segment 3: New Signed and Marked Trail along Lower (old) Meadow Dr from SH 74 to Independence Trail	Short	Low	Determination of roadway operational configuration	None	\$17,000
	Segment 4: Intersection Modification at Lower (old) Meadow Dr/SH 74	Short	Medium	Coordination with CDOT, determination of Lower Meadow Drive operational configuration	None	\$90,000
	Segment 5: New 10' Wide Sidewalk Along SH 74 from Lower (old) Meadow Dr to Meadow Dr.	Medium	Medium/High	Coordination with CDOT, removal/modification of guardrail	Constructed immediately following completion of Segment 6 if sidewalk located on south side of SH 74	\$265,000
	Segment 6: SH 74/Meadow Dr Intersection Improvements	Medium	Medium/High	Coordination with CDOT, completion of traffic study	Should be done before Segment 5	\$375,000
	Segment 7: Improved Pedestrian Crossings Downtown- Bulbouts with raised table crossings and activated crossing devices	Short	Medium	Coordination with CDOT	None	\$70,000
River Trail (Along Bear Creek through Downtown)	New Concrete Trail on South Side of Bear Creek from CR 73 to Driveway Just West of Lower (old) Meadow Dr Where Cozy Cleaners is Currently Located	Long	High	Property ownership, construction costs, steep side slopes	None	\$2,000,000
Meadow Drive Trail (Meadow Dr from Evergreen Pkwy to SH 74)	Segment 1: New Signing/Sharrows along Meadow Dr	Short	Low	Jefferson County coordination	None	\$30,000
	Segment 2: New 5' Wide Paved Shoulders/Bike Lanes along Meadow Dr	Medium	Medium	Available right-of-way	None	\$1,000,000
	Segment 3: New 10' Wide Concrete Trail on South Side of Meadow Dr from Douglas Park Road to SH 74	Medium	Medium	Available right-of-way/easements	Should be done in conjunction with Segment 4 and 5	\$890,000
	Segment 4: New 10' Wide Trail from Evergreen Pkwy to Douglas Park Road	Medium	Medium	IGA with Denver, CDOT coordination	Should be done in conjunction with Segment 3 and 5	\$190,000
	Segment 5: Improved Evergreen Pkwy Crossing	Medium	High	CDOT coordination	Should be done in conjunction with Segment 3 and 4	\$120,000
Additional Parking Area (North of Evergreen Lake Potentially Near Dedisse Park Entrance)	Provide Additional Parking	Medium	High	Additional public process and conceptual design, IGA with Denver, determination of maintenance responsibilities	None	TBD





Project Name	Project Segment Description	Timeframe	Complexity	Factors Affecting Implementation	Dependencies	Planning Level Cost Estimate
Bear Creek Connection (Dedisse Trail Crossing to Pioneer Trail Crossing)	Segment 1: Add Sharrows and Signing to Upper Bear Creek Road Between Dedisse Trail and Pioneer Trail Crossings	Short	Low	Jefferson County coordination	None	\$17,000
	Segment 2: Improve Crossing of Upper Bear Creek Road at Dedisse Trail and Pioneer Trail (marked crosswalks, signing, activated crossing devices)	Short	Medium	Jefferson County coordination, completion of traffic study	None	\$75,000
	Segment 3: Add 10' Wide Concrete Trail on South Side of Upper Bear Creek Road from the Dedisse Trail Crossing to the Lake House Entrance Driveway	Short	High	Jefferson County, Denver, and EPRD coordination	Flood recovery project tie in	\$590,000
North Lake Trail (North Side of Evergreen Lake from Pioneer Trail to the Dam)	Widen Existing Soft Surface Trail to 14' Wide from the Pioneer Trail to the Dam and Pave in Concrete	Long	High	Metro District, CDOT, Jefferson County Coordination. Soil stability may be a factor.	None	\$3,500,000
Wayfinding Signage (Throughout Study Area)	New Wayfinding Signage at Various Locations	Short	Low	Interagency coordination on final design, destinations, and placement	Certain sign locations will require completion of trail projects prior to implementation	\$42,000



Construction and Maintenance Information

Although specific maintenance responsibilities have not been identified at this time, general information regarding construction and maintenance has been identified in documents from the following agencies:

- Jefferson County: *Jefferson County Open Space 1999 Trail Guidelines, NCT Chapter 9 – Maintenance*
- Evergreen Parks and Recreation District: *Evergreen Parks and Recreation District 1996-2001 Master Plan*
- Denver Mountain Parks: *Denver Mountain Parks Design Guidelines 2009*
- Rails to Trails Conservancy: *Rail-Trail Maintenance and Operations*

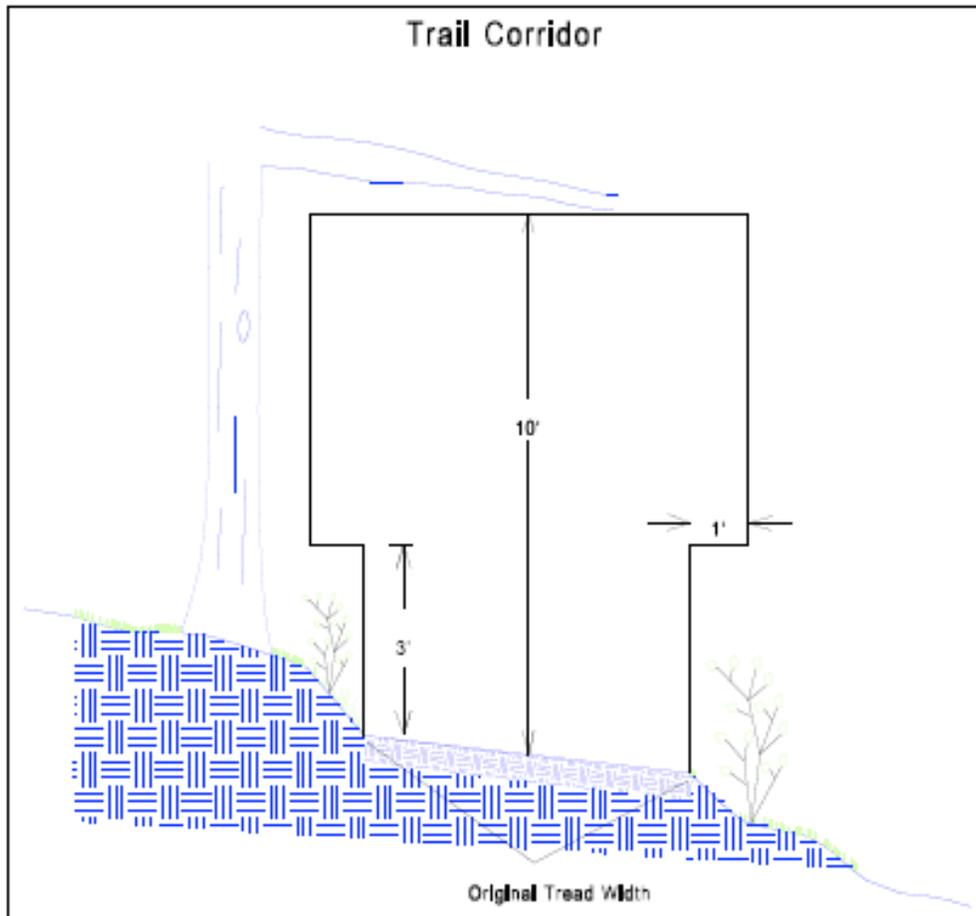
Relevant information from these documents is presented below.

Jefferson County Open Space 1999 Trail Guidelines

Trail Corridor

Standard

- Unless specifically directed otherwise, trail corridor is always cut to the keyhole standard:
- 10' high
- At trail width up to 3' above tread
- 1' beyond trail width above 3'





Corridor Clearing

Corridor clearing in new trail construction:

- The finished trail tread width is the determining factor in calculating the amount of corridor to be cleared.
- The uphill edge of the corridor will be clearly flagged every ± 40 feet before clearing begins.
- With a brush cutter remove smaller trees, brush and low vegetation.
- Cut vegetation close to the ground.
- Move all cut material (slash) out of sight from the trail.
- Selectively trim branches which extend near the corridor edge.
- Make all cuts to the branch collar.
- To preserve a balanced appearance cut evenly around the entire tree.
- Remove the entire tree if pruning removes more than $2/3$ of the tree's branches.
- Remove trees within the corridor using a chainsaw.
- Cut trees as high (3-4 ft) as safety allows, leaving a stump to use as leverage in removing the root mass.
- If necessary limb and buck trees into manageable sizes
- Move slash out of sight from the trail.
- Remove large stumps.
- Expose the roots and cut through them with a pulaski.
- Remove the stump using a come-a-long.
- Dispose of tree stumps out of sight of the trail.
- Rake loose ground material (duff) from the tread location.
- Broadcast the duff out of sight of the trail.
- Duff should not be hanging in nearby bushes.
- The trail tread will be flagged at this time
- Additional recommendations.
- Avoid removing large trees by altering trail tread alignment.
- In the process of corridor clearing do not remove corridor flagging.
- Place slash solidly and flat on the ground with the cut end facing away from the trail.
 - Maintain the trail tread flag line if moved in the clearing process.

Heavy Corridor Clearing

Heavy corridor clearing incorporates all the concepts of clearing corridor for new trail construction in the maintenance of an existing trail.

- Removal of deadfalls, leaners (widow makers), snags, and hanging branches within the corridor or posing a hazard to trail users.
- Make all cuts to the branch collar.
- If necessary limb and buck trees into manageable sizes.
- Place slash solidly and flat on the ground with the cut end facing away from the trail.
- When possible leave standing dead trees for cavity nesting.
- Mowing or brush cutting low vegetation encroaching into the trail tread.
- Broadcast cut vegetation out of sight from the trail.
- Cut vegetation should not be hanging in nearby bushes.

Tools: Folding saw, pole saw, chain saw, brush cutter, mower



Light Maintenance

Corridor clearing is an important part of regular light maintenance cycles and is concerned mainly with hazards, trimming small vegetation to keep the corridor clear and improving visibility on the trail.

- Remove hazardous obstructions such as down trees or leaners.
- Cut back brush and small branches that are encroaching into the trail corridor.
- Cut back or thin vegetation on sections of trail with low visibility to improve line-of-sight.
- Make all cuts to the branch collar.

Tools: Folding saw, hand pruners.

Trail Tread

The trail tread is a benched mineral soil surface upon which the user travels. The fill slope and cut slope are components of the trail which support the tread and blend the man made feature to the surrounding terrain.

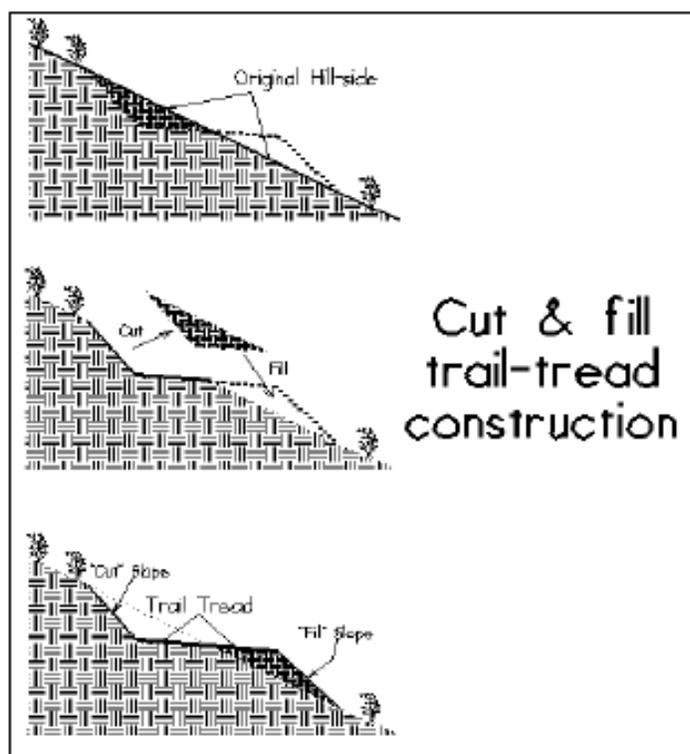
Standard

- Tread construction may be of full bench or a combination of bench and compacted fill. The type of bench must be determined before construction begins.
- Trail tread is typically constructed either 3 feet or 4 feet in width.
- Typical trail grades are 8-10%, with short lengths of steeper grades up to 25%.
- The trail tread cants outward at 5% to allow for drainage.
 - 1.8" drop on a 3 foot width
 - 2.4" drop on a 4 foot width
- The cut and fill slopes are shaped to a minimum slope of 1:1
- Rocks or live roots which are especially difficult to remove may be left so long as they do not create a hazardous condition.
- All dead roots must be removed from the trail tread.

Construction

New trail construction requires a predetermined plan and is accomplished either by machine, hand crews, or a combination of both.

- Wire flags mark the upper edge of the tread where it meets the cut slope.
- In hand construction first outline the tread location by scratching a line between 2 flags to mark the inside edge of the tread.
- Then mark and scratch a parallel line at the correct width.
- Remove duff between the two lines and broadcast it out of sight from the trail.
- Cut straight down at the flag line. The depth of this cut is determined by 2 things:
 - The steepness of side slope
 - The width of the tread including proper cant.





- During the process of tread construction clean and rake fill along the trail tread to remove vegetation.
- Remove vegetation from excavated soil and broadcast out of site from the trail.
- Avoiding damage to the adjacent natural landscape.
- Pack down excavated soils
- Pull fill slope material up onto the tread, rake clean and pack down to form the finished fill slope.
- Shape the cut slope to an even 45° angle and use the generated soil to fine tune the tread cant or shape the fill slope.
- In Sweco construction the flagged trail tread is roughed in by the machine and then cleaned up by hand. In meadow areas the Sweco may only be used for ripping.
- Manual cleanup after Sweco construction is similar to hand construction and includes the following:
 - Removal of rocks, roots and vegetation.
 - Establishment of cant.
 - Shaping of the fill slope and cut slope.

Light Maintenance

Light maintenance focuses mainly on bars and drains, but some attention should also be paid to the tread.

- Remove loose rocks from the tread.
- Any which can be removed with the tines of a McLeod.
- Filling in ruts or holes.
- Removing hazardous obstructions such as boulders, or loose roots.

Heavy Maintenance

The primary function of heavy maintenance on the tread itself is the redefinition of cant, to provide for better drainage and reduce erosion.

- The tread should slope outward at 5%.
- Cut away the berm at the outside edge of the tread and move the material to the inside edge.
- Re-establish the tread to its original width, using material from the berm and surrounding area to narrow it.

Switchbacks

Switchbacks are typically used to gain elevation in areas where it is not convenient to gain the elevation over a long traverse.

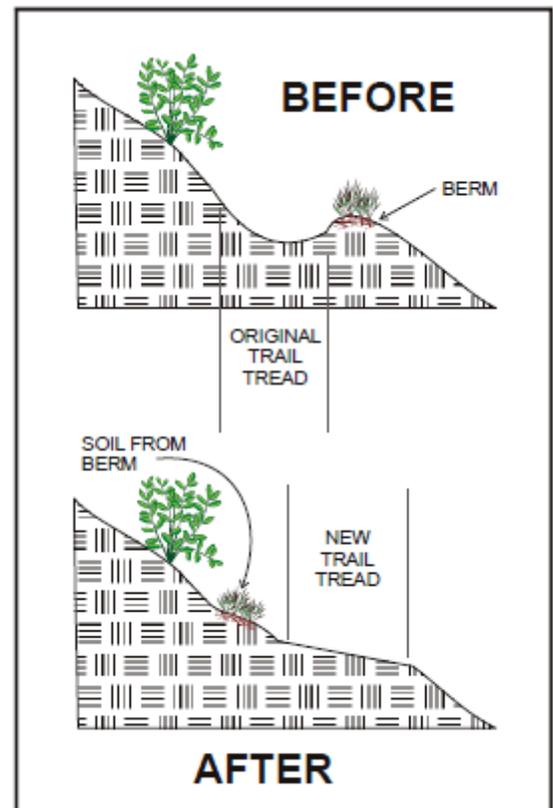
Standard

- The radius of the turn should be 1 1/2 times the width of the trail tread.
- Tread cant should begin a transition inward on the uphill leg no less than 10’ before the vertex.
- The platform (turning radius) is supported by a log and out sloped to a maximum of 5%.

Construction

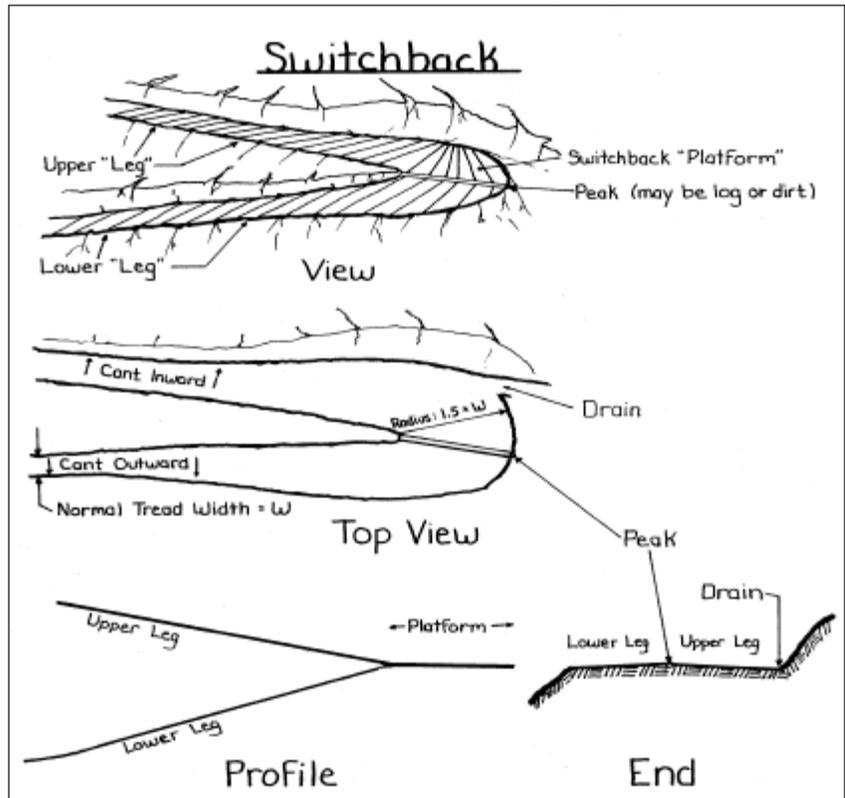
Switchback construction requires a predetermined plan and field location indicated by wire flags.

- Make sure you are clear in your mind what lines the wire flags represent. Both flag-lines represent the cut-slope (or uphill side) of the trail, but they are different in their relationship to the switchback as a structure.





- On the upper leg of the trail, the flags are on the outside of the switchback and will terminate at the outer edge of the platform area.
- On the lower leg, the flags will be on the inside of the switchback and will terminate at the vertex of the two legs.
- Recognize that the trail dimensions will change within the switchback.
- At the vertex of the switchback, the tread width will be 1.5 - 2 times the normal width. Obviously, this means the tread width must gradually increase as you approach the switchback and gradually narrow back to normal width as you exit the switchback.
- Make sure the flag-lines reflect this variation before you start to work.
- Begin construction of the upper leg exactly as in normal trail construction.
 - Scratch your lines.
 - Measure the width and scratch another line.
 - Remove Duff.
 - Dig straight down along the flag line.



Note: As the upper leg of the trail approaches the switchback, the cant will begin to reverse so that water will not flow through and around the switchback, but will now flow along the base of the cut slope and out through the outer radius of the switchback.

- Excavation of the upper flag-line will be much deeper than normal for two reasons.
- The cant is reversed, so the cut slope side of the trail must be deeper than the fill slope side.
- The deck where the upper and lower legs of the trail come together must be level with another. Thus, the upper leg will have to be dug deep enough to meet the lower leg, and to provide enough fill to raise the lower leg if necessary.
- Chances are very good that you will need to construct a rock wall along the outer edge of the lower leg of the switchback (the outside radius of the switchback itself).
- Remember that the trail is quite a bit wider here so your initial platform and the base of your wall are going to be a significant distance from the flag line. Expect it to look a little too wide initially.
- Construct the wall exactly as defined in trail construction.
- Pull your dirt down, recognizing that the upper leg will probably be dug down to solid earth across the full width of the trail and that all of the dirt generated by that excavation will probably be needed on the lower leg.
- The intersection of two legs should be a wide, nearly flat platform with a ridge running between the two and bisecting the switchback.
- The ridge is a necessary result of the opposing cants. The upper leg is canted into the cut slope at this point, whereas the lower leg will have a normal, outward cant.
- Finish off the two legs of the trail exactly as you would a typical section of trail.





Light Maintenance

- Re-establish the drain depth and length
- Recover cant into the drain to 5%, beginning no less 10’ up trail.
- Use dirt excavated from the drain to define the platform out slope.
- Fix loose rocks in existing rock walls.
- Place logs or rocks to prevent short cutting.

Heavy Maintenance

Switchbacks are given to heavy erosion from use and need to be rebuilt from time to time. Heavy maintenance will bring a switchback to like new condition and may include all or some of the following:

- Top leg reconstruction of in slope cant and drain.
- Replacement of logs on the platform.
- Reconstruction of lower leg including cant into platform.
- Rebuild rock walls or addition of new walls.
- Shortcut re vegetation

Water bars

A water bar is a drainage device which directs water off and away from the trail.

Standard

- The bar is built at a 45 degree angle to trail.
- Soils to be fully compacted
- The cant into the drain, or pan, is at a continual 10% grade and begins at least 5’ up trail.
- The drain is 6” deep and 10” wide, or the width of a McLeod
- The drain is long enough to keep water from flowing back onto the trail.

Construction

Consider the following when locating a new water bar:

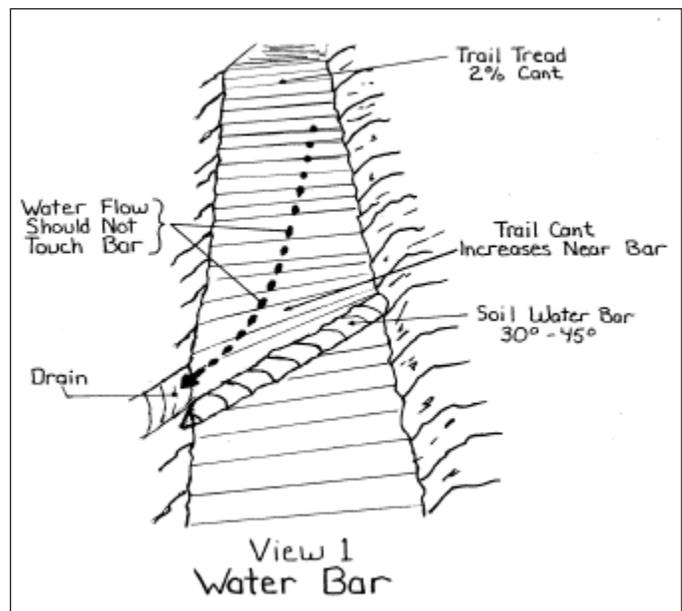
- Trail grade.
- Natural drainage areas.
- Surrounding landscape.
- Apparent erosion patterns.

Light Maintenance

- Restore the drain to proper depth, width, and length
- If the drain is much deeper than it needs to be, place a rock with its top surface at a 6” depth and back fill the drain to the rock, creating the standard 6” depth.
- If the drain is too long shorten it with rock or fill.
- Use all dirt recovered from the drain to help re-establish cant leading into it, and to reform and build up the bar, if necessary.
- Tamp loose dirt.

Heavy Maintenance

- Reconstruction of a failed water bar to standard.
- Addition of a log to an existing soil bar.





Log Bars

Log bars are reinforced soil bars.

Standard (in addition to standards for soil bar)

- The log lays at a slant equaling the cant of the tread.
- The log extends beyond the trail width by 6" on either end.
- The log is secured by two pieces of 18" pieces of rebar located outside the width of the tread.
- The downhill side of the log lays flush with the trail tread.
- Soil slants away from the log into the drain, so that water doesn't reach the log.

Construction

Log water bars are used most often to stabilize, not to replace, existing water bars which have consistently failed.

- Drill holes for rebar before leaving the shop or, if the log length may need to be adjusted on site, take a folding saw and gas drill or brace and bit, to make adjustments and drill holes.
- Make a trench for the log at the high point in the bar.
- Secure the log with 1/2" by 18' rebar.
- Restore or cut the drain, smooth the cant into it, and tamp any loose soil.

Light Maintenance

- Restore the drain to proper depth, width, and length
- If the drain is much deeper than it needs to be, place a rock with its top surface at a 6" depth and back fill the drain to the rock, creating the standard 6" depth.
- If the drain is too long shorten it with rock or fill.
- Repositioning soil so it slants away from the log into the drain, so that water doesn't reach the log.
- Use all dirt recovered from the drain to help re-establish cant leading into it, and to reform and build up the bar, if necessary.
 - Tamp loose dirt.

Heavy Maintenance

- Replacement of rotten, splintered or grooved logs
- Restoration to standards.

Rubber Deflectors

Used in relatively flat, open areas or where short cutting can easily take place. The greater the angle, the more difficult it is for some trail users, especially bicyclists, to roll over.

Standard

- Rubber height is no more than 3" above tread.
- Deflectors lay at between 20 and 45 degrees to the tread.
- Are not secured with rebar.
- Extends beyond the trail width by 6" on either end.
- The drain is long enough to not allow water back onto the trail.
- The top of the wood base is equal to the tread height.

Construction

Deflectors are a 1/2" thick piece of rubber sandwiched by 2"x 4" of wood and typically 8 to 10 feet in length

- Dig a trench for the deflector.
- Place so finished grade will be at the height of the wood base.



- Back fill and tamp soil to secure the deflector.
- Restore or cut the drain, smooth the cant into it, and tamp any loose soil.

