



City of Boulder Open Space and Mountain Parks

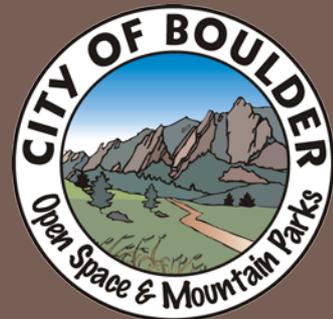
North Trail Study Area Plan



North TSA Plan Refined Scenarios

OPEN SPACE BOARD OF TRUSTEES
STUDY SESSION

JANUARY 13, 2016



North Trail Study Area Plan

Background, Planning Process and Community Engagement

- Substantial work contributed by the community, OSBT and staff to advance the North TSA Plan to the refined scenario step.
- Background information provided in memo.



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Agenda for the Study Session:

1) Staff presentation on:

- Balancing interests and
- Comparing Joder connection options

Does the OSBT have comments or questions about the scenarios, trade-offs or work that went into balancing interests?

2) Staff presentation on:

- Community feedback and
- Key topics for suggested changes

Does the OSBT have comments or questions regarding community input on the scenarios or new ideas heard from the community?



Agenda for the Study Session:

3) Discuss desirable changes

What specific actions or changes to the refined scenarios do the OSBT members consider desirable and feasible to better balance the interests?

4) Discuss preferred scenario

Which of the refined scenarios and corresponding revisions do OSBT members suggest staff advance as a preferred scenario to use as the basis for a draft plan?

North Trail Study Area Plan

Important Points about Refined Scenarios

- Refined scenarios integrate feedback on the preliminary scenarios and ways they could be improved.
- Each scenario seeks to balance community interests.
- Scenarios are conceptual displays and trail changes are depicted only conceptually.

New Actions Included in Both Scenarios

- Additional parking capacity near Foothills Trailhead near Degge Trail
- Work with Parks and Recreation to create a trail connection along the west side of Boulder Reservoir that links into Eagle Trail
- Add shade structure near Wonderland Lake Trailhead and fishing pier and cattail nature study access at Wonderland Lake peninsula
- Voice and Sight control on Lefthand Trail
- Re-route Hogback Trail away from areas of severe erosion
- Pave Longhorn Road

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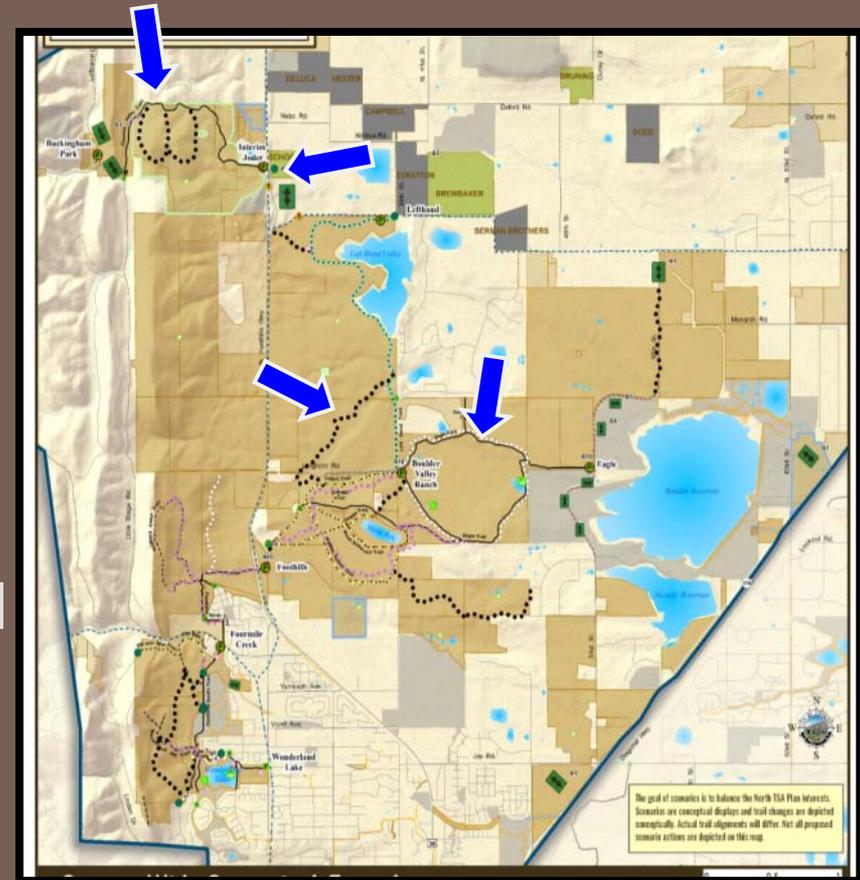
Actions Not Included in Either Scenario

- Link trail between Wonderland Hill Loop and west end of Old Kiln Trail
- Trail connection from North Rim to 51st Street on Axelson property
- Passenger vehicle parking at Joder on the Cox property

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Balancing Interests in Refined Scenario A

