



City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



PLAN

June 2016



Thank you to our community

Open Space and Mountain Parks would like to give our sincere appreciation and thanks to the many community members who contributed their time and efforts in the development and completion of the North Trail Study Area Plan.



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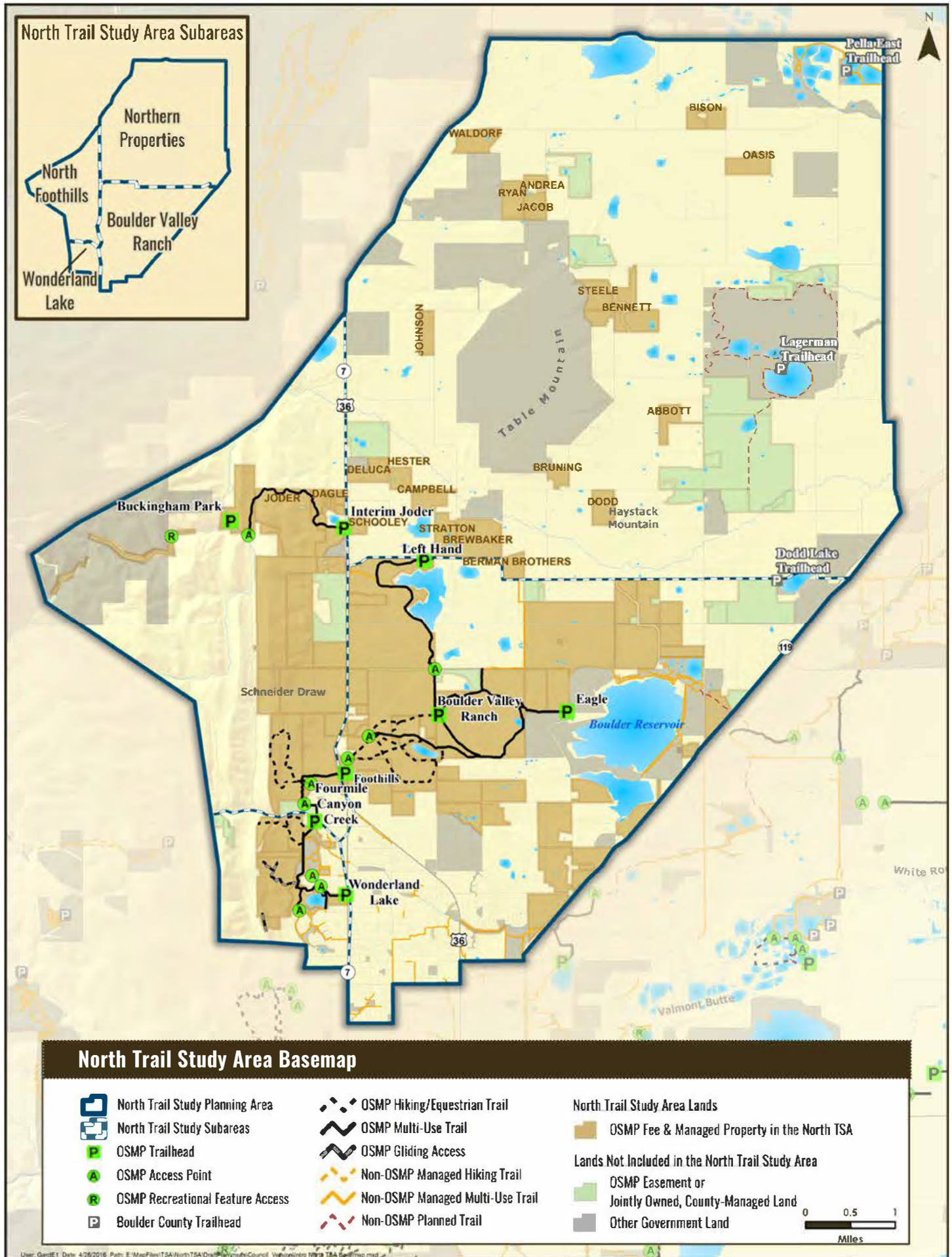
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Fossil of a smooth oyster shell, found in a marine sedimentary rock layer in the North TSA. © Gary Stevens





Purpose and Goals

A community-driven plan for the city's northern open space system

Purpose

The overall purpose of the North Trail Study Area (TSA) Plan is to provide management direction, and describe strategies and actions that will improve visitor experiences and increase the physical and environmental sustainability of trails, trailheads and visitor infrastructure in the North TSA while conserving natural, cultural and agricultural resources. The North TSA Plan will articulate the community's long-term vision and identify on-the-ground management actions directed at achieving that vision.

Description of the North Trail Study Area

The North TSA has diverse landscapes, including ponderosa pine topped hogback ridges, open grasslands, springs, creeks and small lakes. In many places, farming and ranching activities overlay these features. The TSA also includes cultural resources that tell the stories of Boulder's early inhabitants and settlers as well as its mining and agricultural past.

The rise of the Southern Rocky Mountain's foothills from the flatlands of the Central Great Plains is a continental scale environmental transition that sets the stage for high biological diversity and allows for a variety of recreational opportunities. The North TSA contains some popular and frequently visited areas such as Wonderland Lake, the Foothills Trail corridor, Boulder Valley Ranch and some more remote and less-frequented locations such as the Lefthand and Hogback Ridge trails.

The North TSA receives approximately one-fifth of the visitation to OSMP. It shares boundaries with city and county neighborhoods and is a recreation destination for many people who live nearby as well those traveling from elsewhere in the city, county and beyond.



A view of OSMP public land from the Hogback Ridge Trail.

North Trail Study Area Plan Goal

The North Trail Study Area Plan seeks to improve visitor experiences and increase the sustainability of trails and trailheads while conserving the area's natural, cultural and agricultural resources.



The Interim Joder Trail north of Boulder.



The North Trail Study Area (TSA) Planning Process



OSMP held nine public meetings to solicit feedback on the North TSA Plan.

The process for developing the North TSA Plan had four phases. The first phase was focused on collecting and compiling information about the TSA. The primary deliverable for the first phase was the North TSA Inventory and Assessment Report. The information in this report helped guide the development of plan scenarios.

The second phase identified the interests in the North TSA and its future management, as well as any specific issues that needed to be addressed in the plan. This phase resulted in a list of 10 interests and a set of desired actions that further informed the development of plan scenarios.

During the third phase, based on community and Open Space Board of Trustees (OSBT) feedback, OSMP staff developed scenarios designed to achieve planning objectives and community interests. Community and board assessment of and feedback on scenarios resulted in revisions to the scenarios. The OSBT selected which scenario should be used as a basis for the draft plan. In fairness to the process, it should be acknowledged that three OSBT members voted for the scenario while two voted against it. The main point of contention was whether a north-south connector trail should be constructed through the North Foothills HCA.

The fourth and final phase included the review of the draft plan by the community, the OSBT and recommendation and acceptance of the plan by the Boulder City Council.



Phase 1 | Inventory and Assessment

Purpose: Share knowledge about recreational, natural, cultural and agricultural resources. This phase led to the Inventory and Assessment Report.

Key Inputs:

- Community knowledge of visitor experiences, resources, what is functioning well in the North TSA and what needs improvement.
- Staff-prepared information on recreational, natural, cultural and agricultural resources.



Phase 2 | Interests and Issues

Purpose: Share knowledge about desired outcomes and topics that will guide the development and assessment of alternative scenarios and recommendations for the draft plan. This phase led to a North TSA interests and issues report documenting desired actions in scenario development.

Key Inputs:

- Community interests about desired plan outcomes and why the outcomes are wanted.
- Discussion of issues that could pose a challenge in the North TSA.
- Community dialogue about what can be implemented in the North TSA and why.



Phase 3 | Draft Plan Development

Purpose: Assess alternative scenarios and integrate recommendations into a draft plan.

Key Inputs:

- Draft alternative scenarios developed by staff to achieve and balance identified interests and objectives.
- Community and OSBT feedback on draft scenarios to inform refined scenarios and recommendations.



Phase 4 | Plan Acceptance

Purpose: Review draft plan and approve final plan.

Key Inputs:

- Community review.
- OSBT review, approval and recommendations to City Council.
- City Council review and acceptance.



OSMP held two workshops to learn about community interests for the North TSA. The department also held two workshops to learn about current conditions in the area.



Community Participation in the North TSA Planning Process

Since the City of Boulder kicked off the public process for the North TSA Plan in April of 2015, Open Space and Mountain Parks and the Open Space Board of Trustees have:

- » Invited the public to two workshops to learn what the community knows about and considers to be important resources in the North TSA and to solicit feedback on plan sideboards.
- » Conducted two public meetings to learn about the community interests in the North TSA.
- » Hosted two informational panels where experts informed the community about visitor and natural resource management strategies that have been implemented in other areas.
- » Held two workshops to unveil and refine preliminary plan scenarios.
- » Hosted a workshop to unveil and continue to revise refined plan scenarios.
- » Provided community members an opportunity to offer online comment about plan sideboards, their interests for the North TSA and feedback on the preliminary and refined scenarios.
- » Coordinated with Growing Up Boulder to include Boulder-area youth in North TSA planning.
- » Solicited community feedback at local businesses, at OSMP trails and at trailheads.
- » Reached out to the Latino community to provide information and seek input about the plan.

9

Community workshops held to solicit public input on the plan.

965

Comments received from community members through Inspire Boulder, email and social media posts.

73

Boulder area youths participated in North TSA youth engagement efforts.

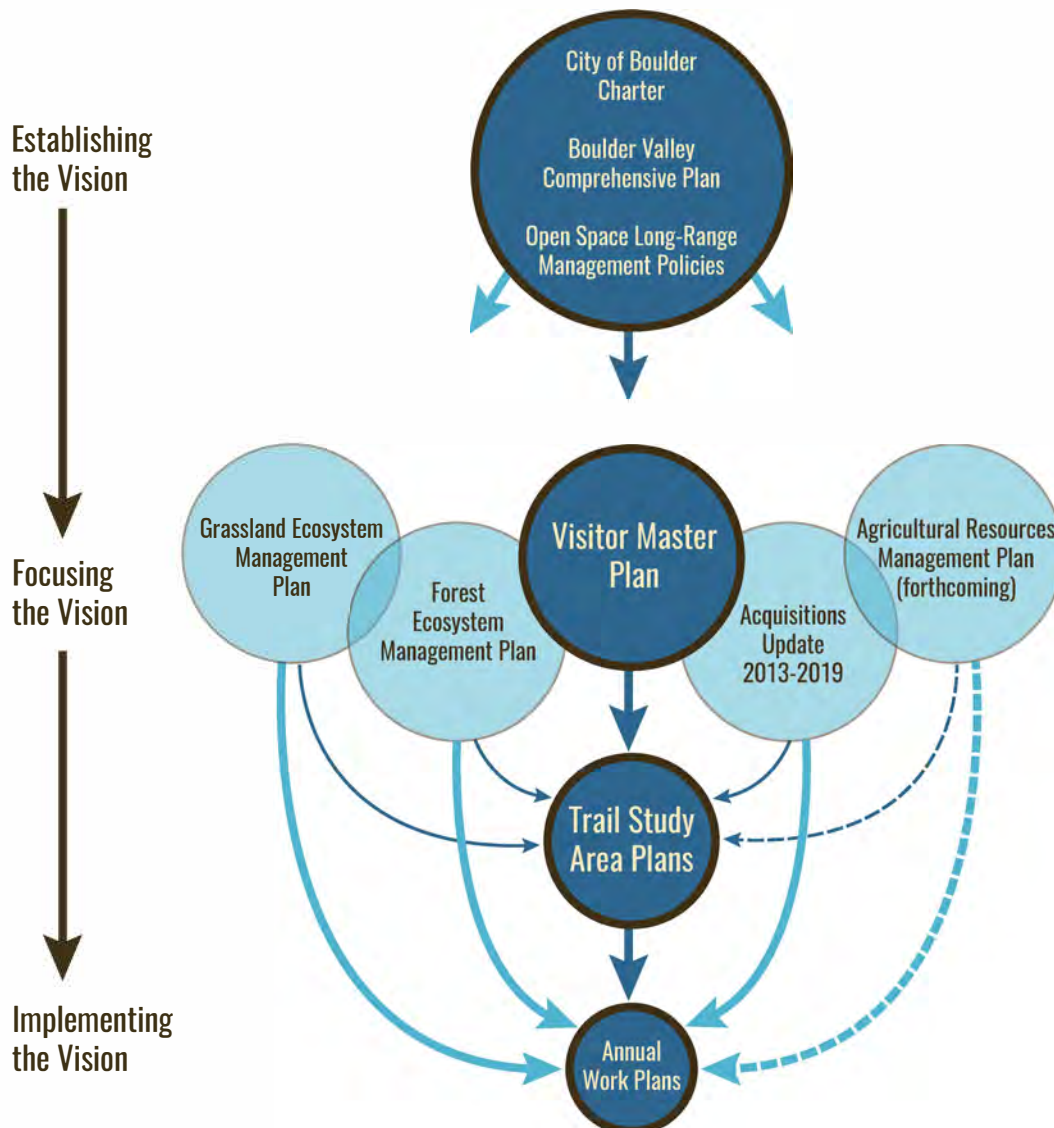


Existing Planning and Policy Guidance

The North TSA Plan is affected and influenced by other OSMP departmental master, area, resource and program management plans. Other shared community visions that must be considered and, as appropriate, integrated into recommendations in the North TSA Plan include City of Boulder master plans and the Boulder Valley Comprehensive Plan.

OSMP staff has been consulting with partner agencies and relevant plans affecting the North TSA to determine how to best integrate and coordinate management objectives. The OSMP Visitor Master Plan (VMP) developed a framework to deliver visitor services and manage visitor facilities in a manner consistent with the conservation of natural, cultural and agricultural resources.

TSA plans provide a means for area-specific implementation of the strategies and policies contained in the VMP. TSA plans also integrate the goals and objectives relevant to visitor access and infrastructure management from OSMP resource plans. These include the Grassland Ecosystem Management Plan, Forest Ecosystem Management Plan and the forthcoming Agricultural Resource Management Plan.





Existing Conditions in the North TSA

The North TSA is home to diverse recreational, natural, agricultural and cultural resources

Recreation Resources

Recreational opportunities occur throughout the North TSA and include a wide range of activities—such as hiking, bike riding, running, horseback riding, dog walking, hang gliding/paragliding, fishing, picnicking and nature study. Most visitors to OSMP, and likely to the North TSA, report a high quality of experience and enjoy the natural setting for passive recreation.

A goal for the North TSA Plan is to maintain the factors that are currently contributing to a high quality visitor experience and take additional actions to improve the quality of visitors' experiences. The OSMP VMP established an area-based framework for implementing management strategies, policies and priorities for visitor infrastructure improvements and service delivery.

Trails and Entry Points

The North TSA contains a 19-mile designated trail system that provides opportunities for visitor activities and connectivity to the Wonderland Lake, North Foothills and Boulder Valley Ranch areas. Several of the designated trails have stretches where the trail location or design can be improved to increase the physical sustainability and reduce impacts on ecological resources. There are also approximately 35 miles of undesignated trails which may not be physically or environmentally sustainable. Some undesignated trails provide access to destinations not served by designated trails, while others parallel designated trails or provide an alternate route to a destination already served by a designated trail.



The Foothills Trail near Wonderland Lake.

A focus for the North TSA Plan will be making the existing trail system more sustainable and reducing the network of undesignated trails, thereby lessening resource impacts. The VMP identified several specific improvements in what is now the North TSA, including trail and trailhead improvements, priority new trail connections and critical road crossings. These improvements were evaluated in the North TSA to improve visitor experience, infrastructure sustainability, safety and resource protection.

A trail or visitor facility is considered sustainable when principles of ecology and economics have been incorporated into the design in an effort to achieve ecological and biological integrity, a quality visitor experience and persistent performance with a minimum of maintenance and upkeep.

8 Trailheads

19+ Miles of designated trails

35+ Miles of undesignated trails



Bell's twinpod, a rare native plant species, growing in a shale outcropping.
© Bill May

Natural Resources

Many of the ecosystems west of U.S. Highway 36 in the North TSA are generally healthy and function naturally. Areas to the east of U.S. 36 have historically been altered to a greater degree for agricultural production, but still contain important wildlife habitat and native plant populations. The North TSA provides habitat and refuge to several sensitive species such as Bell's twinpod, bobolink, Northern Harrier, ottoe skipper, arogos skipper and the prairie rattlesnake.

Some of these rare or uncommon species can be threatened by visitor activities. A focus of the North TSA Plan is to maintain or increase the level of natural resource protection and restoration so OSMP can continue to achieve the community's natural resource conservation goals. The Grassland Ecosystem Management Plan and the Forest Ecosystem Management Plan provide information on natural resource conservation priorities and objectives that have been considered in the development of the North TSA Plan.

Agricultural Resources

Historically, agricultural lands in the North TSA have included beef production, dairy farms, sheep ranching, along with poultry operations, horse boarding, dry land grain production, irrigated forage, irrigated grain harvesting and vegetable production. Today, typical agriculture in the TSA includes cattle grazing and hay production. In response to growing community interest in local foods production, there is now a diversified organic farm in the TSA as well.

OSMP leases properties to local farmers and ranchers who run agricultural operations. In the North TSA, more than 3,000 acres of land are part of OSMP agricultural leases. The Grassland Ecosystem Management Plan and an Agricultural Resources Management Plan—which is in development — provide information on agricultural resources, policies and goals.

3,000 Acres leased for agriculture in the North TSA



Hay bales. Photo courtesy Bob Crifasi.



The historic stone Old Kiln along Fourmile Canyon Creek before the 2013 floods. Photo courtesy Sue Hirschfeld.

Cultural Resources

The North TSA contains important paleontological, archaeological and historic resources. There are cultural features and sites that are important to indigenous people, sites and structures indicative of Euro-American settlement, agriculture, transportation and mining. Some well-known North TSA historic sites include the Old Lime Kiln and north-south grade built for the failed Lefthand and Middle Park Railroad west of U.S. 36.

The wide variety of paleontological, archaeological and historic resources creates a fascinating backdrop for people who enjoy the lands of the North TSA. Some of these cultural resources require a higher level of protection, in order to ensure their long-term sustainability.

The North TSA After the 2013 Flood

The September 2013 flood brought unprecedented rainfall to the region and caused severe flooding and extensive damage to the Boulder Valley including OSMP trails, trailheads, irrigation facilities and fences. The flood also caused ecological changes to areas inundated with water and debris. Landscapes and visitor infrastructure near streams and drainages were significantly impacted and in some locations irreversibly altered.