Light Maintenance

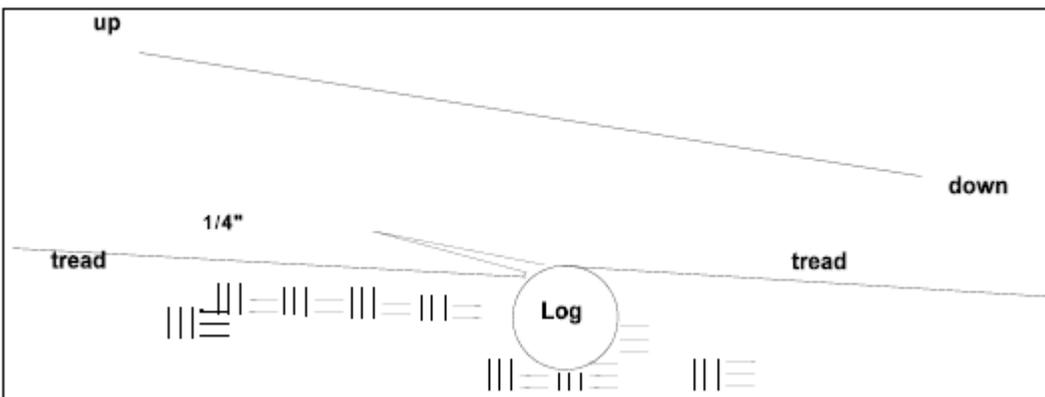
- Clear dirt from the drain, but not below the height of the wood base.
- Dig in rocks to prevent short cutting.
- Add and tamp dirt to the height of the wood base

Heavy Maintenance

- Replace deflector when rubber is laying flat on tread.
- Consider using a log instead.
- Resetting a deflector when:
 - Installed at the incorrect angle.
 - Installed at incorrect height.

Check Dams

Check dams slow water where it can't be drained from the trail and retain soil to maintain and, ideally, to raise the trail tread



Standard

- Check dams are installed where water cannot be drained from the trail tread.
- The log lays perpendicular to the trail, and level rather than slanted.
- The log exceeds the width by 6" on each end.
- Only 1/4" of the log shows above tread on the up trail side, and is flush with the tread on the down trail side.
- The log is secured by two 18" lengths of rebar placed outside the tread width.

Construction

- Install a log to the above standard.
- If possible, choose a location for the check dam where there will be natural obstacles at either end (large rocks, bushes), to prevent trail users from going around it. Otherwise, secure large rocks, by partially burying them, at either end of the log.

Light Maintenance

- Many check dams need no attention.
- If necessary, scrape dirt from the up trail side of the dam to use as fill in on the down trail side.
- If the tread is widening around the dam dig in rocks at either end of the log to redefine the edges and keep traffic on the trail.



Heavy Maintenance

- Reset existing logs to standard.
- Replacement of rotten, splintered or grooved logs.

Rock Walls

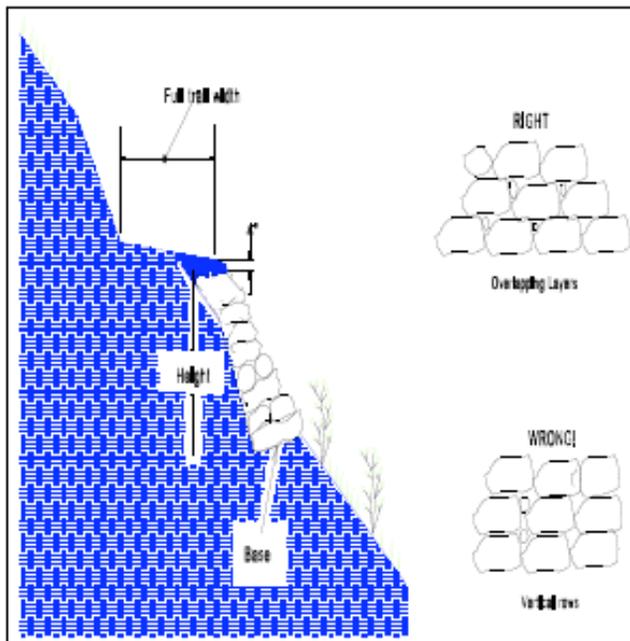
Rock walls prevent washouts and can be used to recover washed out sections of trail, define and reinforce switchbacks, and raise trail tread over culverts. Rocks used are usually found on site.

Standard

- The top of the wall sits 4" below trail tread.
- The top rock is not considered when calculating tread width.
- The wall leans into the slope. (See diagram)
- Joints between rocks are overlapped by rocks of each succeeding layer.
- No rock sticks out from the wall past the layer below it.
- Even a single layer constitutes a rock wall and should adhere to standards.

Construction

- Cut a solid shelf, for the wall's base, slanting inward so that the wall will lean into the bank.
- Find large, flat rocks, if possible, to use as base rocks. Base rocks should not be shimmed; they should sit solidly on their shelf without extra support.
- Make the top of the base, and every subsequent layer, as flat and even as possible, to aid in building a stable layer on top of it. Shims may be used to stabilize rocks in median layers.
- In each successive layer, place rocks to overlap joints of rocks in the previous layer, staggering them as in a brick wall.
- Back fill each layer with rock and dirt before building on it.
- Each layer should rest entirely on the last, with no rocks overhanging.
- Use rock faces which slope back or are flat, and try to match faces with within a layer, and to fit them tightly together.
- Use large, flat cap rocks. Do not use shims on cap rocks; like base rocks, they should be stable without extra supports.



Light Maintenance

- Repair upper layers if they are failing.
- If necessary repair tread cant so drainage can take place.

Heavy Maintenance

- Failing rock walls need to be rebuilt starting from the lowest point of failure.

Steps

Steps are recommended for any short stretches when slopes approach 25%. The use of steps make especially steep sections of trail passable and maintainable.



Standards

- Steps are made from treated dimensional timbers or rock.
- Steps should have 18” of run for every 6” of rise.
- Steps are canted to allow for drainage.
- The first and last step sit perpendicular to the tread
- Steps in a radius of turn should be evenly divided through the run.
- Rise and run should be consistent throughout.

Wooden Steps

Construction

- Determine the number of steps needed by calculating the rise and run.
- Bury initial runners level with the tread and secure them with rebar.
- Build off of the runners, securing further runners with rebar where they sit on soil, and with spikes where they sit on wood.
- Spike the cross timbers to the runners. Follow the above standard for rise and run.
- Build up from a solid bench on the downhill side, if necessary; build into the bank on the uphill side, if possible.

Maintenance

- Back fill step if water puddles behind it.
- Replace worn or rotten wood.

Rock Steps

Construction

- Set the initial step--or foundation--level with the tread.
- Make each step twice the length of its designated run, to provide a solid base for the next step OR secure each step in the soil so that the next step can be securely set in behind it.
- From foundation up, every rock must be completely stable.
- Foundation rocks and final step should sit solidly without shims.
- Shims should only be used between solid surfaces; rocks cannot be shimmed against soil.
- Build up from a solid bench on the downhill side, if necessary; build into the bank on the uphill side, if possible.

Maintenance

- Reset loose rocks.
- Back fill step if water puddles behind it.

Culverts

Where the trail goes through or over drainages or creeks with heavy water flow a culvert needs to be installed to prevent the trail from washing out. The size of the culvert depends on the size of the drainage.

Standard

- Metal or PVC culverts may be used
- The ends will have factory specific flares or be rocked in.

Construction

- Place culvert in at an angle so that water will flow continually.
- Place rip-rap immediately in front of the mouth of the culvert.





- To stabilize the culvert, place rock and fill along the sides of the pipe and pack down.
- Build a rock wall along both sides of the culvert to stabilize the culvert and to make a base for the trail tread.
- Cross the top of the culvert with the rock wall. No part of the culvert should be able to be seen.
- The tread should cant to the rock wall and allow for correct drainage to take place.
- Culvert should be covered by at least 6" of tread suitable material.

Light Maintenance

- Clear entrance and exit of obstructions.
- Repair top layers of rock walls.
- **Heavy Maintenance**
- Reset culvert so water will flow continually.
- Rebuild rock walls from lowest failing point.
- Add fill to maintain 6" of coverage
- Cant tread to rock walls

Crusher Fine Trails

Crusher Fine Trails are used primarily around picnic areas, trailheads and in flat areas where drainage is difficult. The main advantage of crusher fine trails is their solid and even surface plus the ability to soak up moisture.

Standard

- 3/8" granite sand.
- Depth of 4"-6".
- Excavation base lined with geotextile.

Construction

- Excavate a 4"-6" deep trench and the desired width.
- Widths or 6 feet or greater allow use of the skid steer.
- Square and stabilizing the edges.
- Roll out and staple down geotextile.
- Fill in with crusher fines approximately 2" above the actual grade of the trail.
- Rake the crusher fine so that there is a slight crown in the center.
- Spray crusher fines with water and compact the material with roller.
- Grade adjacent areas to drain away from the trail
- Re-vegetate disturbed areas.

Light Maintenance

- Cover visible fabric with crusher.
- Cut away exposed fabric which poses a hazard

Heavy Maintenance

- Add crusher to areas where puddling occurs.
 - Wet and roll
- Remove encroaching vegetation along edges.
 - Mowing
 - Herbicide treatment





Turnpikes

Turnpikes are placed in wet meadow areas where drainage is nonexistent. Turnpikes are basically just elevated crusher fine trails. The design allows for water to freely move through the rip-rap filled base.

Standard

- 3/8" granite sand
- 4"-6" in depth
- Minimum tread width of 36".
- The width of the tread is measured from the inside of the runner
- Built from 6"x 6" wolmanized timbers.
- Crib filled with VL rip-rap
- Geotextile barrier between rip-rap and 3/8" crusher fines.

Construction

- Risers are to be secured with 1/2" rebar into the ground
- Runners are secured to the risers with 10" spikes.
- The rip-rap should not be more than 1" above the runners.
- The fabric should lay loosely on the rip-rap, nailed to the runners at least 2" below the top of the runner.
- The fabric needs to be wrapped around the slats before nailing to the runner.
- All runners should fit snugly together without any gaps.
- Crusher fine should be crowned in the center slightly higher than the top of the runners.
- Wet down the crusher fine and compact the surface with the use of a McLeod

Light Maintenance

- Cover visible fabric with crusher.
- Cut away exposed fabric which poses a hazard

Heavy Maintenance

- Repair loose or worn out timbers.
- Add crusher to areas where puddling occurs.
 - Wet and compact.
- Remove encroaching vegetation
 - Herbicide treatment.

Heavy Trail Maintenance

Heavy maintenance includes tasks on existing trail that need more attention, such as full reconstruction or new installation of water bars and check dams, re-establishment of cant, heavy corridor clearing, and rock work. Heavy maintenance projects are generated from Trailog records and completed in order of priority. This type of project requires preplanning, and usually involves the use of specialized equipment, such as dozers, rock drills, or blasting.

Process

The crew mobilizes any equipment or materials to the project site. The crew has a lead person which knows the project plan in detail and makes the daily field decisions, i.e. who does what, who goes where, etc. Depending on the scope of the project the time required can range from 1 day to ± 1 month and utilize work crews of ± 100 . Heavy Maintenance project locations may require closure for short periods of time due to safety concerns.



Bikeways

Bikeways are a general term used to describe different types of hard surface trails, i.e. concrete and asphalt. Although each bikeway is unique we will categorize them into two kinds:

- 1) Bike lanes- corridors (usually 4'-6' wide shoulders) on existing roads identified by solid white traffic striping and bicycle stencils. Bike lanes include 52nd, 10th, Kendall and Ulysses.
- 2) Bike paths- these are separated from the road in various ways. The corridor is often much wider than the lane itself and may include small structures such as kiosks, and vegetation duties.

Bikeway Inspection

Inspections are done of the entire trail system to monitor trail conditions and to plan future maintenance or construction projects.

Standard

- System wide inspections to be done twice a month.
- Verify existing trailog task list, inspect for hazards, vandalism, signage, vegetation, tread condition, icons and crosswalks, structures, and litter.
- Address simple maintenance during the inspection.
- Add new tasks to trailog.

Process

Every other week an inspection of the bikeway system should be done, checking for problems with signage, vegetation, painting, structures, tread and litter. This will be accomplished by driving on the bikeway with hazard lights on, going at or below the posted speed limit (usually 10 mph). The individual will have with them a sign manual, bikeway inspection form, and a compliment of tools to do any light maintenance which can be done without hindering the process of getting through the entire system in one day. Once the inspection is done, the form needs to be turned in just as a trail log form would be in order for the necessary work objectives to take place.

Bikeway Maintenance

1) Signage- Our goal is to have within the bikeway system a consistent means of signing that will identify the path as Open Spaces' and to be able to have a uniform means of identifying hazards and/or giving information. By using existing documents such as M.U.T.C.D. our bikeways will also be in accordance with other agencies, and by creating a sign plan within Open Space we will be able to improve the method in which we install, inspect and replace signs.

a) installation- after completion of the standards all signs needed on the bikeways need to be installed in accordance to those standards so that an updated sign check off sheet can be created. This will become the form that will be used on all further inspections.

b) inspection- done bimonthly as mentioned before, the individual will go through the system with the check sheet noting any missing or damaged signs. The person doing the inspection should have with them a rock bar and post hole digger so that if they run across any loose signs or signs out of the ground, they are able to repair them on the spot.

c) replacement- will be done on bikeway maintenance days which should also be bi-monthly. If the sign belongs to an agency other than Open Space we must keep in contact with them to make sure the sign gets in. If not having the sign in constitutes a hazard it should be.



2) Signage- All signs that are put in need to be in-line with other agency regulations and with other bikeways in our system. Standards need to be developed regarding height, distance from intersection, distance from path, size, style, depth of installation etc. in order to provide consistency and predictability which leads to better safety.

3) Vegetation- The two areas that should be looked at when doing inspections are ground level (including grasses and weeds), and overhanging limbs and branches.

a) ground level- report excessive height (over 6”), encroachment onto path and/or material growing up through the path. Also note if there is buildup of dead vegetation on the path. The inspector should have with them a push broom and square shovel to take care of any minor problems.

b) over hanging- just as in natural surface trails we want to have a 10’ high corridor. Anything within that needs to be reported. A pole saw, folding saw and hand pruners should be taken along to cut any branches that may be impeding. Judgement should be used when trimming trees, bushes, etc., which could possibly be privately owned.

4) Bike lane Painting- All crosswalks and bike stencils at intersections need to be checked for signs of wear and to make sure they are present. Peeling or faded paint should be checked on the sheet.

5) Trail Tread- Concrete and asphalt pose different problems and both have their pros and cons. When doing an inspection cracks, potholes, separation, uneven settling (causing a tripping hazard) and any other defects along with their location need to be noted. . Sections of concrete need to be replaced when the cracks exceed 1/2” or more or constitute a tripping. Potholes of any size need to be filled and excessive gravel or debris needs to be swept off. Your best estimation on the materials that will be needed to fix the problem is also necessary.

6) Structures- On several of our bikeways there are kiosks, fences, trash barrels, picnic tables and park benches. These need to be inspected for damage resulting from vandalism, weather and age.

a) Fences- The only structure on a bikeway that the trails department is responsible for is fences. Park operations section needs to be notified if trash barrels, park benches, or picnic tables are in need of repair, and construction section is responsible for repairs to any of the kiosks.

7) Trash and Litter- Trash bag(s) should be taken during inspections for small areas of litter pick-up. Extensive amounts of trash within the bikeway corridor and/or full or overflowing trash receptacles need to be addressed. Whatever cannot be taken care of during the inspection should be reported to Park Operations for the scheduling of a special trash run.



General Maintenance Requirements

Frequency of Maintenance

Most trail segments need maintenance about three times per year.

Prior to Memorial Day - This may be the maintenance period that involves the most work. The objective is to get the trail ready for the spring hikers. In addition to general trail cleanup, some of the more important tasks are to:

- Remove tree limbs and fallen trees from the trail, and prune encroaching limbs as needed.
- Repaint or replace the blazes if they are faded or missing. (Be sure that they are not obscured by vegetation consider growth that occurs before the next maintenance).
- Make sure that all signs and trail emblems are in place and well maintained.
- Inspect for water in the trail and take corrective action.
- Carefully inspect all bridges—immediate safety needs should be met and tasks which are too large for immediate action noted.
- Maintain all trailheads, campsites, and other support structures.
- Keep a list of larger jobs or those that require different tools that will require attention at some other time.
- Schedule time for major projects that were identified—round up tools and helpers.
- Pick up litter.

Mid-Summer - Early July is a good time to take care of annual growth so that the trail is kept clear and relatively easy to hike. The hiker should not be assaulted by weeds and briars. Some of the key jobs for mid-summer are to:

- Mow or cut all weeds, brambles, briars, and high grass encroaching on the trail. On sections of the trail that pass through fields or other places receiving direct sunlight, mowing may have to be done on a more frequent basis—perhaps monthly throughout the summer. Brambles and briars may need to be grubbed out by the roots to prevent rapid regrowth.
- Prune all brush and overhanging limbs that have grown into the trail clearing—all blazes and signs must be visible.
- Complete the larger jobs that could not be accomplished the previous spring.
- Maintain and improve water bars, drainage ditches, and all trail structures.
- Be alert for noxious or exotic plant species—remove, kill, or inventory them for future vegetative management projects.
- Pick up litter.

Fall - Fall maintenance is geared toward preparing the trail for the winter months. This is a time to:

- Finish any uncompleted jobs and recheck blazes and signs—replace and repair as necessary.
- Pick up litter.

Maintenance Activities

When assessing trail maintenance needs, the following groups of general maintenance categories should be considered. Some of the more common maintenance activities required to remedy deficiencies identified during the annual trail evaluation could include:





Trail Maintenance-Vegetation:

- Brushing/clearing areas
- Remove fallen trees/branches
- Hazard tree removal
- Slope revegetation
- Backslope grooming
- Vista maintenance
- Poison Ivy removal (herbicide)
- Sign Maintenance:
- Sign repair/rehabilitation
- Sign replacement
- Blaze repainting and maintenance
- Cairn repair
- Barricade/closure device repair
- Drainage Maintenance:
- Cleaning/repairing structures
- Culverts
- Water bars
- Cowetta dips
- Drainage ditches
- Replacement of existing structures
- Culverts/underdrains
- Install additional drainage structures
- Water bars
- Culverts
- Grade dips

Structure Maintenance:

- Bridge repair
- Cribbing/retaining wall repair
- Barrier/guardrail repair
- Steps/perron repair
- Fence/gate/stile repair
- Shelter repair
- Tread Maintenance:
- Grading tread
- Slough and slide removal
- Slump repair
- Filling erosion ditches
- Grubbing rocks/ roots/stumps
- Spot surfacing
- Turnpike section repair
- Surface replacement (similar material)
- Surface repair
- Remove loose rocks
- Litter Clean-up:
- Old dumps near trail
- Current discarded litter

Trail Maintenance-Vegetation: All side branches extending into the trail clearing should be cut flush with the parent branch or stem, leaving no stubs. This is safer, lasts longer, and also allows for the wound to heal naturally.

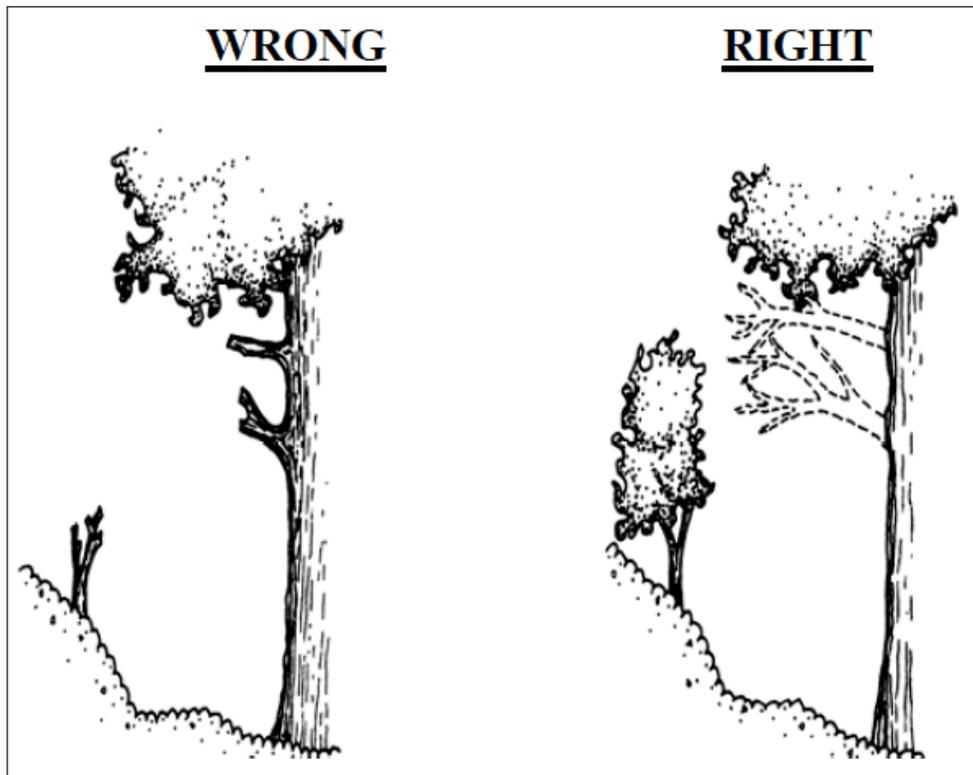
Small trees and shrubs within the tread should be grubbed out to prevent tripping. Holes should be filled and compacted.

Trees and brush outside the tread (but inside the trail clearing) should be cut as close to the ground as possible, leaving no sharp pointed stumps or stems. Consideration may be given (especially on exotic species) to treating these cut stumps with herbicide —after obtaining proper approval.

Unless prohibited because of ROS setting, using power mowers in open grassy areas or power brush saws in brushy areas should be considered.

Fallen branches and trees should be removed except for a few large trees/logs near access points (see maintenance tips). On larger logs, remove a section only the width of the tread to further restrict unwanted use.

In high use sections of the trail or near camping areas, dead or dying trees that have a possibility of falling across the trail or camping area should be removed. In Primitive ROS areas, only those trees that may be a serious hazard to users should be removed.



Summary of Standards from Evergreen Parks and Recreation District 1996-2001 Master Plan

Types of Trails (defined)

Regional Trails

The District depends on other agencies to establish and maintain regional trails and will maintain liaison with these agencies to recommend design, routing, priorities. Information on regional trails can be obtained from Jefferson County Open Space and the Arapahoe National Forest District.

Community Trails

The District’s role is to negotiation the establishment of trail corridors and to assist in arranging or providing funding for trail construction and maintenance. The District works with JeffCo Planning Staff to place trail corridors in new county plats. The District may provide limited funding for development, construction, and maintenance of a community trail network, the bulk of whose support is expected to come from other agencies and private sources.

Neighborhood Trails

Neighborhood trails are private trails for exclusive use of specific neighborhoods. Some neighborhood trials are legally established by land plats, as in Soda Creek, buy more are informally established by years of local use. With a few exceptions, little is known about these trails. Unofficial neighborhood trials are often in jeopardy because they cross private property. The District will assist in acquiring legal easements for these trials and linking them to the public trial system. If these are to be private use trails, construction and maintenance costs will be borne by the neighborhoods using them. The District will provide technical assistance for construction and maintenance and may also work with neighborhoods to write grants. Trail priorities and standards are set by the neighborhoods concerned.





Summary of Maintenance Standards from Denver Mountain Parks Design Guidelines 2009

Section 8: Shelters and Structures

g. Bridges and Crossings

Original bridges and crossings share many of the rustic naturalistic characteristics of the Mountain Parks system such as materials, craftsmanship, and mass and scale.

1. Restore and rehabilitate historically and architecturally significant bridges and crossings for their original use.
2. Design new bridges and crossings to share the same rustic aesthetic as the other bridges in the system such as the Dedisse Bridge.
3. Design new park structures to be products of their time while also being compatible in material, mass, form, scale and detail to the original bridges in the Mountain Parks system.

Section 10: Trails and Trailheads

b. Rehabilitate Original Hiking Trails

Trails, hiking trails in particular, were part of the original construction of the Mountain Parks that began in 1916 and many others were built by the Civilian Conservation Corps in the 1930s. These trails share similar characteristics including the use of indigenous materials, high quality craftsmanship, alignments integrated with natural settings, and routes accessing scenic overlooks.

1. Restore original materials and features such as stone steps and walls and native soil surfacing before replacing with replacing with new materials.
2. Retain alignments of the original hiking trails. Where this isn't possible due to erosion or other functional reasons, realign the trail as close to its original alignment as possible.

c. Hiking Trails

Hiking only trails are primarily located in semi-primitive to primitive areas of the Mountain Parks and are usually accessed at a parking area or within one of the parks. These trails provide a trail experience that ranges in difficulty from easy to moderate to difficult.

1. Where original trails exist, follow historic trail alignments when adding new trails.
 - For example, follow the historic Beaver Creek Wagon Trail in the construction of a new trail in Fillius Park.
2. Provide a native soil trail surface with a minimum tread width of eighteen (18) inches, a clearing width of twelve (12) inches on either side of the trail, and a minimum clearing height of eight feet.
3. Integrate the trail with the natural topography and vegetation. Use stone walls, edges, and back sloping to retain grade.
4. Allow for a maximum sustained slope of 10% to 15%, and a maximum slope of 20% to 30% for distances of 100 feet or less.
5. Allow for a maximum cross slope of 3% or less.



d. Multiple Use Trails

Multiple use trails provide a trail experience for mountain biking, hiking and equestrian users.