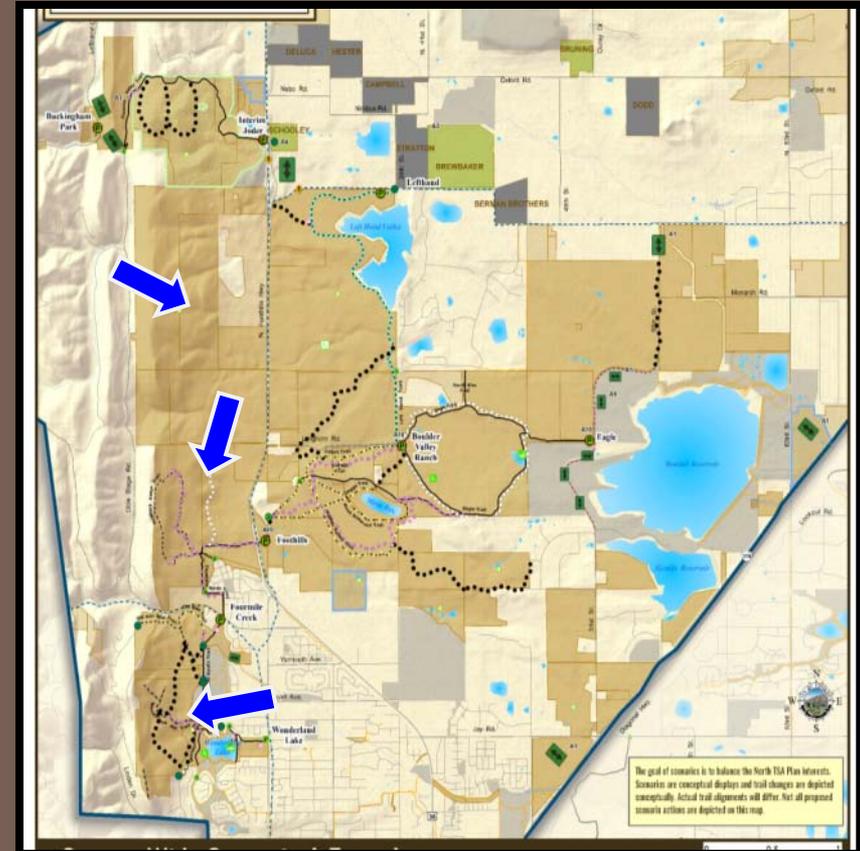
- Passenger vehicle parking at the Schooley property and underpass at US 36
- Two adjacent loops on the Joder property
- Create a diagonal connecting trail from Longhorn Road to Lefthand Trail
- Designate a parallel single-track around Eagle and Sage Trails



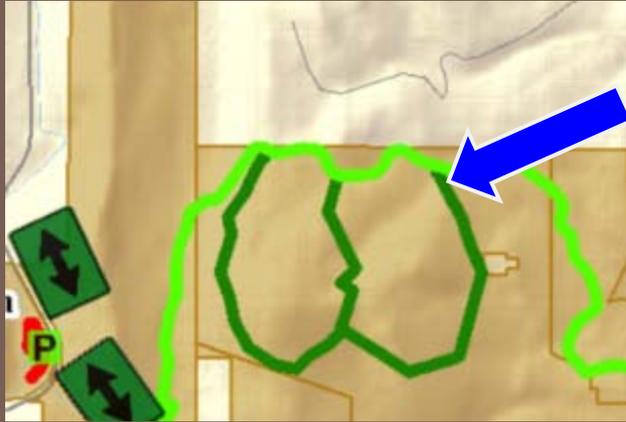
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Balancing Interests in Refined Scenario A

- Designate part of the railroad grade social trail as designated trail
- Access to North Foothills HCA with off-trail permits
- Create a smaller loop trail in addition to the larger loop trail at Wonderland Hill



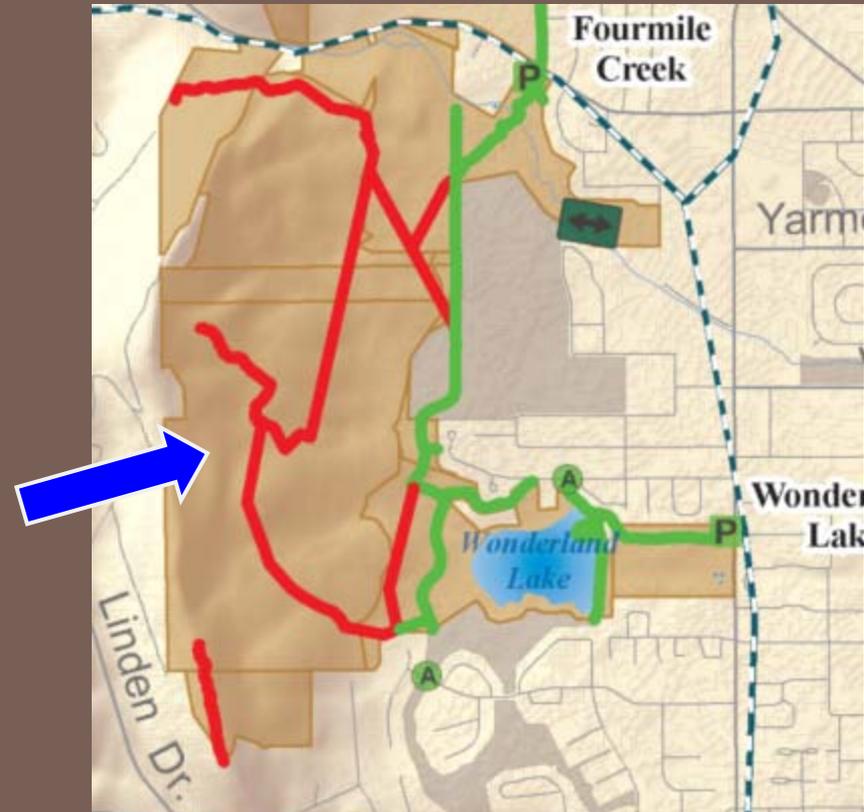
Bike and Horse Access in Refined Scenario A



