



Parks & Open Space

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PARKS & OPEN SPACE ADVISORY COMMITTEE MEETING

Time/Date of Meeting: 6:30 p.m., Thursday, Dec. 14, 2023

Location: Boulder County Courthouse
1325 Pearl Street, Third Floor, Boulder

TO:	Parks & Open Space Advisory Committee
FROM/PRESENTER:	Heidi Wagner, Resource Planning Manager Jeff Moline, Senior Planner Whitney May Taylor, Planner II
AGENDA ITEM:	Final East Boulder Creek Site Management Plan
ACTION REQUESTED:	Approval

Introduction

At the Nov. 16, 2023, POSAC meeting discussing the East Boulder Creek Site Management Plan (EBC), the committee requested additional information and analysis that led to the staff recommendations surrounding two issues of highest concern to the public, and one issue of interest to POSAC and the public. The two issues of highest concern are the location of the 109th St. trailhead and the environmental and wildlife impacts of the proposed trail north of the Kenosha Ponds Critical Wildlife Habitat. The other issue of concern was the risk and mitigation for aquatic nuisance species.

This memo and the attachment provide more information on staff recommendations and the analysis that led to the management actions in the final management plan, as well as the additional information requested by POSAC members and the public. Communication to the neighbors is also addressed.

109th Street Trailhead/Parking Lot

Neighbors provided extensive comment on the East Boulder Creek Site Management Plan after it was posted on the web in October regarding the location of the 109th Street trailhead. Residents worry that the trailhead will add traffic to their public street and compromise their sense of community and safety. Additionally, residents feel the parking lot will bring added visitor and visual impacts to the neighborhood. Input from emails and POSAC testimony have questioned the siting of the trailhead and parking lot and suggested alternatives. POSAC echoed those concerns and requested staff provide an explanation of the analysis performed for recommending the current proposal.

Staff Recommendation: The 109th St. trailhead is required for equitable access to the southwest section of EBC. This is the most appropriate location according to the following analysis:

1. EBC Trailhead Study. Staff analyzed and reviewed nine different locations for trailheads at EBC. Due to a variety of factors such as traffic volumes and speeds, floodplain regulations, connection to the future B.E.R.T., and environmental impacts, the final plan proposed one on the Kenosha property and one at the southwest end of

the site. Staff studied several locations for the western parking lot, eventually selecting the site off of 109th Street.

2. [Five Year Visitor Study, 2021](#). In Table 12 on PDF page 14, the statistically valid study of park visitors includes a summary of answers to a question about the “most common single improvement” the department could make. The top three responses were #1. Trailhead Maintenance, #2. More or longer trails, and #3. Add more parking. In order to provide public access to the East Boulder Creek Site, staff has recommended two trailheads, one each to serve the two sections of the site—a northeast half adjacent to Kenosha Road and a southwest half adjacent to Jasper Road. The department is attempting to provide access to parks and facilities through transit and the closest route is the Longmont-Denver regional bus with a stop at US 287 and Jasper. Providing a trailhead in proximity to that stop helps meet that sustainability goal.
3. [Use Preferences And Visitor Experiences Of People With Disabilities On Parks & Open Space 2020](#). From page two of the report, the three most important amenities to the organizations (representing people with disabilities) are restrooms, trails, and parking lots. The three most important amenities to the survey respondents are trails, parking lots, and trail signage. Other amenities survey respondents reported looking for when choosing to visit a park or open space to visit include: accessible trail design (smooth, handholds for inclines, easy trails), shade, accessible parking, access to parks using public transport, and places that provide easy accommodation for wheelchairs. In another question from this report, “not enough parking or problems with parking” was one of the most common issues the respondents faced at our parks, PDF page 16. The plains of Boulder County provide an opportunity for BCPOS to create trail facilities that meet accessibility standards—something that is a greater challenge in the foothill and mountain parks. The trail routes and trailhead locations are sited to optimize access to multiple portions of EBC. By providing parking at two locations, people with disabilities have a greater opportunity of visiting more of the property.
4. See Attachment 1, Supporting Information: Infrastructure, for a more detailed analysis.

For these reasons, staff recommends providing this accessible parking lot on 109th Street.

Trail North of Kenosha Ponds

Many people commented during the planning process that they valued the environmental features and wildlife on the site and wanted the plan to take measures to preserve and enhance those resources and habitats. Creek restoration west of Kenosha ponds and managed agriculture along the entire riparian corridor will enhance those values. Staff believes the proposed infrastructure and uses (including dogs on-leash) have been selected to have the least impact on wildlife and supports this community feedback.

Some community members and POSAC expressed concerns at the Nov. 16 meeting that the location of the trails in the NE portion of the site and allowing dogs on leash—did constitute an undue impact on the wildlife and environment and objected to the proposed trail alignments.

Staff Recommendation: The trail system, including the trail north of Kenosha Ponds, has the least impact to wildlife and enables access to nature and wildlife viewing for the community, and facilitates regional connectivity as found by the following analysis:

1. Staff analyzed many factors when selecting facilities on the EBC property. Several overarching considerations in the NE portion of the property include:
 - a. Wildlife habitat features including a heronry, raptor nests, and the needs of Species of Concern.
 - b. There are crucial BCCP Environmental Resource Element occurrences on the site including the Kenosha Ponds CWH, the East County HCA, Preble's Meadow Jumping Mouse Conservation Area, and identified wetland and riparian habitats.
 - c. The Wheeler Ranch property remains a viable, independent agricultural operation. Additionally, Indigenous community members have expressed a potential interest in this property for cultural activities.
 - d. The BCCP County Trail Map shows corridors along both Boulder and Coal Creeks. The county's goals for a trail plan serves both recreational and transportation purposes.
2. To address these considerations, the EBC plan includes a through trail that will provide future connectivity to the BERT, the Coal Creek Regional Trail, and meet the intent of the County Trail Map while avoiding the creation of new alignments in sensitive areas or impacting significant environmental resources.
3. The department considered a trail system in the NE part of EBC that only consisted of two "out and back" segments, each approximately a quarter-mile long with very limited views of streams or ponds. Through the public process, as the department received input, this limited level of recreational development was inconsistent with the overall intent to provide a quality experience at the site. The department searched for a way to provide a loop trail experience that also connected to the future Coal Creek Regional Trail just south of Kenosha Road. Recognizing the interest in viewing both the heronry and the Kenosha Ponds habitat, staff settled on an alignment around the north side of the critical habitat, that minimized impacts to the heronry and the Wheeler Ranch agricultural operation. Instead of selecting a route between the Kenosha Ponds CWH and Coal Creek that would disrupt wildlife use in that area, staff chose a route that crossed to the east side of Coal Creek and runs between the agricultural fields and riparian area. The department finds that the proposed trail system on the NE part of EBC balances the protection of environmental resources with the goal of opening the EBC site to the public and providing an appropriate trail experience for visitors.
4. In concert with trail development in the NE part of EBC, the department will restore segments of both Boulder and Coal Creeks to enhance their environmental and wildlife habitat value. The department plans to implement and incorporate the recreational improvements during the stream restoration work so that they can work in concert to enhance the environment and limit negative impacts.
5. Due to both environmental and agricultural values, visitor use of the EBC site will be restricted to on-trail use with the exception of fishing along segments of Boulder Creek and potential passive recreational use of the "stacked ponds." By limiting recreational use of the EBC site and closing most of the site to public access, the land management of most of the property will be very similar to its patterns of the last 20 years. The department anticipates this property management will limit impacts to environmental and agricultural uses.

6. The BCPOS department will be using “adaptive management techniques” to administer and implement the plan for the EBC site. The phasing schedule for the public opening of the NE portion of the site is projected to be seven years from now, around 2030. The department will continue to monitor the environmental resources at the site and will modify plans for facilities and infrastructure if warranted. This includes seasonal closures and trail re-routes.
7. The planning team intentionally discarded several trail iterations that were adjacent to Boulder Creek to preserve the riparian corridor and reduce the stress on wildlife that depend on that ecosystem. There are roughly 5.5 miles of creek within EBC; approximately 1.2 miles of trail is proposed within 200 feet of a creek, keeping 76% of creek separated from trail uses.
8. Rangers have expressed confidence in enforcing on leash rules. BCPOS has high compliance rates overall with 97% compliance in 2020, 93% in 2021, and 95% in 2022 (according to Annual Visitation Report 2022). Additionally, fencing will be installed throughout the site to prevent people, dogs, and cattle from entering riparian areas adjacent to Coal and Boulder creeks.
9. See Attachment 1, Supporting Information: Wildlife, for a more detailed analysis.

Risk and Mitigation for Aquatic Nuisance Species

A few comments made during POSAC meetings expressed concern regarding aquatic nuisance species (ANS). Staff has accounted for ANS within the EBC plan.

Staff Recommendation: The management action pertaining to the New Zealand Mud snails and reference to the Design and Construction manual are appropriate to address harm from aquatic nuisance species according to the following analysis:

1. New Zealand Mud snails have been found in low densities in Boulder Creek in both the southwest and northeast sections of the EBC area. Coal Creek has not yet been sampled within the EBC area. Therefore, precautions during construction and after opening are appropriate.
2. During site construction, contractors must follow decontamination instructions as outlined in the bid. Project management staff consult wildlife staff for these protocols.
3. As stated in the plan, upon implementation of the project, BCPOS wildlife staff will install infrastructure and educational signage to help encourage decontamination for visitors who enter the water.
4. As spoken to earlier, the department practices adaptive management, and will respond accordingly if ANS pose a threat to conservation values or visitors.
5. See Attachment 1, Supporting Information: Wildlife, for more detailed information.

Communication

Numerous communication and outreach methods were used throughout the planning process and were previously summarized at the June and October 2023 POSAC meetings (and included as Appendix 2 to the EBC plan). Pertaining to the neighbors bordering the property, postcards were mailed 4 times to adjacent property owners within 1500 feet of the EBC property boundary. This is the standard buffer distance for BCPOS notifications and Boulder County land use applications which uses the County Assessor’s office information to identify the landowner of record and their mailing address. Number of mailings will vary depending on the time the data was pulled from the Assessor.

- 328 postcards mailed in January 2023.

- 371 postcards mailed on May 25 and 19 trailhead kiosks had flyers posted regarding the second project survey.
- 371 postcards mailed on June 15 regarding the new site visit dates.
- 364 postcards mailed on October 23 regarding the final project survey and release of the draft plan.

Staff is planning a December 13, 2023, neighborhood meeting at the location of the proposed 109th Street trailhead. Staff will discuss the outcomes from that meeting at the Dec. 14th POSAC meeting.

Conclusion

The BCPOS Department manages the county's lands to meet a variety of community and organizational goals. Those goals include the protection of environmental resources and providing passive recreational experiences where those can be located without significantly impacting other values on the site. Through the results of Community Surveys as well as the EBC online surveys, the department knows the importance of both of these—environmental protection and recreation to the community. In the EBC plan, staff has balanced these two and the other aspects of our mission by locating features to minimize impacts and enhance the community's experience at the site. The department has experience in successfully managing parks and open spaces for a larger community that has supported the program while working to minimize visitation impacts upon local neighborhoods.

Staff is respectfully recommending approval of the East Boulder Creek Management Plan from POSAC to the BOCC.

POSAC Action Requested

Recommend the Board of County Commissioners approve this final draft of the East Boulder Creek Site Management Plan.

Attachments:

1. Supporting Information and Analysis

Attachment 1: Supporting Information and Analysis

Infrastructure

Parking Lot Alternatives Analysis for EBC (See map titled *East Boulder Creek Trail & Trailhead Alternatives with Hydrology*)

1). Parking lot Site #1 – Proposed site was just east of Hwy 287, north of existing oil/gas facilities, south of Boulder Creek.

- This location is well within the 100-year floodplain, thus limiting what type of infrastructure would be allowed by Community Planning and Permitting (CPP). Limiting infrastructure includes a restroom or shelter house.
- Southbound traffic would be crossing the northbound lanes of 287 (65mph speed limit) to turn into parking lot. Safety concerns.
- Northbound traffic turning into parking lot would likely require a deceleration lane constructed on a CDOT highway.
- Major road construction, extensive coordination and permitting through CDOT.
- Duration of design and construction implementation would be pushed out by an additional 1-2 years minimum.
- Cost of this option would be extreme relative to other potential options.
- Falls within protected bald eagle habitat.