1. Provide multiple use trails where identified in the system-wide trails master plan to provide regional trail connections. Refer to Chapter 3: Natural, Recreation and Cultural Resource Recommendations in the Denver Mountain Parks Master Plan.
2. Use the more stringent trail construction requirements where multiple use trails connect with adjacent open space properties such as at boundaries with Jefferson County Open Space.
3. Provide a native soil trail surface with a minimum width of 18-24 inches, a clearing width of 12 inches on either side of the trail, and a minimum clearing height of 8 feet.
4. Integrate the trail with the natural topography and vegetation. Use stone walls, edges, and back sloping to retain grade.
5. Allow for a maximum sustained slope of 10% to 15%, and a maximum slope of between 20% to 30% for distances of 100 feet or less.
6. Allow for a maximum cross slope of 8% or less.

e. Accessible Trails

Accessible trails allow all persons, regardless of age, culture or ability to enjoy the mountain park experience. The following guidelines reflect the standards adapted by the:

1. Provide accessible trails where high volumes and a wide diversity of users exist, and where the mountain experience is readily adapted to the recognized standards for accessibility (ABAAS).
2. Provide accessible trails in areas of the Mountain Parks with unique resource value such as Red Rocks Park, Lookout Mountain Park and Buffalo Bills Grave and Museum, and Dedisse Park, and at Picnic Parks such as Turkey Creek Park that are already accessible.
3. Provide a stabilized crusher fines trail surface that meets ABAAS standards.
 - Provide a minimum tread width of 36 inches and a maximum of 12 feet in higher use areas, and a tread width of 28 inches in semi-primitive areas.
 - Provide a clearing width of 12 inches on either side of the trail, and a clearing height of eight (8) feet.
4. Allow for a maximum sustained slope of 8% in higher use areas and of 12% in semi-primitive areas. Provide a maximum slope of 10% for distances of 50 feet or less.
5. Allow for a maximum cross slope of 5% or less.
6. Provide for passing spaces and rest areas that are a minimum of 60 inches by 60 inches in size.
 - Provide passing spaces at trailheads, where trails converge, and at intervals of less than 600 feet for passing spaces and less than 1200 feet for rest areas.
 - Integrate passing spaces and rest areas with the natural setting.





Summary of Maintenance Ownership Standards and Cost Responsibility from Rail–Trail Maintenance and Operation

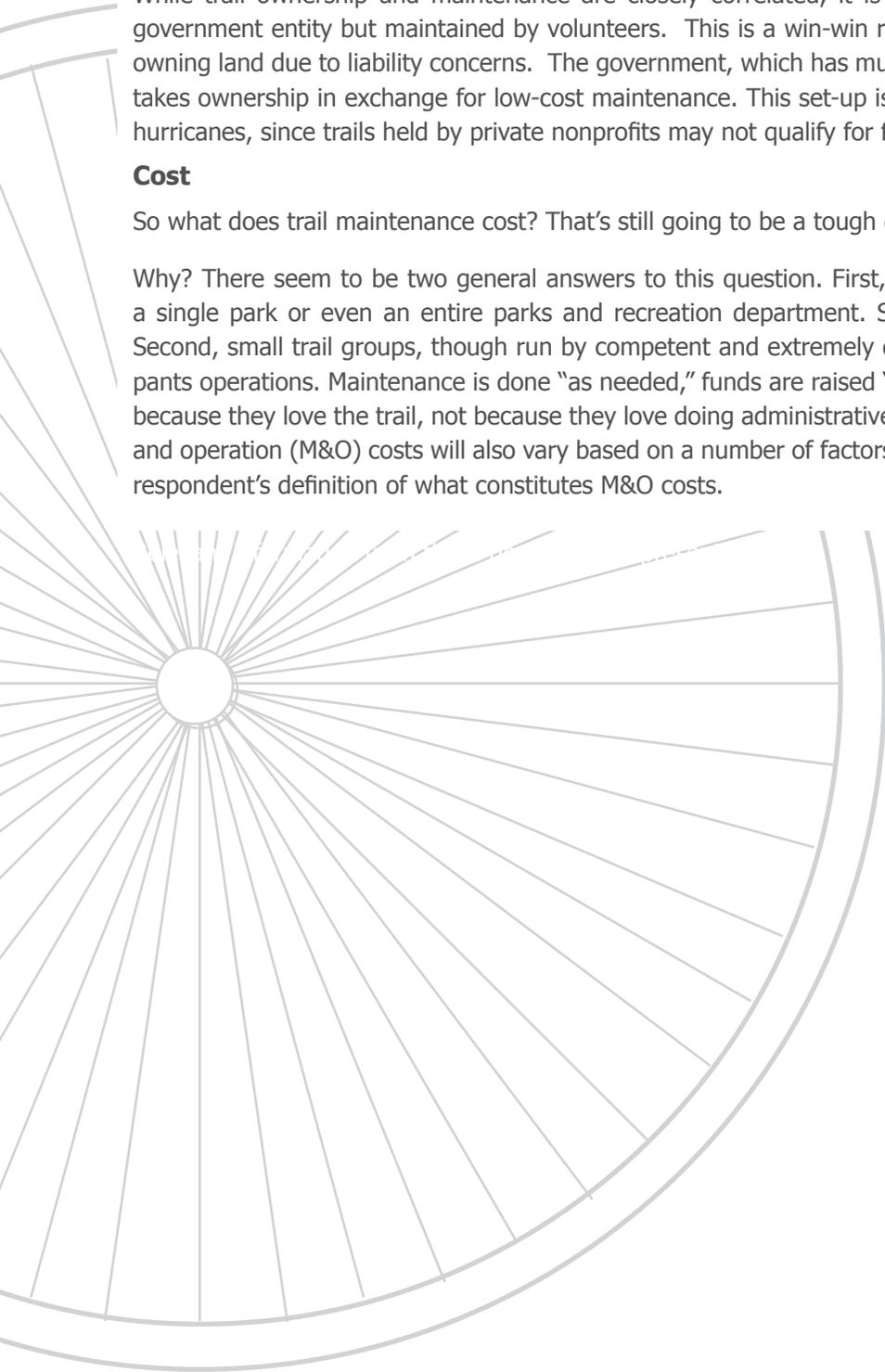
Administrative and Financial Maintenance

While trail ownership and maintenance are closely correlated, it is also common for a trail to be owned by a government entity but maintained by volunteers. This is a win-win relationship. Most nonprofit trail groups avoid owning land due to liability concerns. The government, which has much more wherewithal to address legal issues, takes ownership in exchange for low-cost maintenance. This set-up is also beneficial in disaster situations such as hurricanes, since trails held by private nonprofits may not qualify for federal disaster aid.

Cost

So what does trail maintenance cost? That’s still going to be a tough question to answer.

Why? There seem to be two general answers to this question. First, the trail may be part of a larger budget for a single park or even an entire parks and recreation department. Specific costs for the trail aren’t broken out. Second, small trail groups, though run by competent and extremely dedicated volunteers, tend to be seat-of-the-pants operations. Maintenance is done “as needed,” funds are raised “as needed,” and the people are volunteering because they love the trail, not because they love doing administrative tasks like budgeting. Reported maintenance and operation (M&O) costs will also vary based on a number of factors including the use of paid staff as well as the respondent’s definition of what constitutes M&O costs.





*Appendix A. Jefferson
County Open Space Trail Maps*

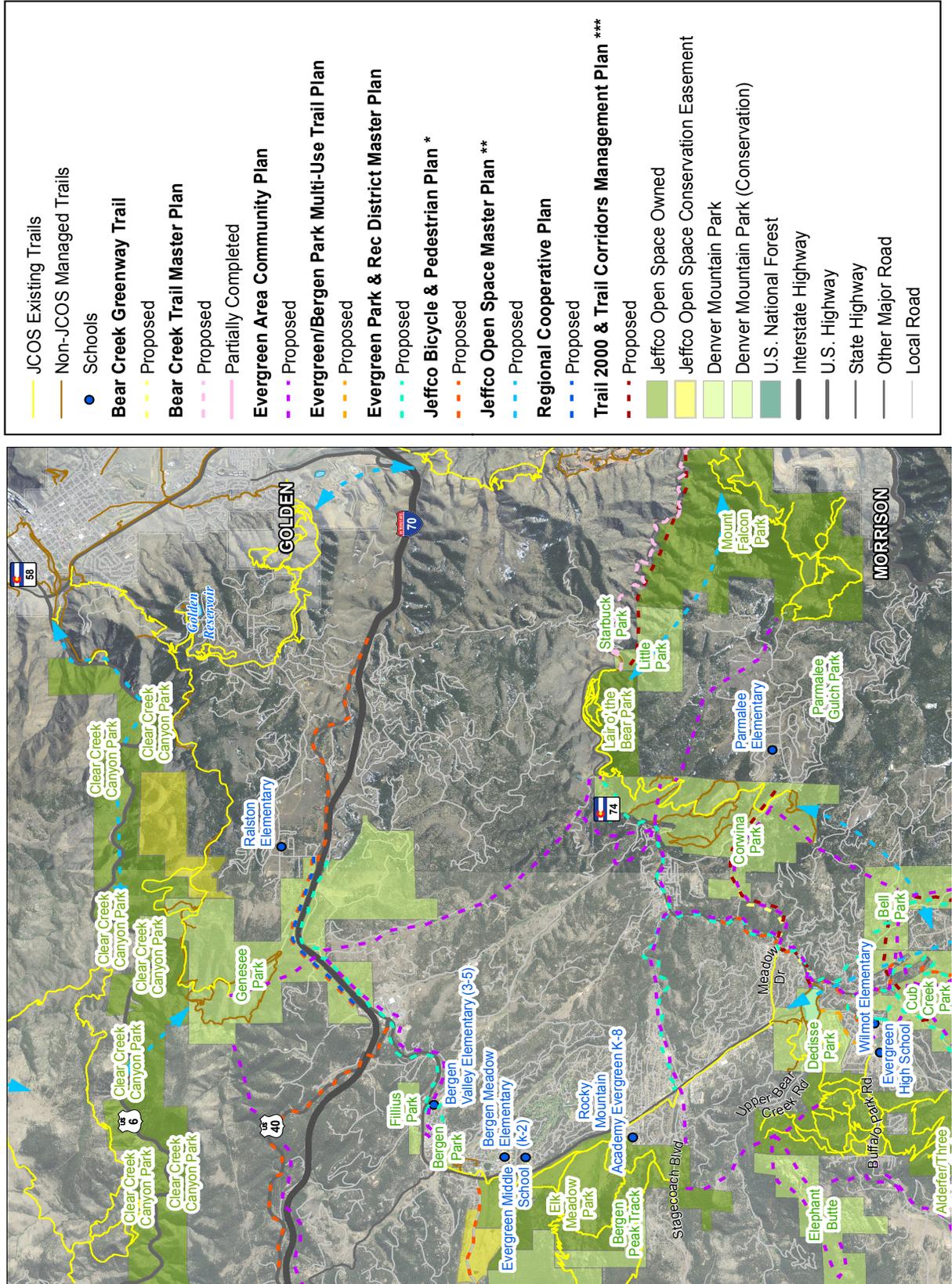




Evergreen Area - Trail Planning Analysis

Regional View

Jeffco.us/Parks



- JCOS Existing Trails
- Non-JCOS Managed Trails
- Schools
- Bear Creek Greenway Trail**
- Proposed
- Bear Creek Trail Master Plan**
- Proposed
- Partially Completed
- Evergreen Area Community Plan**
- Proposed
- Evergreen/Bergen Park Multi-Use Trail Plan**
- Proposed
- Evergreen Park & Rec District Master Plan**
- Proposed
- Jeffco Bicycle & Pedestrian Plan ***
- Proposed
- Jeffco Open Space Master Plan ****
- Proposed
- Regional Cooperative Plan**
- Proposed
- Trail 2000 & Trail Corridors Management Plan *****
- Proposed
- Jeffco Open Space Owned
- Jeffco Open Space Conservation Easement
- Denver Mountain Park
- Denver Mountain Park (Conservation)
- U.S. National Forest
- Interstate Highway
- U.S. Highway
- State Highway
- Other Major Road
- Local Road

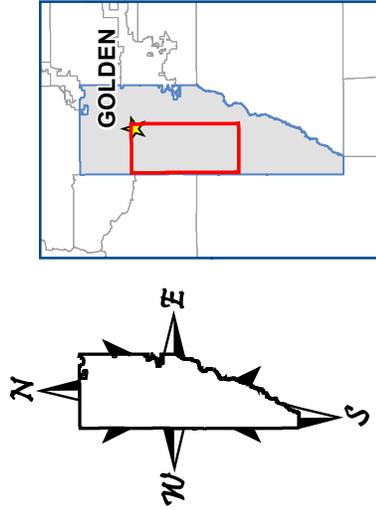




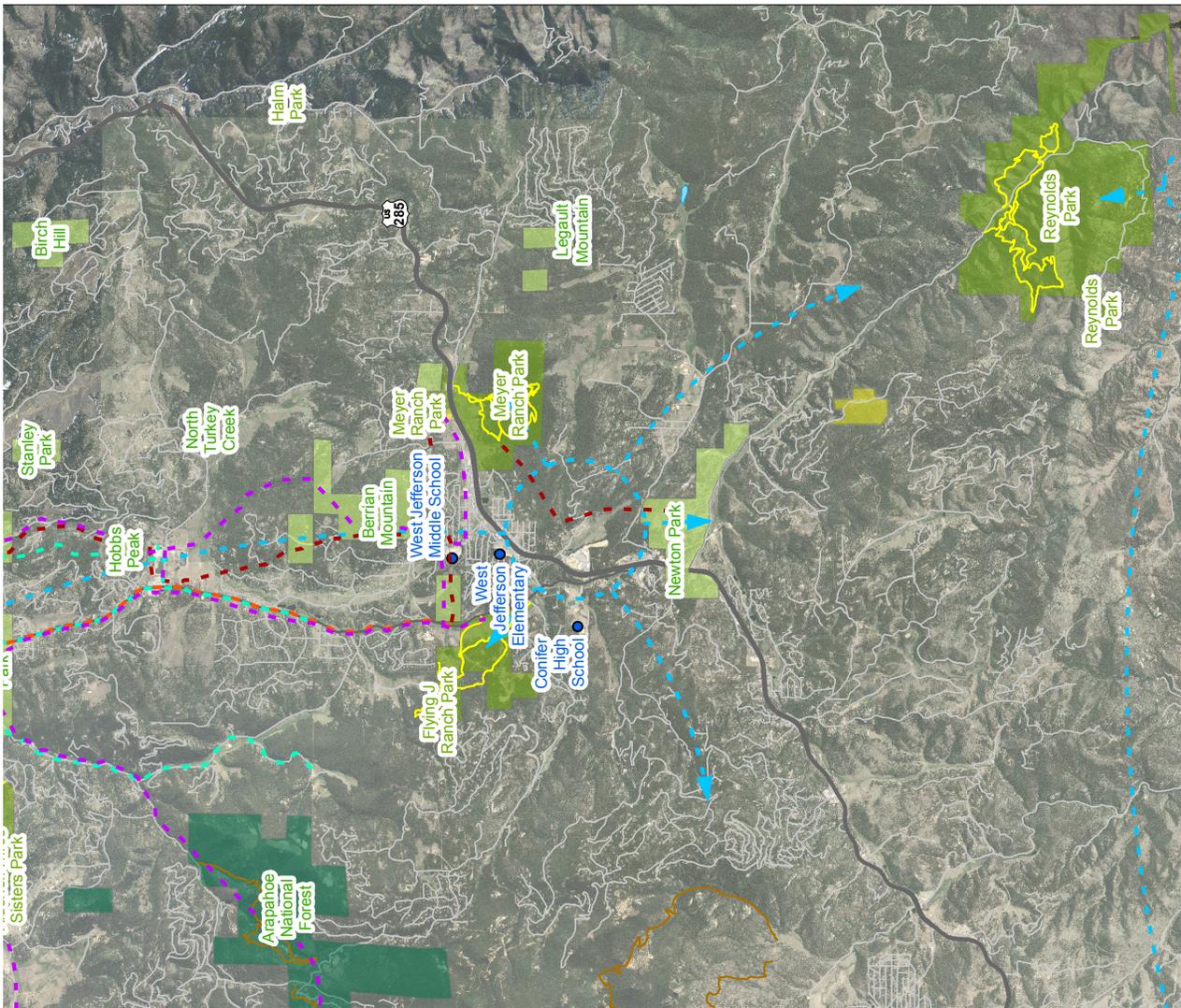
* The Jeffco Bicycle Plan and Jeffco Pedestrian Plan have been combined for the purposes of this planning exercise. The proposed alignments and surface treatments are the same in each plan.

** The Jeffco Open Space Master Plan proposed trails are generalized corridors that represent potential connections. The actual alignments have not been finalized.

*** The Trail 2000 Priorities and the Trail Corridors Management Plan have been combined for the purposes of this planning exercise. The two plans were both produced by Jefferson County Open Space. Both planning documents reference the same alignments for the Evergreen Area.



Disclaimer: This information/map is the property of the Jefferson County Open Space Program (JCOS), Jefferson County, Colorado and is copyrighted material. Reproduction, manipulation or distribution of this product is prohibited without the prior written consent of JCOS staff. Jefferson County does not warrant the completeness, accuracy, or correctness of this product, its use for any purpose, and shall not be liable for damages of any kind arising from use of the product or for any errors or inaccuracies.



Document Path: \\G:\BPLAN\BSP\Projects\014\Evergreen MP - Trail Planning Analysis\Media\Regional_View_11.05.14.mxd Created by: Jeffco Open Space

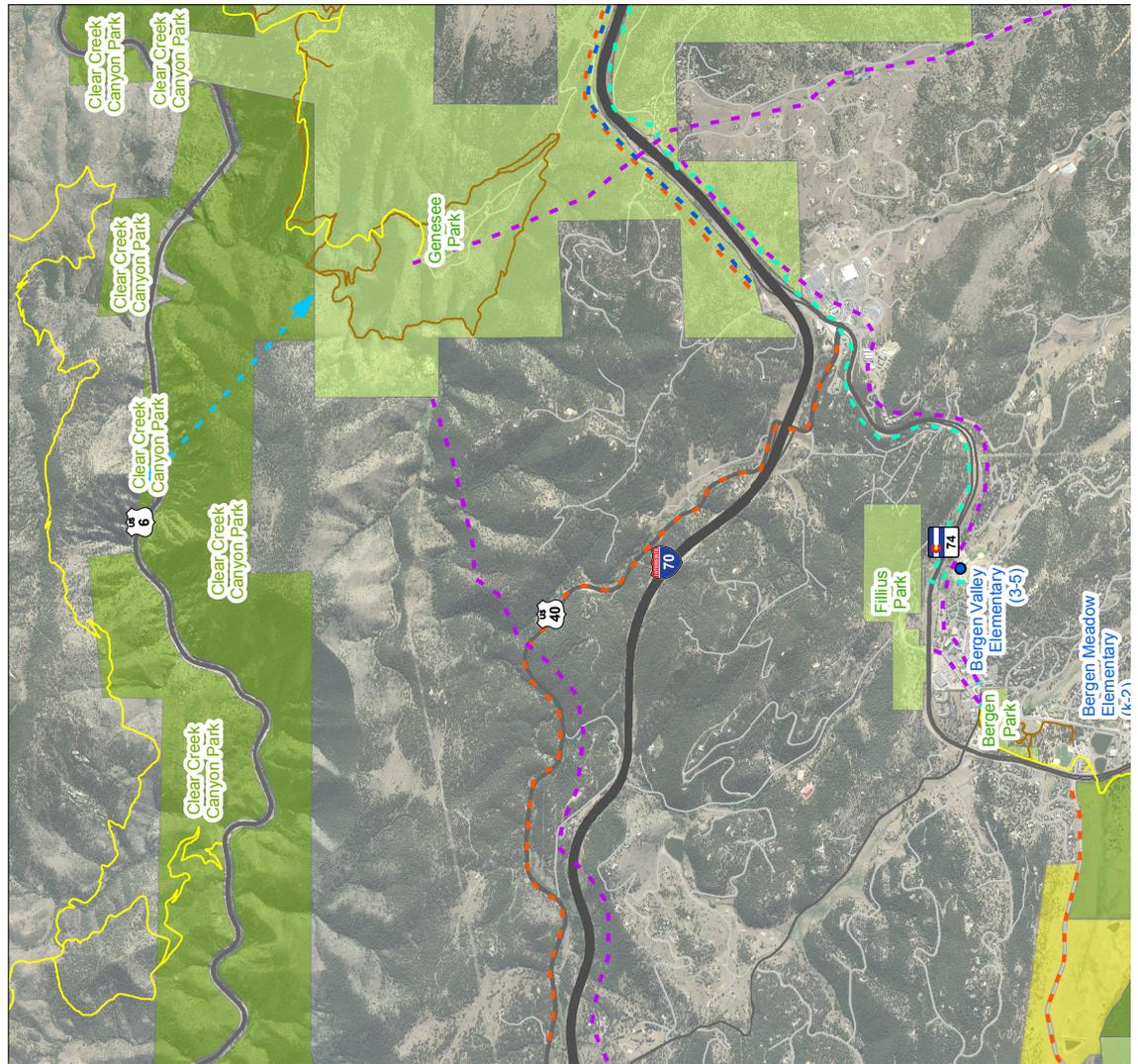
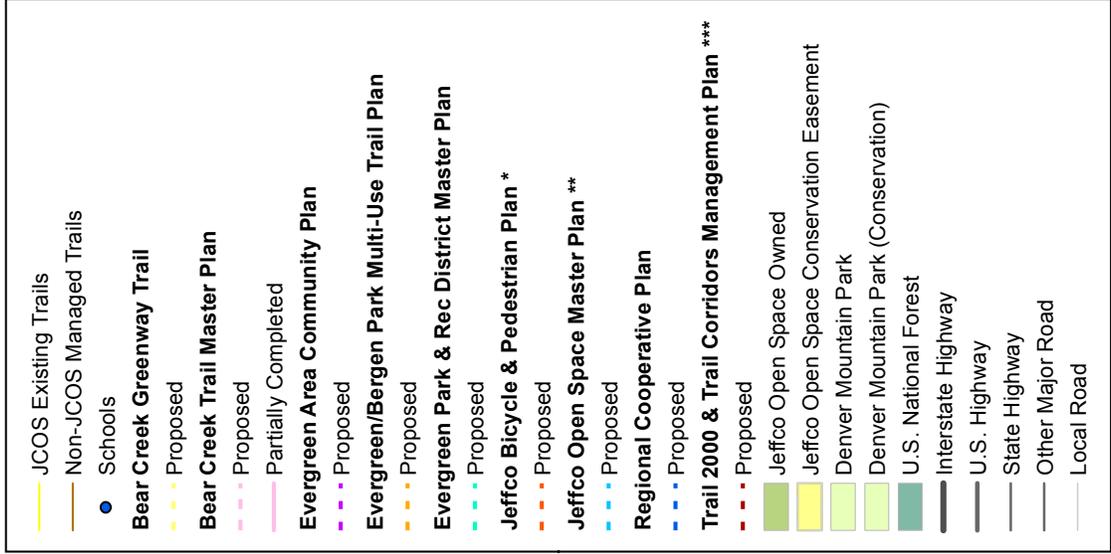




Jeffco.us/Parks

Evergreen Area - Trail Planning Analysis

North Evergreen Area

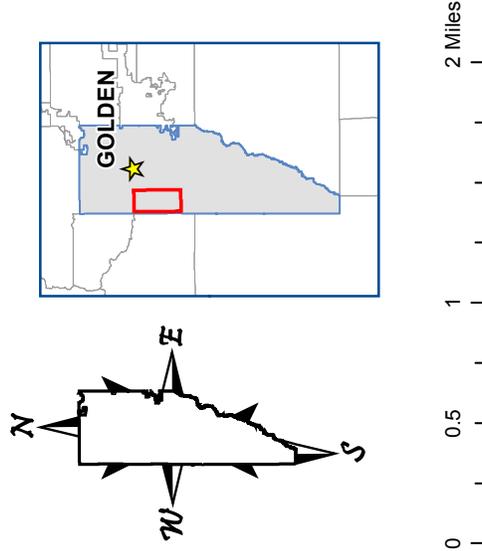




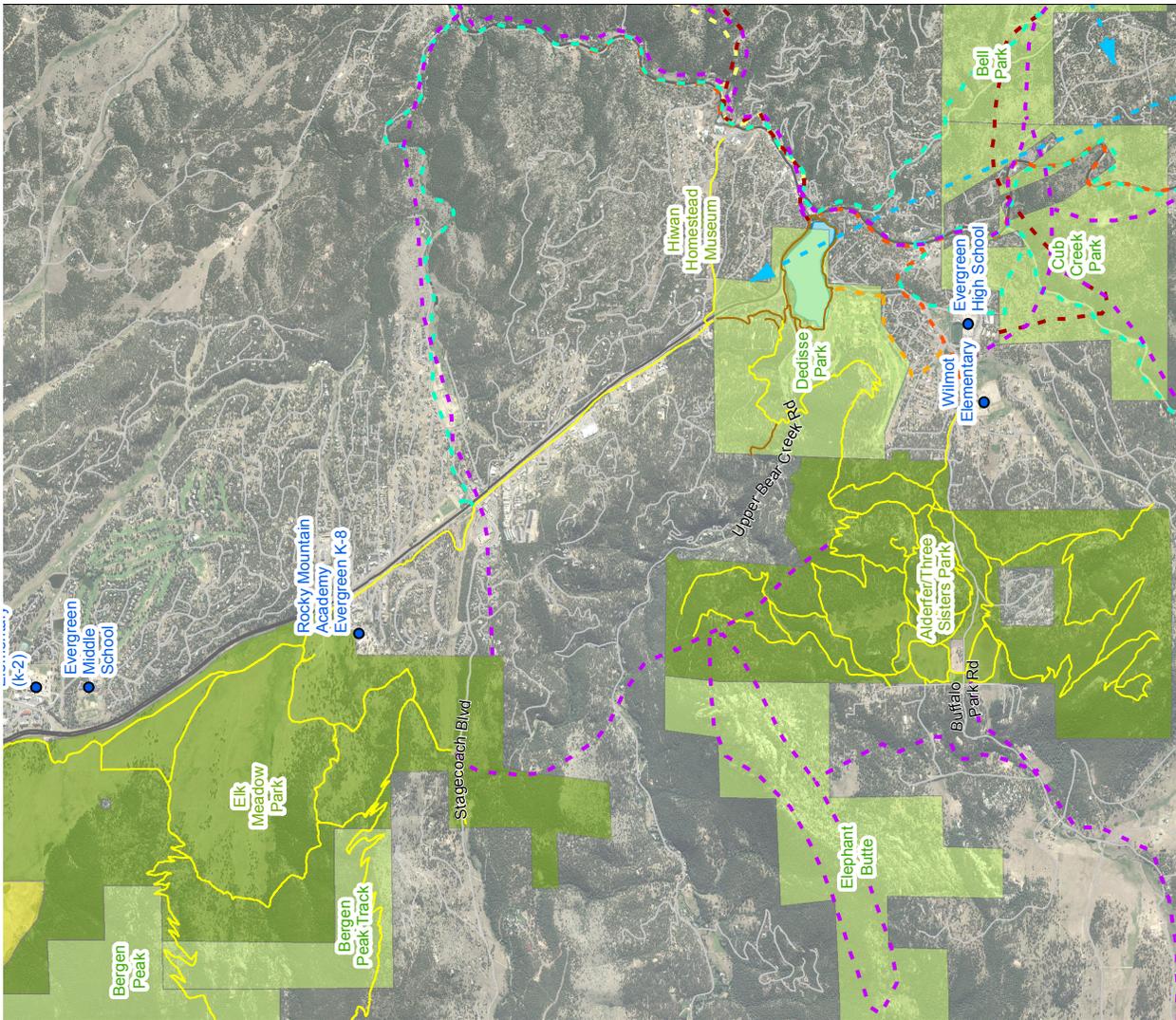
* The Jeffco Bicycle Plan and Jeffco Pedestrian Plan have been combined for the purposes of this planning exercise. The proposed alignments and surface treatments are the same in each plan.