Bikes: Joder Ranch

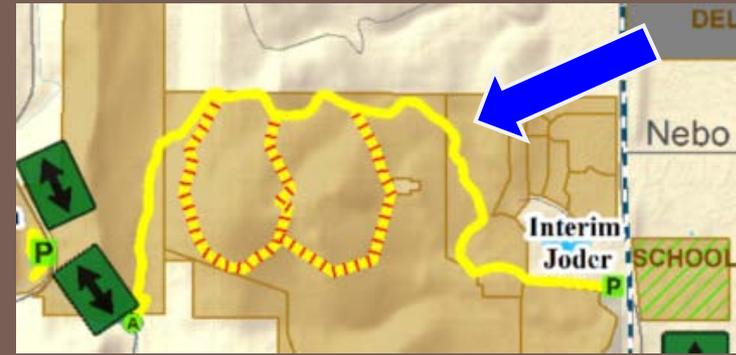


Bikes: Railroad Grade



Horses: Wonderland Lake

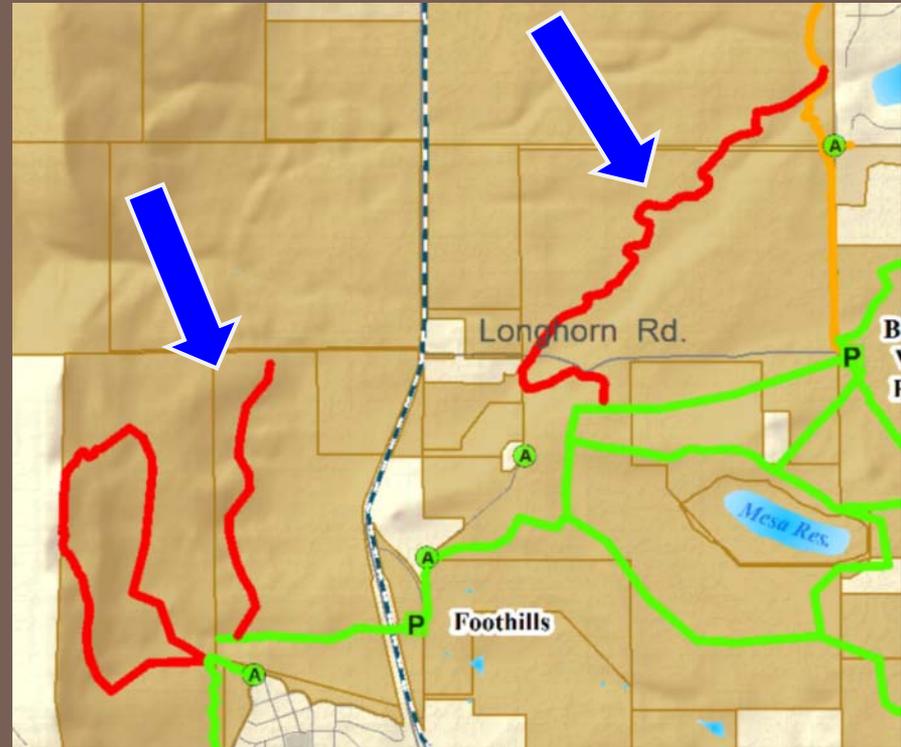
Dog Access in Refined Scenario A



Joder Ranch



Wonderland Lake

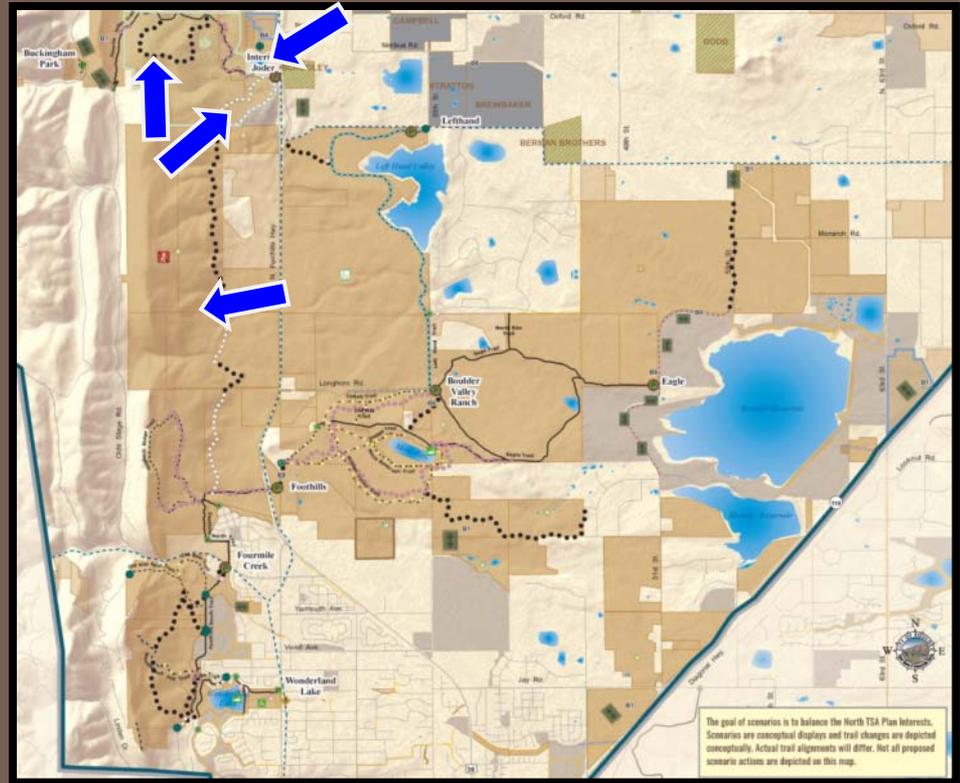


Railroad Grade and diagonal link from Longhorn Rd. to Lefthand Trail

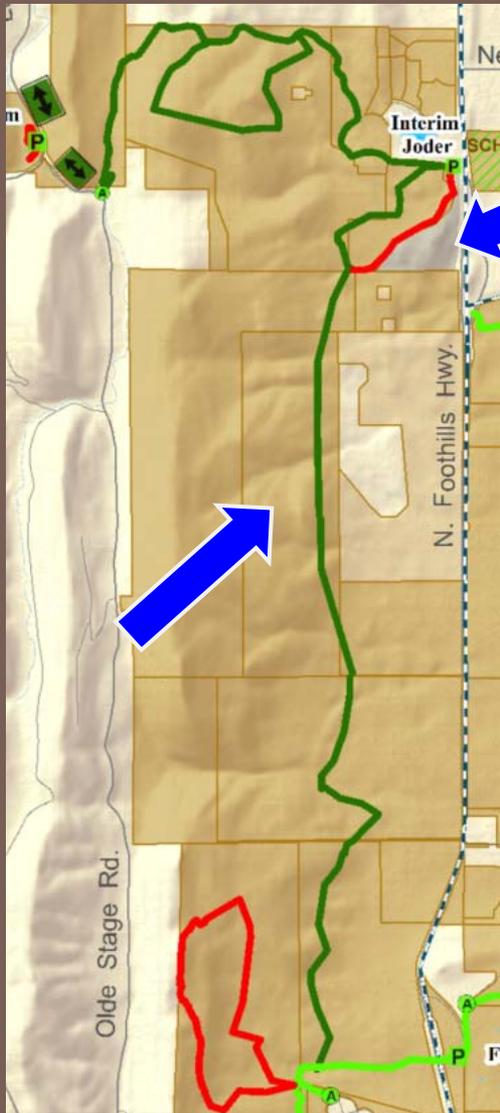
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Balancing Interests in Refined Scenario B