After the flood, the Boulder community actively engaged in recovery efforts to repair and restore OSMP

resources. These efforts promptly restored nearly all visitor access. In most areas, visitor access was restored after rapid action was taken to mitigate hazards and implement temporary repairs. Longer-term and lasting repairs of OSMP trails and trailheads has proceeded at a slower, yet steady pace as funding, staffing, contracting resources and environmental conditions allow. The number of sites and extensive amount of work necessary means that repair and restoration work will continue into the future.

Resilience and Sustainability

The lands and resources of the North TSA like the Boulder community as a whole, face stresses like climate change, floods, drought, economic disruption and fire. Innovative and inclusive approaches are necessary for the future of the North TSA to be resilient and respond effectively to these challenges. This plan encompasses actions designed to allow the North TSA to better endure these challenges, and not only bounce back but also “bounce forward,” preserving and improving the quality of life within our community.

As part of the city’s efforts toward improving resilience, one of the major objectives of the North TSA Plan is to increase the physical and environmental sustainability of trails, trailheads and visitor infrastructure while conserving and restoring the valuable natural, agricultural and cultural resources within this area. Sustainable trails have negligible erosion, minimal braiding, and limited seasonal muddiness and will not require rerouting or major maintenance over long periods of time. Sustainable trails, trailheads and infrastructure support the current and anticipated uses and are designed to keep people on trail with minimal impacts to the adjoining natural systems. Implementing the North TSA Plan fosters a step in the direction of a more resilient future.



North TSA Interests for Plan Outcomes

Community members and stakeholders provided valuable feedback about their interests in the North TSA to OSMP staff and the OSBT through community workshops, online, in person through trailhead or local store-front outreach, email, social media submissions and through special youth engagement opportunities. Interests explain “why” someone wants or needs something rather than “what” they want. Interests enable diverse needs to be better met through more win-win actions. Through the various engagement efforts, the following community interests were identified.



Improved Visitor Experience



Improved Connectivity



Conservation of Resources
Natural, Agricultural, Cultural



Balance of Recreation and
Resource Conservation



Improved Access and
Accessibility



Increased Safety



Honoring Community Values
and Commitments



Decreased Visitor Conflict



Increased Education and
Understanding



Effective Planning Process
and Plan Implementation

The 10 identified North TSA Plan interests are consistent with the goal of the North TSA Plan, and provided guidance and direction for staff in the development of the plan. The goal of the plan is to balance all of the community interests.



Post-Acquisition Property Planning and Management Area Designations

Newly acquired properties need to be integrated into the OSMP system and determinations made about how best to manage the properties' resources and visitor access. This is accomplished by assessing the natural, cultural and agricultural resources of the property, compatibility with visitor-access opportunities and any constraints that need to be addressed. The assessment then allows determinations on how the property can best contribute to the conservation of resources and the delivery of community services as guided by the policies and strategies of the VMP, Grassland Ecosystem Management Plan and Forest Ecology Management Plan, as well as other community adopted plans.

The VMP established the policy that plans would be developed for newly acquired properties. The process would include an assessment of the property and recommendations for public access, and any appropriate infrastructure and services necessary for managing access. Newly acquired property would remain closed to the public until the relevant planning had been completed and on-the-ground actions had been implemented. Planning also would recommend the VMP management area designations if that step had not been taken previously.

The OSMP Acquisition Update 2013-2019 included the option of using a more system-wide framework for integrating new properties into the OSMP system by including them in a broader planning process such as TSA plans. The North TSA includes properties that fit into various stages of assessment, planning and management area designation.



A view of the Joder and West Beech properties north of Boulder.

Property Planning

The North TSA Plan includes three general types of property-specific recommendations:

- » Visitor-access recommendations for recent acquisitions currently closed to public access;
- » Management-area designations for properties without designations.
- » A property complex (Joder and Cox properties) with a management area designation that will be reviewed.

The North TSA Plan includes recommendations for these properties to guide and manage visitor access.

View south from the North Foothills Subarea. © Gary Stevens.

North TSA Plan Recommendations

North TSA-Wide



ACTIONS T1 to T9

Provide management area designations for properties without designations to guide management actions.

Interests Met: 4*

MAP 1: North TSA-Wide - Management Area Designations

- » Retain the Joder and Cox property designation (T1) as a Habitat Conservation Area (HCA) and implement as part of the North Foothills HCA.
- » Designate Dagle II (T2), Stratton (T5), Lappin (T6), IBM open space easement (T7), Hart-Jones Exchange (T8) and Palo Park (T9) properties as Natural Areas.
- » Limit public access to on trail travel on IBM open space easement property.
- » Designate Dakota Ridge Village (T3) property as a Passive Recreation Area.
- » Designate Berman Brothers (T4) property as an Agricultural Area.

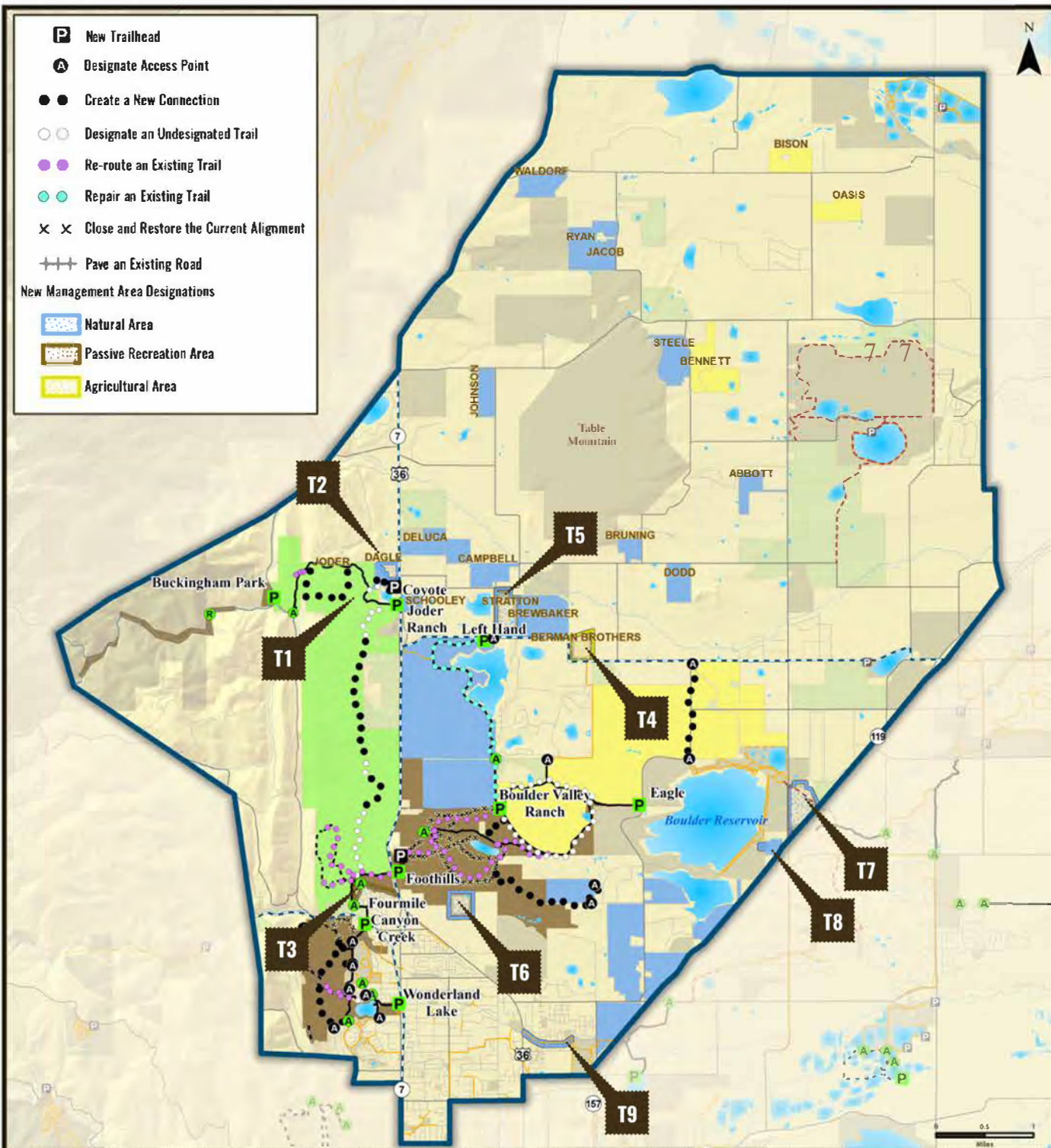
Primary Goal

- » Implement VMP direction to provide management area designations for properties without designations to guide management actions.

Driving Factors/Benefits

- » Joder: includes sensitive habitat and resources that are a consistent extension of habitats and species in North Foothills HCA.
- » Dagle II: natural area designation is consistent with adjacent Wright and Dagle I management designations.
- » Dakota Ridge: adjacent to North Foothills Trail and adjoining passive recreation management area.
- » Berman Brothers: this property has been designated as an agricultural land of statewide importance-suitable for hay production or grazing.
- » Stratton: protect important resources and create healthy habitats for native amphibians, native fish, and, potentially, Preble's meadow jumping mouse.
- » Lappin: protect important plant and aquatic species as well as shale barrens habitat.
- » IBM: support creation of the IBM connector trail.
- » Hart-Jones Exchange: protect riparian areas and rare plant community habitat.
- » Palo Park: protect riparian area of Fourmile Canyon Creek.

*See Appendix D for a list of interests met by each action.



MAP 1: North TSA-Wide - Management Area Designations

- | | | |
|----------------------------------|----------------------------------|---|
| North Trail Study Planning Area | OSMP Hiking/Equestrian Trail | Agricultural Area |
| North Trail Study Subareas | OSMP Multi-Use Trail | Habitat Conservation Area |
| OSMP Trailhead | OSMP Gliding Access | Natural Area |
| OSMP Access Point | Non-OSMP Managed Hiking Trail | Passive Recreation Area |
| OSMP Recreational Feature Access | Non-OSMP Managed Multi-Use Trail | OSMP Easement or Jointly Owned, County-Managed Land |
| Boulder County Trailhead | Non-OSMP Planned Trail | Other Government Land |

Trail changes are depicted conceptually. Actual trail alignments will differ.



ACTIONS T10 to T15

Collaborate with partner agencies to create regional connections.

*Interests Met: 3**

MAP 2: North TSA-Wide - Recommendations

As opportunities arise, collaborate with partner agencies to create the following regional trail connections in a way that minimizes natural resource impacts.

- » **(T10)** North TSA to Boulder County Parks and Open Space's Heil Valley Ranch. The North TSA Plan does not preclude future public planning processes to assess a regional connector trail connection to Heil Ranch on the Buckingham property.
- » **(T11)** North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI/Open Space Complex.
- » **(T12)** A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project.
- » **(T13)** IBM Connector Underpass and Trail (construction pending).
- » **(T14)** Fourmile Canyon Creek Trail underpass to Cottonwood Trail (construction pending).
- » **(T15)** Eagle Trail to the planned Boulder Reservoir Trail.

Primary Goal

- » Enhance regional trail connectivity.

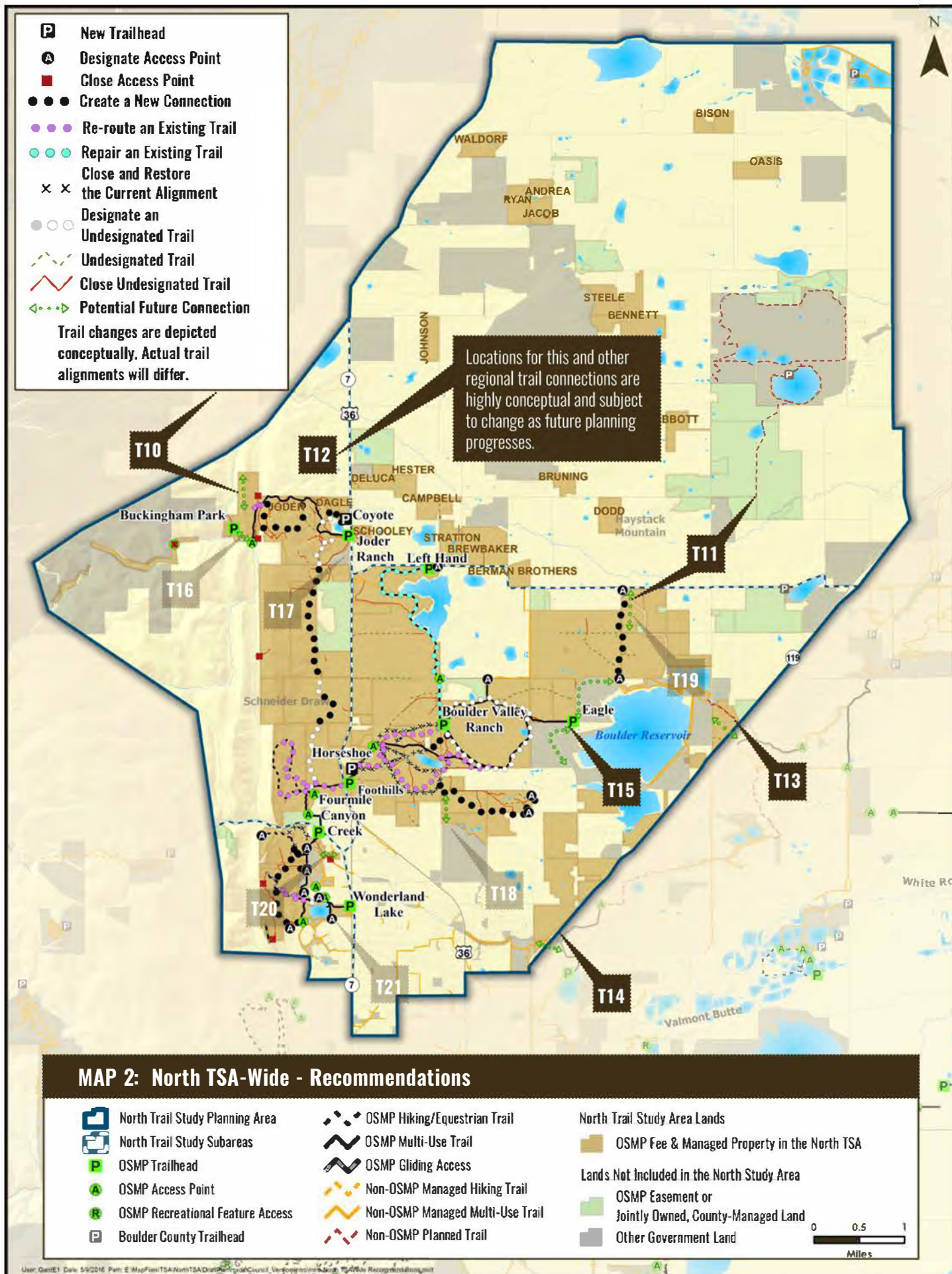
Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Coordination and collaboration among OSMP and partner agencies to accomplish regional connections.
- » Specific to the Eagle Trail to Boulder Reservoir Trail connection: keep trail close to 51st and 55th streets in existing transportation corridors as much as is feasible.



Illustration of a globally rare arogos skipper by OSMP staff Dave Sutherland, prepared for a forthcoming interpretive sign at Joder Ranch.

*See Appendix D for a list of interests met by each action.





ACTIONS T16 to T20

Collaborate with partner agencies to create local trail connections.

*Interests Met: 3**

MAP 2: North TSA-Wide - Recommendations, continued

- » As opportunities arise, collaborate with partner agencies to create the following local trail connections in a way that minimizes natural resource impacts.
- » **(T16)** Joder Trail to Buckingham Park via Olde Stage Road (in progress).
- » **(T17)** Joder Ranch and Boulder County's Six-Mile Fold. Boulder County will conduct its own public planning process to determine access and management of visitors on Six-Mile Fold. OSMP will coordinate with the county's planning efforts to determine if and where trails could be located in this area.
- » **(T18)** City of Boulder's Area III park site to the North TSA.
- » **(T19)** Boulder Reservoir to Niwot Road.
- » **(T20)** Fourmile Canyon Creek Greenway path to Foothills Community Park.

Primary Goal

- » Enhance local trail connectivity.

Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Increase coordination and consistency among OSMP and partner agencies.
- » Specific to Joder Ranch and Boulder County's Six-Mile Fold connection: Provide additional interpretive opportunities.
- » Specific to Area III park site connection: (1) Work with partner agencies on a north-south trail connection from northern Boulder neighborhoods to North TSA; and (2) Increase accessibility for neighbors to the North TSA.
- » Specific to Fourmile Canyon Creek Greenway path to Foothills Community Park connection: Connection accepted by City Council in the Greenways Master Plan.

ACTION T21 Designate undesignated access points that connect with new or existing designated trails.