** The Jeffco Open Space Master Plan proposed trails are generalized corridors that represent potential connections. The actual alignments have not been finalized.

*** The Trail 2000 Priorities and the Trail Corridors Management Plan have been combined for the purposes of this planning exercise. The two plans were both produced by Jefferson County Open Space. Both planning documents reference the same alignments for the Evergreen Area.



Disclaimer: This information/map is the property of the Jefferson County Open Space Program (JCOS), Jefferson County, Colorado and is copyrighted material. Reproduction, manipulation or distribution of this product is prohibited without the prior written consent of JCOS staff. Jefferson County does not warrant the completeness, accuracy, or correctness of this product, its use for any purpose, and shall not be liable for damages of any kind arising from use of the product or for any errors or inaccuracies.



Date: 11/13/2014 Document Path: M:\GIS\PLANNERS\Projects\01\AE_evergreen_MP - Trail Planning\Analysis\MultiNorth_Evergreen_1_106_14.mxd Created by: JAlexa Open Space**





Evergreen Area - T

Downtown



Date: 11/13/2014 Document Path: M:\GIS\PLANNERS\Projects\2014\Evergreen MP - Trail Planning Analysis\Mxd\Central_Evergreen_11.06.14.mxd Created by: Jeffco Open Space



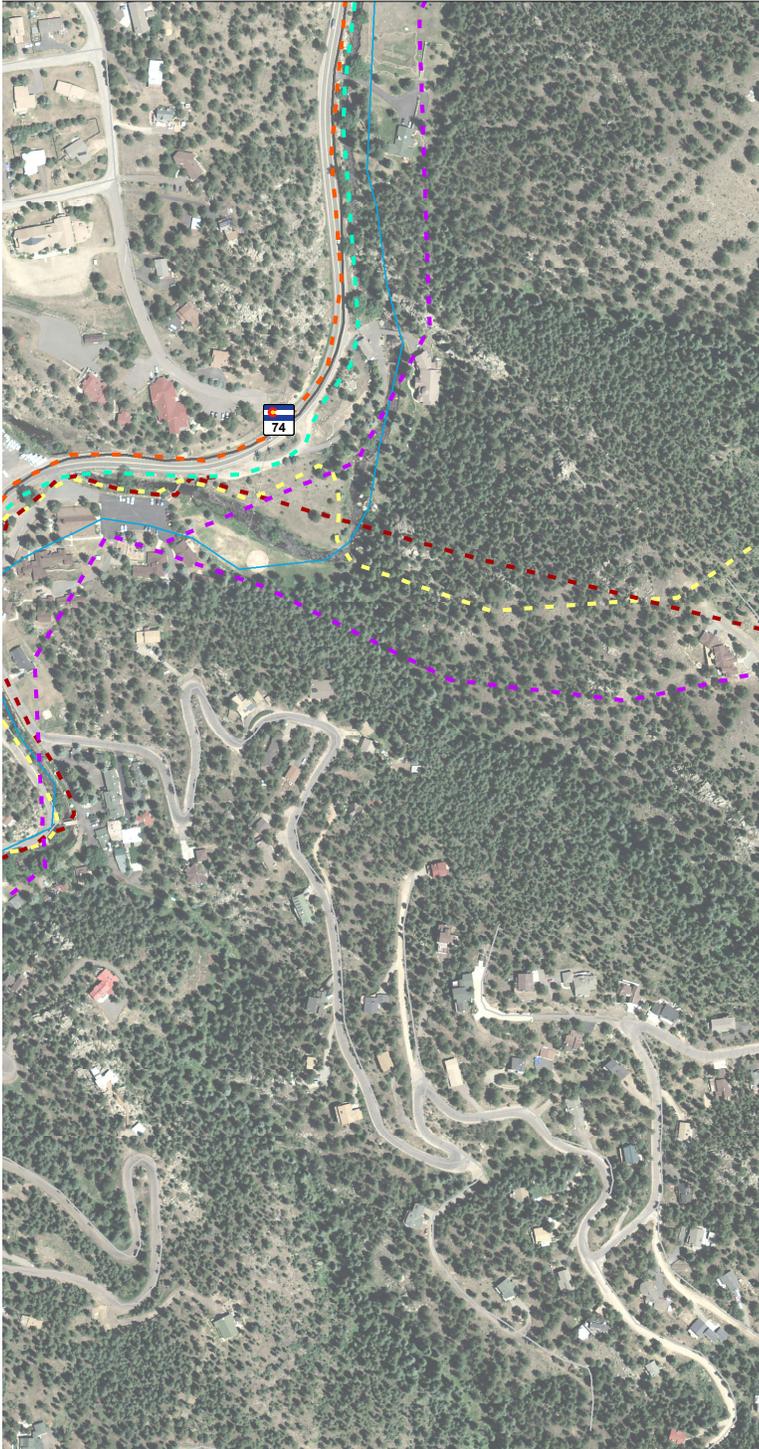


Trail Planning Analysis



Evergreen

Jeffco.us/Parks

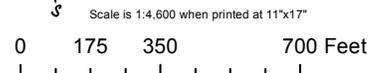
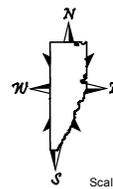


	JCOS Existing Trails
	Non-JCOS Managed Trails
	Schools
Bear Creek Greenway Trail	
	Proposed
Bear Creek Trail Master Plan	
	Proposed
	Partially Completed
Evergreen Area Community Plan	
	Proposed
Evergreen/Bergen Park Multi-Use Trail Plan	
	Proposed
Evergreen Park & Rec District Master Plan	
	Proposed
Jeffco Bicycle & Pedestrian Plan *	
	Proposed
Jeffco Open Space Master Plan **	
	Proposed
Regional Cooperative Plan	
	Proposed
Trail 2000 & Trail Corridors Management Plan ***	
	Proposed
	Jeffco Open Space Owned
	Jeffco Open Space Conservation Easement
	Denver Mountain Park
	Denver Mountain Park (Conservation)
	U.S. National Forest
	Interstate Highway
	U.S. Highway
	State Highway
	Other Major Road
	Local Road

* The Jeffco Bicycle Plan and Jeffco Pedestrian Plan have been combined for the purposes of this planning exercise. The proposed alignments and surface treatments are the same in each plan.

** The Jeffco Open Space Master Plan proposed trails are generalized corridors that represent potential connections. The actual alignments have not been finalized.

*** The Trail 2000 Priorities and the Trail Corridors Management Plan have been combined for the purposes of this planning exercise. The two plans were both produced by Jefferson County Open Space. Both planning documents reference the same alignments for the Evergreen Area.



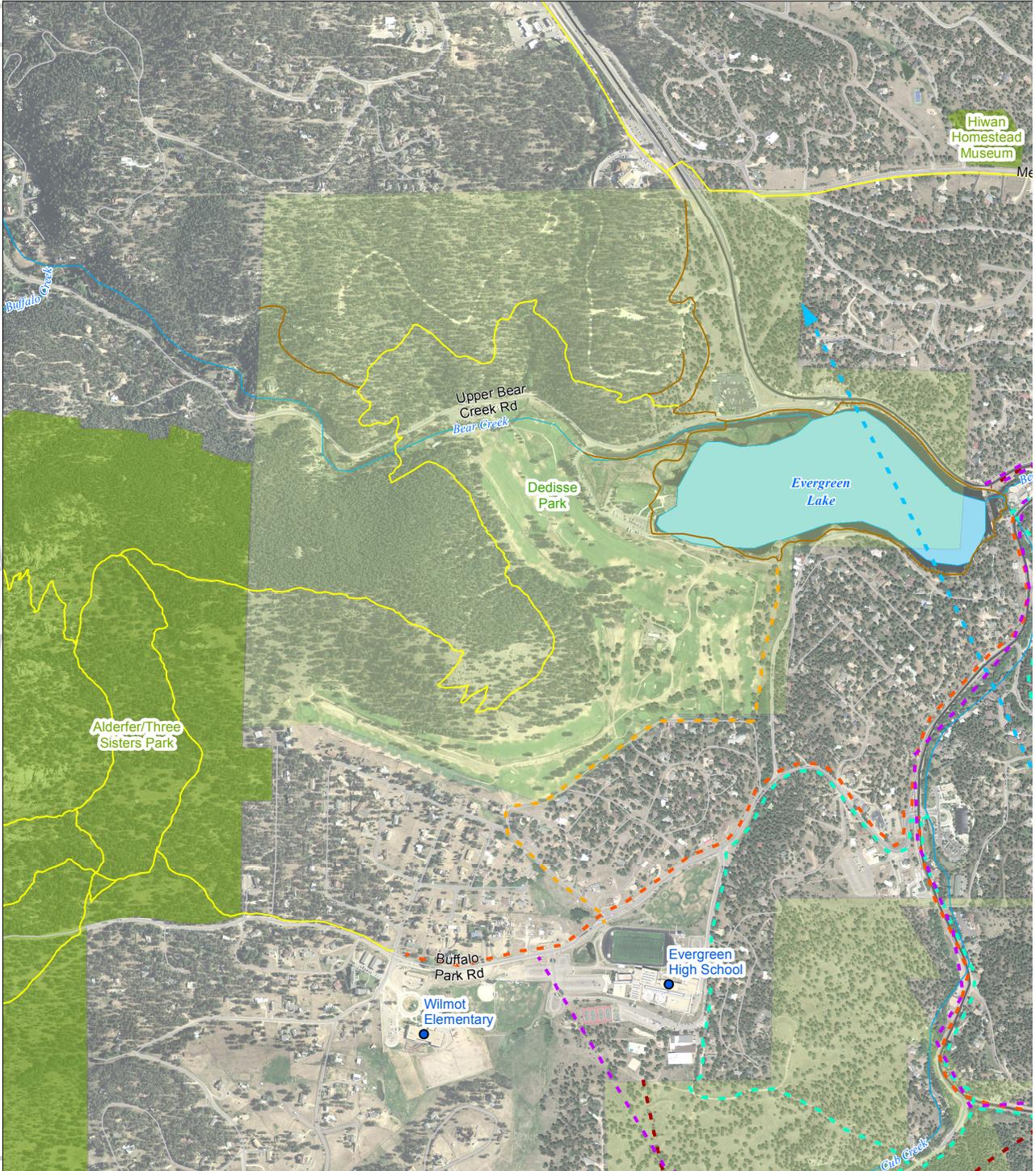
Disclaimer: This information/map is the property of the Jefferson County Open Space Program (JCOS), Jefferson County, Colorado and is copyrighted material. Reproduction, manipulation or distribution of this product is prohibited without the prior written consent of JCOS staff. Jefferson County does not warrant the completeness, accuracy, or correctness of this product, its use for any purpose, and shall not be liable for damages of any kind arising from use of the product or for any errors or inaccuracies.





Evergreen Area - T

Downtown



Date: 11/13/2014 Document Path: M:\GIS\PLANNERS\Projects\2014\Evergreen MP - Trail Planning Analysis\Mxd\Central_Evergreen_11.06.14.mxd Created by: Jeffco Open Space***



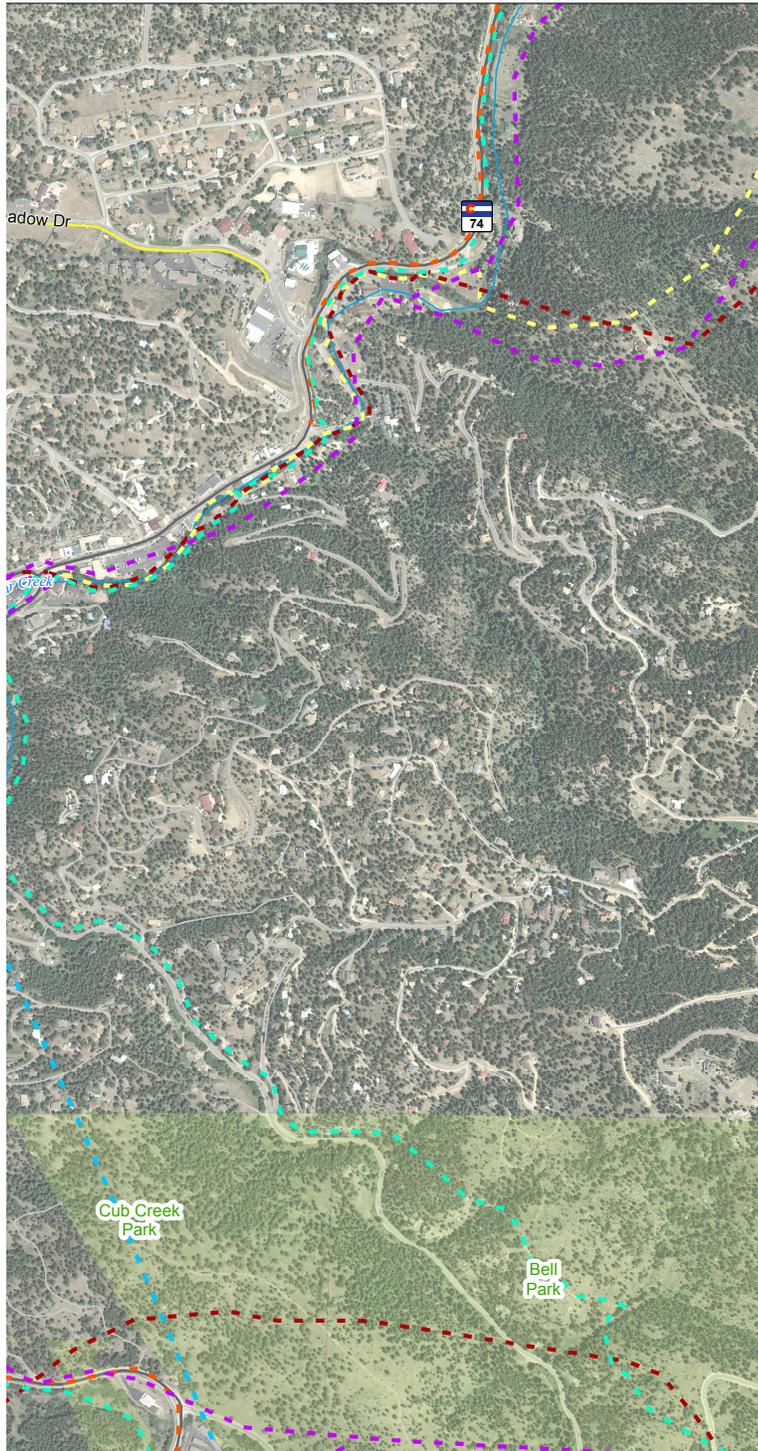


Trail Planning Analysis



Evergreen

Jeffco.us/Parks



* The Jeffco Bicycle Plan and Jeffco Pedestrian Plan have been combined for the purposes of this planning exercise. The proposed alignments and surface treatments are the same in each plan.

** The Jeffco Open Space Master Plan proposed trails are generalized corridors that represent potential connections. The actual alignments have not been finalized.

*** The Trail 2000 Priorities and the Trail Corridors Management Plan have been combined for the purposes of this planning exercise. The two plans were both produced by Jefferson County Open Space. Both planning documents reference the same alignments for the Evergreen Area.



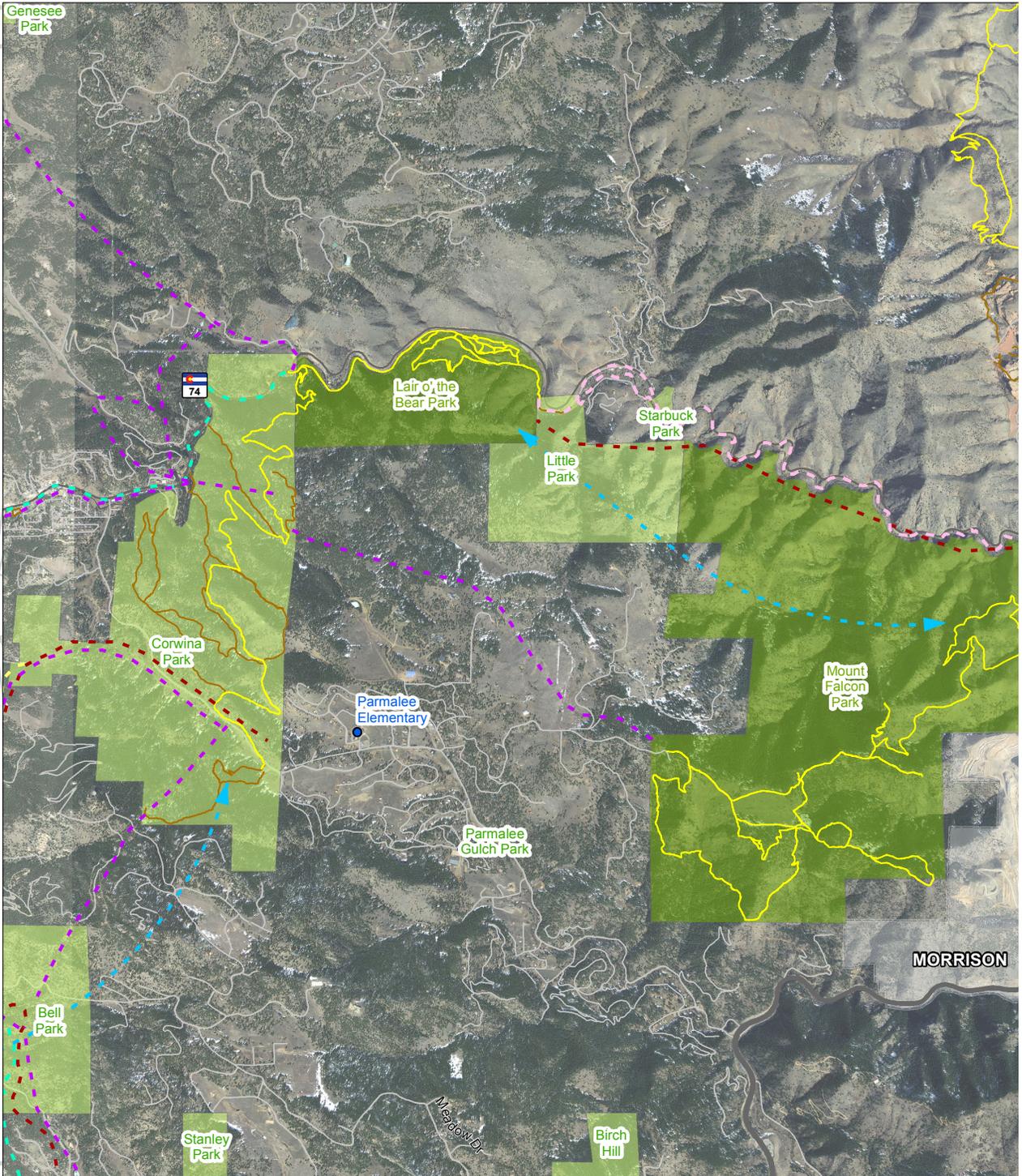
Disclaimer: This information/map is the property of the Jefferson County Open Space Program (JCOS), Jefferson County, Colorado and is copyrighted material. Reproduction, manipulation or distribution of this product is prohibited without the prior written consent of JCOS staff. Jefferson County does not warrant the completeness, accuracy, or correctness of this product, its use for any purpose, and shall not be liable for damages of any kind arising from use of the product or for any errors or inaccuracies.





Evergreen Area -

East - Bear



Date: 11/13/2014 Document Path: M:\GIS\PLANNERS\Projects\2014\Evergreen MP - Trail Planning Analysis\Mxd\East_BearCreek_11.06.14.mxd Created by: Jeffco Open Space***



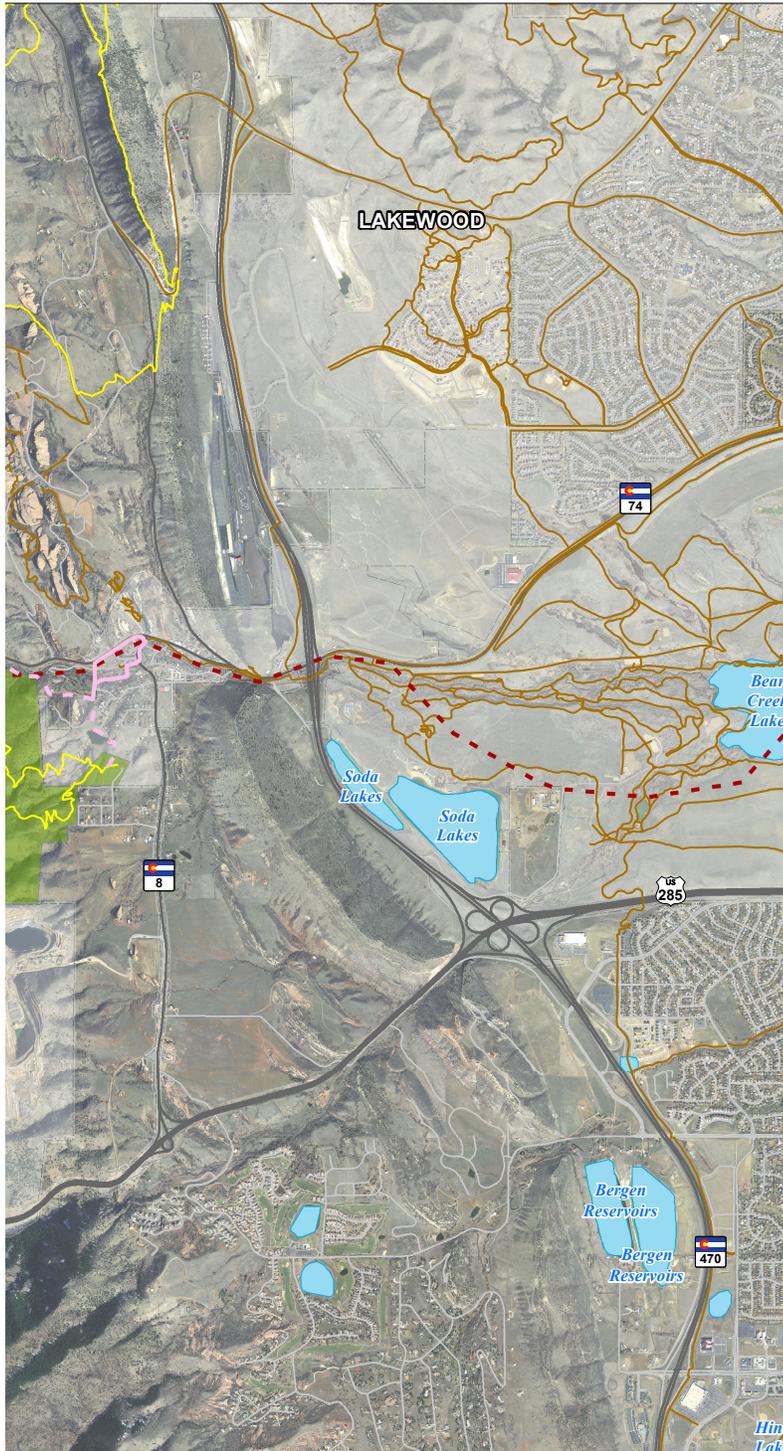


Trail Planning Analysis



Creek Region

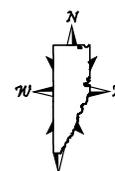
Jeffco.us/Parks



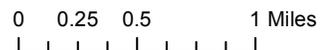
* The Jeffco Bicycle Plan and Jeffco Pedestrian Plan have been combined for the purposes of this planning exercise. The proposed alignments and surface treatments are the same in each plan.

** The Jeffco Open Space Master Plan proposed trails are generalized corridors that represent potential connections. The actual alignments have not been finalized.

*** The Trail 2000 Priorities and the Trail Corridors Management Plan have been combined for the purposes of this planning exercise. The two plans were both produced by Jefferson County Open Space. Both planning documents reference the same alignments for the Evergreen Area.



Scale is 1:41,000 when printed at 11"x17"



Disclaimer: This information/map is the property of the Jefferson County Open Space Program (JCOS). Jefferson County, Colorado and is copyrighted material. Reproduction, manipulation or distribution of this product is prohibited without the prior written consent of JCOS staff. Jefferson County does not warrant the completeness, accuracy, or correctness of this product, its use for any purpose, and shall not be liable for damages of any kind arising from use of the product or for any errors or inaccuracies.