2). Parking lot Site #2 – Proposed site was slightly Northeast of Hwy 287 and Jasper Rd. centered between Hwy 287 and 109th.

- This location is out of the 100-year flood plain.
- Would require utility relocation on south side of Jasper (existing electrical lines would likely have to shift with road widening).
- Would require either a vehicle bridge or box culverts to cross existing irrigation ditch infrastructure.
- Would require a deceleration lane to be constructed on county road for vehicles traveling west on Jasper. The new deceleration turn lane would facilitate entry to the proposed parking location.
- Cost (\$1.5 million) and schedule prohibitive.
- Requires review and approval from ditch company for any additions or modifications to existing conditions, increasing cost.
- Locating the lot off Jasper Rd. would likely go through a CP&P process, which would determine the need for a traffic study of some sort to inform which kinds of improvements may be necessary.
- Separation distances between both Jasper Rd. intersections (with 109th and Hwy 287) would be required.
- Falls within protected bald eagle habitat.

3). Parking lot Site #3 – Proposed site would be located off 109th, just east of the 109th/Boulder Creek bridge and north of existing water ski pond.

- This area is very narrow, (difficult for horse trailer turnaround) and very near the floodway and in the 100-year floodplain as show on CPP floodplain map. Unknown depth of water table.
- Development adjacent to creek corridor will likely have negative habitat/resource impacts.
- Infrastructure (restroom, kiosk) would be limited in this location due to proximity to floodway. No ability to accommodate equestrian trailer parking and turnarounds.
- Functional parking lot design would be tricky but full build out to 50 spots may be tough.
- Putting a 25-50 car lot right next to the Lower Boulder Creek project would invite people into a restricted area (LBC) which we are under mandate to protect from USACE.
- This location would not address the neighbors' complaints about traffic on 109th.

4). Parking lot Site #4 – Northwest corner of Jasper Road and 119th Street.

- Out of the 100-year flood plain.
- Wise-6 field often has wet soil conditions and this hydrology would complicate the siting of trailhead in this area
- Wise- 4 & 6 are major alfalfa production fields (best in county).
- The ground in this location is sub-irrigated, meaning that there is an extremely high-water table.
- High water would drive mitigation and construction costs up.
- While primarily sub-irrigated, the area can also be irrigated with surface water rights. A parking lot in this site would complicate surface water irrigation.
- Creates default parking along 109th at trail terminus; because 109th is a public road, the public could not be prohibited from parking there.

5). Parking lot Site #5 – West side of 119th Street, roughly ¾ mile north of Jasper Road.

- Out of the 100-year floodplain.
- Constructing a trailhead in this location would put it approximately 1 mile from the proposed Kenosha Trailhead location.
- The trails heading directly west of this location would essentially have to dead end on the west side of 109th Street resulting in public on street parking at 109th. Because 109th is a public road, they could not be prohibited from parking there.
- This location would fall in the middle of irrigation Ag land.

6). Parking lot Site #6 – Southwest of the intersection of Highway 52 and East County Line Road, northwest of the Boulder Creek/Coal Creek confluence.

- This location is well within the 100-year floodplain. County floodplain regulations prohibit the construction of structures (including shelters and restrooms) in the 100-year floodplain. BCPOS installs restrooms at trailheads wherever possible. Any proposed trail heading southwest from this location would potentially impact the existing heronry.
- Because this parking lot would be located on the north side of EBC, a bridge would be required to get the public across the river and back down to the Kenosha Trailhead location.
- Major road construction may be necessary on Highway 52 for turn lane, as well as extensive coordination and permitting through CDOT.
- Duration of design and construction implementation would be pushed out by an additional 1-2 years minimum.

- Cost of this option would be extreme relative to other potential options.
- MPT was discouraged from planning trails on the north side of East Boulder Creek due to the habitat provided by the adjoining Wittemyer ponds, visitor safety, and the cost to reconstruct a bridge over EBC. Additionally, the City of Boulder Utilities maintains the right to create a large reservoir storage area by combining the ponds on Wittemyer and on EBC north of the old bridge. If they choose to do so, visitor use and the investment required to facilitate it would be rendered obsolete. This also avoids the environmental impact and cost associated with the construction of a bridge over Boulder Creek

7). Parking lot Site #7 – Just off 109th, immediately north of Boulder Creek and slightly east. Essentially directly north of option #3.

- This location is completely in the floodway. Development in this location is strictly regulated and, in most cases, prohibited.
- Because this parking lot is north of Boulder Creek, a large bridge would need to be constructed to get the public back to the south side of the Creek. This bridge could not be constructed in the Lower Boulder Creek restricted area and a crossing at Kenosha and 115th is not feasible due to existing property lines. For these reasons, this location is extremely problematic.

****Proposed 109th parking location shown on EBC Site Management Plan****

- In the 100-year floodplain but out of the floodway. Staff referenced both BOCO floodway and FEMA floodway maps. CPP uses to the most restrictive layer, which is why the team discussed this location with them. CPP is aware of this proposed location and have stated that they would be open to permitting the required infrastructure.
- No major utility relocations, ditch crossings, deceleration lanes or road work would be required for this location.
- Parking lot would be south of existing wetlands located southwest of the 109th/Boulder Creek road bridge.
- Relatively consistent topography.
- This location could potentially tie into the future BERT trail just to the south.
- Provides a western termination point to the EBC development site. Without a parking lot here people would likely park along 109th on the sides of the road. Because 109th is a public road, they could not be prohibited from parking there.
- 109th St. has the lowest traffic volume of the roads in this area. Jasper Road has 1,720 ADT, 109th St has 90-110 ADT, and Hwy 287 has 27,000. The proposed trailhead is expected to be approximately 164 ADT at full build-out. This is a very low volume of traffic. Source for ADT: [Boulder County Vehicle Traffic Counts online webmap](#).
- Fiscally responsible.
- Site safety for trailhead users: Away from major intersections, ease of access to trailhead, ease of access to trail system. Provides an opportunity for a short trail to access Boulder Creek west of 109.
- This proposed location will be sited as much as possible to be out of the neighbors' direct viewshed.
- The exact location of the 109th St trailhead is conceptual, however the intent is to locate the egress off of 109th and closer to the eastern boundary of the property. The exact location can only be finalized after the cultural resource survey and design and engineering are complete.