*Interests Met: 4**

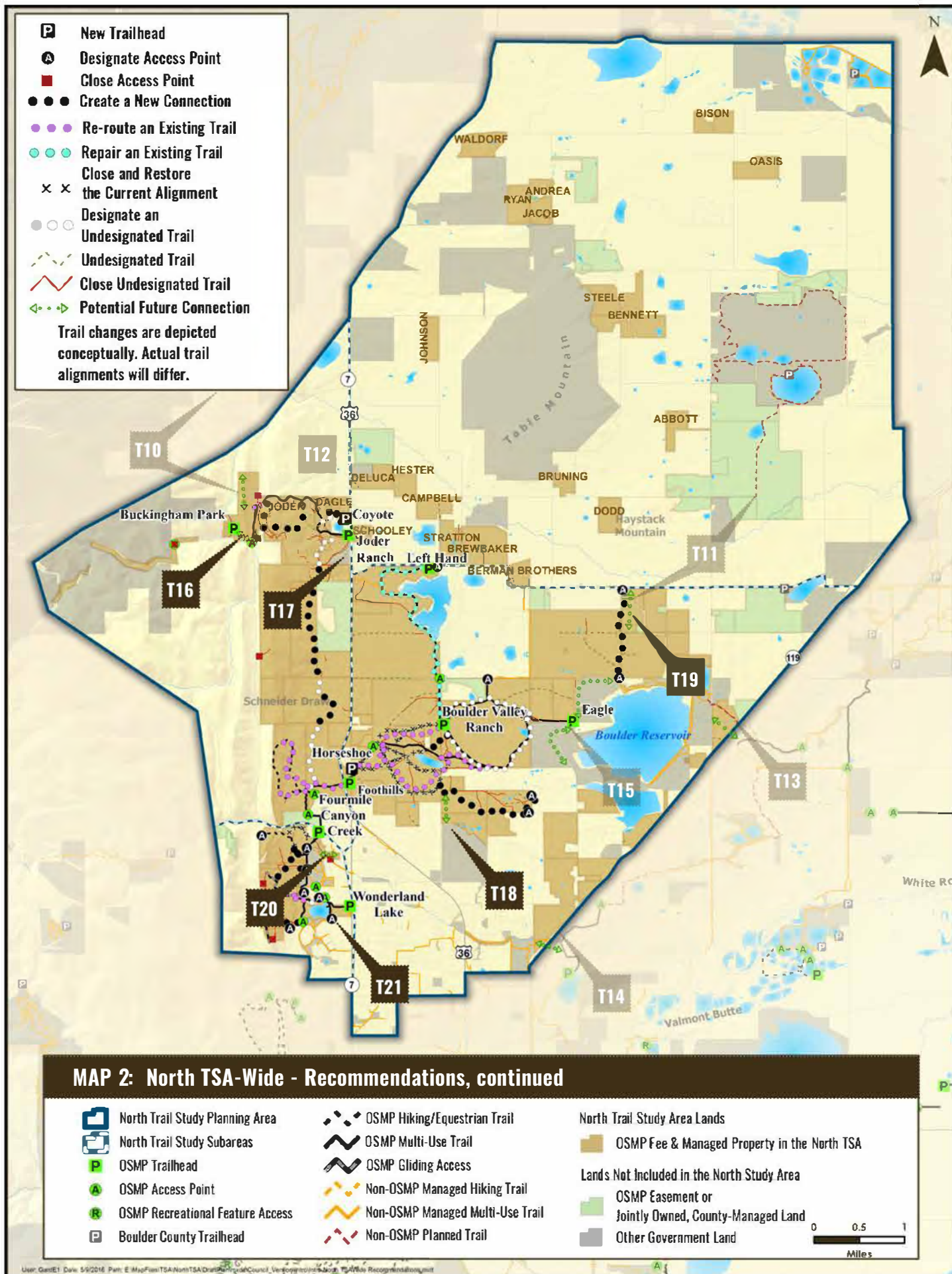
Primary Goal

- » Provide managed public access to designated trails to encourage visitors to use designated trails.

Driving Factors/Benefits

- » Establish clearly identified designated trail access points.
- » Identify infrastructure and maintenance standards for access points.
- » Improve connectivity between North TSA and publicly accessible areas.
- » Minimize impacts to natural resources as connections are improved.

*See Appendix D for a list of interests met by each action.





ACTION T22 Bring all trails up to standards.

*Interests Met: 4**

ACTION T23 Bring all trailheads and access points up to standards.

*Interests Met: 4**

ACTION T24 Remove unnecessary fencing and use wildlife friendly fencing.

*Interests Met: 3**

ADDITIONAL ACTIONS: North TSA-Wide - Recommendations

- » Conduct maintenance activities to bring trails up to OSMP sustainable trail guidelines.**

Primary Goal

- » Increase trail sustainability to protect the OSMP trail system over the long term while providing a quality visitor experience.

Driving Factors/Benefits

- » A sustainable trail is physically, ecologically and economically sustainable over time.
- » Ensure trails maintain their character over time and encourage on-trail use.
- » Use ecological best management practices as work is planned and implemented to minimize erosion and locate trails in a manner that minimizes impacts to surrounding natural and cultural resources.
- » Upgrade trails so they will require minimal maintenance and financial resources over the long term.

- » Update, replace and install infrastructure to bring existing trailheads and access points up to OSMP standards.**

Primary Goal

- » Install appropriate and functioning infrastructure at each trailhead and access point to provide a safe, consistent and quality visitor experience.

Driving Factors/Benefits

- » Provide visitors with safe, well-maintained and functioning infrastructure (e.g., easy to understand signs, toilets, safe parking access, etc.)
- » Upgrade infrastructure so that it is less difficult and costly to maintain over time.

- » Remove fencing that is no longer serving a function and when modifying or installing fencing in implementation of the North TSA, ensure fencing is wildlife friendly.

Primary Goal

- » Remove fences no longer serving a purpose and replace barbed-wire fences with less harmful barriers.

Driving Factors/Benefits

- » Remove fences to improve visitor experience and resource conservation.
- » Enhance wildlife corridors while balancing livestock control measures.
- » Install new fences with wildlife friendly design.

*See Appendix D for a list of interests met by each action.

** OSMP trail and trailhead standards available in the North TSA Inventory and Assessment Report. For current information about OSMP standards, visit osmp.org.



Primary Goal

- » Create larger areas of unfragmented habitat by closing, revegetating or restoring undesignated trails that have not been designated through the North TSA process.

Driving Factors/Benefits

- » Eliminate undesignated trails that are redundant and unmanaged trail connections.
- » Improve conservation of rare plant communities and other sensitive resources.
- » Offset resource impacts of providing new trail connections.

IMPORTANT NOTE: The North TSA Plan recommendations will result in some undesignated trails being integrated into the designated trail system and other undesignated trails being closed and vegetation restored. A few undesignated trails are used for authorized vehicle access and will be retained for this purpose.

NORTH TSA PLAN RECOMMENDATIONS FOR UNDESIGNATED TRAILS	MILES
INTEGRATE INTO OSMP TRAIL SYSTEM	4.7
CLOSE AND RESTORE VEGETATION	22.7
RETAIN FOR AUTHORIZED VEHICLE ACCESS	7.9
TOTAL	35.3

- » Assess and prevent the introduction and spread of priority invasive plants along new trail connections and decommissioned or undesignated trail sections under restoration.

Primary Goal

- » Conserve and restore high-quality native plant communities and rare plant communities.

Driving Factors/Benefits

- » Share information about the resource impacts associated with the spread of invasive plants and ways visitors can help prevent or minimize this issue.
- » The North Foothills HCA is an area of high importance for this action.

Primary Goal

- » Share information with visitors about the ecology, natural features, habitats, plants and animals in various locations throughout the North TSA, including North Foothills HCA, Boulder Valley Ranch and Wonderland Lake.

Driving Factors/Benefits

- » Increase public awareness and understanding of interesting or unique natural resources.
- » Improve compliance with regulations through programs directed at resource protection.

ACTION T25 Allow natural revegetation or restore all undesignated trails not integrated into designated trail connections.

*Interests Met: 4**

ACTION T26 Assess and prevent the introduction and spread of priority invasive plants.

*Interests Met: 2**

ACTION T27 Create interpretive information and messages about unique, rare and sensitive resources.

*Interests Met: 2**

*See Appendix D for a list of interests met by each action.



Background photo: Joder property.

North TSA Plan Recommendations

North Foothills



ACTION NF1 Retain the Joder property as a Habitat Conservation Area (HCA).

*Interests Met: 4**

ACTION NF2 Designate Dagle II property as a Natural Area.

*Interests Met: 2**

ACTION NF3 Designate Dakota Ridge Village property as a Passive Recreation Area.

*Interests Met: 2**

MAP 3: North Foothills - Management Area Designations

- » Retain the management area designation and include as part of the North Foothills HCA.

Primary Goal

- » Honor the OSBT's request to thoroughly evaluate the Joder property management area designation and implement the VMP direction to establish management area designations for undesignated properties to guide management actions.

Driving Factors/Benefits

- » Joder includes sensitive habitat and resources that are a consistent extension of habitats and species in the North Foothills HCA including rare plants and plant communities, highly suitable habitat for North TSA focal species such as globally-imperiled grassland-dependent butterflies, lazuli bunting, lark sparrow and prairie rattlesnake.
- » Ensures trail development and visitor access are considered in the context of important and sensitive natural resources.

Primary Goal

- » Implement VMP direction to provide management area designations for undesignated properties.

Driving Factors/Benefits

- » Consistent with adjacent Wright and Dagle I management area designations.

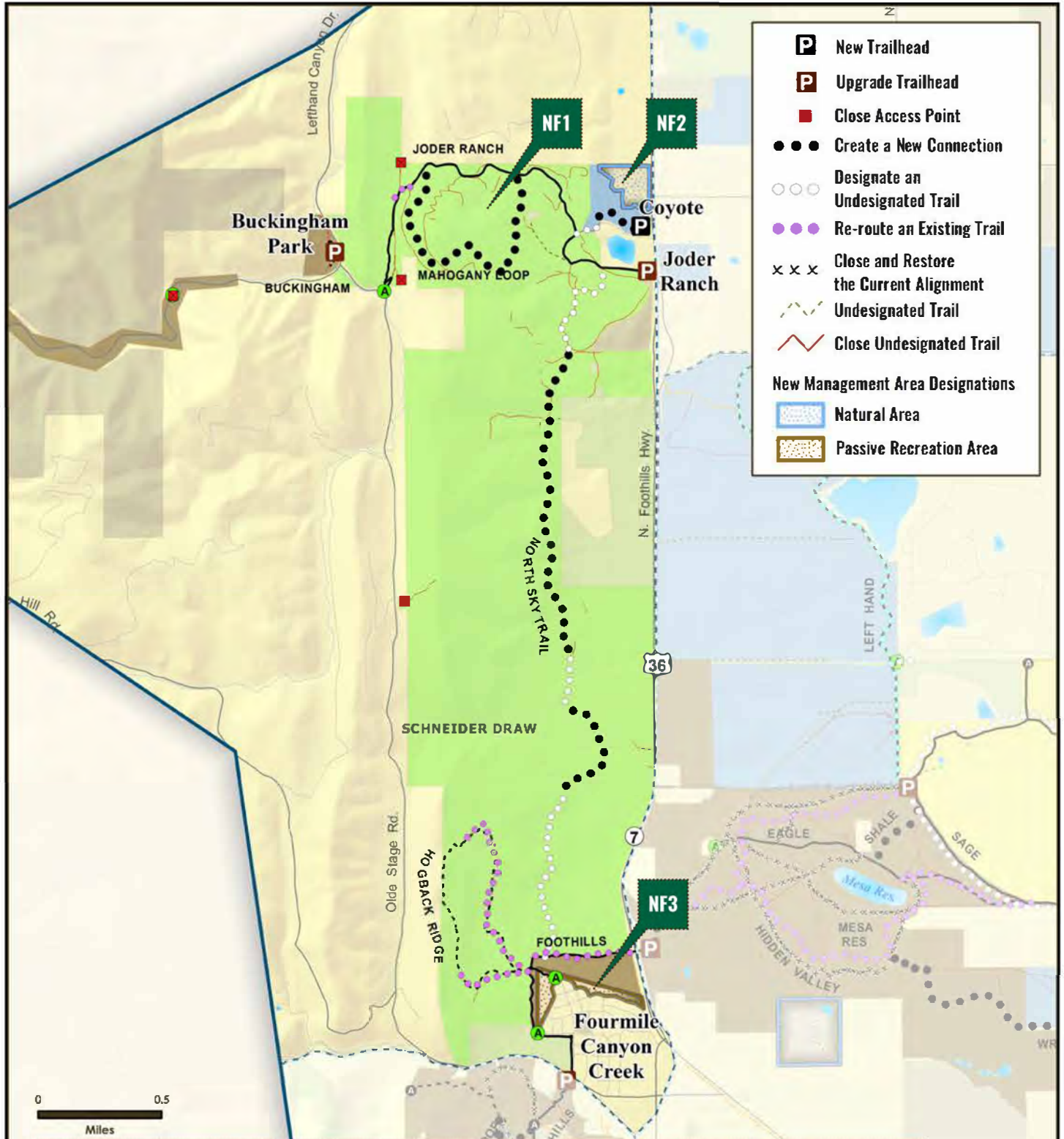
Primary Goal

- » Implement VMP direction to provide management area designation for undesignated properties.

Driving Factors/Benefits

- » Consistent with adjacent Passive Recreation Area designation around Foothills Trail.

*See Appendix D for a list of interests met by each action.



MAP 3: North Foothills - Management Area Designations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Access Point
- OSMP Fee & Managed Property
- OSMP Easement or Jointly Owned, County-Managed Land

- OSMP Hiking/Equestrian Trail
 - OSMP Multi-Use Trail
 - Non-OSMP Managed Multi-Use Trail
- Trail changes are depicted conceptually. Actual trail alignments will differ.

- Agricultural Area
- Habitat Conservation Area
- Natural Area
- Passive Recreation Area
- Other Government Land





ACTION NF4 Collaborate to create a trail connection from North TSA to Boulder County Parks and Open Space's Heil Valley Ranch.

*Interests Met: 3**

ACTION NF5 Collaborate to create a connection from Joder Ranch Trail to Buckingham Park via Olde Stage Road (in progress).

*Interests Met: 3**

MAP 4: North Foothills - Subarea-Wide Recommendations

- » As opportunities arise, collaborate with partner agencies to create regional trail connections in a way that minimizes natural resource impacts.
- » The North TSA Plan does not preclude future public planning processes to assess a regional trail connection to Heil Ranch on the Buckingham property.

Primary Goal

- » Enhance regional connectivity.

Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Increase coordination among OSMP and partner agencies.

- » As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts.

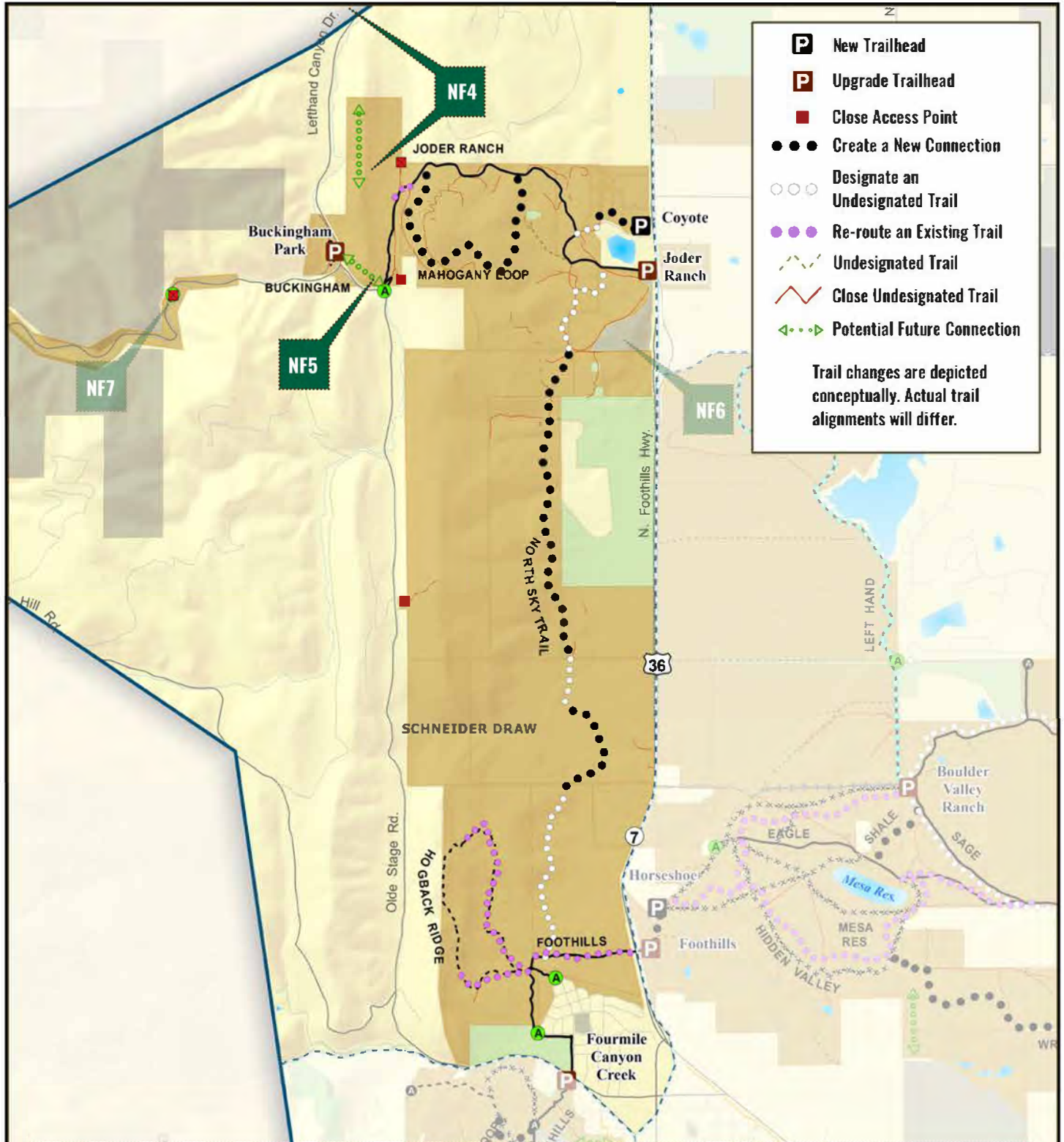
Primary Goal

- » Enhance local trail connectivity.

Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Increase coordination among OSMP and partner agencies.

*See Appendix D for a list of interests met by each action.



MAP 4: North Foothills - Subarea-Wide Recommendations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Access Point
- OSMP Recreational Feature Access

- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- North Trail Study Area Lands
- OSMP Fee & Managed Property

- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land

0 0.5
Miles





ACTION NF6 Collaborate to create a connection between Joder Ranch and Boulder County's Six-Mile Fold property.

*Interests Met: 3**

ACTION NF7 Close Cottonwood Recreation Area.

*Interests Met: 2**

MAP 4: North Foothills - Subarea-Wide Recommendations, continued

- » As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts.
- » Boulder County will conduct its own public planning process to determine access and management of visitors onto Six-Mile Fold. OSMP will coordinate with the county's planning efforts to determine if and where trails could be located to provide access to this area and minimize natural resource impacts.

Primary Goal

- » Enhance local trail connectivity to provide designated access from the Joder Ranch Trail and Trailhead to the Six-Mile Fold area.

Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Increase coordination among OSMP and partner agencies.
- » Enhance interpretive and education access and opportunities.
- » Protect geological and natural resources.