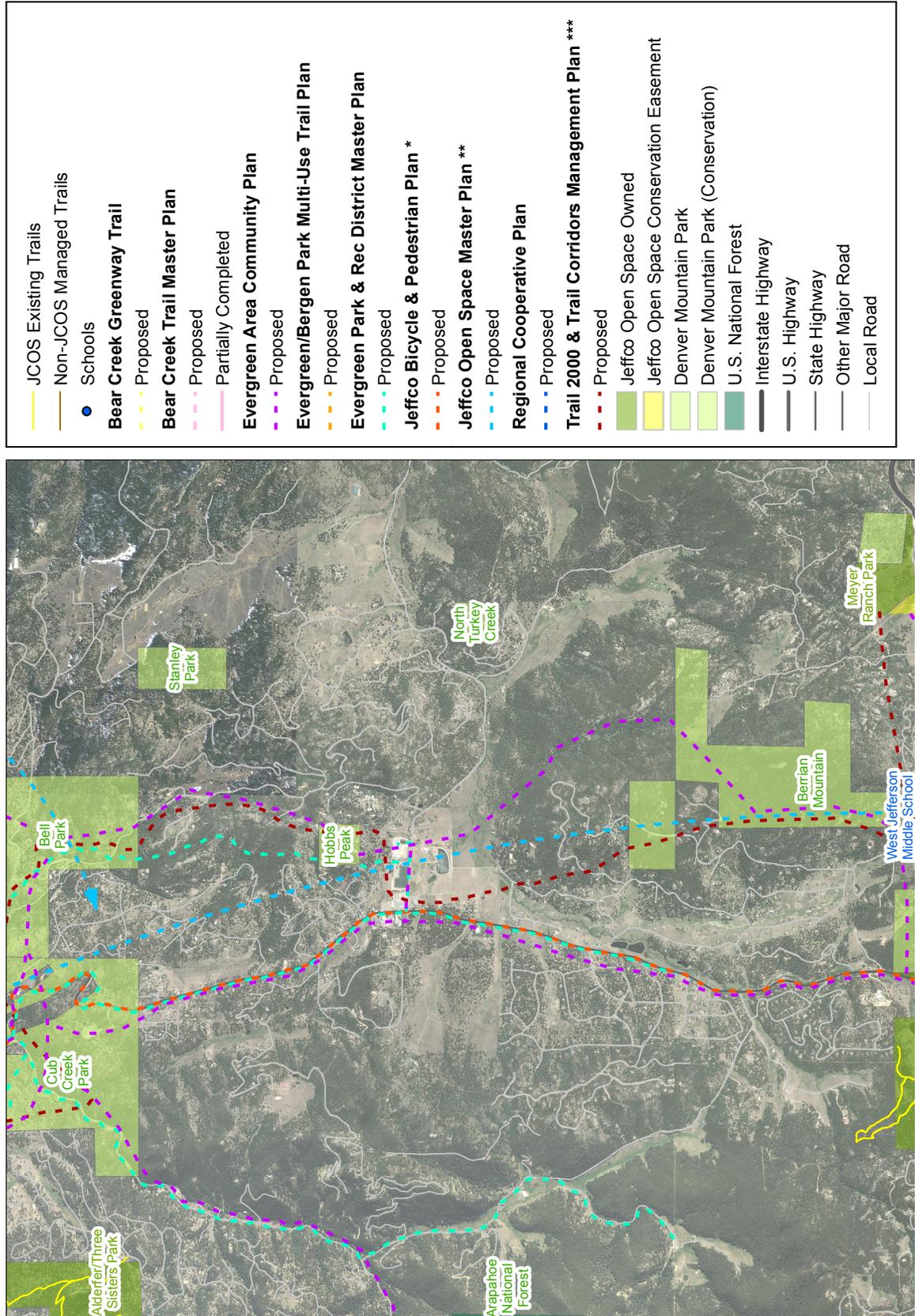




Evergreen Area - Trail Planning Analysis

South Evergreen / Conifer Area

Jeffco.us/Parks



—	JCOS Existing Trails
—	Non-JCOS Managed Trails
●	Schools
—	Bear Creek Greenway Trail
—	Proposed
—	Bear Creek Trail Master Plan
—	Proposed
—	Partially Completed
—	Evergreen Area Community Plan
—	Proposed
—	Evergreen/Bergen Park Multi-Use Trail Plan
—	Proposed
—	Evergreen Park & Rec District Master Plan
—	Proposed
—	Jeffco Bicycle & Pedestrian Plan *
—	Proposed
—	Jeffco Open Space Master Plan **
—	Proposed
—	Regional Cooperative Plan
—	Proposed
—	Trail 2000 & Trail Corridors Management Plan ***
—	Proposed
■	Jeffco Open Space Owned
■	Jeffco Open Space Conservation Easement
■	Denver Mountain Park
■	Denver Mountain Park (Conservation)
■	U.S. National Forest
—	Interstate Highway
—	U.S. Highway
—	State Highway
—	Other Major Road
—	Local Road

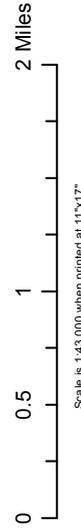
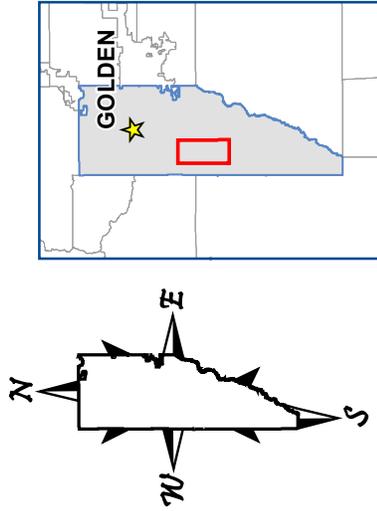




* The Jeffco Bicycle Plan and Jeffco Pedestrian Plan have been combined for the purposes of this planning exercise. The proposed alignments and surface treatments are the same in each plan.

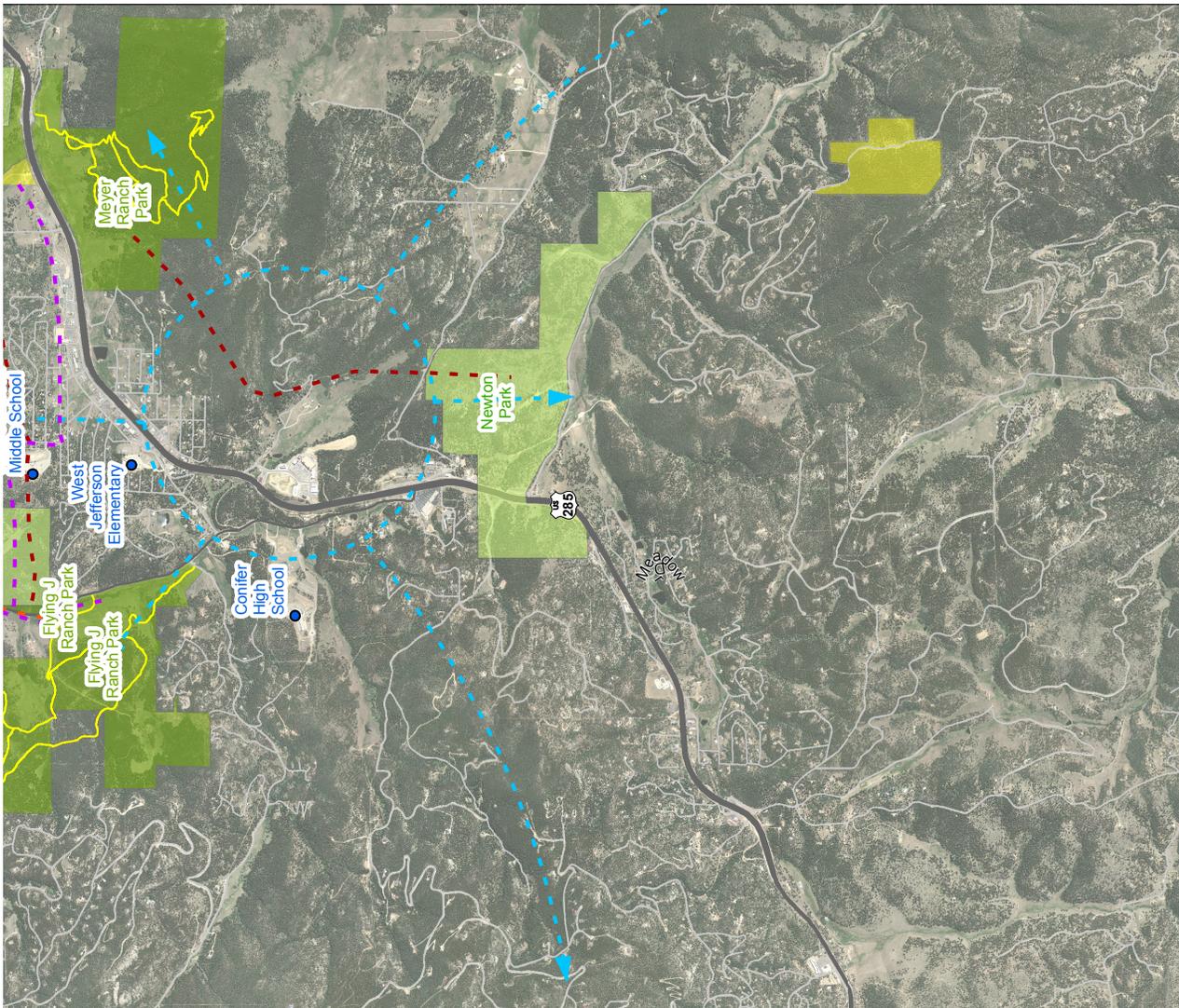
** The Jeffco Open Space Master Plan proposed trails are generalized corridors that represent potential connections. The actual alignments have not been finalized.

*** The Trail 2000 Priorities and the Trail Corridors Management Plan have been combined for the purposes of this planning exercise. The two plans were both produced by Jefferson County Open Space. Both planning documents reference the same alignments for the Evergreen Area.



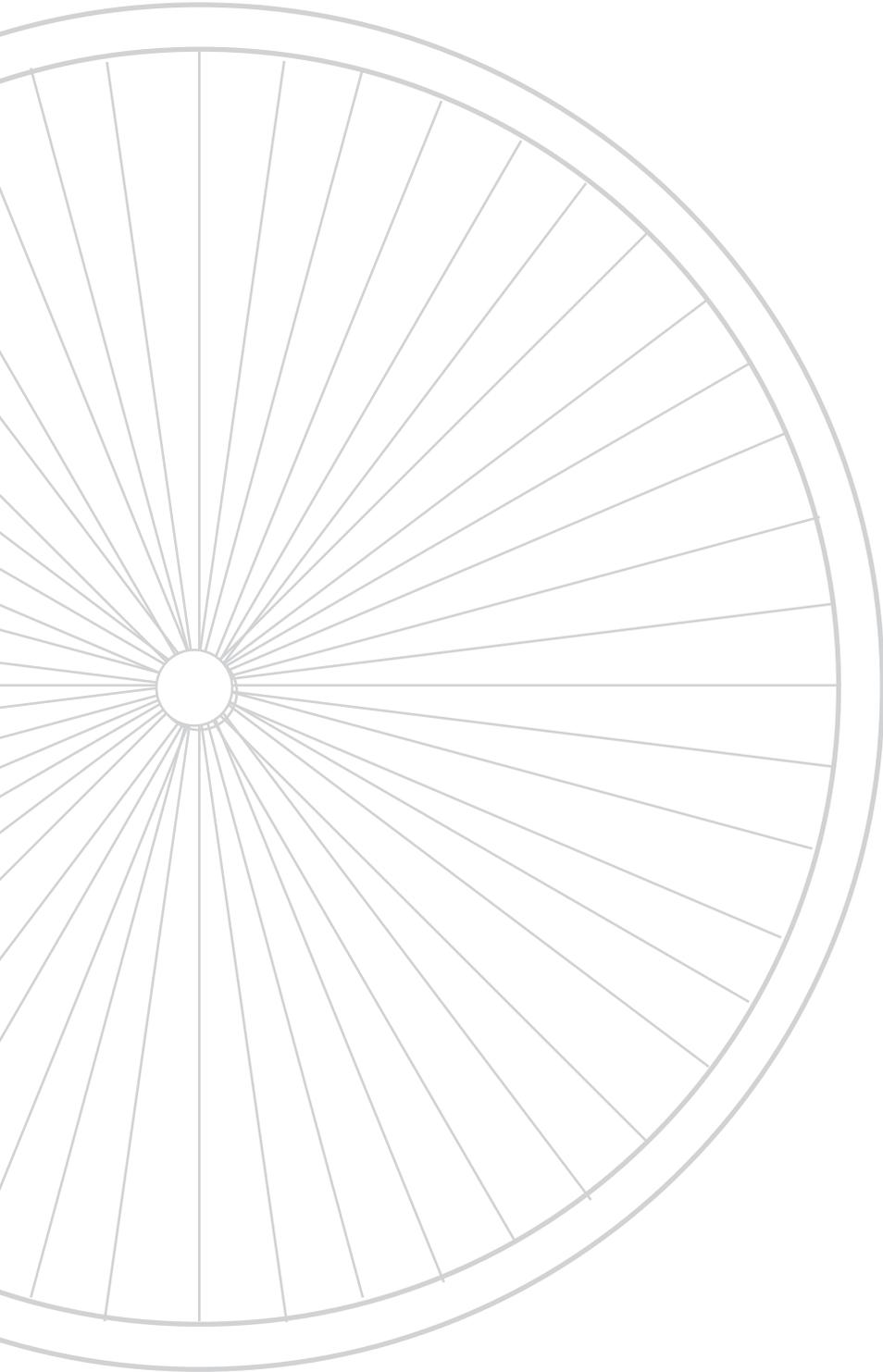
Scale is 1:43,000 when printed at 11"x17"

Disclaimer: This information/map is the property of the Jefferson County Open Space Program (JCOS), Jefferson County, Colorado and is copyrighted material. Reproduction, manipulation or distribution of this product is prohibited without the prior written consent of JCOS staff. Jefferson County does not warrant the completeness, accuracy, or correctness of this product, its use for any purpose, and shall not be liable for damages of any kind arising from use of the product or for any errors or inaccuracies.



ab 11/13/2014 DocumentPath: M:\GIS\PLANNERS\Projects\2011\Evergreen MP - Total Planning Analysis\Map\South_Evergreen_11.06.14.mxd Created by: Jeffco Open Space**







Appendix B. Cost Estimates

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Lake Linkage Trail Segment 1 (Improve Existing Trail from Evergreen Lake to Golf Way)

Notes
 1,200 LF

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	1067	\$ 14,404.50
2	Earthwork (10% of Paving Costs)	%	\$ 1,440.45	1	\$ 1,440.45
3	Clearing and Grubbing	LS	\$ 1,000.00	1	\$ 1,000.00
Total (A)					\$ 16,844.95

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 5,053.49
Utilities	(3-20% of A)	3%	\$ 505.35
Drainage	(4-10% of A)	5%	\$ 842.25
Erosion Control	(2-5% of A)	5%	\$ 842.25
Environmental Mitigation	(1-5% of A)	5%	\$ 842.25
Signing and Striping	(1-5% of A)	5%	\$ 842.25
Construction Traffic Control	(2-20% of A)	5%	\$ 842.25
Total (B)			\$ 9,770.07

Mobilization	(4-20% of B)	20%	\$ 1,954.01
Total Construction Cost (C)			\$ 11,724.09

Construction Engineering	(10% of C)	10%	\$ 1,172.41
Prelim & Final Design	(20% of C)	20%	\$ 2,344.82
Total Engineering Cost (D)			\$ 3,517.23

Total Project Cost (A+C+D) \$ 41,856.33

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Lake Linkage Trail Segment 2 (Improved Crossing of Buffalo Park Rd)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crosswalk Markings	EA	\$ 500.00	1	\$ 500.00
2	Activated Crossing Equipment	EA	\$ 15,000.00	1	\$ 15,000.00
Total (A)					\$ 15,500.00

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 4,650.00
Utilities	(3-20% of A)	3%	\$ 465.00
Drainage	(4-10% of A)	4%	\$ 620.00
Erosion Control	(2-5% of A)	2%	\$ 310.00
Environmental Mitigation	(1-5% of A)	1%	\$ 155.00
Signing and Striping	(1-5% of A)	5%	\$ 775.00
Construction Traffic Control	(2-20% of A)	10%	\$ 1,550.00
Lighting	(1-5% of A)	5%	\$ 775.00
Total (B)			\$ 9,300.00

Mobilization	(4-20% of B)	20%	\$ 1,860.00
Total Construction Cost (C)			\$ 11,160.00

Construction Engineering	(10% of C)	10%	\$ 1,116.00
Prelim & Final Design	(20% of C)	20%	\$ 2,232.00
Total Engineering Cost (D)			\$ 3,348.00

Total Project Cost (A+C+D) \$ 39,308.00

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
 Planning Level Opinion of Probable Cost
 9/25/15



Project: Lake Linkage Trail Segment 3 (Marked Trail on Existing Pavement Buffalo Park Rd to east HS Entrance)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Tuff Curb and Vertical Post	EA	\$ 120.00	45	\$ 5,400.00
Total (A)					\$ 5,400.00

Notes
 placed every 20 LF

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 1,620.00
Utilities	(3-20% of A)	3%	\$ 162.00
Drainage	(4-10% of A)	4%	\$ 216.00
Erosion Control	(2-5% of A)	2%	\$ 108.00
Environmental Mitigation	(1-5% of A)	1%	\$ 54.00
Signing and Striping	(1-5% of A)	5%	\$ 270.00
Construction Traffic Control	(2-20% of A)	20%	\$ 1,080.00
Total (B)			\$ 3,510.00

Mobilization	(4-20% of B)	20%	\$ 702.00
Total Construction Cost (C)			\$ 4,212.00

Construction Engineering	(10% of C)	10%	\$ 421.20
Prelim & Final Design	(20% of C)	20%	\$ 842.40
Total Engineering Cost (D)			\$ 1,263.60

Total Project Cost (A+C+D) \$ 14,385.60

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Lake Linkage Trail Segment 4 (New Sidewalk east HS Entrance to Wulf Rec Center)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (6' wide)	SY	\$ 58.00	333	\$ 19,314.00
2	Retaining Walls	SF	\$ 85.00	700	\$ 59,500.00
3	Earthwork (10% of Paving Costs)	%	\$ 1,931.40	1	\$ 1,931.40
4	Clearing and Grubbing	LS	\$ 1,000.00	1	\$ 1,000.00
Total (A)					\$ 81,745.40

Notes
 500 LF
 350 LF; 2' in height average

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 24,523.62
Utilities	(3-20% of A)	3%	\$ 2,452.36
Drainage	(4-10% of A)	4%	\$ 3,269.82
Irrigation	(1-2% of A)	1%	\$ 817.45
Erosion Control	(2-5% of A)	3%	\$ 2,452.36
Environmental Mitigation	(1-5% of A)	1%	\$ 817.45
Signing and Striping	(1-5% of A)	1%	\$ 817.45
Construction Traffic Control	(2-20% of A)	10%	\$ 8,174.54
Lighting	(1-5% of A)	1%	\$ 817.45
Landscaping	(1-20% of A)	5%	\$ 4,087.27
Total (B)			\$ 48,229.79

Mobilization	(4-20% of B)	20%	\$ 9,645.96
Total Construction Cost (C)			\$ 57,875.74

Construction Engineering	(10% of C)	10%	\$ 5,787.57
Prelim & Final Design	(15% of C)	15%	\$ 8,681.36
Total Engineering Cost (D)			\$ 14,468.94

Total Project Cost (A+C+D) \$ 202,319.87

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Planning » Design » Action

Project: Buffalo Park Rd Trail Segment 1 (New Soft Surface Trail Wilmot Elementary to S. Olive Rd)

Notes
 1,900 LF

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	1690	\$ 22,815.00
2	Earthwork (10% of Paving Costs)	%	\$ 2,281.50	1	\$ 2,281.50
3	Clearing and Grubbing	LS	\$ 1,000.00	1	\$ 1,000.00
Total (A)					\$ 26,096.50

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 7,828.95
Utilities	(3-20% of A)	3%	\$ 782.90
Drainage	(4-10% of A)	4%	\$ 1,043.86
Erosion Control	(2-5% of A)	3%	\$ 782.90
Environmental Mitigation	(1-5% of A)	1%	\$ 260.97
Signing and Striping	(1-5% of A)	1%	\$ 260.97
Construction Traffic Control	(2-20% of A)	5%	\$ 1,304.83
Total (B)			\$ 12,265.36

Mobilization	(4-20% of B)	20%	\$ 2,453.07
Total Construction Cost (C)			\$ 14,718.43

Construction Engineering	(10% of C)	10%	\$ 1,471.84
Prelim & Final Design	(15% of C)	15%	\$ 2,207.76
Total Engineering Cost (D)			\$ 3,679.61

Total Project Cost (A+C+D) \$ 56,759.89

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Buffalo Park Rd Trail Segment 2 (New Sidewalk S. Olive Rd to CR 73)

Notes

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (6' wide)	SY	\$ 58.00	1200	\$ 69,600.00
2	Curb and Gutter	LF	\$ 28.00	1800	\$ 50,400.00
3	Retaining Walls	SF	\$ 85.00	2000	\$ 170,000.00
4	Earthwork (10% of Paving Costs)	%	\$ 12,000.00	1	\$ 12,000.00
5	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 307,000.00

1000 LF; 2' in height average

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 92,100.00
Utilities	(3-20% of A)	5%	\$ 15,350.00
Drainage	(4-10% of A)	5%	\$ 15,350.00
Irrigation	(1-2% of A)	1%	\$ 3,070.00
Erosion Control	(2-5% of A)	3%	\$ 9,210.00
Environmental Mitigation	(1-5% of A)	1%	\$ 3,070.00
Signing and Striping	(1-5% of A)	1%	\$ 3,070.00
Construction Traffic Control	(2-20% of A)	10%	\$ 30,700.00
Lighting	(1-5% of A)	1%	\$ 3,070.00
Landscaping	(1-20% of A)	1%	\$ 3,070.00
Total (B)			\$ 178,060.00

Mobilization	(4-20% of B)	20%	\$ 35,612.00
Total Construction Cost (C)			\$ 213,672.00

Construction Engineering	(10% of C)	10%	\$ 21,367.20
Prelim & Final Design	(15% of C)	15%	\$ 32,050.80
Total Engineering Cost (D)			\$ 53,418.00

Total Project Cost (A+C+D) \$ 752,150.00

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: REAL Trail Segment 1 (New Sidewalk Along CR 73 Buffalo Park Rd to Denver Mountain Parks Boundary)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (8' wide)	SY	\$ 58.00	670	\$ 38,860.00
2	Curb and Gutter	LF	\$ 28.00	750	\$ 21,000.00
3	Earthwork (5% of Paving Costs)	%	\$ 2,993.00	1	\$ 2,993.00
4	Clearing and Grubbing	LS	\$ 2,000.00	1	\$ 2,000.00
Total (A)					\$ 64,853.00

Notes
750 LF

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 19,455.90
Utilities	(3-20% of A)	5%	\$ 3,242.65
Drainage	(4-10% of A)	10%	\$ 6,485.30
Irrigation	(1-2% of A)	1%	\$ 648.53
Erosion Control	(2-5% of A)	3%	\$ 1,945.59
Environmental Mitigation	(1-5% of A)	1%	\$ 648.53
Signing and Striping	(1-5% of A)	2%	\$ 1,297.06
Construction Traffic Control	(2-20% of A)	10%	\$ 6,485.30
Lighting	(1-5% of A)	1%	\$ 648.53
Landscaping	(1-20% of A)	5%	\$ 3,242.65
Total (B)			\$ 44,100.04

Mobilization	(4-20% of B)	20%	\$ 8,820.01
Total Construction Cost (C)			\$ 52,920.05

Construction Engineering	(10% of C)	10%	\$ 5,292.00
Prelim & Final Design	(15% of C)	15%	\$ 7,938.01
Total Engineering Cost (D)			\$ 13,230.01

Total Project Cost (A+C+D) \$ 175,103.10

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: REAL Trail Segment 2 (New Trail across Denver Mountain Parks Property CR 73 to Olive Ln)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	2200	\$ 29,700.00
2	Earthwork (30% of Paving Costs)	%	\$ 8,910.00	1	\$ 8,910.00
3	Clearing and Grubbing	LS	\$ 3,000.00	1	\$ 3,000.00
Total (A)					\$ 41,610.00

Notes
 2,500LF; approx 8% avg grade

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 12,483.00
Utilities	(3-20% of A)	3%	\$ 1,248.30
Drainage	(4-10% of A)	4%	\$ 1,664.40
Erosion Control	(2-5% of A)	5%	\$ 2,080.50
Environmental Mitigation	(1-5% of A)	5%	\$ 2,080.50
Signing and Striping	(1-5% of A)	3%	\$ 1,248.30
Construction Traffic Control	(2-20% of A)	2%	\$ 832.20
Total (B)			\$ 21,637.20

Mobilization	(4-20% of B)	20%	\$ 4,327.44
Total Construction Cost (C)			\$ 25,964.64

Construction Engineering	(10% of C)	10%	\$ 2,596.46
Prelim & Final Design	(20% of C)	20%	\$ 5,192.93
Total Engineering Cost (D)			\$ 7,789.39

Total Project Cost (A+C+D) \$ 97,001.23

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: REAL Trail Segment 3 (New Trail across Denver Mountain Parks Property Olive Ln to Wulf Rec Center)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	2300	\$ 31,050.00
2	Earthwork (15% of Paving Costs)	%	\$ 4,657.50	1	\$ 4,657.50
3	Clearing and Grubbing	LS	\$ 3,000.00	1	\$ 3,000.00
Total (A)					\$ 38,707.50

Notes
2,600LF

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 11,612.25
Utilities	(3-20% of A)	3%	\$ 1,161.23
Drainage	(4-10% of A)	4%	\$ 1,548.30
Erosion Control	(2-5% of A)	5%	\$ 1,935.38
Environmental Mitigation	(1-5% of A)	5%	\$ 1,935.38
Signing and Striping	(1-5% of A)	3%	\$ 1,161.23
Construction Traffic Control	(2-20% of A)	2%	\$ 774.15
Total (B)			\$ 20,127.90

Mobilization	(4-20% of B)	20%	\$ 4,025.58
Total Construction Cost (C)			\$ 24,153.48