While we don't see a huge shift (>200ft in each direction) the exact location cannot be pinpointed at this time.

****Proposed Kenosha parking location shown on EBC Site Management Plan ****

- Location is out of floodway and is in both the 500-year floodplain for the Boulder County Regulatory Flood Risk Zone and FEMA Regulatory Flood Risk Zone categories.
- CPP said they would allow a restroom at this location.
- Existing access road leads to location.
- Site location is in close proximity to oil and gas operations.
- Flat topography, ease of construction.
- Potential for access to utilities (water/electric).

Trail Analysis Summary

The departmental teams working on the EBC Site Management Plan reviewed numerous alternative trail alignments. Trail alignment discussions were an iterative process, and it took many months for the Management Planning Team to create the alignment and build consensus around the final product in the plan. However, at the end of the process all MPT members were in support of the alignment because each expert felt their area of focus had been carefully considered and the compromises made were appropriate to protect wildlife, maintain agricultural areas, provide high quality visitor experiences, site accessibility, and local and regional connectivity.

Some of the trail experience opportunities at the EBC Site include proximity to water features, the potential for regional trail connections (BERT and Coal Creek), connectivity to Erie's trail system, the ability to use accessible trail standards, working with stable substrates and slopes, and viewing wildlife. There were also a variety of environmental resources and designations that the department considered during the review of trail alternatives. In the NE portion of the EBC, some designations such as the Kenosha Ponds Critical Wildlife Habitat, Heronry Buffer, wetlands, riparian areas, Preble's Meadow Jumping Mouse zones, and Environmental Conservation Areas. Due to these environmental considerations, trail alignments between the CWH and Coal Creek, north of Boulder Creek, paralleling Boulder Creek for extensive lengths, and trails that would have required bridging Boulder Creek were discounted. Additionally, limiting trail impacts to the existing agricultural operations and the department's partner tenants required selecting alignments that did not divide pastures or require extensive new fencing. Another consideration in trail siting was eliminating parallel alignments that would necessitate duplicative maintenance. One trail alignment northeast of the intersection of 115th Street and Kenosha Road was eliminated due a required wetland crossing and its lack of shade and scenery—the principle visual feature in the area is a large oil and gas facility.

At the SW portion of the site, environmental considerations eliminated the consideration of trails west of US 287. Trail alternatives between 109th Street and 119th Street were limited by an exclusion zone associated with the Lower Boulder Creek Restoration Project. Finally, other trail alignments in this area were discounted due to the complications presented by wetlands, irrigation ditches, and existing agricultural operations and fields.

Additional analysis pertaining to trail alignments and wildlife impacts is included below in the section titled "Wildlife."

East Boulder Creek Trail & Trailhead Alternatives With Hydrology



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1-7 Trailhead Locations Considered

***** Proposed Trailheads

--- Additional Trail Alignments Considered

--- Boulder Area Trails (BAT)

--- East Boulder Creek

--- Town of Erie Green Space

Conceptual Trails East Boulder Creek

--- Accessible

--- Soft Surface

Other

--- Town of Erie Proposed Trail

--- Boulder-Erie Regional Trails (BERT)

Hydrology

--- Perennial Stream

--- Main Ditch

--- Wetland/Riparian

--- Perennial Lake/Reservoir

--- Intermittent Lake/Reservoir

Flood Risk Zones

CO Hazard Mapping Program

--- Floodway

--- 100-Year Floodplain (Zones AE, A, AO, AH)

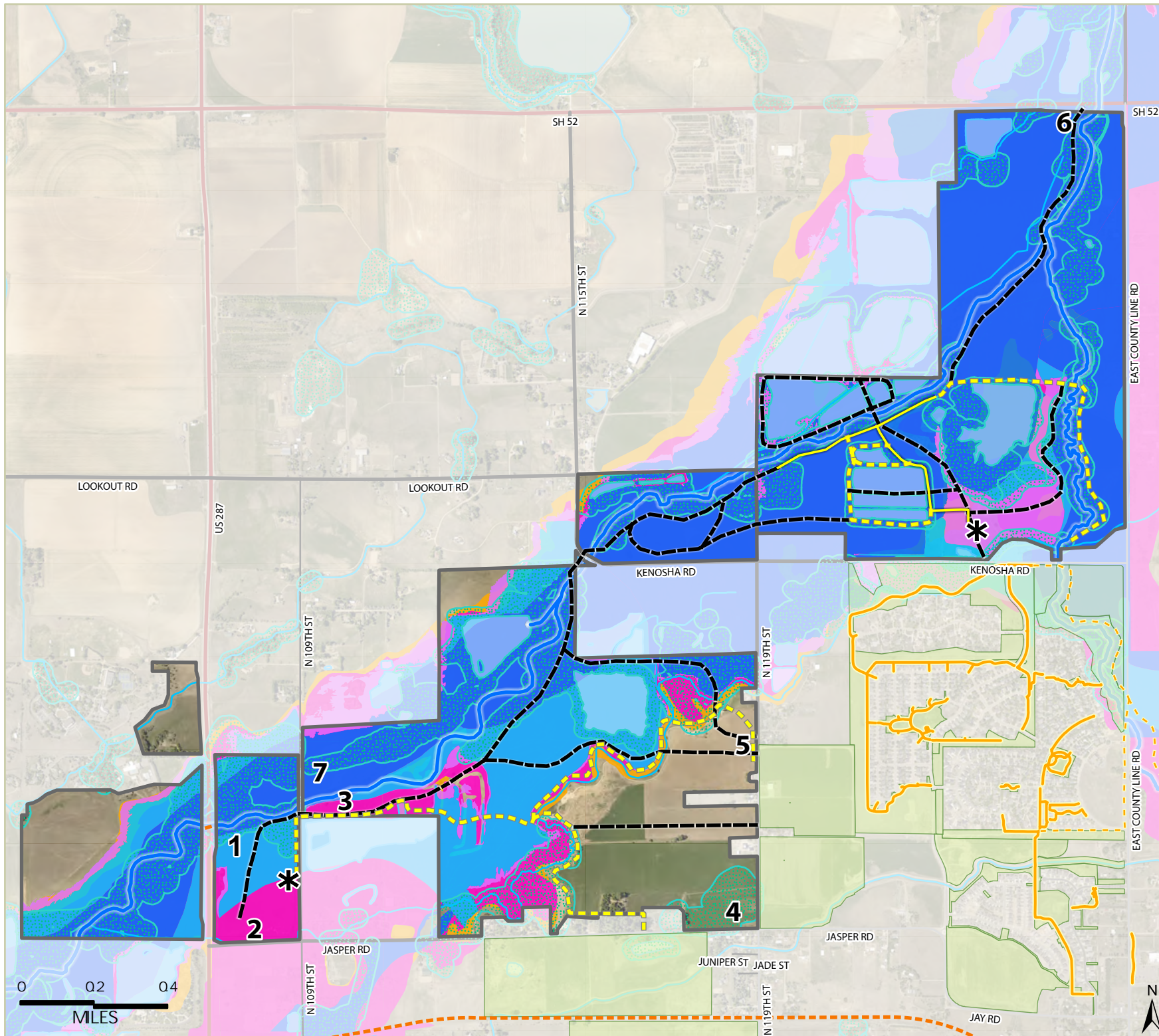
--- 500-Year Floodplain (Zone X500)