- Passenger vehicle parking at Dagle property
- Separated loops on Joder; one east and one west
- Partially rerouted Joder Interim Trail
- Off-trail permits not allowed *west* of trail in North Foothills HCA



Bike and Horse Access in Refined Scenario B

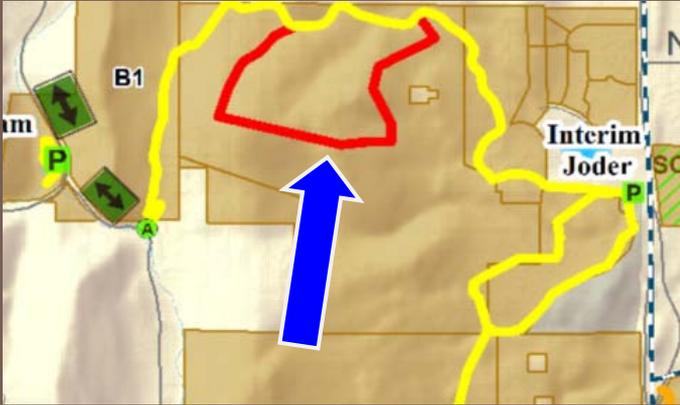


Bikes: Joder Connector and Loops



Horses: Hogback Loop

Dog Access in Refined Scenario B



Joder Ranch



Joder Connector



Wonderland Lake

Natural Resource Context- East Connector

East Beech Area:

- State Recognized Biodiversity (Very High Biodiversity Area)- Colorado Natural Heritage Program
- County Designated Environmental Conservation Area (Boulder County Comp Plan)
- Large habitat block within Grassland Preserve (Grassland Ecosystem Management Plan)

North Trail Study Area Plan

Natural Resource Context- East Connector

- Plains riparian areas
- Prairie dog colonies- rattlesnakes and raptors
- Grassland nesting birds
- Rare plant species and communities- Bell's twinpod, grassland communities





Visitor Experience Context- East Connector

- The new diagonal link trail would connect to Lefthand Trail and provide a more direct connection to the Joder property
- Variety of terrain and vegetation is limited
- New diagonal link is located on a northwest facing slope with clay soils
- Route requires 5 road crossings





Trail Context- East Connector

- 4 miles long (includes new link trail and the portion of Lefthand Trail that would be used)
- New link will be in 25-35% cross slopes
- Located in heavy clay soils and will need to be surfaced
- Will require one bridge and new box culvert at Hwy 36



North Trail Study Area Plan

East Connector Trail Corridor Natural Resources- riparian/wetland

Riparian and wetland areas:

- One new riparian crossing requiring wetland permit – straight forward
- Parallels drainage, but up on hill
- Avoids main riparian vegetation
- Want to minimize social trailing to pond/drainage (no dog regulation, fencing if necessary)





East Connector Trail Corridor Natural Resources- Wildlife

Crossed by alignment:

- Small areas of shrubs (closely approaches developed riparian shrubland)
- Lark Sparrow(Grassland bird) nesting habitat
- May require Preble's (USFWS) consultation for 1 drainage crossing

Avoids:

- Prairie dog colonies (raptor foraging area)
- Prairie rattlesnake highly suitable habitat





North Trail Study Area Plan

East Connector Trail Corridor Natural Resources- plants/ plant communities

Rare plants and communities:

- Crosses rare needle and threadgrass community
- Avoids Bell's twinpod habitat and high concentrations of rare plant communities within East Beech
- Minimizes likelihood of social trailing to north through high quality grassland habitat





Other Alternatives Evaluated on East

Other side of drainage:

- Multiple drainage crossings
- Lark Sparrow (Grassland bird) nesting habitat
- May require Preble's (USFWS) consultation for drainage crossings
- Most of length in prairie dog colonies used frequently by raptors

Trail traveling further north:

- Impossible to avoid large areas of highest concentration Bell's twinpod populations, New Mexico feathergrass and other rare plant communities
- Many drainage crossings
- Topography dictates sinuous trail design cutting through large percentage of habitat block
- Surfaced trail necessary- more significant building/weeds, etc

North Trail Study Area Plan

Natural Resource Context- West Connector

- State Recognized Biodiversity (Very High Biodiversity Area)- Colorado Natural Heritage Program
- County Designated Environmental Conservation Area (Boulder County Comp Plan)
- County Designated Critical Wildlife Habitat (Boulder County Comp Plan)
- Large habitat block and riparian habitat identified for conservation within Grassland Ecosystem Management Plan



Natural Resource Context- West Connector

- Foothills riparian/wetland/seep areas
- Rare butterfly habitat
- Multiple rattlesnake hibernacula
- Rare plant species and communities - Bell's twinpod, rare and imperiled grassland communities





Visitor Experience Context- West Connector

- Would utilize the existing railroad grade for approx $\frac{3}{4}$ mile, then would require new trail construction to cross Schneider Draw, and climb to the highest point along the trail, and then descend to the Joder property partially utilizing existing road beds.
- Varied terrain and vegetation would provide a high quality visitor experience
- Remote and rugged feel with sweeping views of the plains
- East facing aspect will warm and dry faster reducing the frequency and duration of muddy trail closures
- No road crossings