Construction Engineering	(10% of C)	10%	\$ 2,415.35
Prelim & Final Design	(15% of C)	15%	\$ 3,623.02
Total Engineering Cost (D)			\$ 6,038.37

Total Project Cost (A+C+D) \$ 89,027.25

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Wilmot-Wulf Trail Segment 1 (Improve Existing Social Trail Wulf Rec Center to Wilmot Elementary)
Option 1- Minimal Improvements

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	980	\$ 13,230.00
2	Pedestrian Rail Fence (wooden)	LF	\$ 20.00	250	\$ 5,000.00
3	Earthwork (10% of Paving Costs)	%	\$ 1,323.00	1	\$ 1,323.00
4	Clearing and Grubbing	LS	\$ 1,000.00	1	\$ 1,000.00
Total (A)					\$ 20,553.00

Notes
 1,100 LF
 Along tennis courts

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 6,165.90
Utilities	(3-20% of A)	3%	\$ 616.59
Drainage	(4-10% of A)	5%	\$ 1,027.65
Erosion Control	(2-5% of A)	5%	\$ 1,027.65
Environmental Mitigation	(1-5% of A)	5%	\$ 1,027.65
Signing and Striping	(1-5% of A)	5%	\$ 1,027.65
Construction Traffic Control	(2-20% of A)	5%	\$ 1,027.65
Total (B)			\$ 11,920.74

Mobilization	(4-20% of B)	20%	\$ 2,384.15
Total Construction Cost (C)			\$ 14,304.89

Construction Engineering	(10% of C)	10%	\$ 1,430.49
Prelim & Final Design	(15% of C)	15%	\$ 2,145.73
Total Engineering Cost (D)			\$ 3,576.22

Total Project Cost (A+C+D) \$ 50,354.85

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Wilmot-Wulf Trail Segment 1 (Improve Existing Social Trail Wulf Rec Center to Wilmot Elementary)
Option 2- ADAAG Compliant Trail in Soft Surface

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	1660	\$ 22,410.00
2	Pedestrian Rail Fence (wooden)	LF	\$ 20.00	250	\$ 5,000.00
3	Earthwork (50% of Paving Costs)	%	\$ 11,205.00	1	\$ 11,205.00
4	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 43,615.00

Notes
 1,100 LF
 Along tennis courts

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 13,084.50
Utilities	(3-20% of A)	3%	\$ 1,308.45
Drainage	(4-10% of A)	5%	\$ 2,180.75
Erosion Control	(2-5% of A)	5%	\$ 2,180.75
Environmental Mitigation	(1-5% of A)	5%	\$ 2,180.75
Signing and Striping	(1-5% of A)	5%	\$ 2,180.75
Construction Traffic Control	(2-20% of A)	5%	\$ 2,180.75
Total (B)			\$ 25,296.70

Mobilization	(4-20% of B)	20%	\$ 5,059.34
Total Construction Cost (C)			\$ 30,356.04

Construction Engineering	(10% of C)	10%	\$ 3,035.60
Prelim & Final Design	(15% of C)	15%	\$ 4,553.41
Total Engineering Cost (D)			\$ 7,589.01

Total Project Cost (A+C+D) \$ 106,856.75

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
 Planning Level Opinion of Probable Cost
 9/25/15



Project: Wilmot-Wulf Trail Segment 1 (Improve Existing Social Trail Wulf Rec Center to Wilmot Elementary)
Option 2- ADAAG Compliant Trail in Concrete

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Trail (8' wide)	SY	\$ 58.00	1660	\$ 96,280.00
2	Pedestrian Rail Fence (wooden)	LF	\$ 20.00	250	\$ 5,000.00
3	Earthwork (30% of Paving Costs)	%	\$ 28,884.00	1	\$ 28,884.00
4	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 135,164.00

Notes
 1,100 LF
 Along tennis courts

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 40,549.20
Utilities	(3-20% of A)	3%	\$ 4,054.92
Drainage	(4-10% of A)	5%	\$ 6,758.20
Erosion Control	(2-5% of A)	5%	\$ 6,758.20
Environmental Mitigation	(1-5% of A)	5%	\$ 6,758.20
Signing and Striping	(1-5% of A)	5%	\$ 6,758.20
Construction Traffic Control	(2-20% of A)	5%	\$ 6,758.20
Total (B)			\$ 78,395.12

Mobilization	(4-20% of B)	20%	\$ 15,679.02
Total Construction Cost (C)			\$ 94,074.14

Construction Engineering	(10% of C)	10%	\$ 9,407.41
Prelim & Final Design	(15% of C)	15%	\$ 14,111.12
Total Engineering Cost (D)			\$ 23,518.54

Total Project Cost (A+C+D) \$ 331,151.80

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Wilmot-Wulf Trail Segment 2 (New Trail from Wilmot Elementary back fence to new Outdoor Learning Lab Location)
Soft Surface Trail

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 13.50	340	\$ 4,590.00
2	Concrete Sidewalk (8' wide)	SY	\$ 58.00	170	\$ 9,860.00
3	Retaining Walls	SF	\$ 85.00	600	\$ 51,000.00
4	Earthwork (10% of Paving Costs)	%	\$ 1,445.00	1	\$ 1,445.00
5	Clearing and Grubbing	LS	\$ 3,000.00	1	\$ 3,000.00
Total (A)					\$ 69,895.00

Notes
380 LF
190 LF along school maintenance driveway
200 LF in steep sideslope area; 3' in height average

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 20,968.50
Utilities	(3-20% of A)	3%	\$ 2,096.85
Drainage	(4-10% of A)	5%	\$ 3,494.75
Erosion Control	(2-5% of A)	5%	\$ 3,494.75
Environmental Mitigation	(1-5% of A)	5%	\$ 3,494.75
Signing and Striping	(1-5% of A)	5%	\$ 3,494.75
Construction Traffic Control	(2-20% of A)	5%	\$ 3,494.75
Total (B)			\$ 40,539.10

Mobilization	(4-20% of B)	20%	\$ 8,107.82
Total Construction Cost (C)			\$ 48,646.92

Construction Engineering	(10% of C)	10%	\$ 4,864.69
Prelim & Final Design	(20% of C)	20%	\$ 9,729.38
Total Engineering Cost (D)			\$ 14,594.08

Total Project Cost (A+C+D) \$ 173,675.10

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Wilmot-Wulf Trail Segment 2 (New Trail from Wilmot Elementary back fence to new Outdoor Learning Lab Location)
Concrete Trail

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crushed Gravel Trail (8' wide)	SY	\$ 58.00	340	\$ 19,720.00
2	Concrete Sidewalk (8' wide)	SY	\$ 58.00	170	\$ 9,860.00
3	Retaining Walls	SF	\$ 85.00	600	\$ 51,000.00
4	Earthwork (30% of Paving Costs)	%	\$ 8,874.00	1	\$ 8,874.00
5	Clearing and Grubbing	LS	\$ 3,000.00	1	\$ 3,000.00
Total (A)					\$ 92,454.00

Notes
380 LF
190 LF along school maintenance driveway
200 LF in steep sideslope area; 3' in height average

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 27,736.20
Utilities	(3-20% of A)	3%	\$ 2,773.62
Drainage	(4-10% of A)	5%	\$ 4,622.70
Erosion Control	(2-5% of A)	5%	\$ 4,622.70
Environmental Mitigation	(1-5% of A)	5%	\$ 4,622.70
Signing and Striping	(1-5% of A)	5%	\$ 4,622.70
Construction Traffic Control	(2-20% of A)	5%	\$ 4,622.70
Total (B)			\$ 53,623.32

Mobilization	(4-20% of B)	20%	\$ 10,724.66
Total Construction Cost (C)			\$ 64,347.98

Construction Engineering	(10% of C)	10%	\$ 6,434.80
Prelim & Final Design	(20% of C)	20%	\$ 12,869.60
Total Engineering Cost (D)			\$ 19,304.40

Total Project Cost (A+C+D) \$ 229,729.70

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: CR 73 Trail Segment 1 (New Concrete Trail Buffalo Park Rd to Little Cub Creek Rd)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (10' wide)	SY	\$ 58.00	1300	\$ 75,400.00
2	Curb and Gutter	LF	\$ 28.00	1165	\$ 32,620.00
3	Retaining Walls	SF	\$ 85.00	3825	\$ 325,125.00
4	Pedestrian Railing	LF	\$ 200.00	765	\$ 153,000.00
5	Earthwork (20% of Paving Costs)	%	\$ 21,604.00	1	\$ 21,604.00
6	Clearing and Grubbing	LS	\$ 20,000.00	1	\$ 20,000.00
Total (A)					\$ 627,749.00

Notes

765 LF; 5' in height average
located where retaining wall used

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 188,324.70
Utilities	(3-20% of A)	20%	\$ 125,549.80
Drainage	(4-10% of A)	10%	\$ 62,774.90
Irrigation	(1-2% of A)	1%	\$ 6,277.49
Erosion Control	(2-5% of A)	5%	\$ 31,387.45
Environmental Mitigation	(1-5% of A)	5%	\$ 31,387.45
Signing and Striping	(1-5% of A)	2%	\$ 12,554.98
Construction Traffic Control	(2-20% of A)	20%	\$ 125,549.80
Lighting	(1-5% of A)	5%	\$ 31,387.45
Landscaping	(1-20% of A)	5%	\$ 31,387.45
Total (B)			\$ 646,581.47

Mobilization	(4-20% of B)	20%	\$ 129,316.29
Total Construction Cost (C)			\$ 775,897.76

Construction Engineering	(15% of C)	15%	\$ 116,384.66
Prelim & Final Design	(20% of C)	20%	\$ 155,179.55
Total Engineering Cost (D)			\$ 271,564.22

Total Project Cost (A+C+D) \$2,321,792.45

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: CR 73 Trail Segment 2 (New Concrete Trail Little Cub Creek Rd to Downtown Evergreen)

Notes

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (10' wide)	SY	\$ 58.00	1500	\$ 87,000.00
2	Curb and Gutter	LF	\$ 28.00	1335	\$ 37,380.00
3	Retaining Walls	SF	\$ 85.00	4175	\$ 354,875.00
4	Pedestrian Railing	LF	\$ 200.00	835	\$ 167,000.00
5	Bridge Widening	SF	\$ 100.00	700	\$ 70,000.00
6	Earthwork (20% of Paving Costs)	%	\$ 24,876.00	1	\$ 24,876.00
7	Clearing and Grubbing	LS	\$ 20,000.00	1	\$ 20,000.00
Total (A)					\$ 761,131.00

835 LF; 5' in height average
 located where retaining wall used

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 228,339.30
Utilities	(3-20% of A)	20%	\$ 152,226.20
Drainage	(4-10% of A)	10%	\$ 76,113.10
Irrigation	(1-2% of A)	1%	\$ 7,611.31
Erosion Control	(2-5% of A)	5%	\$ 38,056.55
Environmental Mitigation	(1-5% of A)	5%	\$ 38,056.55
Signing and Striping	(1-5% of A)	2%	\$ 15,222.62
Construction Traffic Control	(2-20% of A)	20%	\$ 152,226.20
Lighting	(1-5% of A)	5%	\$ 38,056.55
Landscaping	(1-20% of A)	5%	\$ 38,056.55
Total (B)			\$ 783,964.93

Mobilization	(4-20% of B)	20%	\$ 156,792.99
Total Construction Cost (C)			\$ 940,757.92

Construction Engineering	(15% of C)	15%	\$ 141,113.69
Prelim & Final Design	(20% of C)	20%	\$ 188,151.58
Total Engineering Cost (D)			\$ 329,265.27

Total Project Cost (A+C+D) \$ 2,815,119.12

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Downtown Area Connections Segment 1 (Widen Existing Sidewalk Along South Side of SH 74 from Douglas Park Rd to Evergreen National Bank)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Removal of Curb and Gutter	LF	\$ 6.50	230	\$ 1,495.00
2	Removal of Asphalt Material	SY	\$ 5.25	135	\$ 708.75
3	Concrete Sidewalk (10' wide)	SY	\$ 58.00	135	\$ 7,830.00
4	Curb and Gutter	LF	\$ 28.00	750	\$ 21,000.00
5	Earthwork (10% of Paving Costs)	%	\$ 2,883.00	1	\$ 2,883.00
6	Clearing and Grubbing	LS	\$ 2,000.00	1	\$ 2,000.00
Total (A)					\$ 35,916.75

Notes
 5' width of removal for 240 LF
 240 LF; Widen from 5' to 10'

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 10,775.03
Utilities	(3-20% of A)	20%	\$ 7,183.35
Drainage	(4-10% of A)	10%	\$ 3,591.68
Irrigation	(1-2% of A)	1%	\$ 359.17
Erosion Control	(2-5% of A)	5%	\$ 1,795.84
Environmental Mitigation	(1-5% of A)	5%	\$ 1,795.84
Signing and Striping	(1-5% of A)	5%	\$ 1,795.84
Construction Traffic Control	(2-20% of A)	20%	\$ 7,183.35
Lighting	(1-5% of A)	5%	\$ 1,795.84
Landscaping	(1-20% of A)	10%	\$ 3,591.68
Total (B)			\$ 39,867.59

Mobilization	(4-20% of B)	20%	\$ 7,973.52
Total Construction Cost (C)			\$ 47,841.11

Construction Engineering	(10% of C)	10%	\$ 4,784.11
Prelim & Final Design	(15% of C)	15%	\$ 7,176.17
Total Engineering Cost (D)			\$ 11,960.28

Total Project Cost (A+C+D) \$ 135,585.73

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Downtown Area Connections Segment 2 (New Sidewalk Along South Side of SH 74 from Evergreen National Bank to Lower Meadow Dr)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Removal of Curb and Gutter	LF	\$ 6.50	230	\$ 1,495.00
2	Removal of Asphalt Material	SY	\$ 5.25	670	\$ 3,517.50
3	Concrete Sidewalk (10' wide)	SY	\$ 58.00	1000	\$ 58,000.00
4	Curb and Gutter	LF	\$ 28.00	900	\$ 25,200.00
5	Earthwork (10% of Paving Costs)	%	\$ 8,320.00	1	\$ 8,320.00
6	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 101,532.50

Notes
 10' width of removal for 600 LF
 900 LF

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 30,459.75
Utilities	(3-20% of A)	20%	\$ 20,306.50
Drainage	(4-10% of A)	10%	\$ 10,153.25
Irrigation	(1-2% of A)	1%	\$ 1,015.33
Erosion Control	(2-5% of A)	5%	\$ 5,076.63
Environmental Mitigation	(1-5% of A)	5%	\$ 5,076.63
Signing and Striping	(1-5% of A)	5%	\$ 5,076.63
Construction Traffic Control	(2-20% of A)	20%	\$ 20,306.50
Lighting	(1-5% of A)	5%	\$ 5,076.63
Landscaping	(1-20% of A)	10%	\$ 10,153.25
Total (B)			\$ 112,701.08

Mobilization	(4-20% of B)	20%	\$ 22,540.22
Total Construction Cost (C)			\$ 135,241.29

Construction Engineering	(10% of C)	10%	\$ 13,524.13
Prelim & Final Design	(15% of C)	15%	\$ 20,286.19
Total Engineering Cost (D)			\$ 33,810.32

Total Project Cost (A+C+D) \$ 383,285.19

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Downtown Area Connections Segment 3 (New Striped Trail Along Lower Meadow Dr From SH 74 to Bridge over Bear Creek)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Traffic Striping	LF	\$ 0.60	900	\$ 540.00
2	Traffic Markings	EA	\$ 300.00	6	\$ 1,800.00
3	Special Trail Signage	EA	\$ 250.00	4	\$ 1,000.00
4	Signs for One-Way Conversion	EA	\$ 250.00	8	\$ 2,000.00
Total (A)					\$ 5,340.00

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 1,602.00
Construction Traffic Control	(2-20% of A)	20%	\$ 1,068.00
Landscaping	(1-20% of A)	20%	\$ 1,068.00
Total (B)			\$ 3,738.00

Mobilization	(4-20% of B)	20%	\$ 747.60
Total Construction Cost (C)			\$ 4,485.60

Construction Engineering	(30% of C)	30%	\$ 1,345.68
Prelim & Final Design	(50% of C)	50%	\$ 2,242.80
Total Engineering Cost (D)			\$ 3,588.48

Total Project Cost (A+C+D) \$ 17,152.08

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Downtown Area Connections Segment 4 (Intersection Improvements SH 74/Lower Meadow Dr)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost	Notes
1	Removal of Asphalt Material	SY	\$ 5.25	400	\$ 2,100.00	3,600 SF
2	Curb and Gutter	LF	\$ 28.00	220	\$ 6,160.00	
3	Concrete Sidewalk (10' wide)	SY	\$ 58.00	111	\$ 6,438.00	100 LF
4	Earthwork (20% of Paving Costs)	%	\$ 1,232.00	1	\$ 1,232.00	
5	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00	
Total (A)					\$ 20,930.00	

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 6,279.00
Utilities	(3-20% of A)	20%	\$ 4,186.00
Drainage	(4-10% of A)	10%	\$ 2,093.00
Irrigation	(1-2% of A)	1%	\$ 209.30
Erosion Control	(2-5% of A)	5%	\$ 1,046.50
Environmental Mitigation	(1-5% of A)	5%	\$ 1,046.50
Signing and Striping	(1-5% of A)	5%	\$ 1,046.50
Construction Traffic Control	(2-20% of A)	20%	\$ 4,186.00
Lighting	(1-5% of A)	5%	\$ 1,046.50
Landscaping	(1-20% of A)	20%	\$ 4,186.00
Total (B)			\$ 25,325.30

Mobilization	(4-20% of B)	20%	\$ 5,065.06
Total Construction Cost (C)			\$ 30,390.36

Construction Engineering	(15% of C)	15%	\$ 4,558.55
Prelim & Final Design	(20% of C)	20%	\$ 6,078.07
Total Engineering Cost (D)			\$ 10,636.63

Total Project Cost (A+C+D) \$ 87,282.29

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Downtown Area Connections Segment 5 (New Sidewalk Along SH 74 from Lower Meadow Dr to Meadow Dr)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Removal of Guardrail	LF	\$ 4.05	250	\$ 1,012.50
2	Removal of Asphalt Material	SY	\$ 5.25	670	\$ 3,517.50
3	Concrete Sidewalk (10' wide)	SY	\$ 58.00	680	\$ 39,440.00
4	Curb and Gutter	LF	\$ 28.00	550	\$ 15,400.00
5	Earthwork (10% of Paving Costs)	%	\$ 5,484.00	1	\$ 5,484.00
6	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 69,854.00

Notes
550 LF; 10' in width
610 LF; 10' wide

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 20,956.20
Utilities	(3-20% of A)	20%	\$ 13,970.80
Drainage	(4-10% of A)	10%	\$ 6,985.40
Irrigation	(1-2% of A)	1%	\$ 698.54
Erosion Control	(2-5% of A)	5%	\$ 3,492.70
Environmental Mitigation	(1-5% of A)	5%	\$ 3,492.70
Signing and Striping	(1-5% of A)	5%	\$ 3,492.70
Construction Traffic Control	(2-20% of A)	20%	\$ 13,970.80
Lighting	(1-5% of A)	5%	\$ 3,492.70
Landscaping	(1-20% of A)	10%	\$ 6,985.40
Total (B)			\$ 77,537.94

Mobilization	(4-20% of B)	20%	\$ 15,507.59
Total Construction Cost (C)			\$ 93,045.53

Construction Engineering	(10% of C)	10%	\$ 9,304.55
Prelim & Final Design	(15% of C)	15%	\$ 13,956.83
Total Engineering Cost (D)			\$ 23,261.38

Total Project Cost (A+C+D) \$ 263,698.85

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Downtown Area Connections Segment 6 (Intersection Improvements SH 74/Meadow Dr)
Assumes Traffic Signal Installation

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crosswalks	EA	\$ 500.00	3	\$ 1,500.00
2	Traffic Signal	LS	\$ 150,000.00	1	\$ 150,000.00
Total (A)					\$ 151,500.00

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 45,450.00
Utilities	(3-20% of A)	10%	\$ 15,150.00
Irrigation	(1-2% of A)	1%	\$ 1,515.00
Erosion Control	(2-5% of A)	2%	\$ 3,030.00
Environmental Mitigation	(1-5% of A)	1%	\$ 1,515.00
Signing and Striping	(1-5% of A)	5%	\$ 7,575.00
Construction Traffic Control	(2-20% of A)	5%	\$ 7,575.00
Lighting	(1-5% of A)	5%	\$ 7,575.00
Landscaping	(1-20% of A)	1%	\$ 1,515.00
Total (B)			\$ 90,900.00

Mobilization	(4-20% of B)	20%	\$ 18,180.00
Total Construction Cost (C)			\$ 109,080.00

Construction Engineering	(10% of C)	10%	\$ 10,908.00
Prelim & Final Design	(10% of C)	10%	\$ 10,908.00
Total Engineering Cost (D)			\$ 21,816.00

Total Project Cost (A+C+D) \$ 373,296.00

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
 Planning Level Opinion of Probable Cost
 9/25/15



Project: Downtown Area Connections Segment 7 (Bulbout with Raised Table Pedestrian Crossing Per Location)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Removal of Curb and Gutter	LF	\$ 6.50	55	\$ 357.50
2	Removal of Asphalt Material	SY	\$ 5.25	125	\$ 656.25
3	Concrete Sidewalk (10' wide)	SY	\$ 58.00	50	\$ 2,900.00
4	Curb and Gutter	LF	\$ 28.00	110	\$ 3,080.00
5	Asphalt Paving Material	SY	\$ 58.00	15	\$ 870.00
6	Concrete Raised Table Crossing	SY	\$ 58.00	65	\$ 3,770.00
7	Active Crossing Warning Signs	EA	\$ 1,500.00	4	\$ 6,000.00
8	Earthwork (10% of Paving Costs)	%	\$ 1,062.00	1	\$ 1,062.00
9	Clearing and Grubbing	LS	\$ 2,000.00	1	\$ 2,000.00
Total (A)					\$ 20,695.75

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 6,208.73
Utilities	(3-20% of A)	10%	\$ 2,069.58
Drainage	(4-10% of A)	10%	\$ 2,069.58
Irrigation	(1-2% of A)	1%	\$ 206.96
Erosion Control	(2-5% of A)	2%	\$ 413.92
Environmental Mitigation	(1-5% of A)	1%	\$ 206.96
Signing and Striping	(1-5% of A)	5%	\$ 1,034.79
Construction Traffic Control	(2-20% of A)	20%	\$ 4,139.15
Lighting	(1-5% of A)	5%	\$ 1,034.79
Landscaping	(1-20% of A)	10%	\$ 2,069.58
Total (B)			\$ 19,454.01

Mobilization	(4-20% of B)	20%	\$ 3,890.80
Total Construction Cost (C)			\$ 23,344.81

Construction Engineering	(15% of C)	15%	\$ 3,501.72
Prelim & Final Design	(20% of C)	20%	\$ 4,668.96
Total Engineering Cost (D)			\$ 8,170.68

Total Project Cost (A+C+D) \$ 71,665.24

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: River Trail (Along Bear Creek CR 73 to Lower Meadow Dr)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (10' wide)	SY	\$ 58.00	1667	\$ 96,686.00
2	Retaining Walls	SF	\$ 85.00	3000	\$ 255,000.00
3	Pedestrian Railing	LF	\$ 200.00	1500	\$ 300,000.00
4	Special Trail Signage	EA	\$ 250.00	4	\$ 1,000.00
5	Earthwork (30% of Paving Costs)	%	\$ 29,005.80	1	\$ 29,005.80
6	Clearing and Grubbing	LS	\$ 25,000.00	1	\$ 25,000.00
Total (A)					\$ 706,691.80

Notes
1500 LF
1000 LF; 3' in height average
located where retaining wall used

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 212,007.54
Utilities	(3-20% of A)	5%	\$ 35,334.59
Drainage	(4-10% of A)	10%	\$ 70,669.18
Irrigation	(1-2% of A)	1%	\$ 7,066.92
Erosion Control	(2-5% of A)	5%	\$ 35,334.59
Environmental Mitigation	(1-5% of A)	5%	\$ 35,334.59
Signing and Striping	(1-5% of A)	1%	\$ 7,066.92
Construction Traffic Control	(2-20% of A)	5%	\$ 35,334.59
Lighting	(1-5% of A)	5%	\$ 35,334.59
Landscaping	(1-20% of A)	5%	\$ 35,334.59
Total (B)			\$ 508,818.10

Mobilization	(4-20% of B)	20%	\$ 101,763.62
Total Construction Cost (C)			\$ 610,581.72

Construction Engineering	(15% of C)	15%	\$ 91,587.26
Prelim & Final Design	(20% of C)	20%	\$ 122,116.34
Total Engineering Cost (D)			\$ 213,703.60

Total Project Cost (A+C+D) \$ 2,039,795.21

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Meadow Dr. Segment 1 (Signing and Markings Evergreen Parkway to SH 74 East of Downtown)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Shared Lane Markings	EA	\$ 300.00	46	\$ 13,800.00
2	Special Signage	EA	\$ 250.00	8	\$ 2,000.00
Total (A)					\$ 15,800.00

Notes
 5800 LF of roadway

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 4,740.00
Construction Traffic Control	(2-20% of A)	10%	\$ 1,580.00
Total (B)			\$ 6,320.00

Mobilization	(4-20% of B)	20%	\$ 1,264.00
Total Construction Cost (C)			\$ 7,584.00

Construction Engineering	(10% of C)	10%	\$ 758.40
Prelim & Final Design	(20% of C)	20%	\$ 1,516.80
Total Engineering Cost (D)			\$ 2,275.20

Total Project Cost (A+C+D) \$ 31,979.20

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Meadow Dr. Segment 2 (Widen Shoulders and Add Bike Lanes Douglas Park Rd to Evergreen Pkwy)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Asphalt Paving Material	SY	\$ 58.00	4666	\$ 270,628.00
2	Traffic Striping	LF	\$ 0.60	8400	\$ 5,040.00
4	Bike Lane Symbol	EA	\$ 300.00	16	\$ 4,800.00
3	Bike Lane Signs	EA	\$ 250.00	8	\$ 2,000.00
5	Earthwork (10% of Paving Costs)	%	\$ 27,062.80	1	\$ 27,062.80
6	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 314,530.80