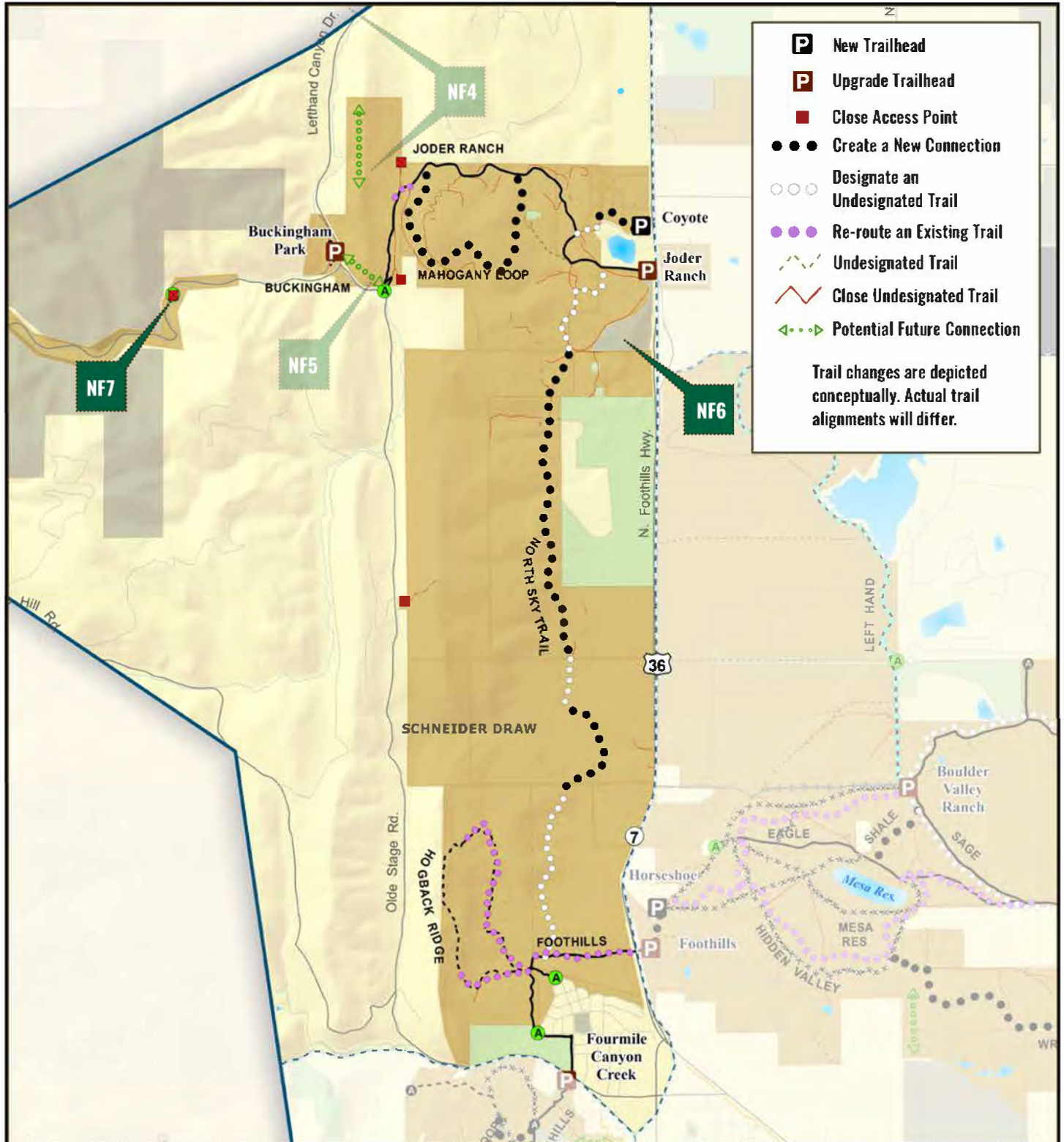
Primary Goal

- » Support Lefthand Creek wetland and riparian restoration efforts after 2013 flood.

Driving Factors/Benefits

- » The site was significantly altered after the 2013 flood and recreation amenities destroyed.
- » Area is no longer suitable as a recreation access area.

*See Appendix D for a list of interests met by each action.



MAP 4: North Foothills - Subarea-Wide Recommendations, continued

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Access Point
- OSMP Recreational Feature Access

- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- North Trail Study Area Lands**
- OSMP Fee & Managed Property

- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land

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Miles





ACTION NF8 Realign western section of the Interim Joder Trail near the Buckingham property. (Joder Ranch Trail)

*Interests Met: 4**

ACTION NF9 Construct one loop trail on the northwest section of the Joder property. (Mahogany Loop)

*Interests Met: 4**

ACTION NF10 Construct a new trailhead for passenger vehicle parking on the Dagle/Wright properties. (Coyote Trailhead)

*Interests Met: 4**

MAP 5: North Foothills - Joder Focus Area

Primary Goal

- » Improve trail conditions to improve physical sustainability and visitor experience.

Driving Factors/Benefits

- » Re-route steep, unsustainable portion of trail at west end of carriage road that connects to Buckingham property to improve sustainability and reduce the trail grade.
- » Conserve butterfly habitats and minimize the impact of the trail re-route on butterfly highly suitable habitat.

Primary Goal

- » Increase recreation and visitor experience opportunities.

Driving Factors/Benefits

- » Provide new visitor opportunity while limiting the extent of trail in areas of highest resource sensitivity and avoiding trails crossing through the large drainage on the property.
- » Manage visitor activities to minimize visitor conflict on the loop trail.
- » Allow restoration of historic undesignated trails to increase habitat quality in HCA.

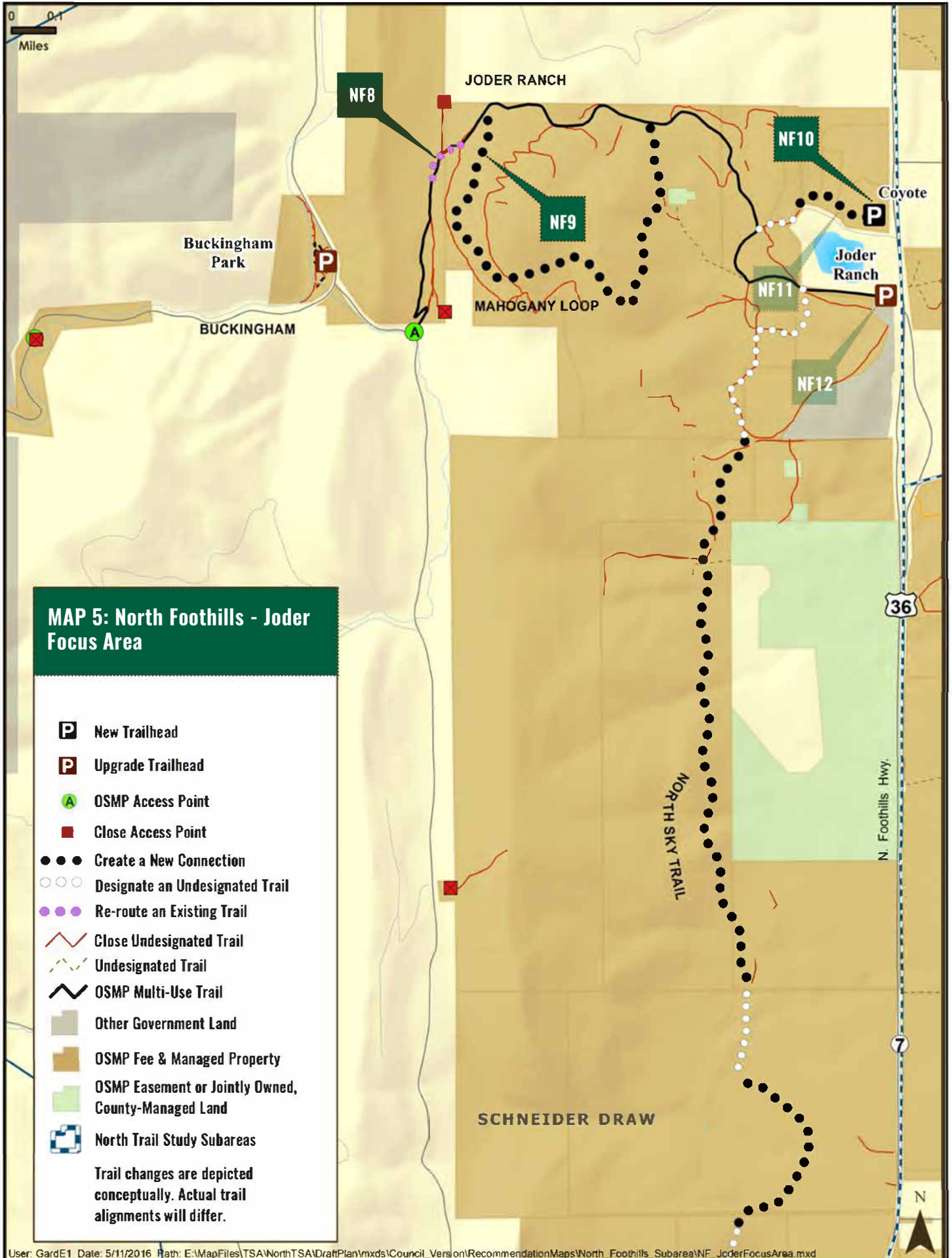
Primary Goal

- » Provide additional passenger vehicle parking for Joder Ranch that does not require visitors to cross U.S. 36.

Driving Factors/Benefits

- » Provide parking for pedestrians and cyclists.
- » Construct parking lot that has suitable terrain, drainage and soil quality.
- » Access road off of U.S. 36 may provide suitable sitelines for obtaining Colorado Department of Transportation (CDOT) access permits.

*See Appendix D for a list of interests met by each action.





ACTION NF11 Construct a connector trail from the new trailhead (Coyote Trailhead) on the Dagle property to the Joder Ranch Trail.

*Interests Met: 5**

ACTION NF12 Retain Interim Joder Trailhead. (Joder Ranch Trailhead)

*Interests Met: 4**

MAP 5: North Foothills - Joder Focus Area, continued

Primary Goal

- » Provide connection from the new parking area to the Joder Ranch Trail.

Driving Factors/Benefits

- » Create trail connectivity with trailhead.
- » Minimize visitor conflict along the access road to lessees on the Dagle and Wright properties.

Primary Goal

- » Provide horse trailer and large-vehicle parking for the Joder trail system. Retain a limited number of passenger vehicle parking spots.

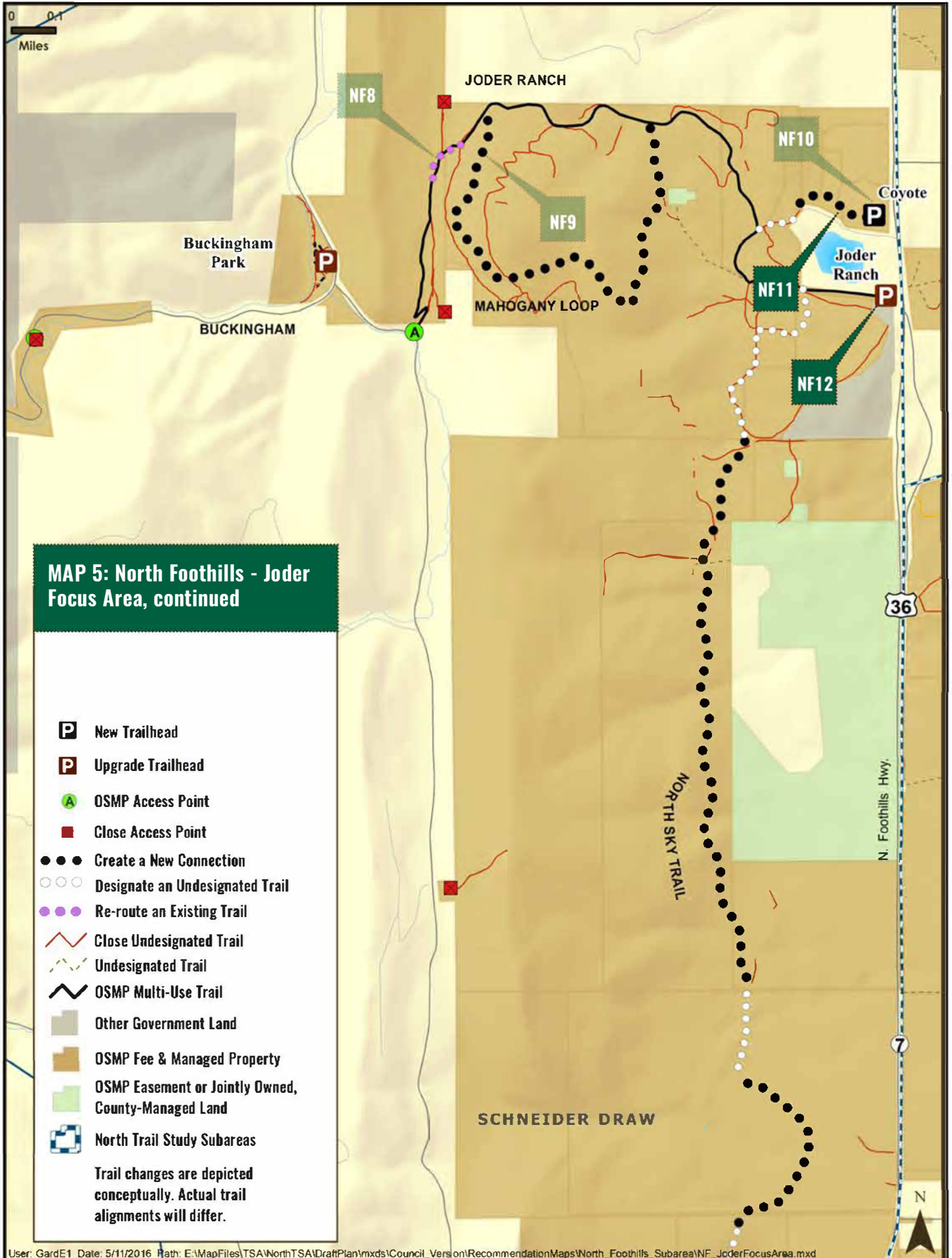
Driving Factors/Benefits

- » Provide access for equestrians and school groups to the Joder property and Boulder County's Six-Mile Fold property.
- » Increase safety by preventing the need for equestrians/school groups to cross U.S. 36 to access Joder property.



Barn on Joder property.

*See Appendix D for a list of interests met by each action.





ACTION NF13 Construct a north-south connector trail from Foothills Trail to the Joder Ranch Trail west of U.S. 36. (North Sky Trail)

*Interests Met: 4**

ACTION NF14 Include the North Sky Trail in the muddy closure program.

*Interests Met: 3**

Schneider Draw

MAP 6: North Foothills - Hogback and North Sky Focus Area

- » Minimize the footprint of the North Sky Trail and find an alignment that minimizes natural resource impacts.
- » Construct a trail from the southern section of the Railroad Grade, west of Foothills Business Park, connecting to the Joder Ranch Trail.
- » Use best efforts to locate connector trail through the conservation easement.

Primary Goal

- » Increase connectivity among North TSA properties while minimizing natural resource impacts to every extent possible.

Driving Factors/Benefits

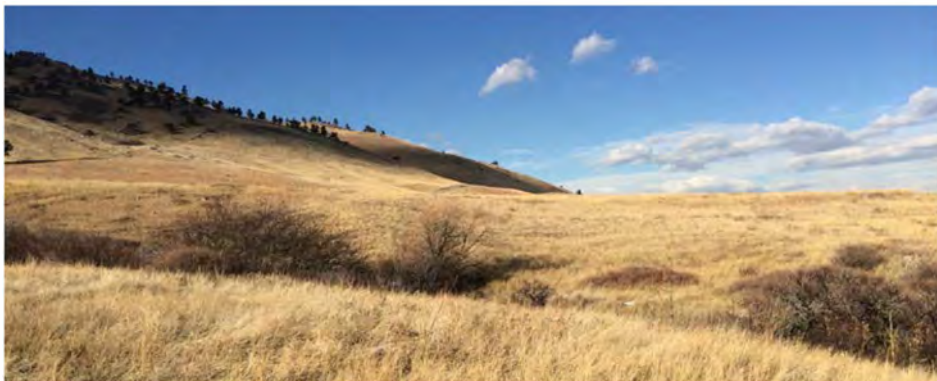
- » Use existing infrastructure and trails including parts of the Railroad Grade and abandoned roads and bridges.
- » Minimize resource disturbance as much as feasible where creation of new trail tread is necessary.
- » The conservation easement includes lower quality habitat than the area west of the conservation easement, and would allow for less impactful drainage crossings.
- » Use steep terrain adjacent to Railroad Grade to encourage visitors to stay on the trail.
- » Create interpretive opportunities around new trail alignment and the natural resources of the North Foothills HCA.
- » Locate the trail east of the Railroad Grade to cross through Schneider Draw at a location that minimizes impacts to the high quality riparian area.
- » Design drainage crossings to minimize wetland impacts and associated required mitigation.
- » In a few locations where a pedestrian/equestrian-designed trail, rather than bike-accessible trail, can reduce resource impacts, consider designing these sections with the option that cyclists may need to dismount their bikes.

Primary Goal

- » Improve trail sustainability and reduce trail maintenance and repair costs.

Driving Factors/Benefits

- » Reduce trail braiding and natural resource impacts.
- » Improve trail conditions and sustainability.