Trail Context- West Connector

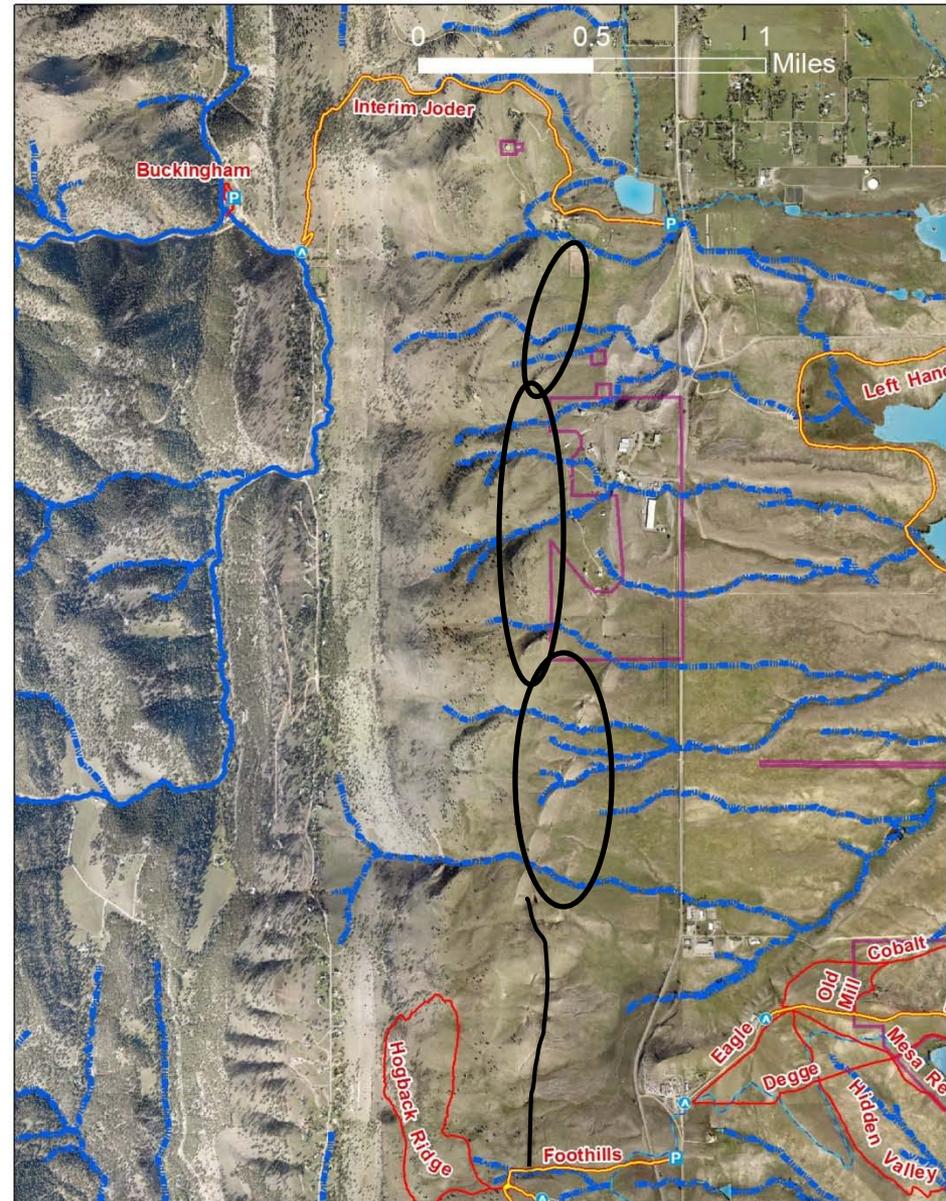
- 3 miles long
- Sections of the railroad grade social trail will need to be improved for water drainage and increased use levels.
- Where the trail descends to cross Schneider Draw the grade would exceed cross-slope
- Trail would cross 11 drainages. Bridges can be used to reduce impacts to natural resources.



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West Connector Natural Resources- Riparian/Wetland Resources

- 11 USGS mapped, some bridged
- Most require city and/or Federal wetland permits – challenging permitting
- Some may require Preble's (USFWS consultation)
- Hillside seeps
- Wetlands





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West Connector- Riparian/ Wetland Resources

- Crosses only remaining *foothills* drainages on OSMP not crossed by trails and/or roads
- Riparian values higher as move up drainage
- West of CE = high impact
- Lower crossing on Schneider

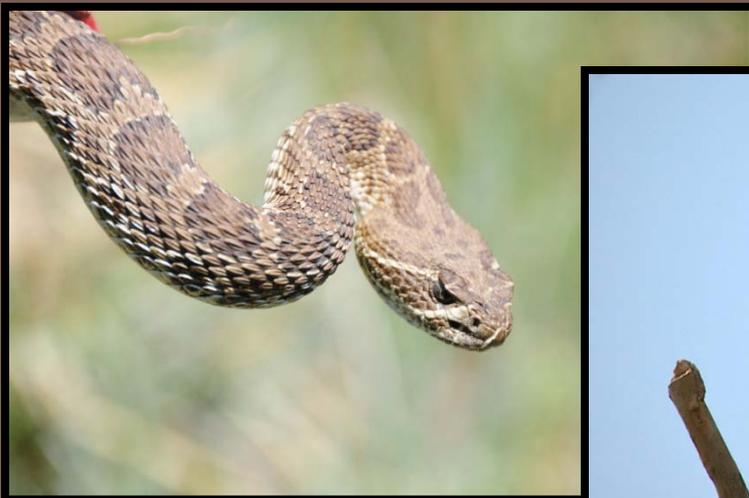


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West Connector Natural Resources- Wildlife

Species/groups impacted:

- Grassland butterflies- xeric tallgrass specialists - State Threatened/ Imperiled
- Shrub nesting birds - Lazuli bunting
- Grassland nesting birds - Lark Sparrow
- Prairie rattlesnake - foraging habitat and hibernacula