Notes
5' wide; 4,200 LF per side

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 94,359.24
Utilities	(3-20% of A)	10%	\$ 31,453.08
Drainage	(4-10% of A)	10%	\$ 31,453.08
Irrigation	(1-2% of A)	1%	\$ 3,145.31
Erosion Control	(2-5% of A)	5%	\$ 15,726.54
Environmental Mitigation	(1-5% of A)	5%	\$ 15,726.54
Construction Traffic Control	(2-20% of A)	20%	\$ 62,906.16
Lighting	(1-5% of A)	1%	\$ 3,145.31
Landscaping	(1-20% of A)	5%	\$ 15,726.54
Total (B)			\$ 273,641.80

Mobilization	(4-20% of B)	20%	\$ 54,728.36
Total Construction Cost (C)			\$ 328,370.16

Construction Engineering	(10% of C)	10%	\$ 32,837.02
Prelim & Final Design	(15% of C)	15%	\$ 49,255.52
Total Engineering Cost (D)			\$ 82,092.54

Total Project Cost (A+C+D) \$ 998,635.29

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Meadow Dr. Segment 3 (New Trail Douglas Park Rd to Evergreen Pkwy)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Removal of Asphalt Material	SY	\$ 5.25	445	\$ 2,336.25
2	Concrete Sidewalk (10' wide)	SY	\$ 58.00	4666	\$ 270,628.00
3	Tuff Curb and Vertical Post	EA	\$ 120.00	47	\$ 5,640.00
4	Special Trail Signage	EA	\$ 250.00	4	\$ 1,000.00
5	Earthwork (10% of Paving Costs)	%	\$ 27,062.80	1	\$ 27,062.80
6	Clearing and Grubbing	LS	\$ 10,000.00	1	\$ 10,000.00
Total (A)					\$ 316,667.05

Notes
 400 LF; 10 wide
 4,200 LF; 10' wide
 placed every 20 LF for 940 LF on east end

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 95,000.12
Utilities	(3-20% of A)	10%	\$ 31,666.71
Drainage	(4-10% of A)	5%	\$ 15,833.35
Irrigation	(1-2% of A)	1%	\$ 3,166.67
Erosion Control	(2-5% of A)	5%	\$ 15,833.35
Environmental Mitigation	(1-5% of A)	3%	\$ 9,500.01
Signing and Striping	(1-5% of A)	3%	\$ 9,500.01
Construction Traffic Control	(2-20% of A)	10%	\$ 31,666.71
Lighting	(1-5% of A)	1%	\$ 3,166.67
Landscaping	(1-20% of A)	1%	\$ 3,166.67
Total (B)			\$ 218,500.26

Mobilization	(4-20% of B)	20%	\$ 43,700.05
Total Construction Cost (C)			\$ 262,200.32

Construction Engineering	(15% of C)	15%	\$ 39,330.05
Prelim & Final Design	(20% of C)	20%	\$ 52,440.06
Total Engineering Cost (D)			\$ 91,770.11

Total Project Cost (A+C+D) \$ 889,137.74

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Meadow Dr. Segment 4 (Improve Trail Connection Meadow Dr to Evergreen Pkwy)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (10' wide)	SY	\$ 58.00	555	\$ 32,190.00
2	Retaining Walls	SF	\$ 85.00	300	\$ 25,500.00
2	Special Trail Signage	EA	\$ 250.00	2	\$ 500.00
3	Earthwork (20% of Paving Costs)	%	\$ 6,438.00	1	\$ 6,438.00
4	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 69,628.00

Notes
500 LF; 10' wide
150 LF; 2' in height average

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 20,888.40
Utilities	(3-20% of A)	5%	\$ 3,481.40
Drainage	(4-10% of A)	5%	\$ 3,481.40
Irrigation	(1-2% of A)	1%	\$ 696.28
Erosion Control	(2-5% of A)	5%	\$ 3,481.40
Environmental Mitigation	(1-5% of A)	3%	\$ 2,088.84
Signing and Striping	(1-5% of A)	1%	\$ 696.28
Construction Traffic Control	(2-20% of A)	10%	\$ 6,962.80
Lighting	(1-5% of A)	1%	\$ 696.28
Landscaping	(1-20% of A)	5%	\$ 3,481.40

Total (B) \$ 45,954.48

Mobilization	(4-20% of B)	20%	\$ 9,190.90
--------------	--------------	-----	-------------

Total Construction Cost (C) \$ 55,145.38

Construction Engineering	(15% of C)	15%	\$ 8,271.81
Prelim & Final Design	(20% of C)	20%	\$ 11,029.08

Total Engineering Cost (D) \$ 19,300.88

Total Project Cost (A+C+D) \$ 190,028.74

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Meadow Dr. Segment 5 (Improved and Relocated Pedestrian Crossing of Evergreen Pkwy)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Remove Existing Crossing and Equipment	LS	\$ 5,000.00	1	\$ 5,000.00
2	Removal of Asphalt Material	SY	\$ 5.25	240	\$ 1,260.00
3	Concrete Median	SY	\$ 58.00	50	\$ 2,900.00
4	Curb and Gutter	LF	\$ 28.00	400	\$ 11,200.00
5	Crosswalk Markings	EA	\$ 500.00	2	\$ 1,000.00
6	Activated Crossing Equipment	EA	\$ 15,000.00	1	\$ 15,000.00
Total (A)					\$ 36,360.00

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 10,908.00
Utilities	(3-20% of A)	10%	\$ 3,636.00
Drainage	(4-10% of A)	10%	\$ 3,636.00
Erosion Control	(2-5% of A)	2%	\$ 727.20
Environmental Mitigation	(1-5% of A)	3%	\$ 1,090.80
Signing and Striping	(1-5% of A)	5%	\$ 1,818.00
Construction Traffic Control	(2-20% of A)	20%	\$ 7,272.00
Lighting	(1-5% of A)	5%	\$ 1,818.00
Landscaping	(1-20% of A)	5%	\$ 1,818.00
Total (B)			\$ 32,724.00

Mobilization	(4-20% of B)	20%	\$ 6,544.80
Total Construction Cost (C)			\$ 39,268.80

Construction Engineering	(10% of C)	10%	\$ 3,926.88
Prelim & Final Design	(20% of C)	20%	\$ 7,853.76
Total Engineering Cost (D)			\$ 11,780.64

Total Project Cost (A+C+D) \$ 120,133.44

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Bear Creek Connection Segment 1 (Add Signing and Markings to Upper Bear Creek Rd Dedisse Trail to Pioneer Trail)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Shared Lane Markings	EA	\$ 300.00	20	\$ 6,000.00
2	Special Signage	EA	\$ 250.00	4	\$ 1,000.00
Total (A)					\$ 7,000.00

Notes
 2600 LF of roadway

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 2,100.00
Construction Traffic Control	(2-20% of A)	20%	\$ 1,400.00
Total (B)			\$ 3,500.00

Mobilization	(4-20% of B)	20%	\$ 700.00
Total Construction Cost (C)			\$ 4,200.00

Construction Engineering	(20% of C)	20%	\$ 840.00
Prelim & Final Design	(30% of C)	30%	\$ 1,260.00
Total Engineering Cost (D)			\$ 2,100.00

Total Project Cost (A+C+D) \$ 16,800.00

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Bear Creek Connection Segment 2 (Improve Crossings of Upper Bear Creek Rd at Dedisse Trail and Pioneer Trail)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Crosswalk Markings	EA	\$ 500.00	2	\$ 1,000.00
2	Activated Crossing Equipment	EA	\$ 15,000.00	2	\$ 30,000.00
Total (A)					\$ 31,000.00

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 9,300.00
Utilities	(3-20% of A)	3%	\$ 930.00
Drainage	(4-10% of A)	4%	\$ 1,240.00
Erosion Control	(2-5% of A)	2%	\$ 620.00
Environmental Mitigation	(1-5% of A)	1%	\$ 310.00
Signing and Striping	(1-5% of A)	5%	\$ 1,550.00
Construction Traffic Control	(2-20% of A)	10%	\$ 3,100.00
Lighting	(1-5% of A)	1%	\$ 310.00

Total (B) \$ 17,360.00

Mobilization	(4-20% of B)	20%	\$ 3,472.00
--------------	--------------	-----	-------------

Total Construction Cost (C) \$ 20,832.00

Construction Engineering	(10% of C)	10%	\$ 2,083.20
Prelim & Final Design	(15% of C)	15%	\$ 3,124.80

Total Engineering Cost (D) \$ 5,208.00

Total Project Cost (A+C+D) \$ 74,400.00

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Bear Creek Connection Segment 3 (New Trail Along Upper Bear Creek Rd from Dedisse Trail to Lake House Entrance)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (10' wide)	SY	\$ 58.00	555	\$ 32,190.00
2	Retaining Walls	SF	\$ 85.00	1200	\$ 102,000.00
3	Pedestrian Railing	LF	\$ 200.00	300	\$ 60,000.00
4	Tuff Curb and Vertical Post	EA	\$ 120.00	80	\$ 9,600.00
5	Special Trail Signage	EA	\$ 250.00	2	\$ 500.00
6	Earthwork (10% of Paving Costs)	%	\$ 3,219.00	1	\$ 3,219.00
7	Clearing and Grubbing	LS	\$ 5,000.00	1	\$ 5,000.00
Total (A)					\$ 212,509.00

Notes
 1600 LF; 10' wide
 300 LF; 4' in height average; east end along creek
 located where retaining wall used
 placed every 20 LF

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 63,752.70
Utilities	(3-20% of A)	5%	\$ 10,625.45
Drainage	(4-10% of A)	5%	\$ 10,625.45
Irrigation	(1-2% of A)	1%	\$ 2,125.09
Erosion Control	(2-5% of A)	5%	\$ 10,625.45
Environmental Mitigation	(1-5% of A)	5%	\$ 10,625.45
Signing and Striping	(1-5% of A)	1%	\$ 2,125.09
Construction Traffic Control	(2-20% of A)	10%	\$ 21,250.90
Lighting	(1-5% of A)	1%	\$ 2,125.09
Landscaping	(1-20% of A)	5%	\$ 10,625.45
Total (B)			\$ 144,506.12

Mobilization	(4-20% of B)	20%	\$ 28,901.22
Total Construction Cost (C)			\$ 173,407.34

Construction Engineering	(15% of C)	15%	\$ 26,011.10
Prelim & Final Design	(20% of C)	20%	\$ 34,681.47
Total Engineering Cost (D)			\$ 60,692.57

Total Project Cost (A+C+D) \$ 591,115.03

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: North Lake Trail (Widen and Improve Existing Trail on North Side of Evergreen Lake Pioneer Trail to Dam)

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Concrete Sidewalk (14' wide)	SY	\$ 58.00	3500	\$ 203,000.00
2	Retaining Walls	SF	\$ 85.00	5000	\$ 425,000.00
3	Pedestrian Railing	LF	\$ 200.00	1000	\$ 200,000.00
4	Special Trail Signage	EA	\$ 250.00	4	\$ 1,000.00
5	Earthwork (50% of Paving Costs)	%	\$101,500.00	1	\$ 101,500.00
6	Clearing and Grubbing	LS	\$ 25,000.00	1	\$ 25,000.00
Total (A)					\$ 955,500.00

Notes
 2240 LF
 1000 LF; 5' in height average
 located where retaining wall used

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 286,650.00
Utilities	(3-20% of A)	5%	\$ 47,775.00
Drainage	(4-10% of A)	10%	\$ 95,550.00
Irrigation	(1-2% of A)	1%	\$ 9,555.00
Erosion Control	(2-5% of A)	5%	\$ 47,775.00
Environmental Mitigation	(1-5% of A)	5%	\$ 47,775.00
Signing and Striping	(1-5% of A)	1%	\$ 9,555.00
Construction Traffic Control	(2-20% of A)	20%	\$ 191,100.00
Lighting	(1-5% of A)	5%	\$ 47,775.00
Landscaping	(1-20% of A)	20%	\$ 191,100.00
Total (B)			\$ 974,610.00

Mobilization	(4-20% of B)	20%	\$ 194,922.00
Total Construction Cost (C)			\$ 1,169,532.00

Construction Engineering	(15% of C)	15%	\$ 175,429.80
Prelim & Final Design	(20% of C)	20%	\$ 233,906.40
Total Engineering Cost (D)			\$ 409,336.20

Total Project Cost (A+C+D) \$ 3,508,978.20

Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.

Evergreen Trails Master Plan
Planning Level Opinion of Probable Cost
9/25/15



Project: Wayfinding Sign Improvements

	Item	Pay Unit	Unit Cost	Quantity	Extended Cost
1	Kiosk	EA	\$ 5,000.00	2	\$ 10,000.00
2	Entry Monument	EA	\$ 1,500.00	3	\$ 4,500.00
3	Directional Marker	EA	\$ 500.00	13	\$ 6,500.00
Total (A)					\$ 21,000.00

Notes

	% Range	% Used	Cost
Contingencies	(10-30% of A)	30%	\$ 6,300.00
Construction Traffic Control	(2-20% of A)	5%	\$ 1,050.00
Total (B)			\$ 7,350.00

Mobilization	(4-20% of B)	20%	\$ 1,470.00
Total Construction Cost (C)			\$ 8,820.00

Construction Engineering	(20% of C)	20%	\$ 1,764.00
Prelim & Final Design	(30% of C)	30%	\$ 2,646.00
Total Engineering Cost (D)			\$ 4,410.00

Total Project Cost (A+C+D) \$ 41,580.00

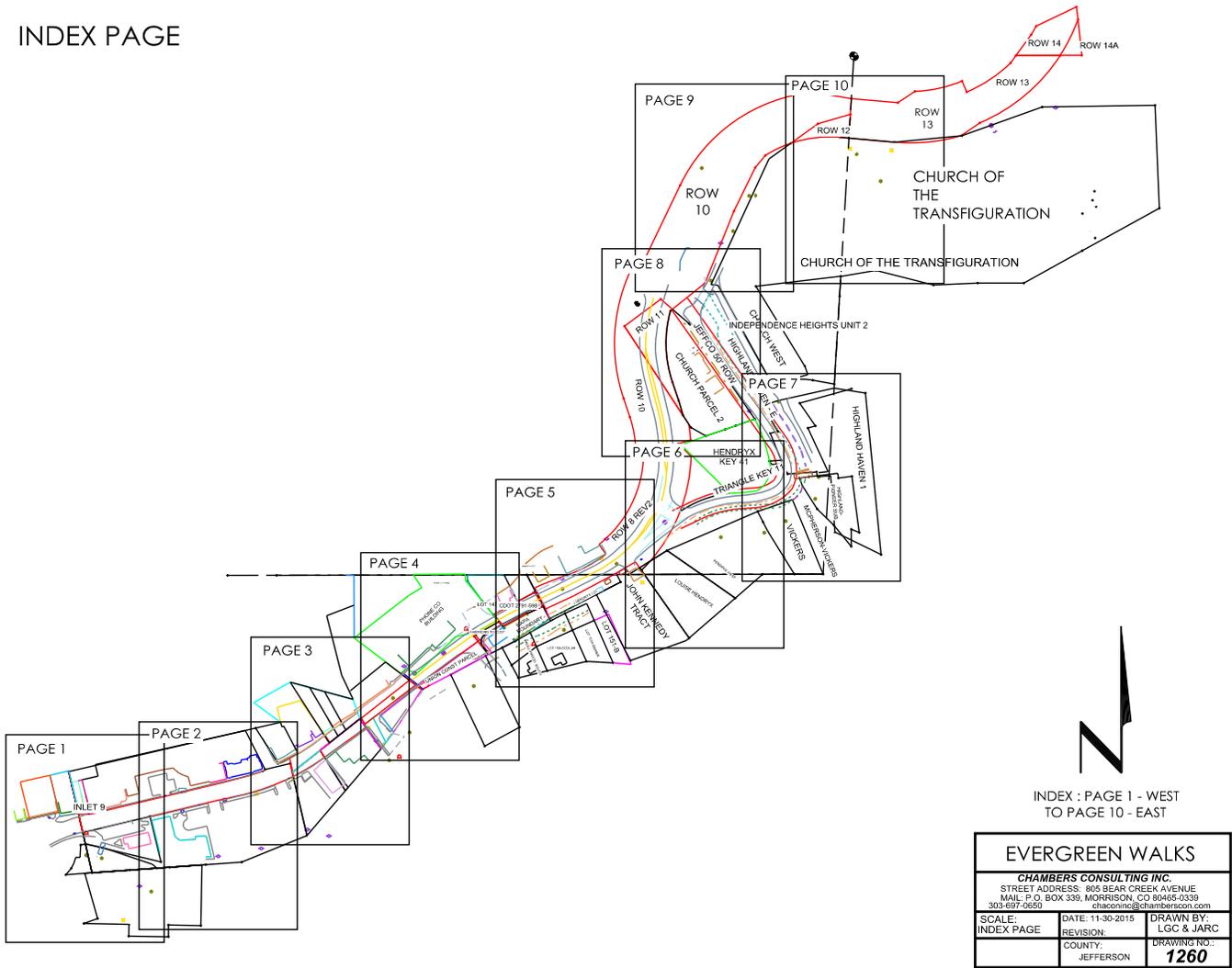
Notes: All costs in 2015 dollars. Unit costs based on CDOT 2014-2015 Cost Data. ROW acquisition not included in costs.

In providing opinions of probable construction cost, the Client understands that OV Consulting has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that opinions of probable construction costs provided are to be made on the basis of our qualifications and experience. OV Consulting makes no warranty, express or implied, as to the accuracy of such opinions as compared to bid or actual costs.



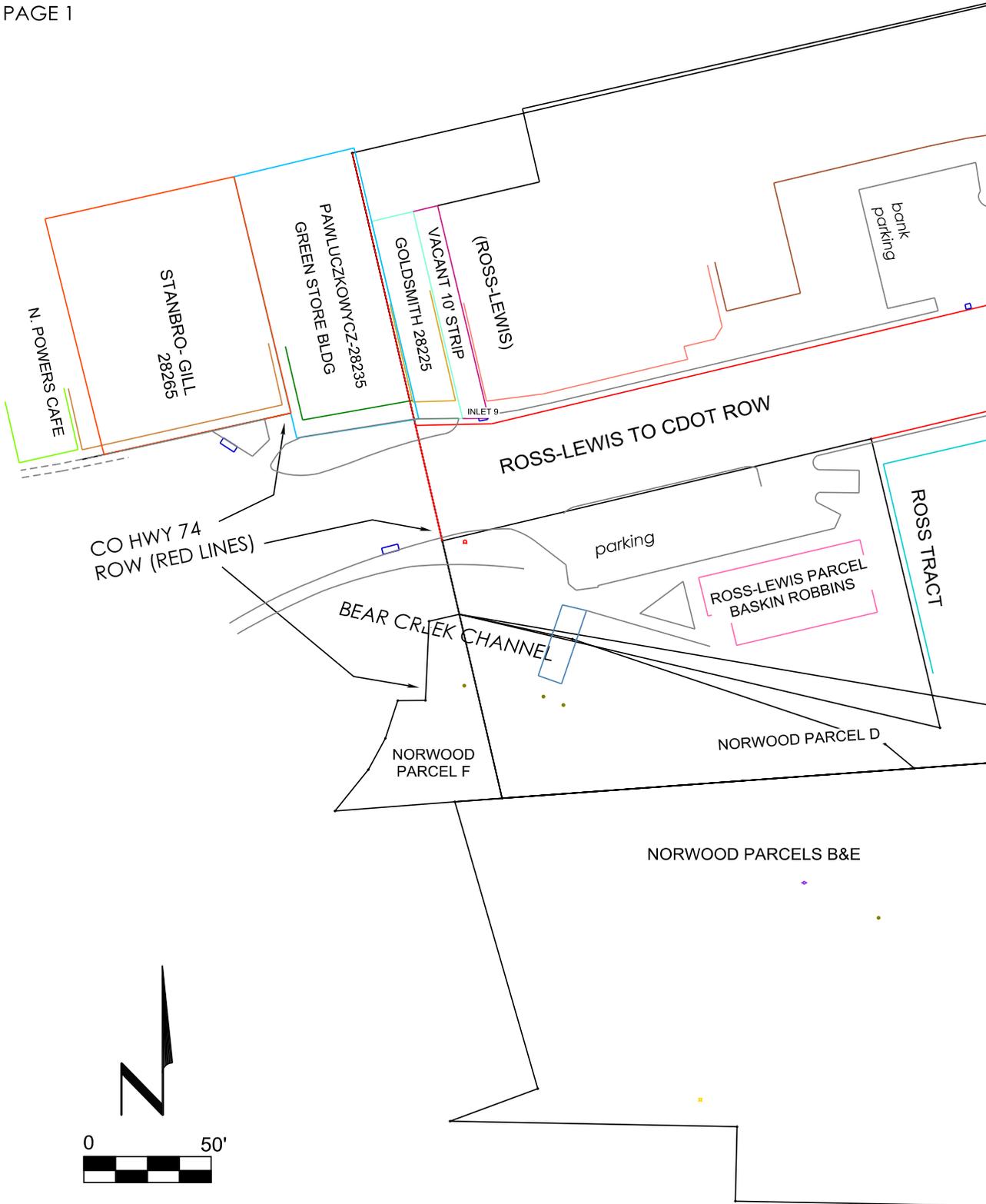
Appendix C. Right-of-Way Mapping

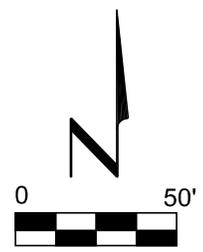
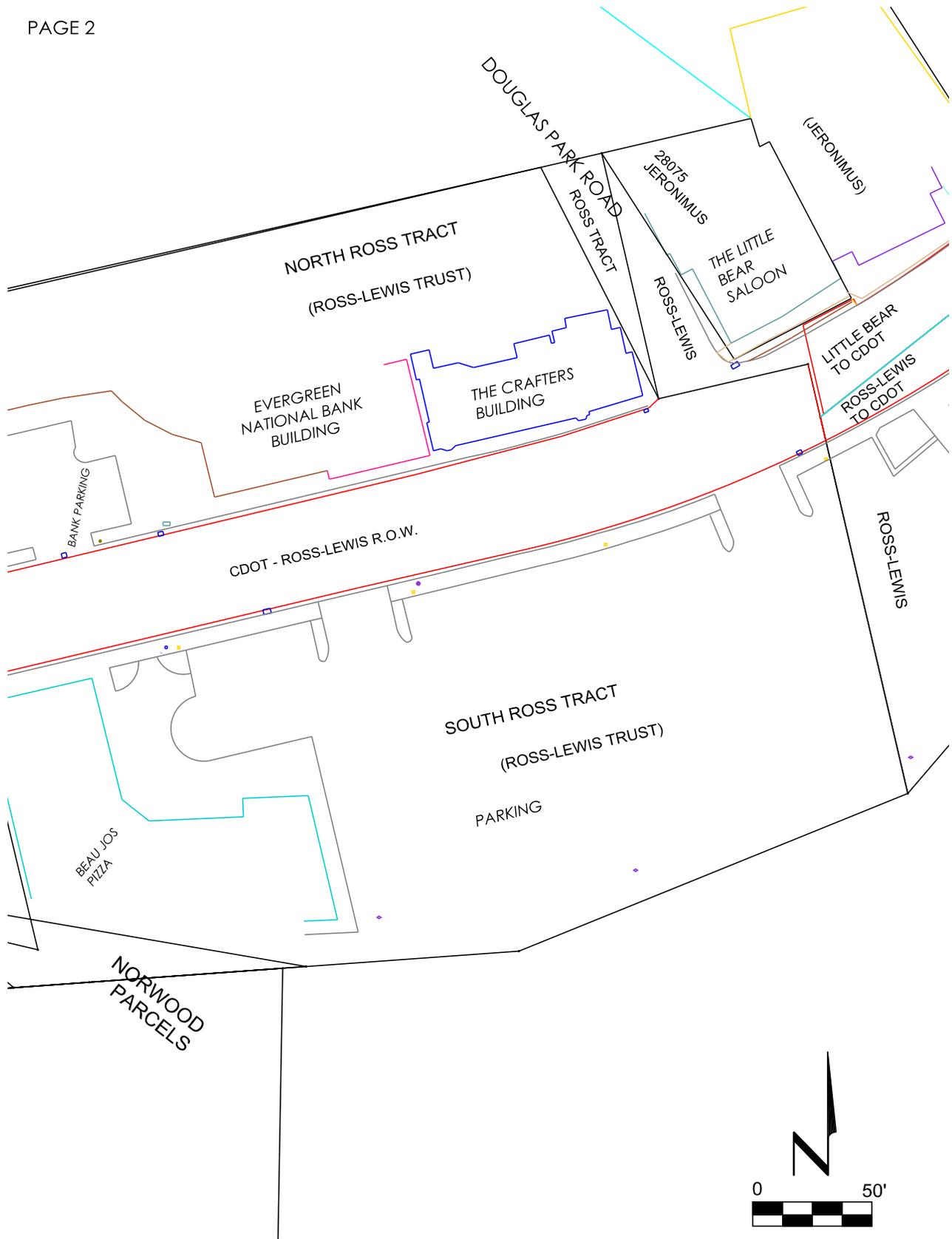
INDEX PAGE