FEMA

--- 100-Year Floodplain (Zones AE, A, AO, AH)

--- 500-Year Floodplain (Zone X500)

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Wildlife

Additional information and analysis pertaining to wildlife at EBC (See map titled *East Boulder Creek Trail & Trailhead Alternatives with Wildlife*)

Overview:

The East Boulder Creek Site Management Plan's overall impacts to wildlife varies across the site and ranges from little to no additional impact, to potentially moderate to elevated impacts in some locations. Across the EBC planning area, habitat quality, connectedness, and availability is also quite variable; this variability is the result of historical and current human utilization of the site (including mining and agriculture), prior creek-straightening and creek restoration efforts, disturbance events such as flooding, and the establishment of invasive plants. Within this variability, some high-quality habitat patches persist.

Long-term Benefits to Wildlife:

- Most of the length of Boulder Creek passing through the EBC site has been identified for restoration and protection of riparian habitat (including no or limited grazing and no recreation), which in the long-term should allow these spaces to continue to develop into higher quality habitat or be restored to generate additional natural spaces and enhanced movement corridors for wildlife. This includes eliminating the prospective trail alignment from the majority of the length of the Boulder Creek corridor, as was indicated as a conceptual trail corridor in the Boulder County Comprehensive Plan (BCCP).
- A number of adjacent wetlands have also been identified for improvement of native floristic diversity, which may improve conditions for wildlife in those wetlands or broaden the species utilizing those locations.

Impacts to Wildlife along Coal Creek and Kenosha Wetland Critical Wildlife Habitat:

- Initially, no trail system was proposed for the Kenosha Wetland and Coal Creek corridor due to wildlife sensitivity, but after staff examined limitations to other alternatives, a loop trail around Kenosha Wetland was proposed. This particular location was of elevated concern to wildlife staff for several reasons:
 - The Critical Wildlife Habitats (CWH) are identified in the BCCP by minimum polygons that do not include buffers, which may vary due to site characteristics and concerns.
 - The conceptual alignment for a loop trail around Kenosha Wetland Critical Wildlife Habitat doubled a parallel trail along the oil & gas access road west of the wetland, entered both the potential CWH buffer extent and the southern extent of the heronry buffer on the north edge of the wetland (<250 meters from nesting colony). The loop alignment placed a trail parallel to the east shoreline of the wetland, creating both a trail and access road between the wetland and adjacent Coal Creek habitat, and returned to the identified location of the proposed trailhead parking lot. This concept avoided crossing Coal Creek and extending recreation into active agriculture and along steep eroding banks of Coal Creek.
 - In an attempt to minimize impacts to the CWH, this conceptual alignment was modified to reduce the trail length along the CWH and associated wetlands by expanding the size of the loop by crossing Coal Creek at the northeast corner of

the wetland. Additionally, wildlife staff has stated that the south end of the CWH is most abundant, and staff choose to leave that area undisturbed by skimming the northern boundary and crossing Coal Creek.

- Moving the alignment to the east side of Coal Creek reduces recreation impacts on the wetland and eliminates additional fragmentation of habitat between Kenosha Wetland and Coal Creek. However, the exact alignment of the proposed trail east of Coal Creek is unknown due to the need for engineering and future restoration of Coal Creek; the impacts of this work on nesting Swainson's Hawks and associated seasonal closures cannot be determined at this time. When the trail is constructed, staff will implement appropriate visitor regulations based on nest location at that time, e.g. seasonal closures.
- Modifications to this initial conceptual trail alignment were made to reduce some of the impact to wildlife. Staff recognizes it is not possible to avoid all impacts to all species even with these mitigations.
- Restoration of Coal Creek (north of Kenosha Road) was proposed in response to severe erosion, incision of the creek bank, and flooding concerns in relation to the creek restoration work the Town of Erie is conducting directly upstream of Kenosha Road. These proposed changes to Coal Creek could result in significant changes and loss of the well-developed, mature, and complex riparian habitat for uncommon migratory songbirds. The potential for successful replacement or regeneration of this type of high-quality habitat following resetting Coal Creek is tentative and somewhat unlikely. However, staff chose to move ahead with the restoration because the Town of Erie (TOE) work will essentially create a "channeling effect" into Coal Creek just north of the Kenosha Bridge on the creek. This means that during a flood event, water that is spread out through the TOE restored creek bed would suddenly get pushed through a much smaller waterway, thereby eroding the banks of Coal Creek even further and destroying the habitat. The ultimate result is that regardless if Parks leaves this section of Coal Creek alone or restores it, changes to the existing structure as it is today is inevitable. Therefore, restoration was chosen. This choice would have had to been made regardless of the final trail alignment selected.