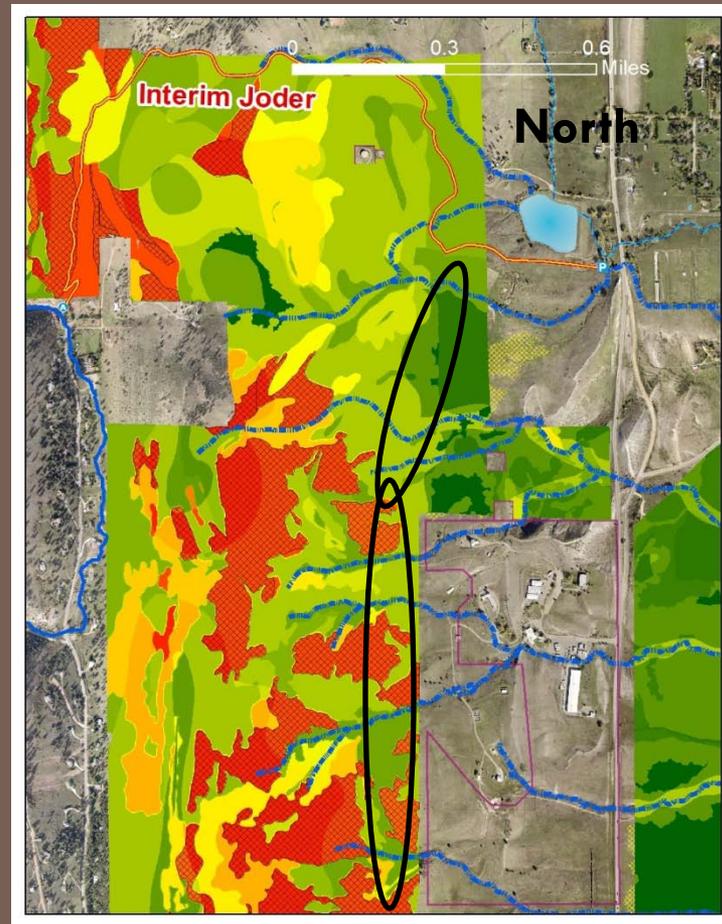
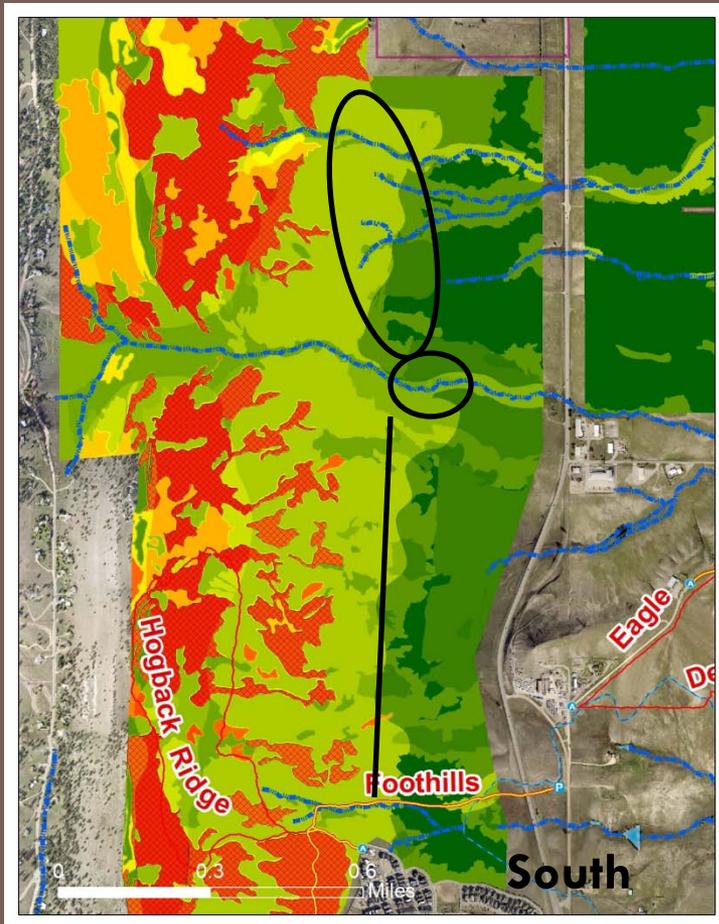




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West Connector Natural Resources- Wildlife

Grassland Dependent Butterflies

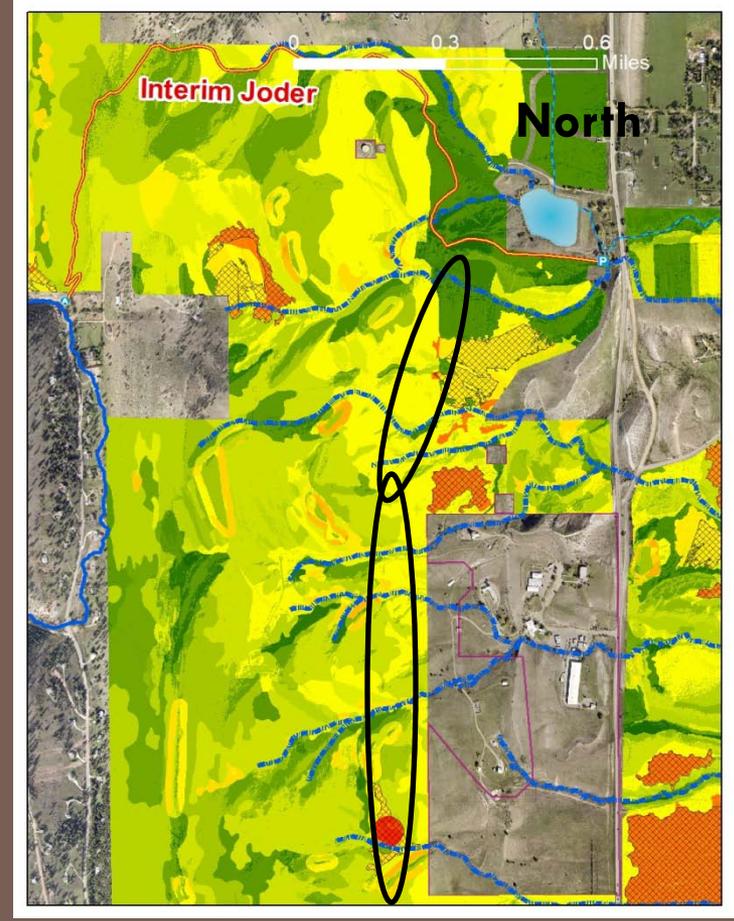
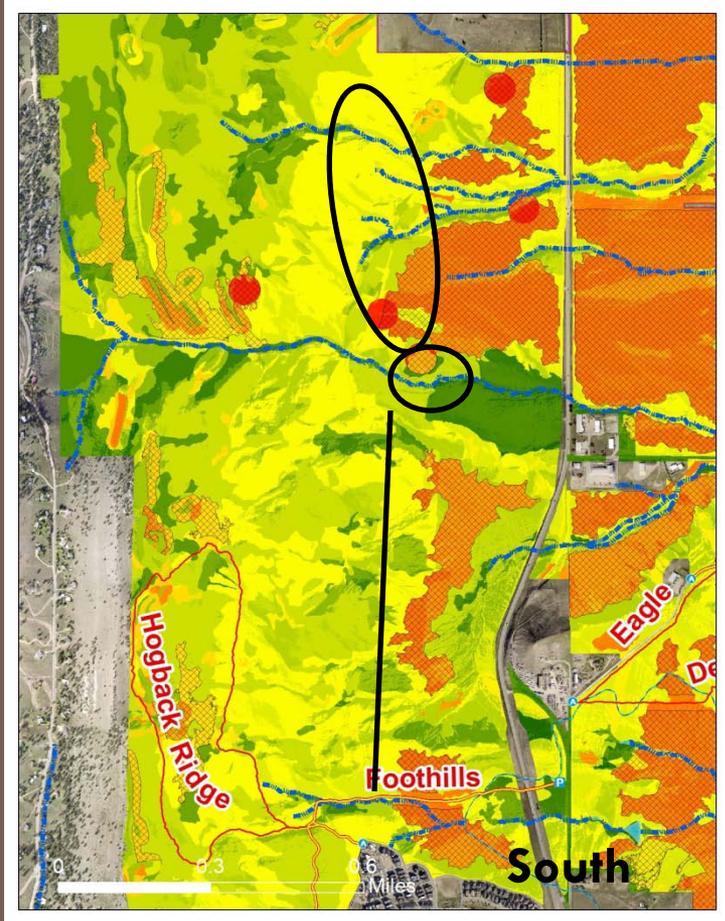