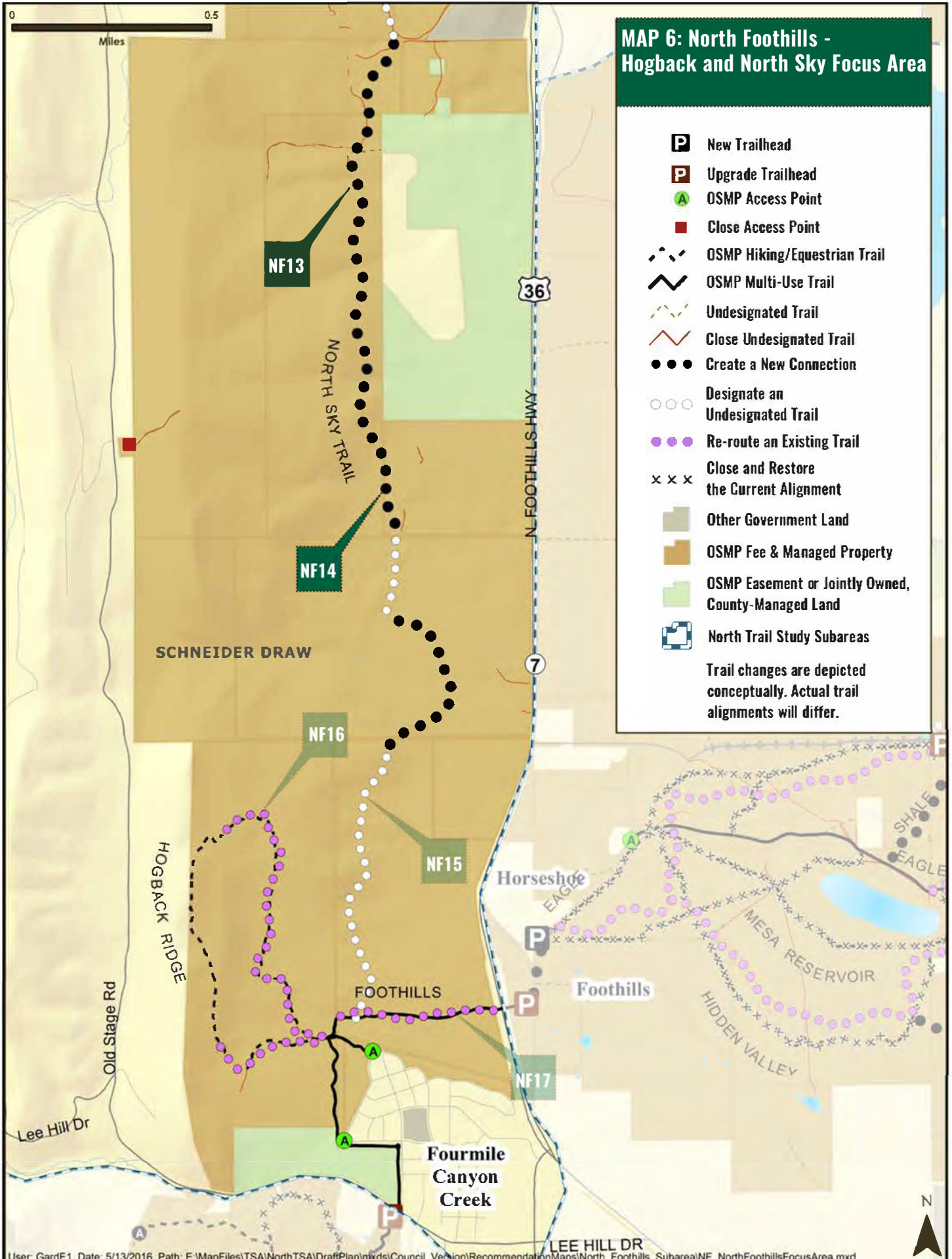
*See Appendix D for a list of interests met by each action.



MAP 6: North Foothills - Hogback and North Sky Focus Area

- New Trailhead
- Upgrade Trailhead
- OSMP Access Point
- Close Access Point
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Undesignated Trail
- Close Undesignated Trail
- Create a New Connection
- Designate an Undesignated Trail
- Re-route an Existing Trail
- Close and Restore the Current Alignment
- Other Government Land
- OSMP Fee & Managed Property
- OSMP Easement or Jointly Owned, County-Managed Land
- North Trail Study Subareas

Trail changes are depicted conceptually. Actual trail alignments will differ.



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ACTION NF15 Post educational signs about the North Foothills HCA.

*Interests Met: 4**

ACTION NF16 Re-route Hogback Trail.

*Interests Met: 5**

ACTION NF17 Re-route Foothills Trail where it connects to Hogback Trail and eastward to U.S. 36.

*Interests Met: 5**

MAP 6: North Foothills - Hogback and North Sky Focus Area, continued

- » Include information about the area's important natural resources as well as safety concerns such as rattlesnakes.

Primary Goal

- » Educate visitors about the important natural resources and safety concerns of the HCA.

Driving Factors/Benefits

- » Reduce impacts of new recreation opportunities on natural resources.
- » Increase visitor awareness of special natural resources and HCAs.
- » Increase safety of visitors.
- » Increase compliance with regulations intended to protect the habitats of the HCA.

Primary Goal

- » Construct a more sustainable trail.

Driving Factors/Benefits

- » Improve trail quality and sustainability, thereby encouraging visitors to stay on trail, as well as minimize trail braiding and the creation of social trails.
- » During re-route, minimize impacts to highly suitable habitat for North TSA focal species including bluestem dependent butterflies, lark sparrow and prairie rattlesnakes.
- » Avoid rare and sensitive plant communities, rare plant habitat and wetlands in re-route planning.
- » Repair trail damaged by 2013 flood.

Primary Goal

- » Construct a more sustainable trail.

Driving Factors/Benefits

- » Improve trail quality and sustainability, thereby encouraging visitors to stay on trail as well as minimize trail braiding and the creation of social trails.
- » During re-route, minimize impacts to highly suitable habitat for North TSA focal species including bluestem dependent butterflies, lark sparrow and prairie rattlesnakes.
- » Repair trail damaged by 2013 flood.
- » Avoid rare plant habitat in planning and constructing re-route.

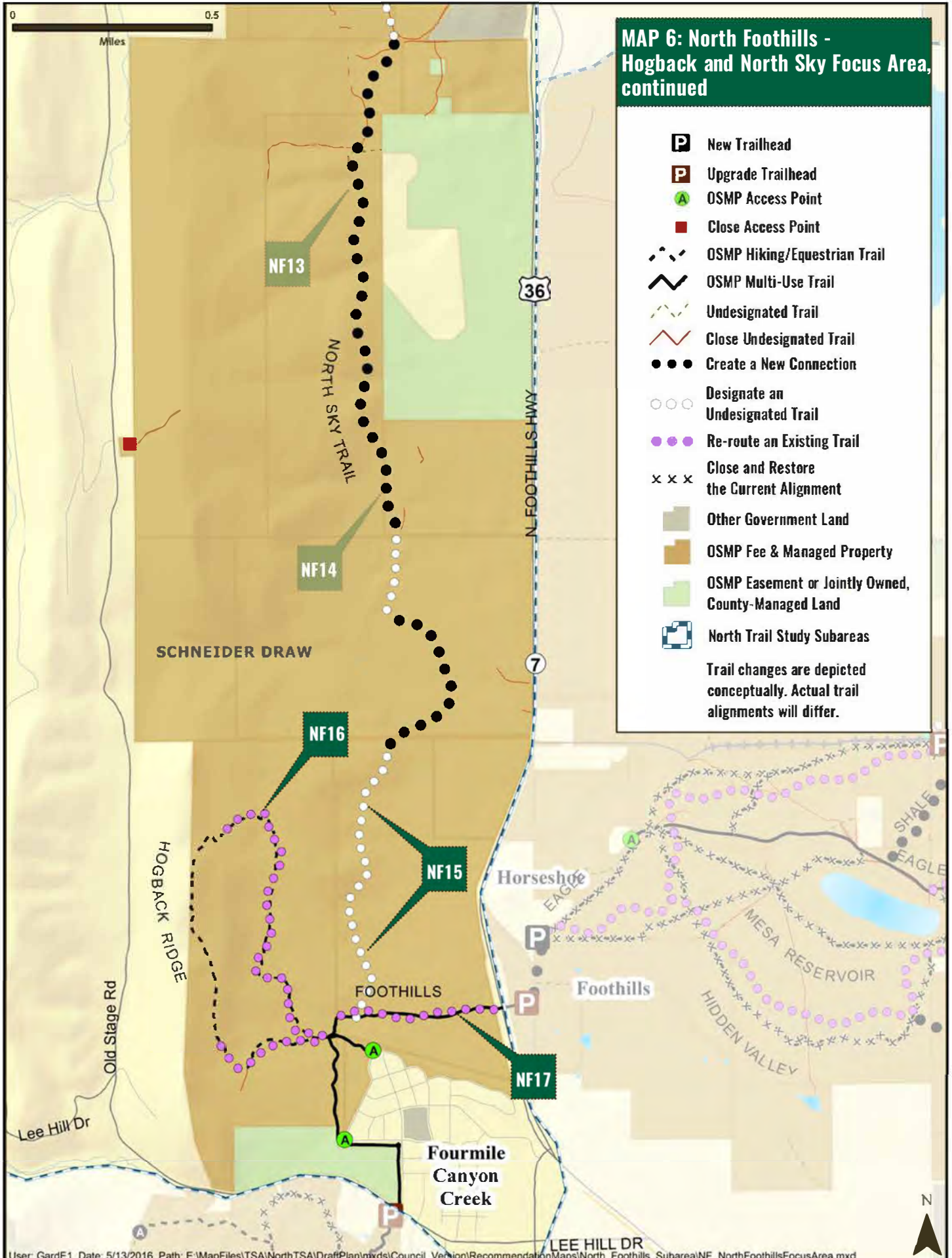
*See Appendix D for a list of interests met by each action.



MAP 6: North Foothills - Hogback and North Sky Focus Area, continued

- New Trailhead
- Upgrade Trailhead
- OSMP Access Point
- Close Access Point
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Undesignated Trail
- Close Undesignated Trail
- Create a New Connection
- Designate an Undesignated Trail
- Re-route an Existing Trail
- Close and Restore the Current Alignment
- Other Government Land
- OSMP Fee & Managed Property
- OSMP Easement or Jointly Owned, County-Managed Land
- North Trail Study Subareas

Trail changes are depicted conceptually. Actual trail alignments will differ.



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ACTION NF18 Do not allow off-trail permits for the area inside the Joder loop trail for two years following the trail's construction. (Mahogany Loop)

*Interests Met: 2**

ACTION NF19 Do not allow off-trail permits within the North Foothills HCA.

*Interests Met: 2**

ACTION NF20 After City Council approval of the North TSA Plan, staff will return to the OSBT with monitoring recommendations for the North Foothills HCA, the North Sky Trail and the Joder property.

MAP 7: North Foothills - North Foothills Habitat Conservation Area (HCA) Off-Trail Permit Recommendations

Primary Goal

- » Reduce impacts of new recreational opportunities on natural resources.

Driving Factors/Benefits

- » Provide best chance of successfully restoring undesignated trails within the loop and improve habitat conditions.
- » Provide an opportunity for the restoration and revegetation of existing undesignated trails.
- » Decrease the potential for creation of new undesignated trails.
- » Minimize impacts on natural resources while providing new trail access.

- » Off-trail permits not allowed in the North Foothills HCA except for areas west and north of Joder Ranch Trail and inside the Mahogany Loop.

Primary Goal

- » Reduce impacts of new recreation opportunities on natural resources outside of trail corridor.

Driving Factors/Benefits

- » Minimize impacts on natural resources while providing new trail access.
- » Decrease the potential for creation of new undesignated trails.
- » Decrease habitat fragmentation and increase protection of sensitive natural resources outside of the trail corridor. The new trail provides access to view and enjoy the HCA.

Primary Goal

- » Have staff endeavor to develop and bring back to the OSBT an ecological monitoring program for the North Sky Trail and the Joder property in light of the important ecological qualities of these properties.

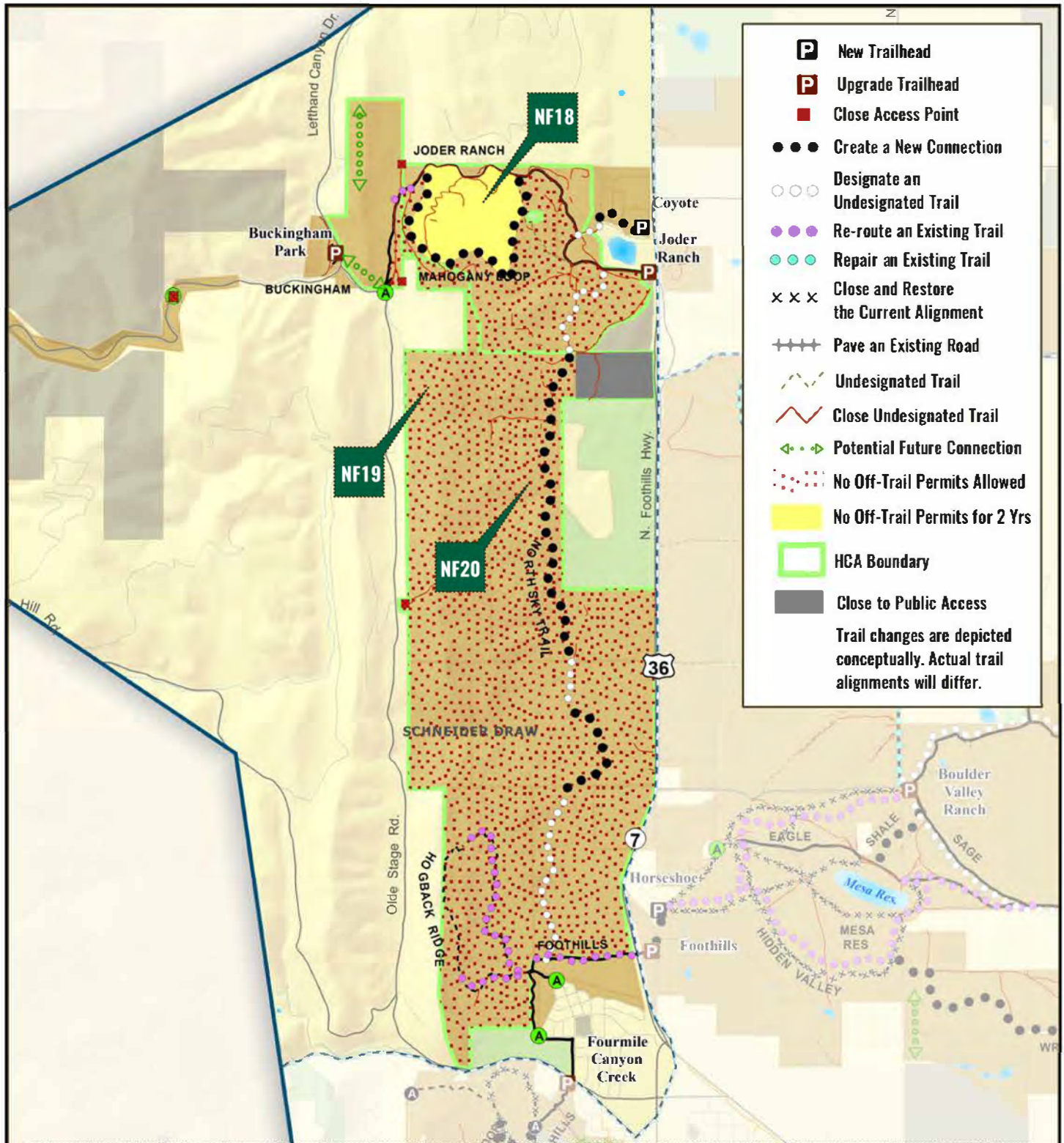
Driving Factors/Benefits

- » Action added by OSBT during approval of the draft plan.



Prairie rattlesnake, a focal species in the North Trail Study Area. © Greg Joder

*See Appendix D for a list of interests met by each action.



MAP 7: North Foothills - North Foothills Habitat Conservation Area Off-Trail Permit Recommendations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Access Point
- OSMP Recreational Feature Access

- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- North Trail Study Area Lands**
- OSMP Fee & Managed Property

- Lands Not Included in the North Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land

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Miles





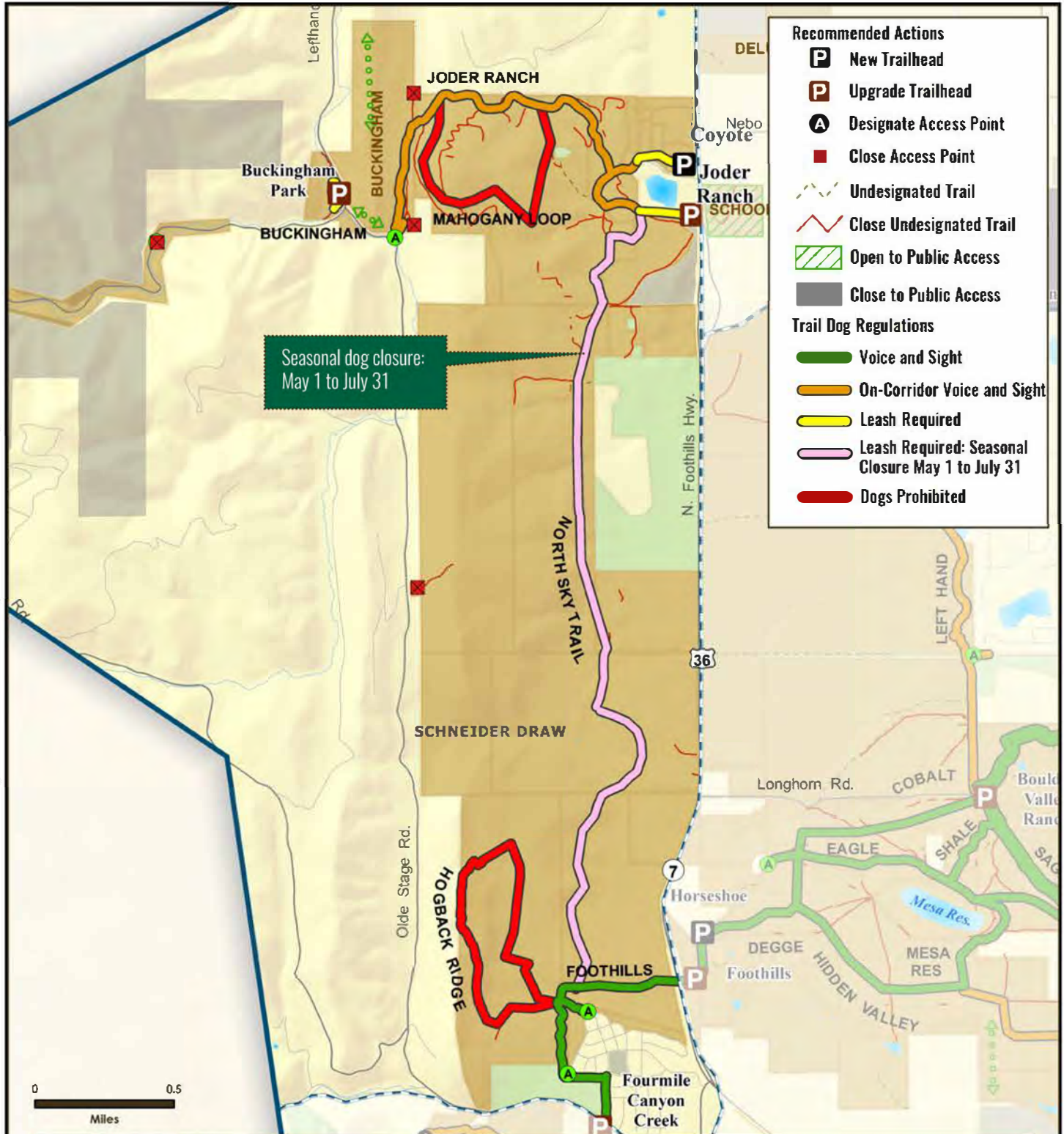
MAP 8: North Foothills - Trail-Based Dog Regulations

TRAIL NAME	DOG REGULATION
New Trails	
Joder Loop Trail (Mahogany Loop)	Dogs Prohibited
Connector Trail from Coyote Trailhead to Interim Joder Trail (Joder Ranch Trail)	On-Corridor Voice and Sight Leash Required (Coyote Trailhead leash extent)
Joder connector trail (North Sky Trail)	Leash Required (August 1 - April 30) Dogs Prohibited (May 1 - July 31)
Existing and Re-routed Trails with New Dog Regulations	
Trails serving the Buckingham Park picnic area	Leash Required
Interim Joder Trail (Joder Ranch Trail)	On-Corridor Voice and Sight Leash Required (Joder Ranch Trailhead leash extent)
Existing and Re-routed Trails with No Changes to Existing Dog Regulations	
Hogback Trail with re-routed section	Dogs Prohibited
Foothills North Trail with re-routed section	Voice and Sight

There are no new recommended off-trail dog regulations in this subarea.