Wildlife Protection Measures Discussed:

- On-trail requirements
- Educational and regulatory signage
- Fencing to prohibit access to closed, sensitive areas such as CWH
- Fencing along riparian areas to control cattle access and grazing
- Seasonal closures for nesting raptors
- Adaptive management for all measures, including whether dogs on-leash will continue to be an allowed use upon opening each section of EBC.
 - 2012 BCPOS Regulation Compliance Study – 13% of dogs were off leash (147 violations) on 9 properties. This % increased at Coalton (potentially the most similar trail to EBC due to proximity to neighborhoods and nearby habitat value) to 22% non-compliance. Source: [2012 Regulation Compliance Study](#)

- Per Section 7 or Section 10 of the ESA, consultation with US Fish & Wildlife Service (USFWS) will occur early in the planning phase for creek restoration projects to minimize impacts to Preble's Meadow Jumping Mouse (PMJM).
- Any future creek restoration projects will be implemented using PMJM Conservation measures with the objective to improve PMJM habitat overall.

Trails and Wildlife Buffers:

- Conceptual trails pass through a heronry buffer, the likely extent of CWH buffer (north of the Kenosha Wetland CWH), and a Swainson's Hawk nest buffer.
- A new pair of osprey constructed a nest on utility infrastructure in the northeast section of EBC. As is standard practice, utility companies relocate nests on utility infrastructure in the interest of public safety, bird safety, reliable delivery of the electric utility, and protection of utility infrastructure. This osprey nest will need to be relocated in coordination with BCPOS staff, Colorado Parks & Wildlife and the electrical utility company. Given the small size of the site, some proposed park infrastructure may fall within the buffer boundary for the new osprey nest location.

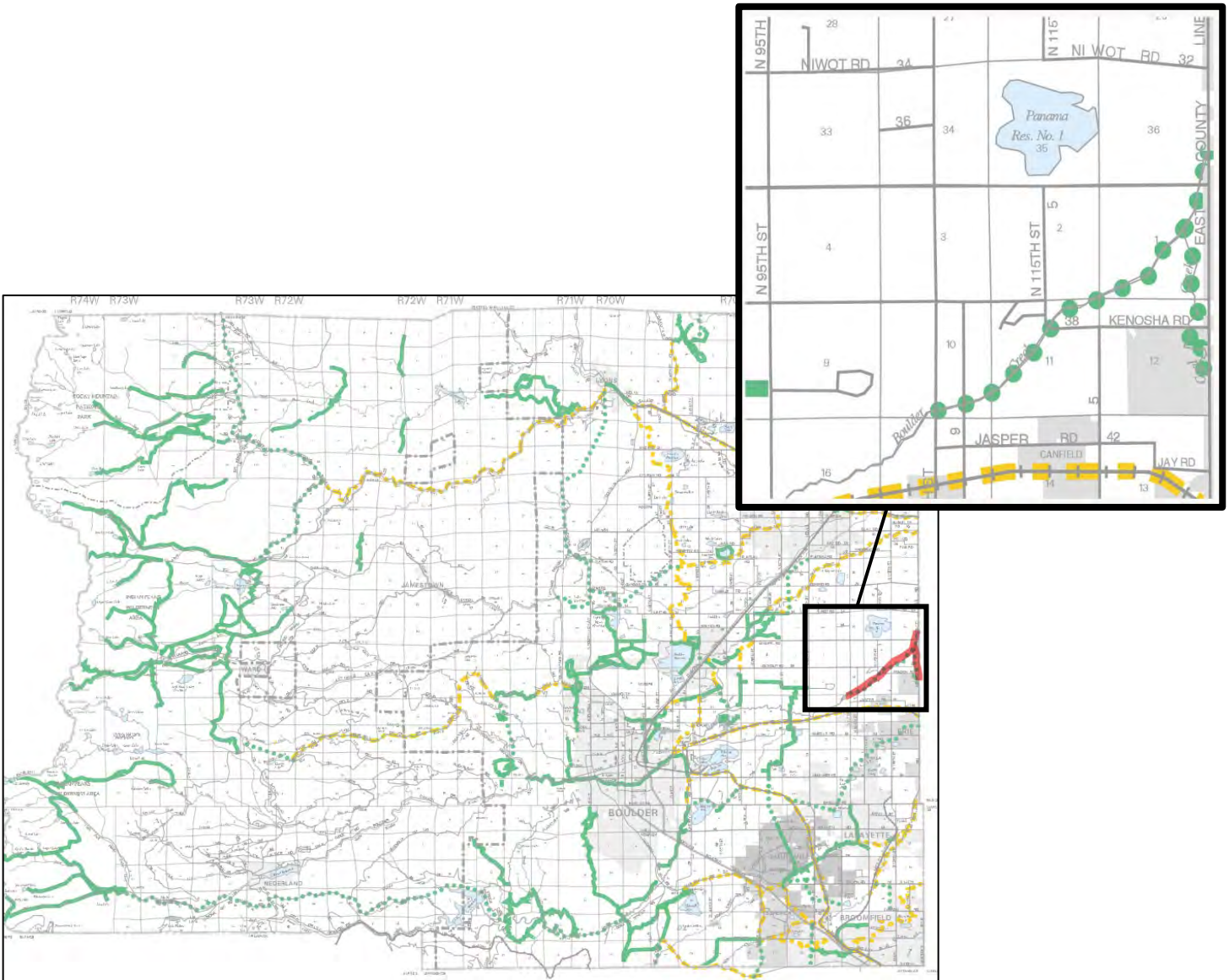
Supporting Data, Information and Analysis:

Although there is background data on species occurrence focused on the northeast section of the EBC site, we also utilized spatial analysis in ArcMap to provide visualization of the location and extent of the heronry and heronry buffer, raptor nest locations and buffers, and polygons representing Critical Wildlife Habitat. Literature sourced during the process included Colorado Parks and Wildlife's Recommended Buffer Zones for raptors, and exploration of additional sources related to buffering heronries, and multiple journal articles related to effects of recreation on wildlife.