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West Connector Natural Resources- Wildlife

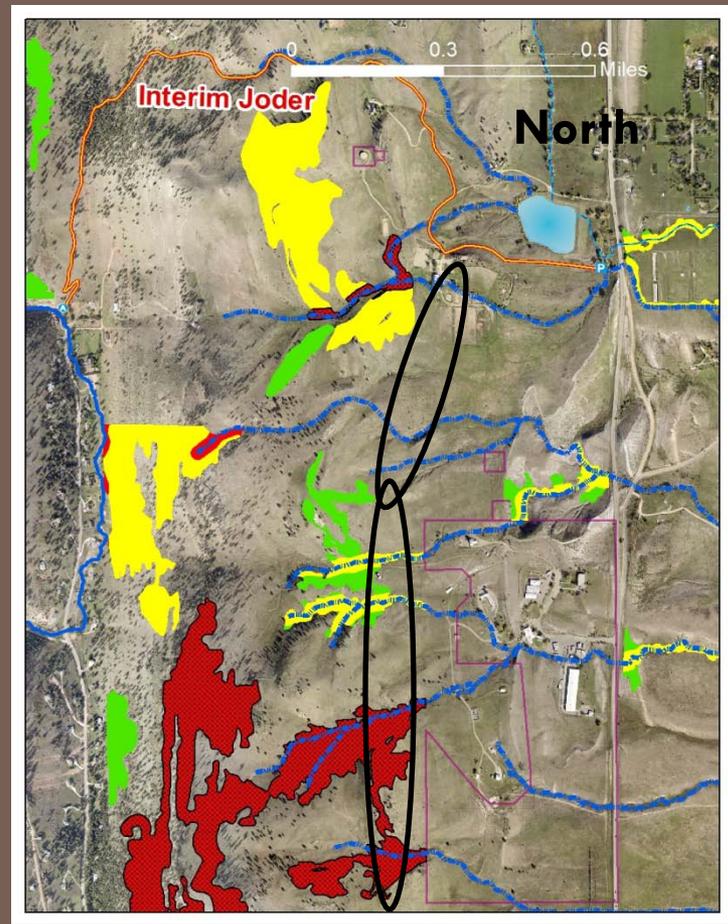
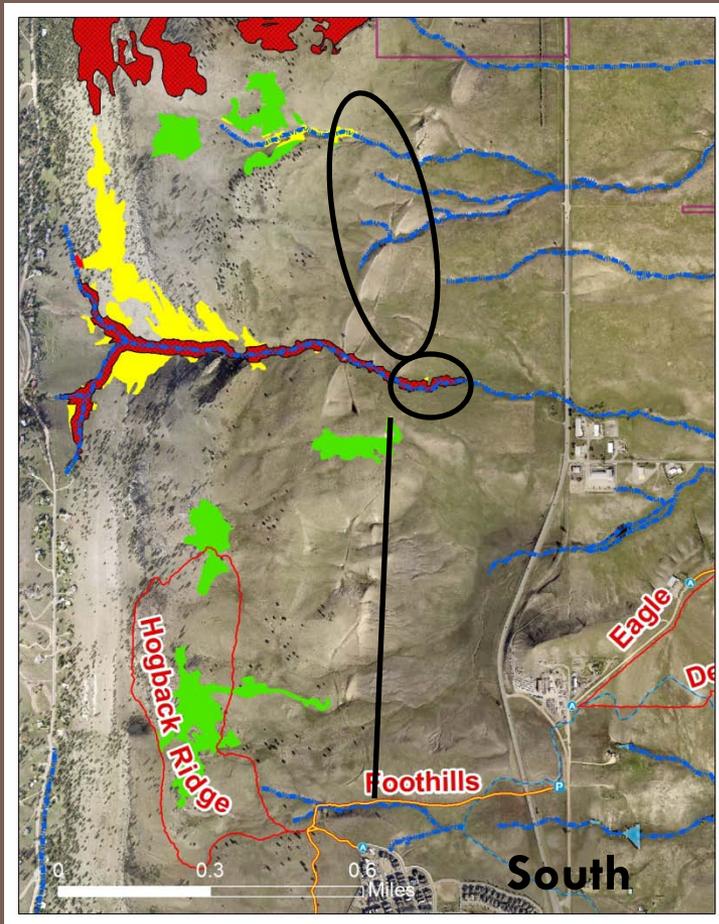
Prairie Rattlesnakes