© Michael Morton



MAP 8: North Foothills - Trail-Based Dog Regulations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead

- Potential Future Connections
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands
- OSMP Fee & Managed Property

- Lands Not Included in the North Trail Study Area
- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land

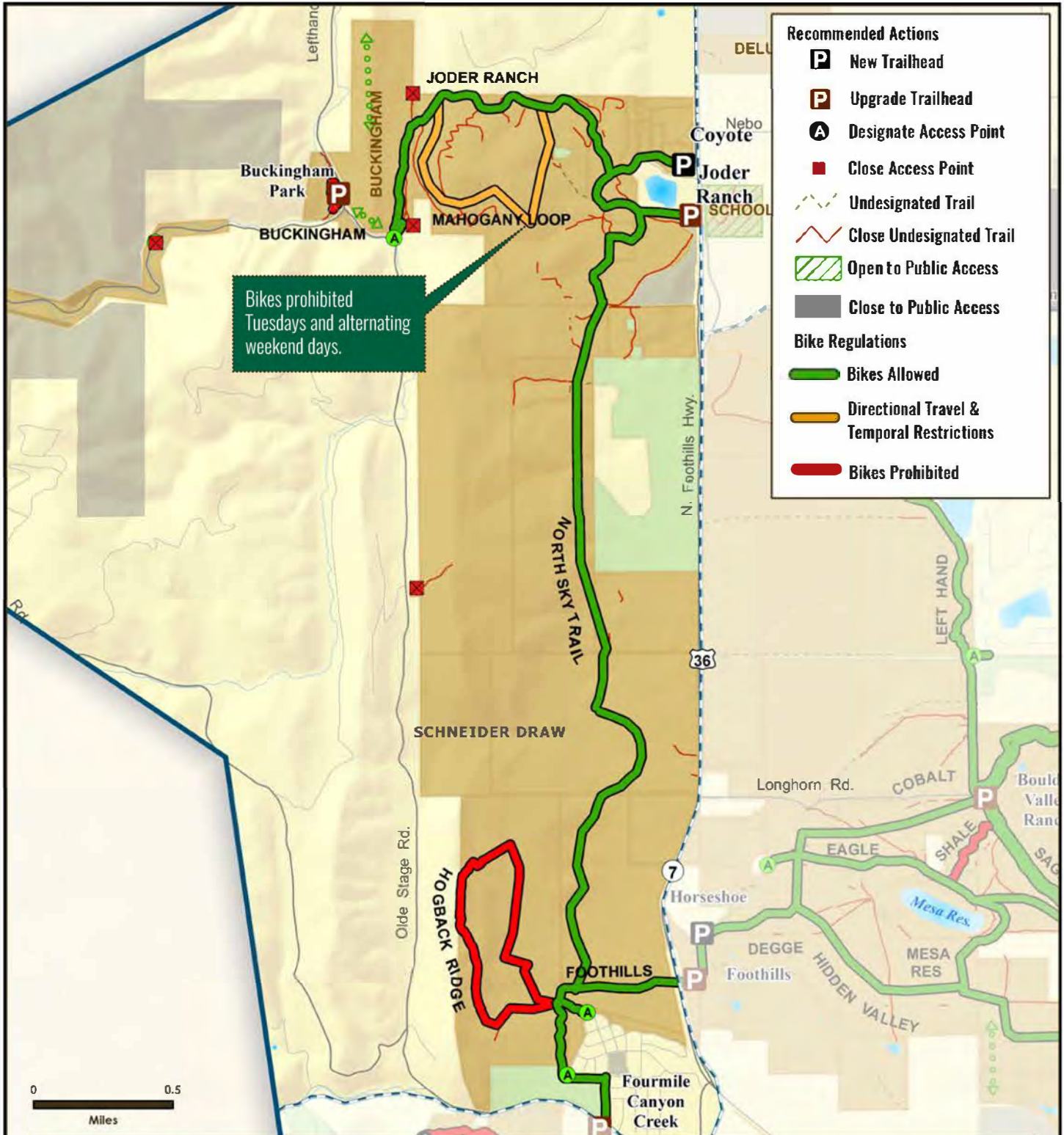


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MAP 9: North Foothills - Bike Regulations

TRAIL NAME	BIKE REGULATION
New Trails	
Western Joder Loop Trail (Mahogany Loop)	Bikes allowed with directional and temporal restrictions. Bikes prohibited Tuesdays and alternating weekend days. Directional travel will alternate every two weeks.
Connector Trail from Coyote Trailhead to Interim Joder Trail (Joder Ranch Trail)	Bikes Allowed
Joder connector trail (North Sky Trail)	Bikes Allowed
Existing and Re-routed Trails with No Changes to Existing Bike Regulations	
Trails serving the Buckingham picnic area	Bikes Prohibited
Interim Joder Trail (Joder Ranch Trail)	Bikes Allowed
Hogback Trail with re-routed section	Bikes Prohibited
Foothills North Trail with re-routed section	Bikes Allowed



MAP 9: North Foothills - Bike Regulations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead

- Potential Future Connections
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands**
- OSMP Fee & Managed Property
- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land



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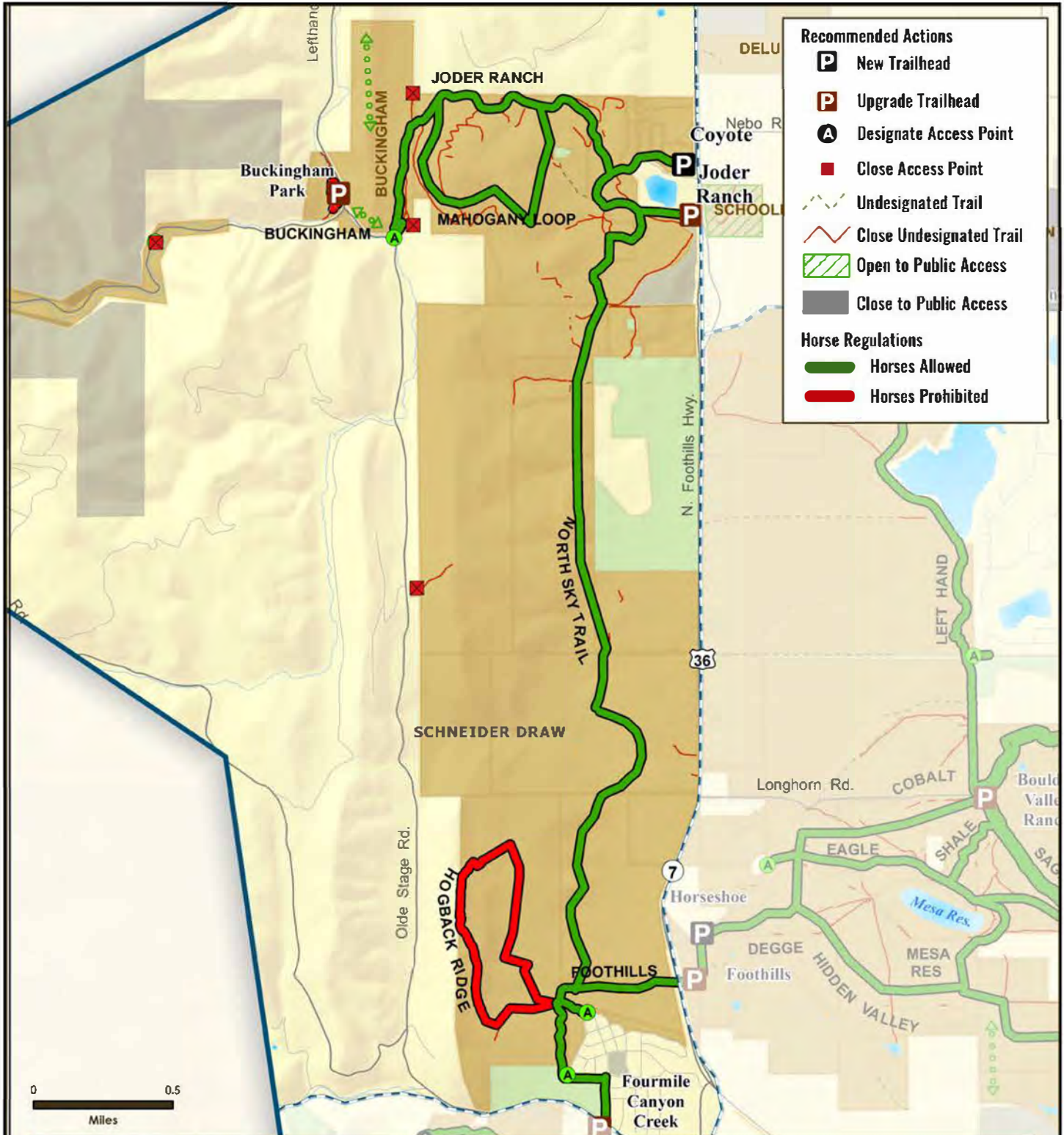
MAP 10: North Foothills - Trail-Based Horse Regulations

TRAIL NAME	HORSE REGULATION
New Trails	
Western Joder Loop Trail (Mahogany Loop)	Horses Allowed
Connector Trail from Coyote Trailhead to Interim Joder Trail (Joder Ranch Trail)	Horses Allowed
Joder connector trail (North Sky Trail)	Horses Allowed
Existing and Re-routed Trails with New Horse Regulations	
Trails serving the Buckingham picnic area	Horses Prohibited
Hogback Trail with re-routed section	Horses Prohibited
Existing and Re-routed Trails with No Changes to Existing Horse Regulations	
Interim Joder Trail (Joder Ranch Trail)	Horses Allowed
Foothills North Trail with re-routed section	Horses Allowed

New Off-Trail Horse Regulations

Horses prohibited off-trail in the North Foothills Habitat Conservation Area (exceptions listed below)

- Horses allowed off-trail on the Buckingham property and the Joder property west and north of the Joder Ranch Trail.
- Horses allowed off-trail inside the Joder Loop Trail (Mahogany Loop) following a two-year restriction of off-trail access to allow for the revegetation of undesignated trails.



MAP 10: North Foothills - Trail-Based Horse Regulations

- North Trail Study Planning Area
- North Trail Study Subareas
- P** OSMP Trailhead
- A** OSMP Access Point
- R** OSMP Recreational Feature Access
- P** Boulder County Trailhead

- Potential Future Connections
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands**
- OSMP Fee & Managed Property
- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land



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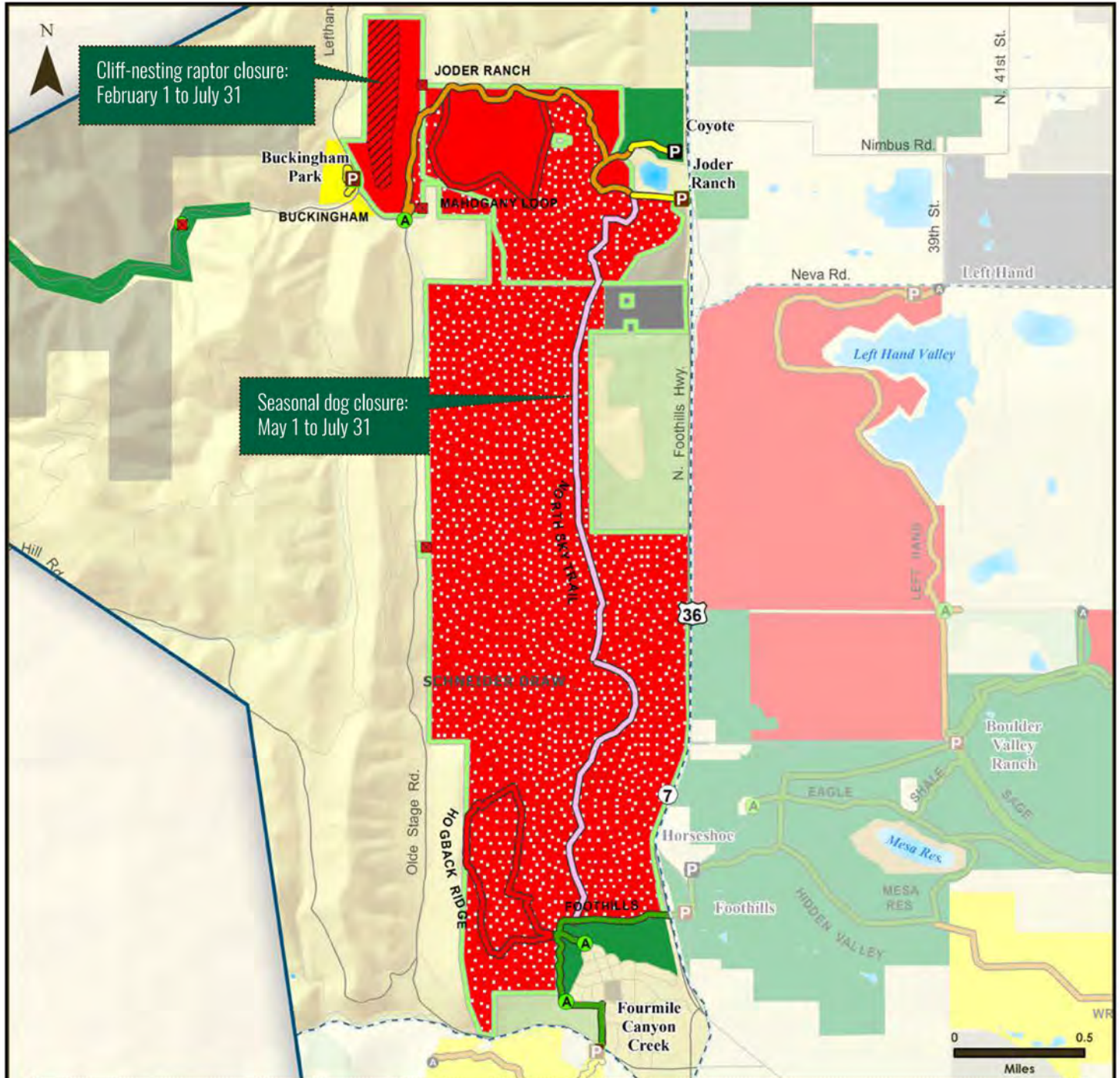


MAP 11: North Foothills - Regulatory Settings

Visitor access regulations pertain to the management of activities both on- and off-trail. The regulatory settings map includes on-trail and off-trail specific regulations where public access is restricted year-round, areas with seasonal wildlife closures and on-trail and off-trail dog regulations.



© Gary Stevens



MAP 11: North Foothills - Regulatory Settings

- North Trail Study Planning Area
- North Trail Study Subareas
- HCA Boundary
- OSMP Trailhead
- OSMP Access Point

Visitor Access Regulations

- New Trailhead
- New Access Point
- Close Access Point

Trail Dog Regulations

- Voice and Sight
- On-Corridor Voice and Sight
- Leash Required
- Leash Required: Seasonal Closure May 1 - July 31
- Dogs Prohibited

- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land

Dog Regulation Areas

- Voice and Sight Control
- Leash Required
- Dogs Prohibited
- Open with Seasonal Closure (May 1-July 31)
- Seasonal Raptor Closure
- Closed to Off-Trail Public Access
- Closed to Public Access



Background photo: Lefthand Trailhead.



North TSA Plan Recommendations

Boulder Valley Ranch



MAP 12: Boulder Valley Ranch - Management Area Designations

ACTIONS B1 to B4
Provide management area designations for properties without designations to guide management actions.

*Interests Met: 4**

- » Designate Lappin property (**B1**), IBM open space easement property (**B2**), Hart-Jones Exchange property (**B3**) and Palo Park property (**B4**) as Natural Areas. Limit public access to on-trail travel on IBM open space easement property.

Primary Goal

- » Implement VMP direction to provide management area designations for properties without designations to guide management actions.

Driving Factors/Benefits

Lappin Property

- » Conserve natural resources while allowing access for low-impact passive recreation.
- » Maintain habitat effectiveness of Lappin Pond in supporting sensitive native fish species.
- » Protect important plant and aquatic species.
- » Increase protection of shale barrens habitat and pond.
- » Conserve highly suitable habitat for North TSA focal wildlife species.

IBM open space easement property

- » Support efforts of creating the IBM connector trail.
- » Create management regulations to implement terms of the easement and respond to the property owner's interests.