The BCCP County Trails Map shows a conceptual trail corridor utilizing Boulder Creek through EBC. The team did not recommend this alignment because:

1. This stretch of creek already has active agriculture on both sides, with plans to enhance riparian health rather than introduce an additional impact like recreation.
2. Boulder County already has extensive roads, trail systems, and urban developments along most of its creeks. This planning effort recognized the detrimental effects these features can have on wildlife habitat and creek health, opting to limit recreation and human access to the creek to specific locations.

3. Avoiding fragmentation of linear riparian corridors is important for the conservation of Preble's Meadow Jumping Mouse.



BCCP County Trails Map with adjacent inset map showing EBC area zoomed in.

East Boulder Creek Trail & Trailhead Alternatives with Wildlife



Parks & Open Space

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- 1-7** Trailhead Options
- *** Proposed Trailheads
- Additional Trail Alignments Considered
- Boulder Area Trails (BAT)
- East Boulder Creek
- Town of Erie Green Space
- ▨ Critical Wildlife Habitat (BCCP)
- ▨ PMUM Zone 4 (BCCP)
- Active Heronry
- Active Heronry Buffer
- Raptor Nest Buffer

Conceptual Trails

East Boulder Creek

- Accessible
- - - Soft Surface

Other

- - - Town of Erie Proposed Trail
- - - Boulder-Erie Regional Trails (BERT)

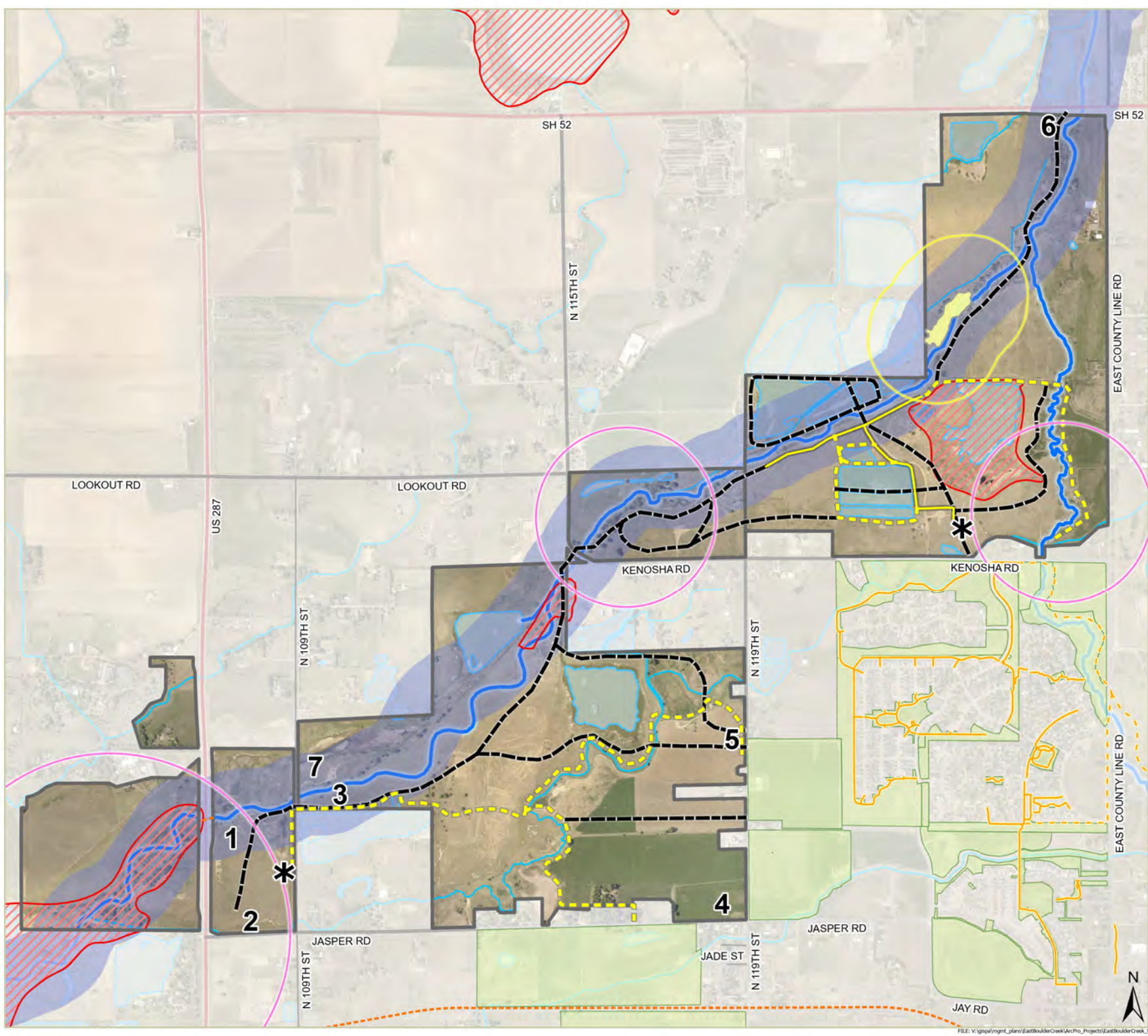
Hydrology

- ~ Perennial Stream
- ~ Main Ditch
- ~ Perennial Lake/Reservoir
- ~ Intermittent Lake/Reservoir

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MILES

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New Zealand Mudsnails (NZMS) and Aquatic Nuisance Species

NZMS and the ANS of highest concern. Potential concerns associated with NZMS, as outlined by wildlife staff, include:

- Avoiding the spread of snails and/or their eggs between Boulder Creek and Coal Creek
- Avoiding the spread of snails between Boulder Creek and the ponds and wetlands on the EBC property
- Avoiding the spread of snails to other water bodies outside of the EBC property (by making sure people clean their gear and pets before going into another creek/reservoir/wetland)
- Limiting behaviors that might encourage growth of the NZMS population within Boulder Creek on the EBC property. Staff will be researching information on factors that encourage population growth of snails within a site.