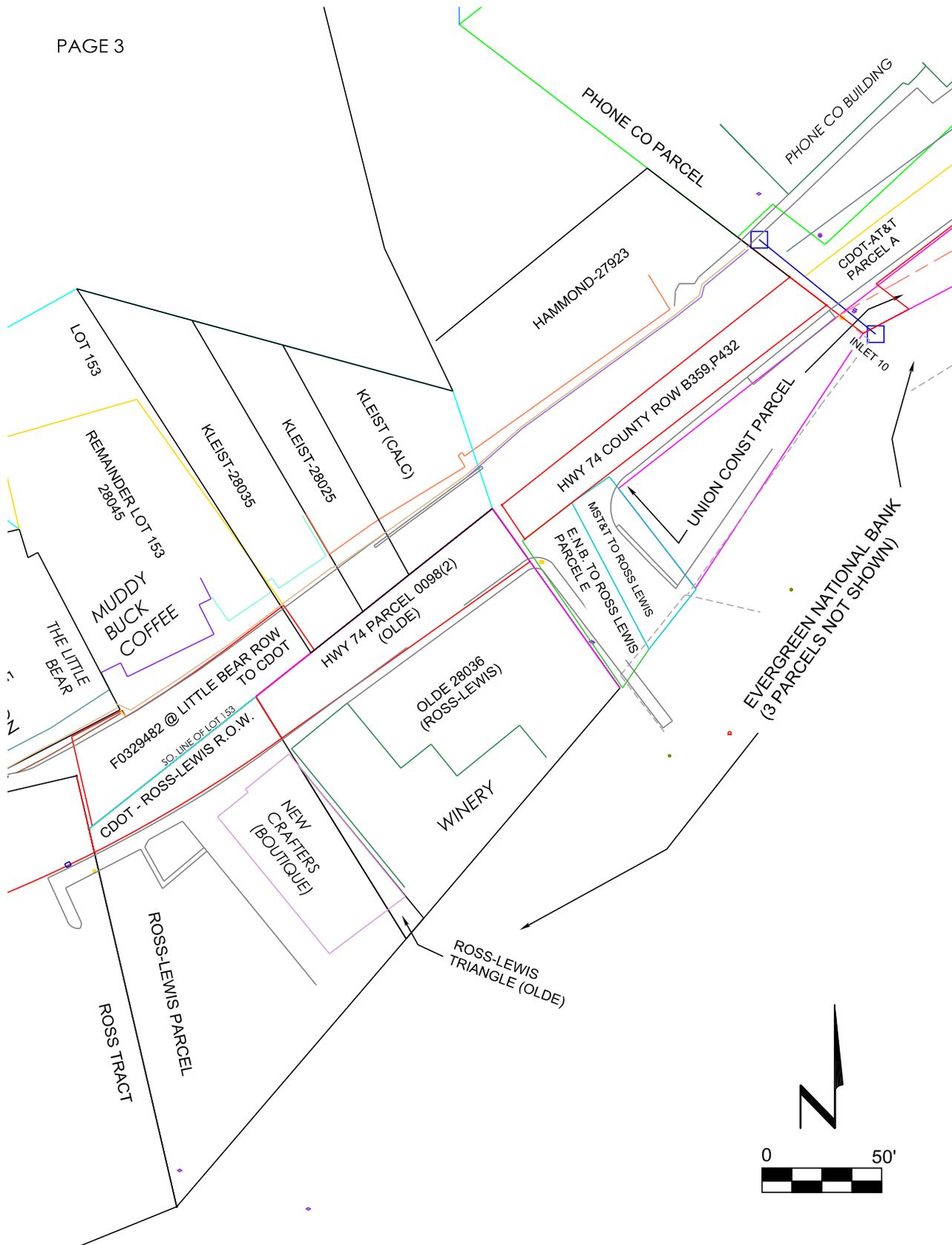
PAGE 1

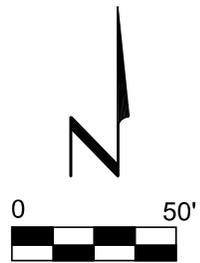
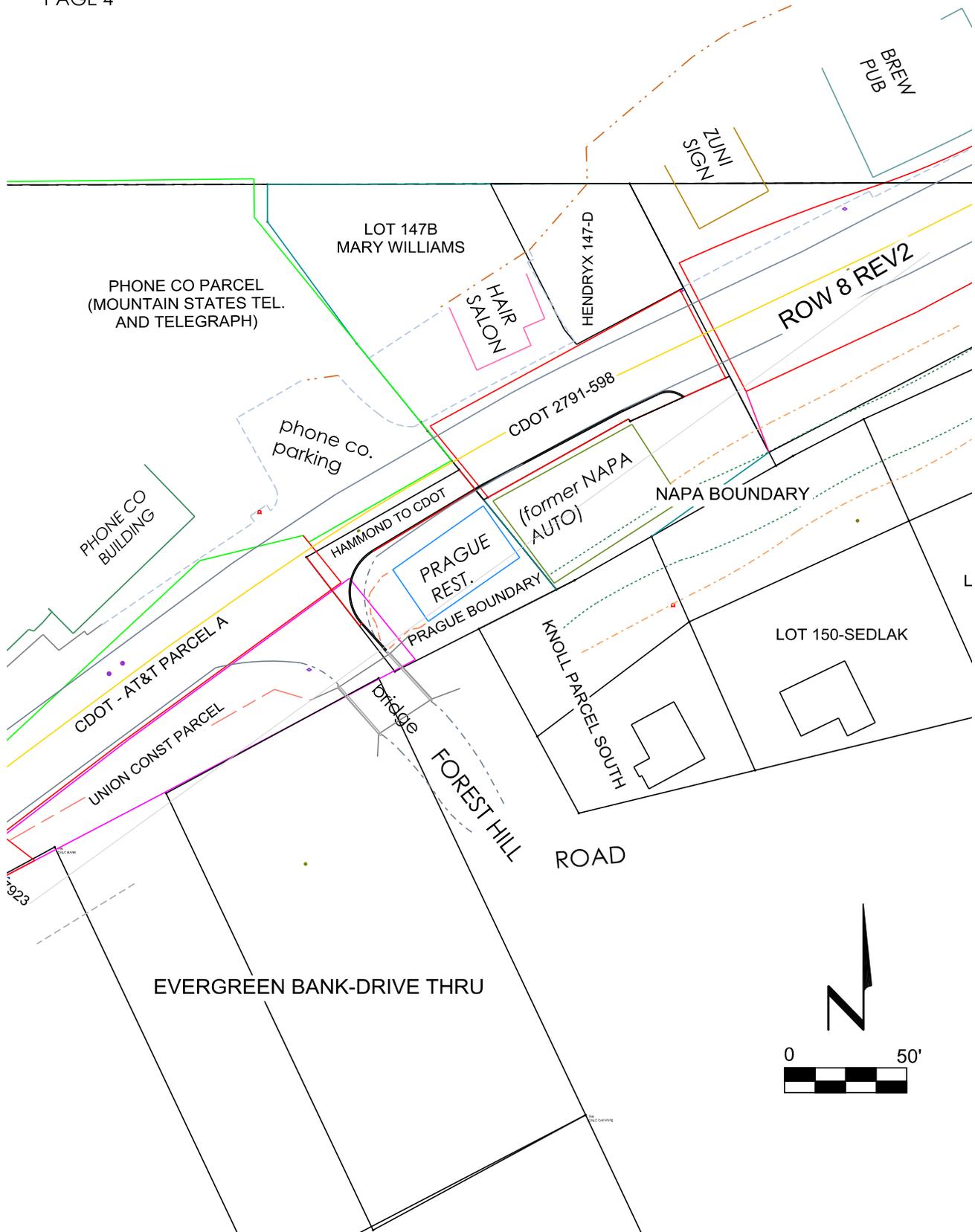


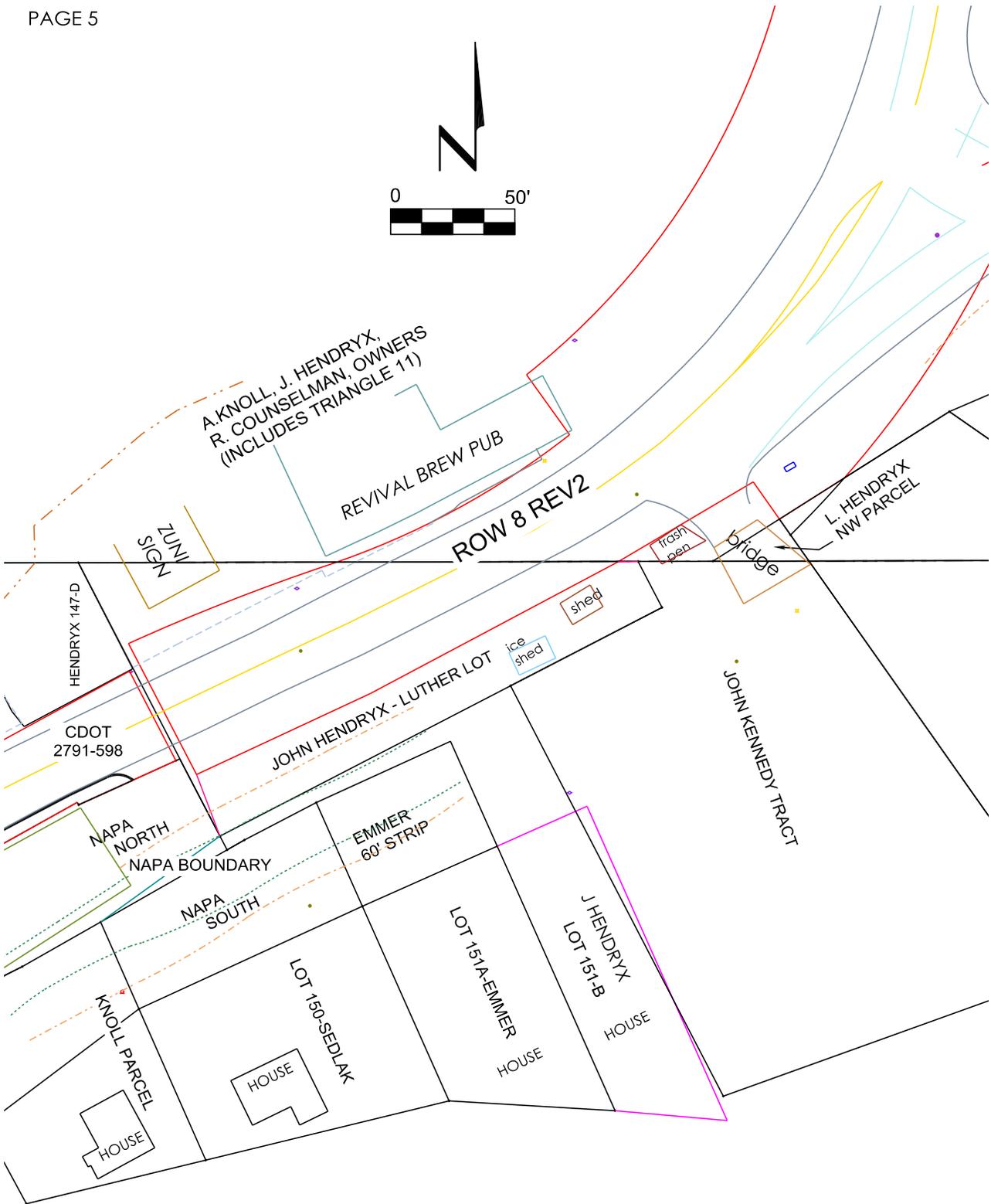




PAGE 3

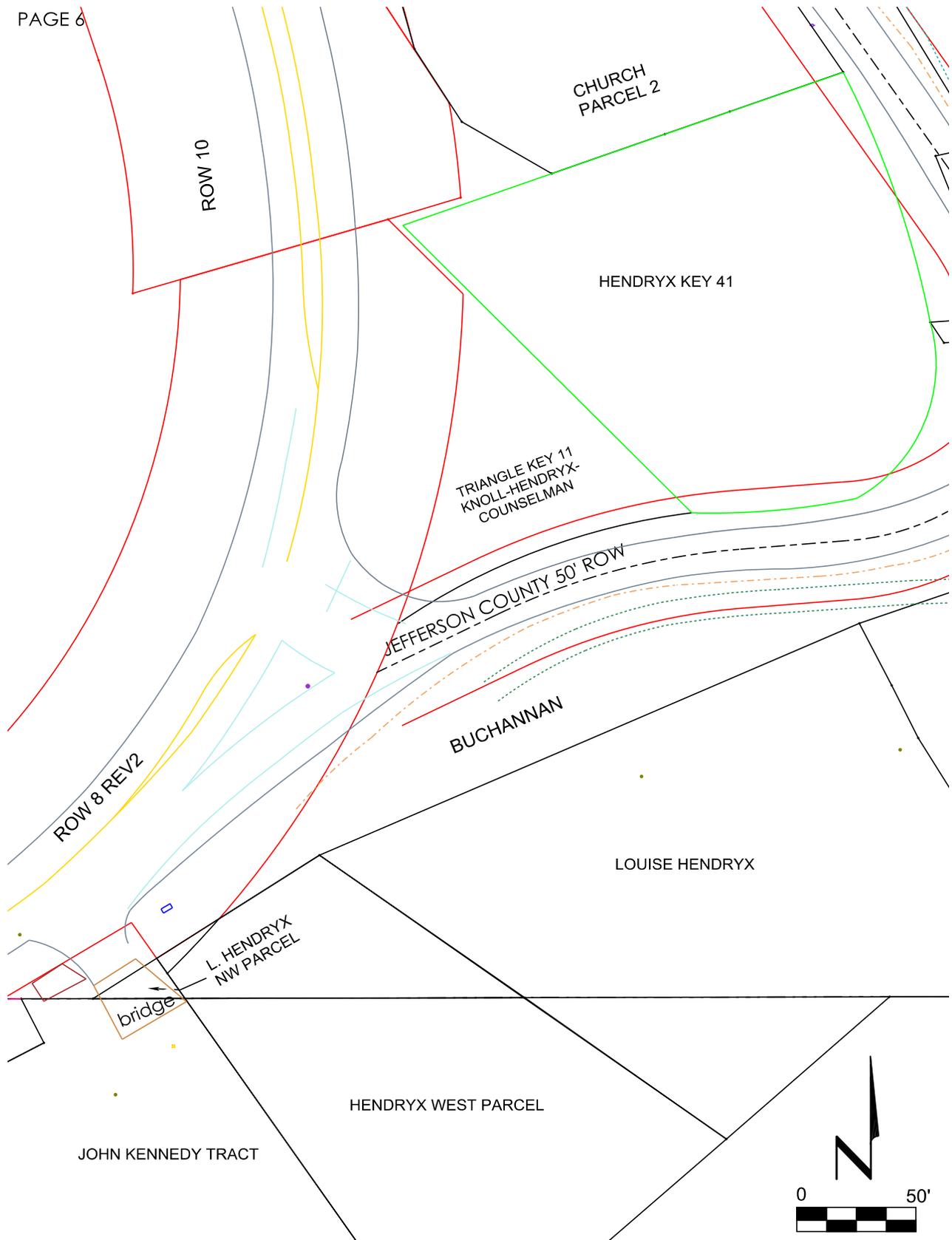


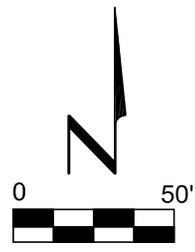
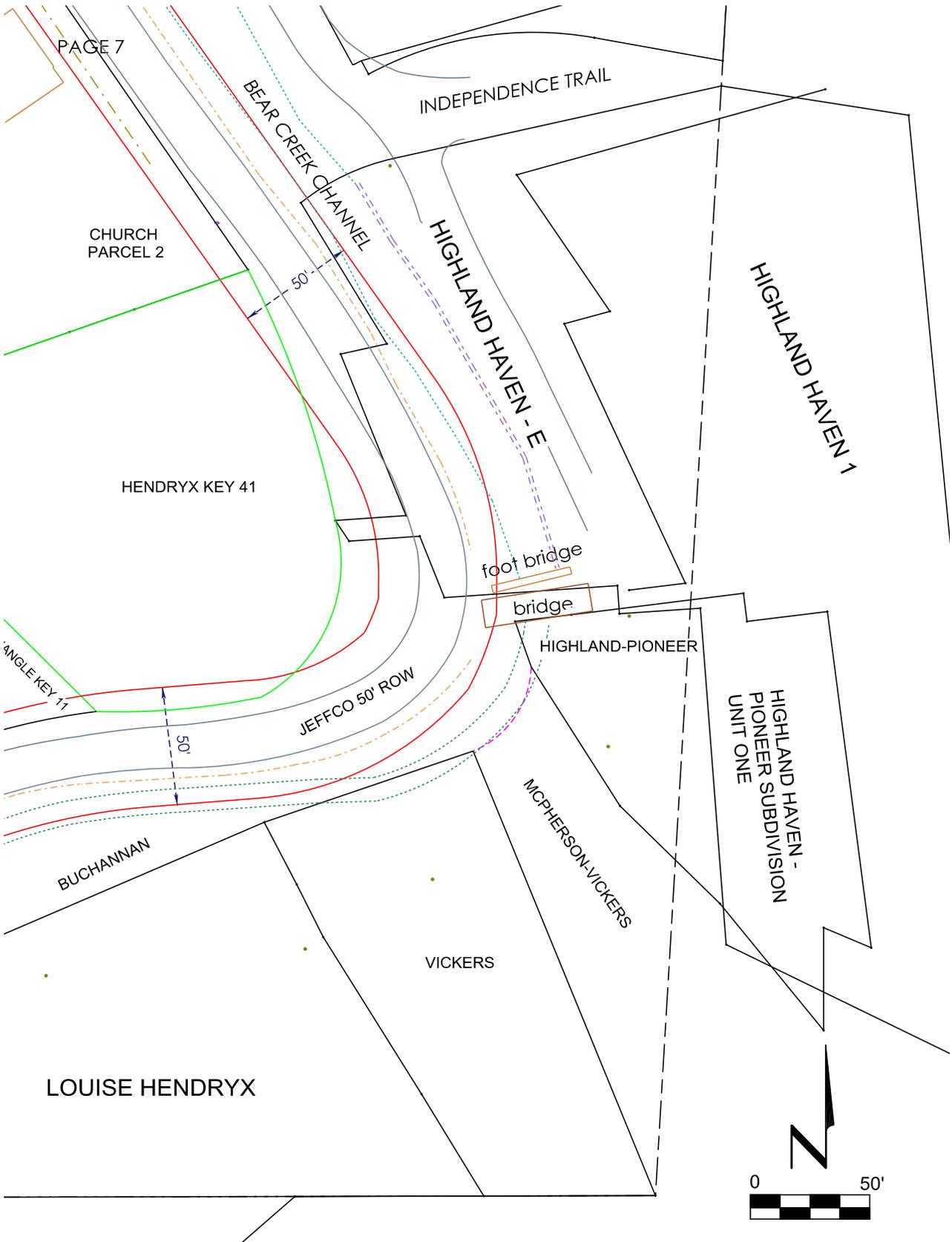


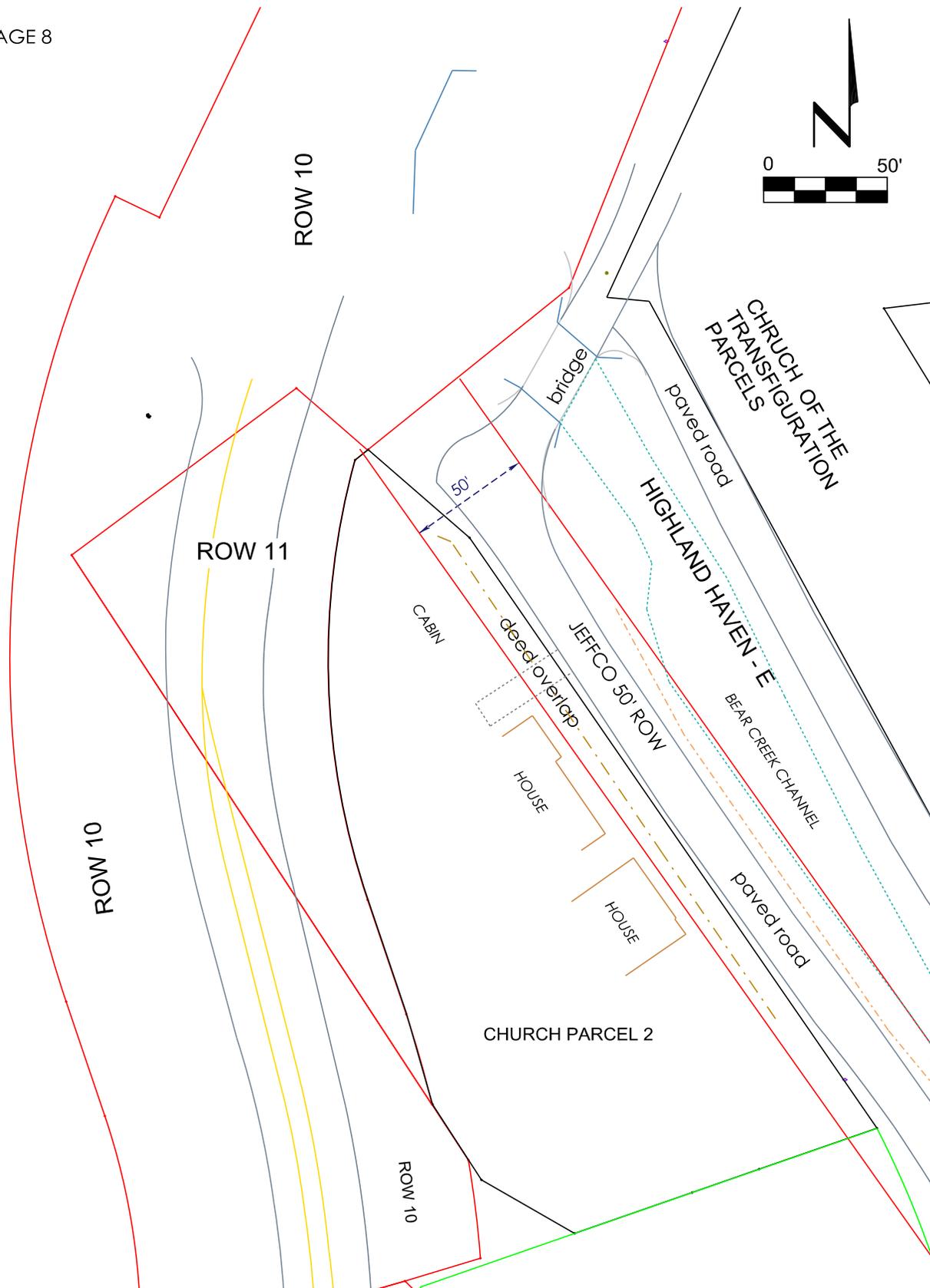




PAGE 6

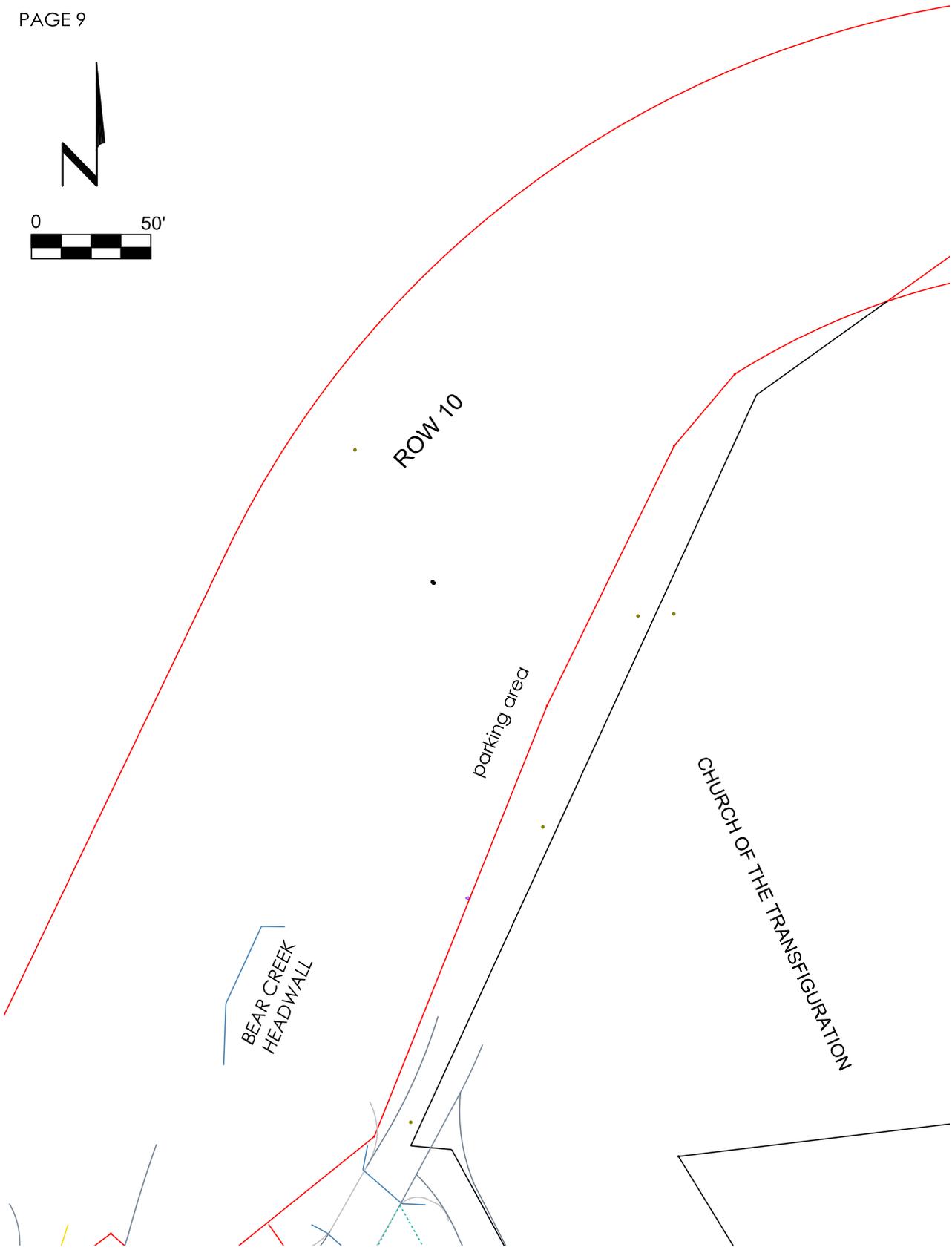
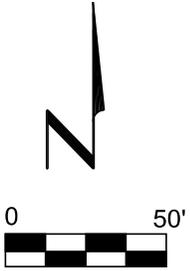








PAGE 9





PAGE 10