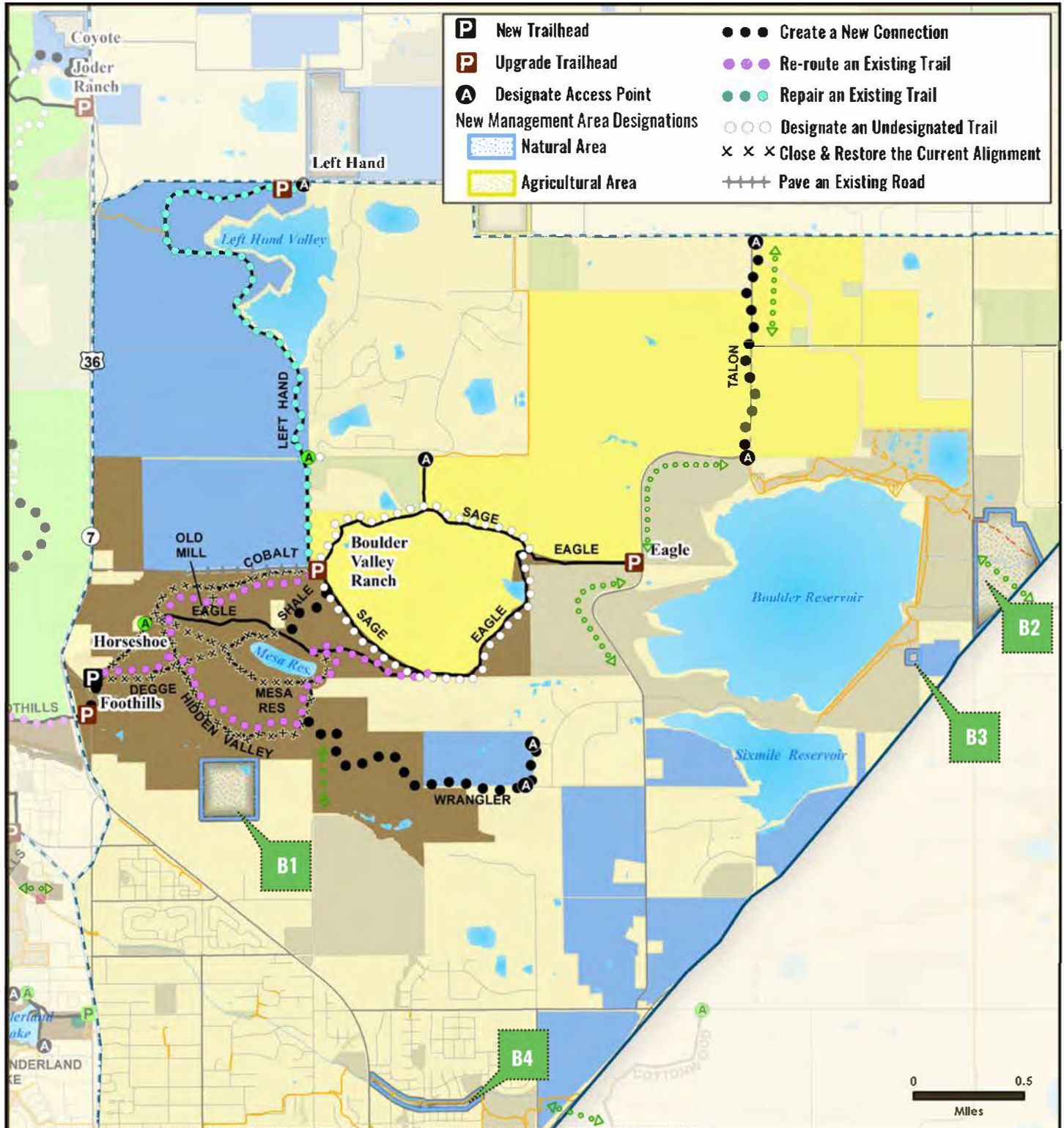
Hart-Jones Exchange property

- » Protect riparian areas.
- » Protect habitat for rare plants.

Palo Park property

- » Protect riparian areas of Fourmile Canyon Creek.
- » Property includes Greenway path.

*See Appendix D for a list of interests met by each action.



MAP 12: Boulder Valley Ranch - Management Area Designations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Access Point

OSMP Fee & Managed Property

OSMP Easement or Jointly Owned, County-Managed Land

Potential Future Connection

OSMP Multi-Use Trail

Non-OSMP Planned Trail

Non-OSMP Managed Multi-Use Trail

Agricultural Area

Habitat Conservation Area

Natural Area

Passive Recreation Area

Other Government Land

Trail changes are depicted conceptually.
Actual trail alignments will differ.





ACTIONS R5 to R9

Collaborate with partner agencies to create regional trail connections.

*Interests Met: 5**

MAP 13 : Boulder Valley Ranch - Subarea-Wide Recommendations

- » As opportunities arise, collaborate with partner agencies to create the following regional trail connections in a way that minimizes natural resource impacts.
- » **(B5)** City of Boulder's Area III park site to the North TSA.
- » **(B6)** A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project.
- » **(B7)** IBM Connector Trail (construction pending).
- » **(B8)** Fourmile Canyon Creek Trail underpass to Cottonwood Trail (construction pending).
- » **(B9)** Eagle Trail to the planned Boulder Reservoir Trail.

Primary Goal

- » Enhance regional connectivity.

Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Increase coordination/consistency among OSMP and partner agencies.

Specific to Area III park site **(B5)**:

- » Collaborate with other partner agencies to provide a north-south trail connection from northern Boulder neighborhoods to North TSA.
- » Increase accessibility for neighbors to the North TSA.

Specific to Eagle Trail to Boulder Reservoir Trail connection **(B9)**:

- » Keep trail close to 51st and 55th streets and in existing transportation corridors as much as is feasible.

ACTION B10 Provide public access to portions of Lappin, Lousberg, Papini and B.L.I.P. properties while protecting sensitive natural resources.

*Interests Met: 2**

- » Protect aquatic and wetland resources in and around ponds on these properties by prohibiting public access to the ponds.

Primary Goal

- » Establish areas where visitor access is not allowed for important aquatic sites.

Driving Factors/Benefits

- » Protect aquatic habitats that are being managed for species of concern, including native fish.
- » Explain reasoning for restricting access to ponds by using signs with positive messaging about sensitive aquatic resources in order to promote compliance.
- » Conserve highly suitable habitat for North TSA focal wildlife species.

*See Appendix D for a list of interests met by each action.



MAP 13: Boulder Valley Ranch - Subarea-Wide Recommendations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point

Trail changes are depicted conceptually. Actual trail alignments will differ.

- Potential Future Connection
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Non-OSMP Planned Trail
- Non-OSMP Managed Multi-Use Trail
- Undesignated Trail

North Trail Study Area Lands

OSMP Fee & Managed Property

Lands Not Included in the North Trail Study Area

- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land



ACTION B11 Designate access point for where Lefthand Trail connects to Neva Road.

*Interests Met: 4**

ACTION B12 Bring Lefthand Trailhead up to standards.

*Interests Met: 4**

ACTION B13 Improve Lefthand Trail.

*Interests Met: 5**

ACTION B14 Designate a connector trail from Lefthand Trail to the Lake Valley Estates neighborhood.

*Interests Met: 3**

MAP 14: Boulder Valley Ranch - East Beech and Lefthand Focus Area

Primary Goal

- » Designate an access point that is served by a designated trail.

Driving Factors/Benefits

- » Provide trail connectivity directly to Neva Road.
- » Increase safety.

- » Include horse trailer parking at Lefthand Trailhead.

Primary Goal

- » Include horse trailer parking in the existing trailhead space.

Driving Factors/Benefits

- » Ensure consistent and basic facilities at all trailheads based on visitation numbers and facility standards.
- » Replace infrastructure that is in need of repair.
- » Improve sustainability and safety.

Primary Goal

- » Improve the physical sustainability of the trail to better accommodate visitors and protect resources.

Driving Factors/Benefits

- » Retain a north-south connection to Neva Road that improves trail sustainability and helps conserve and reduce impacts to sensitive natural resources.
- » Conserve large habitat blocks.
- » Conserve highly suitable habitat for North TSA focal wildlife species.

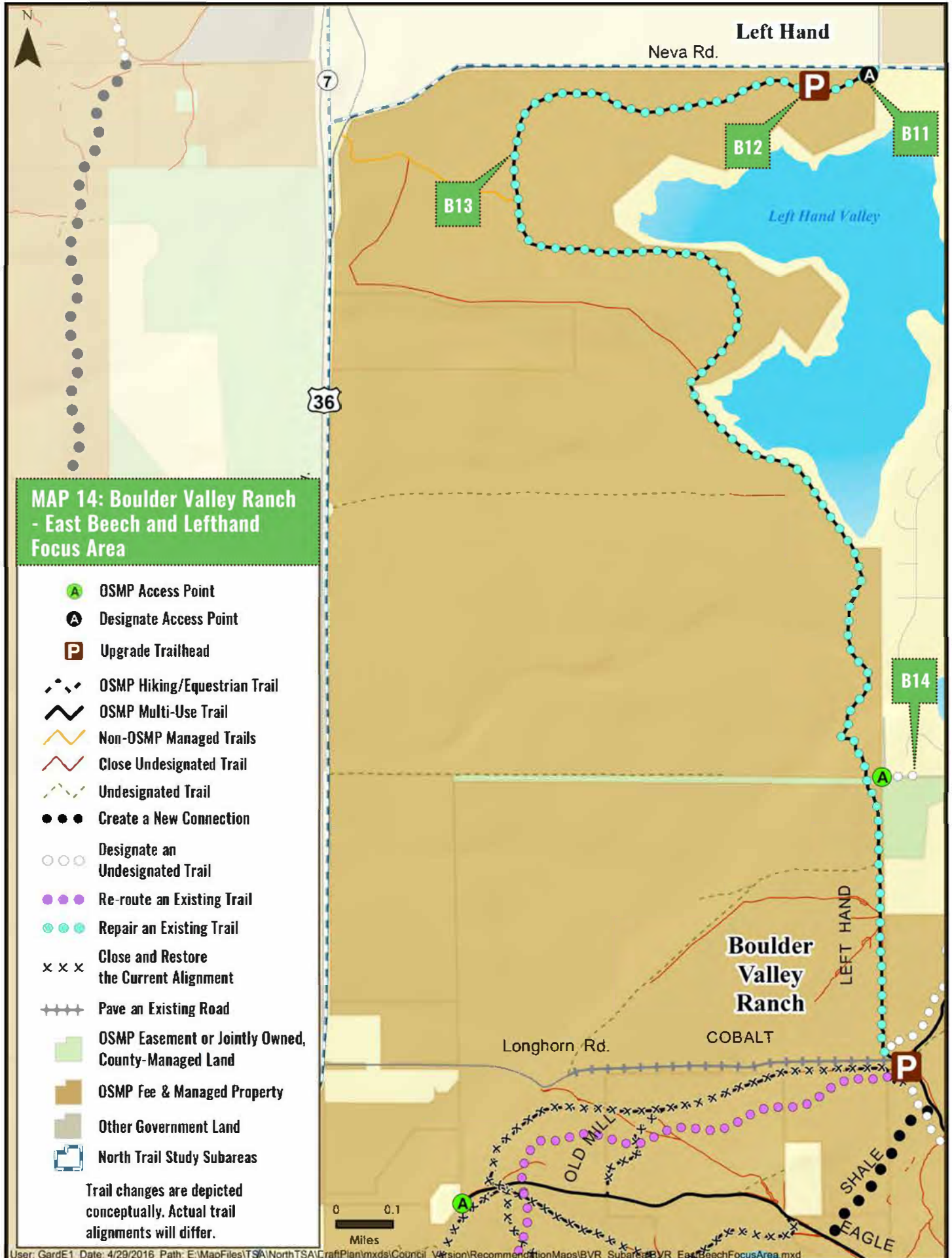
Primary Goal

- » Designate and manage an existing undesignated trail that serves to connect a neighborhood to the North TSA.

Driving Factors/Benefits

- » Improve access to North TSA trail system.
- » Consolidate undesignated access points and trails.

*See Appendix D for a list of interests met by each action.





ACTION B15 Create a connection via the Boulder Reservoir to Niwot Road. (Talon Trail)

*Interests Met: 7**

ACTION B16 Bring Eagle Trailhead up to standards.

*Interests Met: 5**



MAP 15: Boulder Valley Ranch - Eagle and Boulder Reservoir Focus Area

- » Create a regional trail connection in a way that minimizes natural resource impacts. Work with partner agencies to determine the most feasible trail alignment with a preference for an alignment along 55th Street.

Primary Goal

- » Increase connections between North TSA and other regional destinations. Enhance local trail connectivity and the creation of safe road crossing and trail connections.

Driving Factors/Benefits

- » Provide increased connectivity.
- » Allow visitors a safe alternative to current connections along roadways.
- » By siting a trail on road right of way; maintain habitat effectiveness for North TSA focal wildlife species like Northern Harrier and plains topminnow.
- » Provide greater opportunities for visitors.
- » Increase coordination/consistency among OSMP and partner agencies.

- » Include horse trailer parking at Eagle Trailhead.

Primary Goal

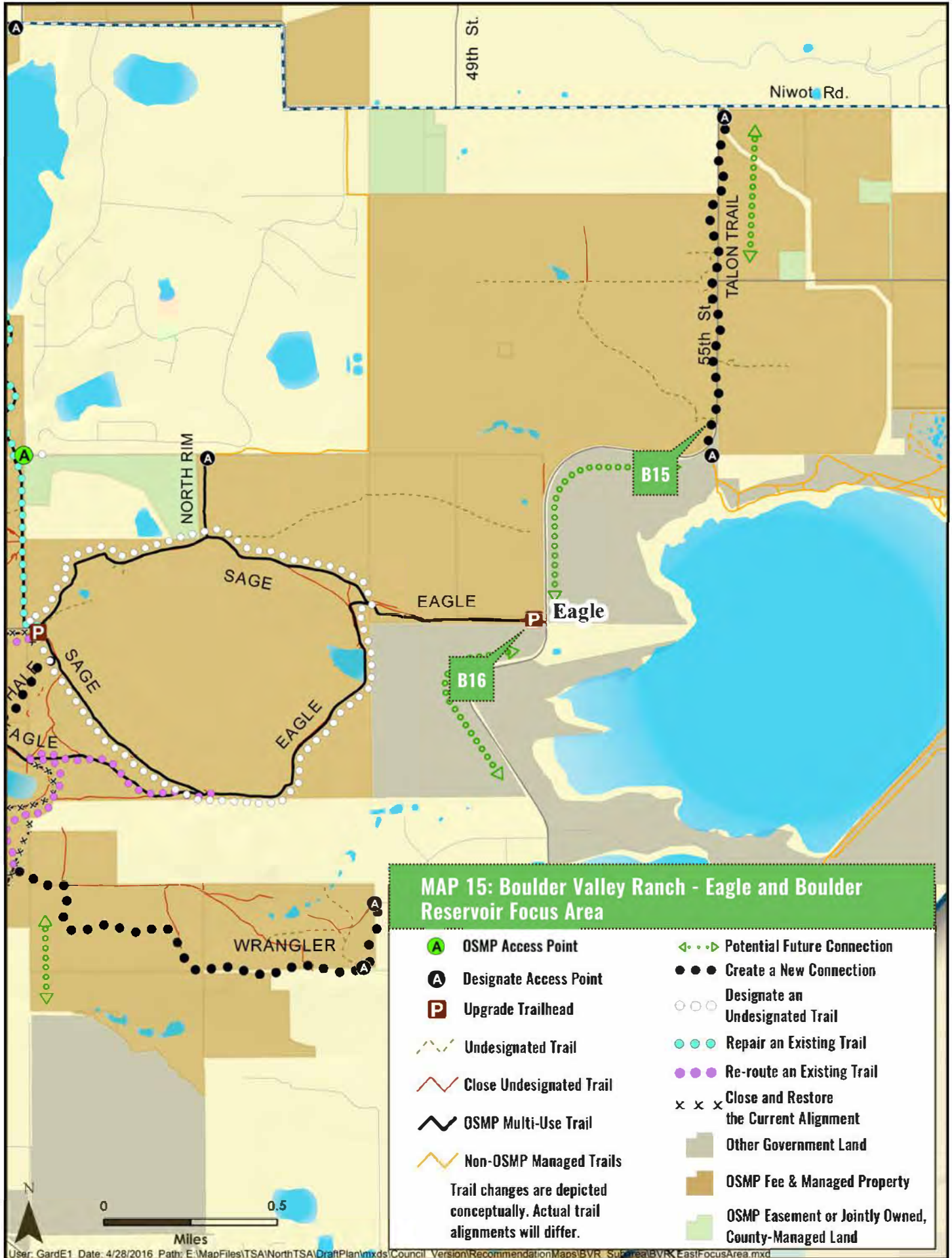
- » Provide designated horse trailer parking.

Driving Factors/Benefits

- » Reconfigure trailhead to improve safety.
- » Ensure consistent and basic facilities at all trailheads based on visitation numbers and facility standards.
- » Replace infrastructure that is in need of repair.

Eagle Trailhead, to be upgraded to include horse trailer parking.

*See Appendix D for a list of interests met by each action.





ACTION B17 Bring Foothills Trailhead up to standards.

*Interests Met: 6**

ACTION B18 Add a new trailhead at the Degge Trail access point. (Horseshoe Trailhead)

*Interests Met: 2**

ACTION B19 Create a trail connection between Foothills and Degge trails, re-route Degge Trail.

*Interests Met: 5**



MAP 16: Boulder Valley Ranch - Degge Focus Area

Primary Goal

- » Improve parking configuration to allow cars to safely back out of parking spaces.

Driving Factors/Benefits

- » Ensure consistent and basic facilities at all trailheads based on visitation numbers and facility standards.
- » Replace infrastructure that is in need of repair.
- » Reconfigure trailhead to improve safety.

- » Provide additional parking capacity and horse trailer parking.

Primary Goal

- » Add horse trailer parking and provide additional parking facilities at the Degge Trail access point.

Driving Factors/Benefits

- » Provide a new trailhead in a location that would minimize impacts to resources.
- » Improve capacity for horse trailer parking.

- » Provide a trail connection from Foothills Trail to re-routed west end of Degge Trail.