BCPOS integrates aquatic nuisance species (ANS) best management practices into contracts for any in-stream work, including construction, design, and research. These BMPs dictate how heavy equipment is operated and maintained and how personal gear and other equipment are cleaned to minimize the spread of ANS. An example of this protocol for a construction contract is included at the end of this attachment.

For the site opening, regulatory and interpretive signage will be installed, as well as decontamination infrastructure, as appropriate, to support riparian health. CPW has NZMS decontamination protocol that Parks uses as guidance for in-stream work or visitors. This decontamination protocol is included at the end of this attachment. The department also practices adaptive management and will respond accordingly if NZMS pose a threat to conservation values or visitors. This presents an opportunity to gather baseline data on NZMS abundance in EBC prior to opening the site to the public, so that continued monitoring can determine any changes after the site is publicly accessible.

Example of construction protocol to minimize spread of NZMS:

“HEAVY EQUIPMENT OPERATIONS AND MAINTENANCE:

1. Heavy equipment shall have biodegradable hydraulic fluid for any equipment that will be in contact with Fourmile Canyon Creek. This shall include hydraulic fluid that is vegetable oil based, 100% non-toxic, fully degradable, non-bioaccumulating. MSDS for hydraulic fluid must specify biological testing criteria i.e. LD 50 information.
2. To minimize the spread of invasive plant species, all equipment and gear shall be free of all mud, vegetative matter, organic material, seeds and other debris prior to its delivery to the project site. All equipment shall be thoroughly cleaned, including the undercarriages, tracks, turrets, buckets, drags, teeth, tires, etc.
3. To minimize the spread of aquatic nuisance species (ANS), decontamination practices shall be employed if equipment and gear were used in another stream, river, lake, reservoir, pond or wetland.
4. Equipment that shall be treated for ANS includes all parts of heavy machinery and vehicles of all types and sizes that are operating below the ordinary high-water mark. This includes excavators that operate from the bank due to exposure of bucket to stream water.

5. Gear that must be treated for ANS includes boots, waders, hand tools, and all other materials and attire used previously in the live water. This includes exposure to mud from riverbanks. 6. If pumping out of a creek or other waterbody, all water pumps and hoses must be cleaned and disinfected prior to use on the project to prevent introduction of invasive aquatic organisms into the watershed.

7. To decontaminate equipment and gear the Contractor shall use one of the following treatments:

a. Remove all mud and debris and organic material from equipment (tracks, turrets, buckets, drags, teeth, etc.) and gear. Spray/soak equipment and gear with a solution of commercial grade quaternary ammonium disinfectant compound containing at least 8.0% active ingredient diluted in solution to achieve at least 0.8% concentration (roughly 12 ounces of product per gallon of water). Specifically, a 1:15 solution of Quat 4 or Super HDQ Neutral institutional cleaner and water, could be used for effective treatment. Treated equipment and gear should be kept moist for at least 10 minutes. Treated equipment and gear should be rinsed with water from ANS free source, managing rinsate as a solid waste in accordance with local, county, state, or federal regulations.

b. Remove all mud and debris and organic material from equipment (tracks, turrets, buckets, drags, teeth, etc.) and gear. Spray/soak equipment and gear with water hotter than 140 degrees Fahrenheit for at least 10 minutes. Do not move water from one water body to another. Be sure Equipment is dry before use.

8. Prior to mobilizing equipment and gear to the project site, the Contractor shall submit to BCPOS a written list of the equipment and gear certifying that it was cleaned and if needed, that it was decontaminated using one of the two methods specified above. Equipment and gear shall be inspected following treatment and prior to unloading at the project site to ensure mud, vegetative matter, organic material, seeds and other debris has been removed and none remains. BCPOS staff shall inspect equipment prior to unloading at the project site and reserve the right to reject and request additional cleaning of any piece of equipment deemed not to be cleaned satisfactorily.

9. After project completion, equipment and gear should be treated prior to use in another stream river, lake, pond, reservoir, or wetland.

10. Equipment fueling must be maintained to area indicated on the SWMP on Sheet 11 of the plan set. This must include proper BMPs.”

Example of CPW ANS New Zealand Mudsnaill Density Study Protocol

“Equipment Decontamination

Equipment decontamination is mandatory to avoid transporting ANS (animals, plants, and pathogens) between water bodies and sampling locations. All sampling equipment must be fully decontaminated in accordance with state protocol between each water body. In certain situations (e.g. mapping ANS populations, surveying in areas with New Zealand mudsnails, etc.) all equipment must be fully decontaminated between each sampling location so that ANS are not spread.

CPW ANS Staff are NOT permitted to use felt sole waders.

Keep all waders, boots, equipment and gear that come into contact with the water free of mud, plants, and organic debris in between each and every use. Unknowingly moving a species from one body of water to another, even within different stretches of the same river, can start a domino effect of invasion, causing irreversible ecological damage. It is especially important to keep waders clean.

FIRST - Staff MUST scrub the bottom of boots or waders with a brush and remove all mud, plants, and organic materials in between each and every use.

SECOND - Staff MUST also perform ONE of the following options before going into the next body of water:

OPTION 1:

Submerge waders and gear in a large tub filled with a mixture of 6 ounces per gallon quaternary ammonia-based institutional cleaner (such as Super HDQ Neutral) and water for at least 10 minutes, scrubbing debris from the gear, and visually inspecting the gear for snails before rinsing. Follow all precautionary label instructions! Rinse water must be from a New Zealand mudsnail-free source (to avoid re-infection), and the chemical bath must be properly disposed of, away from the water body. In place of soaking, boots and gear can be sprayed with the 409 solution to fully saturate, then allow to sit with the 409 solution for at least 10 minutes.

OPTION 2

Spray or soak waders and gear with 140° Fahrenheit water for at least 10 minutes.

OPTION 3

Dry your waders and equipment completely for a minimum of 10 days in between each use (remember that mudsnails can survive several days out of water).

NOTE: This option is not available to staff due to the high frequency of ANS work.

OPTION 4

Place waders and boots in a freezer overnight.

NOTE: This option is typically not available to staff due to the rustic overnight nature of ANS work."