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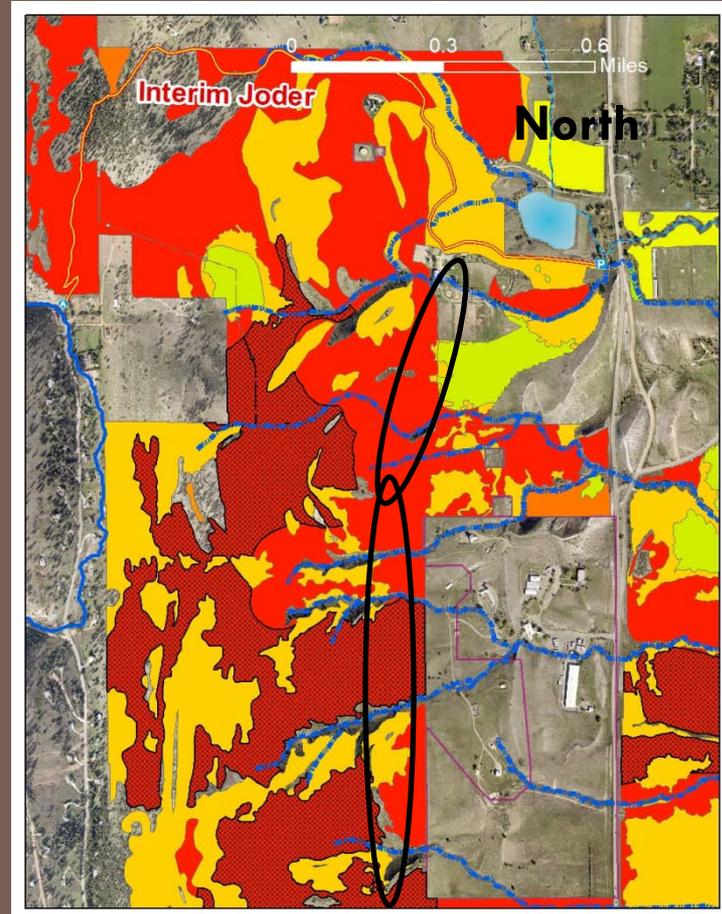
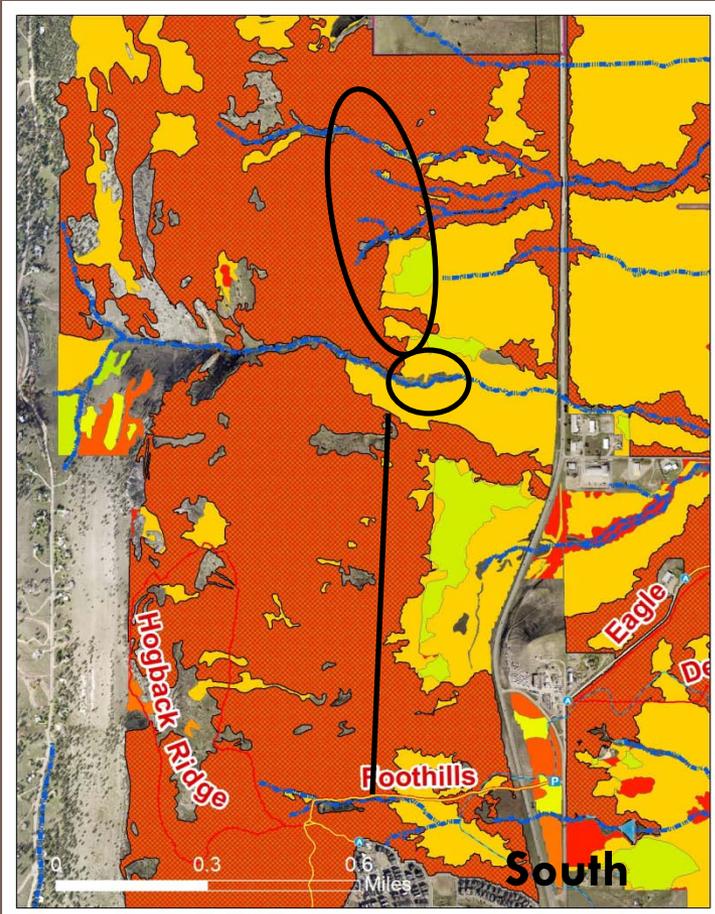
West Connector Natural Resources- Wildlife

Shrub Nesting Birds (Lazuli Bunting)



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West Connector Natural Resources- Wildlife Grassland Nesting Birds (Lark Sparrow)





West Connector Natural Resources- Plants

Rare plants and communities:

- Crosses rare New Mexico feathergrass, needle and threadgrass communities and xeric tallgrass
- Crosses Bell's twinpod habitat in several locations
- New trail building in grassland communities considerable due to private property obstacle rather than terrain





Other Alternatives Evaluated on West

Further East:

- Wetland areas
- Lark Sparrow (Grassland bird) nesting habitat
- Bell's twinpod habitat
- Would cross prairie dog colonies used frequently by raptors

Trail Further West:

- Impossible to avoid large areas of grassland butterflies, New Mexico feathergrass and other rare plant communities
- Cross drainages further into highly developed riparian habitat- more fragmentation- permitting very difficult
- Additional impacts to shrub habitats (birds, deer, elk, etc)
- Additional fragmentation of habitat block



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Overall Comparison of East/West Connector Options

East Connector	West Connector
4 miles utilizing new diagonal connector and Lefthand Trail	3 miles utilizing a portion of the railroad grade, new trail construction and some existing old road beds
5 road crossings	No road crossings
Limited variety of terrain and vegetation	High diversity of terrain and vegetation
Good views of grasslands and west Boulder foothills	Sweeping views of the prairie
Clay soils with poor drainage and northwest aspect. Longer closures due to muddy conditions	Better soils for drainage and east aspect. Fewer closures due to muddy conditions
Approximately \$300k for trail and bridge and \$2 million for box culvert	Approximately \$800k for new trail construction and bridge.

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Overall Comparison of East/West Connector Options

Resource	East Connector	West Connector
Riparian Drainages	Cross 1	Cross 11
Other wetlands	No	Yes- seeps
Bell's twinpod	No	Yes- moderate
Rare grass comm.	Yes- needle & thread- moderate	Yes- NM feathergrass, xeric tallgrass, needle & thread- extensive
Grassland butterflies	No	Yes- moderate
Rattlesnake	Minimal	Yes- hibernacula
Shrub/grassland birds	Minimal for both	Extensive for both



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Does the OSBT have comments or questions about the scenarios, trade-offs, work that went into balancing interests in the scenarios?