Primary Goal

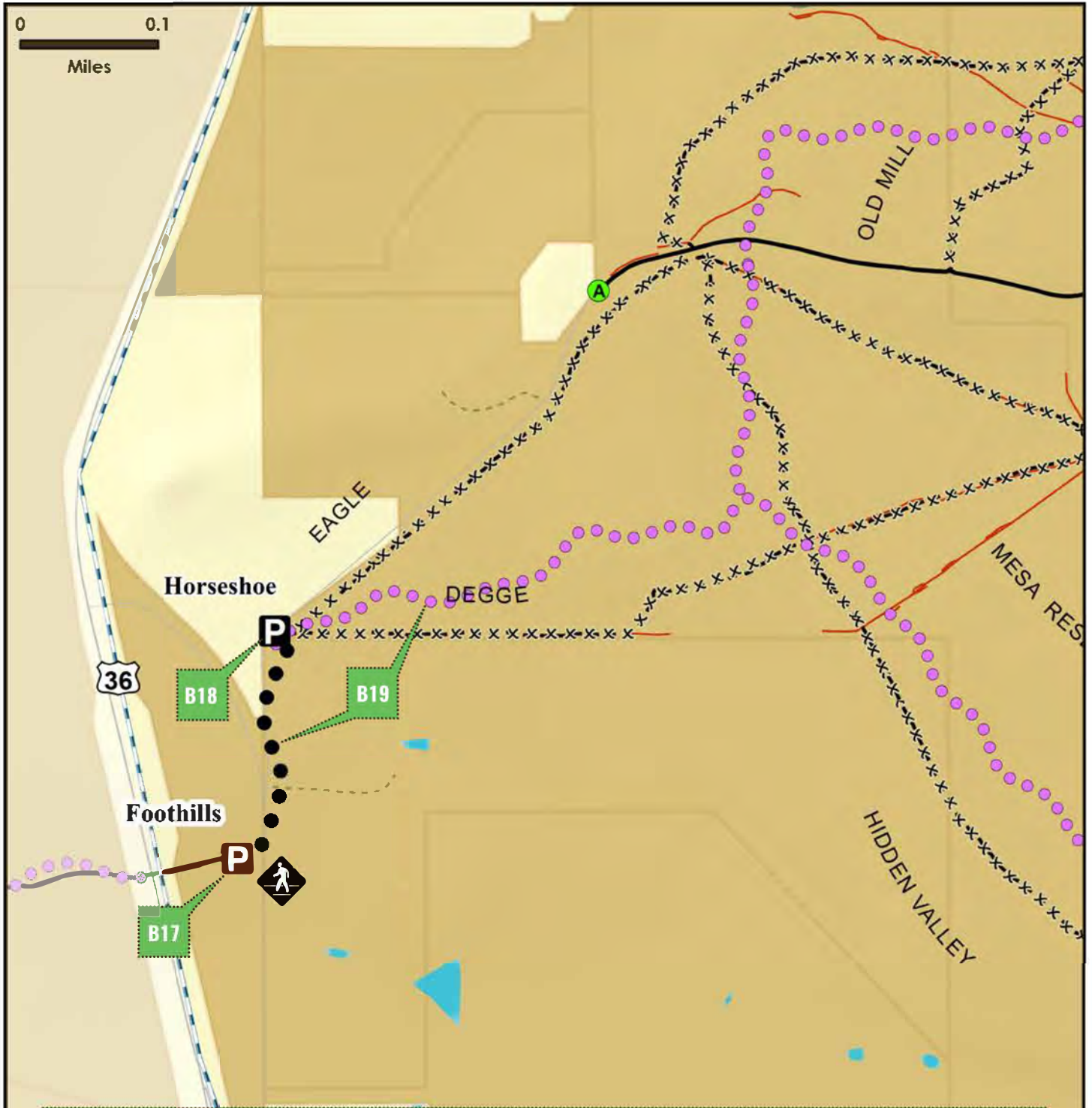
- » Improve visitor experience, trail connectivity and offer a safer way for visitors to connect from the Foothills Trail to the Boulder Valley Ranch/Mesa Reservoir area trails.

Driving Factors/Benefits

- » Improve trail connectivity and safety of access.
- » Replace high-density, low-quality trails with fewer, high-quality, sustainable trails.

Foothills Trailhead, to be upgraded to improve parking circulation and safety.

*See Appendix D for a list of interests met by each action.



MAP 16: Boulder Valley Ranch - Degge Focus Area

OSMP Access Point

New Trailhead

Upgrade Trailhead

Build Safer Crossing

Create a New Connection

Re-route an Existing Trail

Close and Restore the Current Alignment

Close Undesignated Trail

Undesignated Trail

OSMP Multi-Use Trail

OSMP Fee & Managed Property

North Trail Study Subareas

Trail changes are depicted conceptually. Actual trail alignments will differ.





ACTION B20 Replace existing trails north of Mesa Reservoir with new trail connections.

*Interests Met: 5**

ACTION B21 Replace undesignated trails through sensitive resources with a single trail. (Shale Trail)

*Interests Met: 4**

ACTION B22 Provide nature-viewing access at Mesa Reservoir.

*Interests Met: 5**

ACTION B23 Replace existing trails with a new trail connection south of Mesa Reservoir.

*Interests Met: 5**

MAP 17: Boulder Valley Ranch - Mesa Reservoir Focus Area

- » Replace Old Mill and Cobalt trails with a single new trail and replace western section of Eagle Trail and steep, downhill section of Eagle Trail with new re-routed connections.

Primary Goal

- » Replace high-density, low-quality trails with fewer, high-quality, sustainable trails to improve visitor experience.

Driving Factors/Benefits

- » Use terrain effectively to create a better visitor experience and improve biking access.
- » Where possible, relocate trail sections that run through prairie dog colonies to maintain or improve prairie rattlesnake highly suitable habitat and manage public safety issues related to rattlesnakes.
- » Follow current general trail alignments in reconstruction to retain quality and size of grassland habitats.

- » Provide a sustainable connection with Sage Trailhead, by replacing undesignated trails through shale barrens and rare plant habitat with one new designated trail with educational signs for pedestrians and equestrians north of Mesa Reservoir.

Primary Goal

- » Consolidate and replace unsustainable undesignated trails with a single designated trail to better protect shale barrens and rare plants, habitat and populations.

Driving Factors/Benefits

- » Reduce the number and extent of undesignated trails.
- » Provide an opportunity for the public to learn about the unique resources of the site.

Primary Goal

- » Create recreation opportunities specifically for visitors looking for a quiet experience.

Driving Factors/Benefits

- » Provide access to view wetland resources.

- » Replace southern sections of Mesa Reservoir Trail and the Hidden Valley Trail with a new single trail connection.

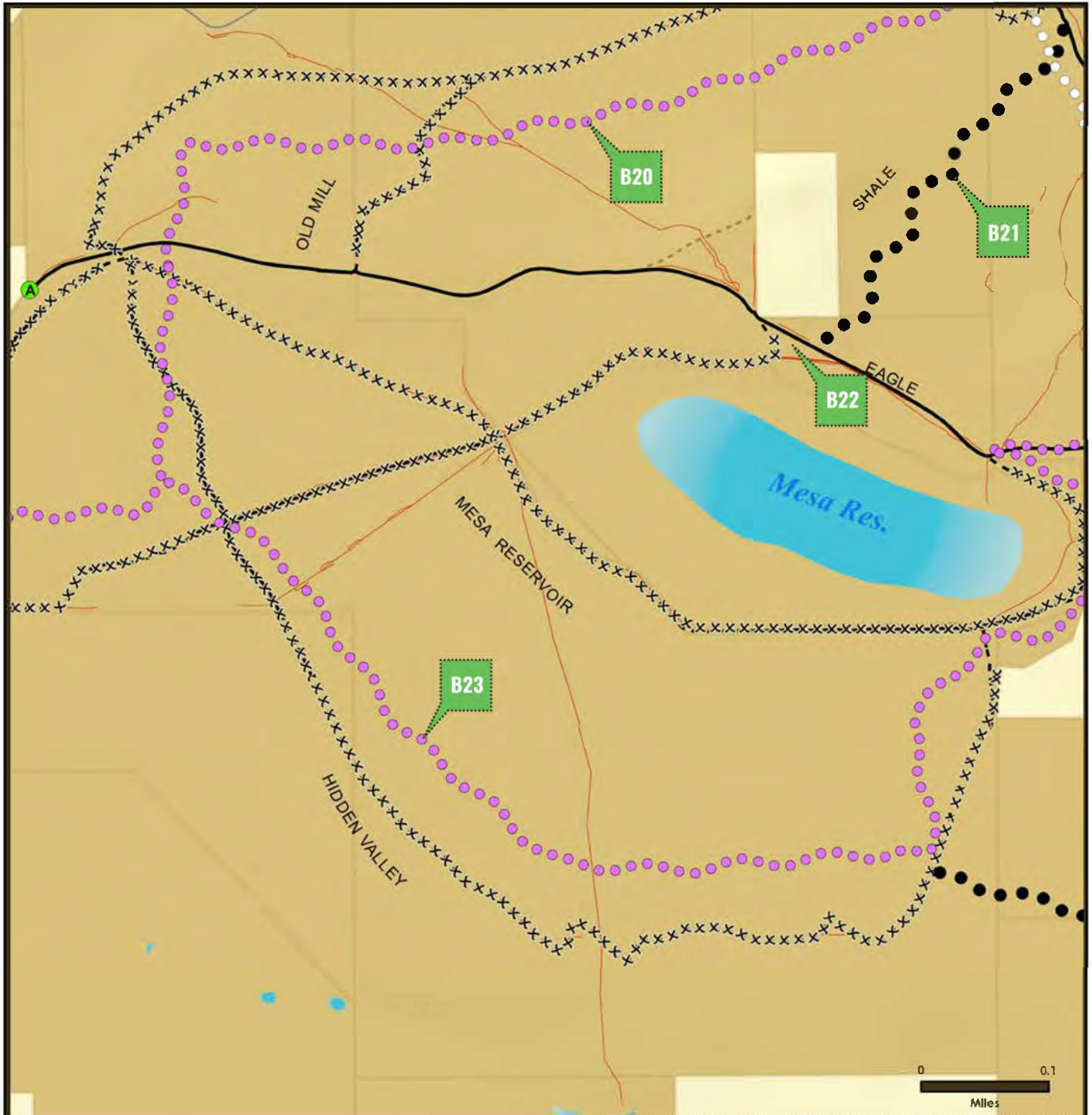
Primary Goal

- » Replace high-density, low-quality trails with fewer, high-quality, sustainable trails to improve visitor experience.

Driving Factors/Benefits

- » Use terrain effectively to create a better visitor experience and improve biking access.
- » Follow current general trail alignments in reconstruction to retain quality and size of grassland habitats.
- » Enhance education and interpretive offerings in the area.

*See Appendix D for a list of interests met by each action.



MAP 17: Boulder Valley Ranch - Mesa Reservoir Focus Area

OSMP Access Point

OSMP Fee & Managed Property

Trail changes are depicted conceptually. Actual trail alignments will differ.

OSMP Hiking/Equestrian Trail

OSMP Multi-Use Trail

Undesignated Trail

Close Undesignated Trail

Create a New Connection

Designate an Undesignated Trail

Re-route an Existing Trail

Close and Restore the Current Alignment





ACTION B24 Pave Longhorn Road.

*Interests Met: 2**

ACTION B25 Bring Sage (BVR) Trailhead up to standards.

*Interests Met: 5**

ACTION B26 Improve Americans with Disabilities Act (ADA) access on Eagle and Sage trails.

*Interests Met: 4**

ACTION B27 Provide a parallel single track trail at BVR.

*Interests Met: 3**

MAP 18: Boulder Valley Ranch - South Boulder Valley Ranch Focus Area

- » Pave or resurface Longhorn Road with an alternative permeable surface material.

Primary Goal

- » Provide a more sustainable and safer surface, to improve access to Sage Trailhead.

Driving Factors/Benefits

- » Existing gravel roadway is difficult to maintain and in poor condition.
- » Roadway surface is eroded and can't be effectively resurfaced with gravel.

- » Improve restroom facilities.

Primary Goal

- » Provide better facilities to benefit visitors.

Driving Factors/Benefits

- » Reconfigure trailhead to improve safety.
- » Ensure consistent and basic facilities at all trailheads based on visitation numbers and facility standards.
- » Replace infrastructure that is in need of repair.
- » Update restrooms to bring them up to standards.

Primary Goal

- » Retain and improve wheelchair access to the Eagle and Sage loop at BVR.

Driving Factors/Benefits

- » These trails are suitable for providing improved ADA access due to the trail width and design.
- » The grade and out-slope are appropriate, but some areas will need to be improved.

- » Designate and slightly re-route in some locations one parallel single track tread adjacent to the Eagle and Sage loop at BVR.

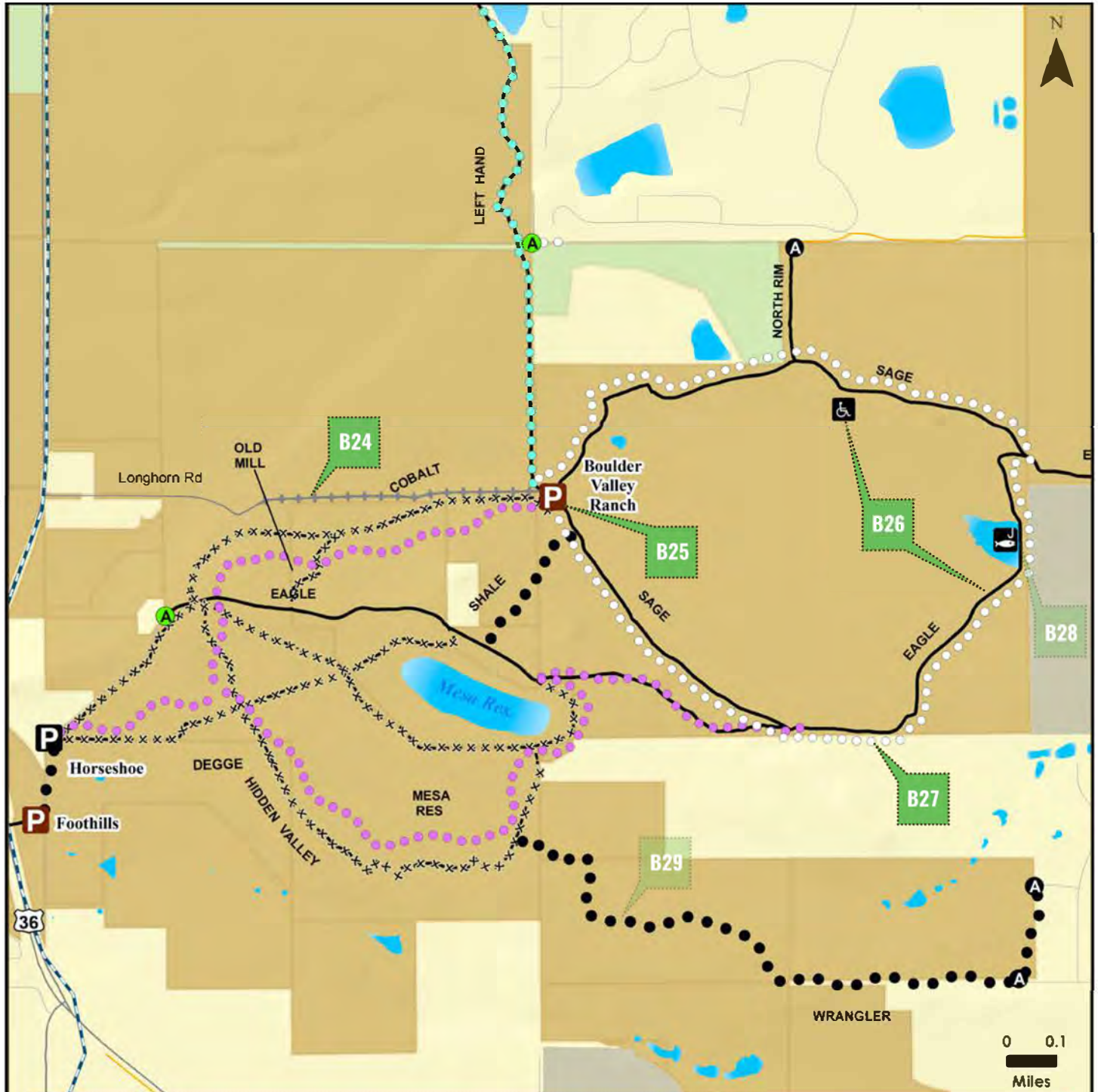
Primary Goal

- » Provide improved visitor experience and safety while reducing visitor conflict by providing a managed alternate trail tread adjacent to existing trail.

Driving Factors/Benefits

- » Improve visitor experience.
- » Consolidate multiple undesigned trail treads into a single designated tread and improve trail sustainability, by re-routing some sections and conducting maintenance on the single track.
- » Decrease visitor conflict.

*See Appendix D for a list of interests met by each action.



MAP 18: Boulder Valley Ranch - South Boulder Valley Ranch Focus Area

- | | | |
|-----------------------------|---|---|
| OSMP Access Point | OSMP Hiking/Equestrian Trail | Create a New Connection |
| New Trailhead | OSMP Multi-Use Trail | Designate an Undesignated Trail |
| Upgrade Trailhead | Non-OSMP Managed Trails | Re-route an Existing Trail |
| Designate for Fishing | Undesignated Trail | Repair an Existing Trail |
| Maintain ADA Standards | Close Undesignated Trail | Close and Restore the Current Alignment |
| Designate Access Point | Pave an Existing Road | Other Government Land |
| OSMP Fee & Managed Property | OSMP Easement or Jointly Owned, County-Managed Land | |
- Trail changes are depicted conceptually. Actual trail alignments will differ.



ACTION B28 Allow fishing access on eastern shore of BVR pond.

*Interests Met: 4**

ACTION B29 Create a new trail connection on the south side of the Papini property. (Wrangler Trail)

*Interests Met: 6**

ACTION B30 Public access to BVR arena.

MAP 18: Boulder Valley Ranch - South Boulder Valley Ranch Focus Area, continued

Primary Goal

- » Formalize and designate area for water access to reduce impacts to wildlife, aquatic and other natural resources.

Driving Factors/Benefits

- » Protect northern shore from resource degrading impacts of visitor activities.
- » Retain current seasonal closure over part of the pond to protect sensitive wildlife.

- » Provide a trail connection along the south side of the Papini property connecting Kelso Road to the Mesa Reservoir trail system.

Primary Goal

- » Increase trail connectivity within the North TSA and between surrounding residential areas and reduce undesignated trails.

Driving Factors/Benefits

- » Provide trail connections to reduce the extent and number of undesignated trails.
- » Protect natural resources from impacts associated with undesignated trails and access points. Allow access within a fenced corridor on the Papini property to protect natural resources, including ponds which may become a native fish refuge.

Primary Goal

- » Continue to follow the terms of the lease regarding public access to the BVR equestrian arena and concurrently develop options for nearby horse trailer parking and/or seek to provide an equivalent and suitable corral option that will be determined in cooperation with stakeholders that will be vetted and approved in a future public process. Proactively address any conflict issues resulting from public access in future lease negotiations.

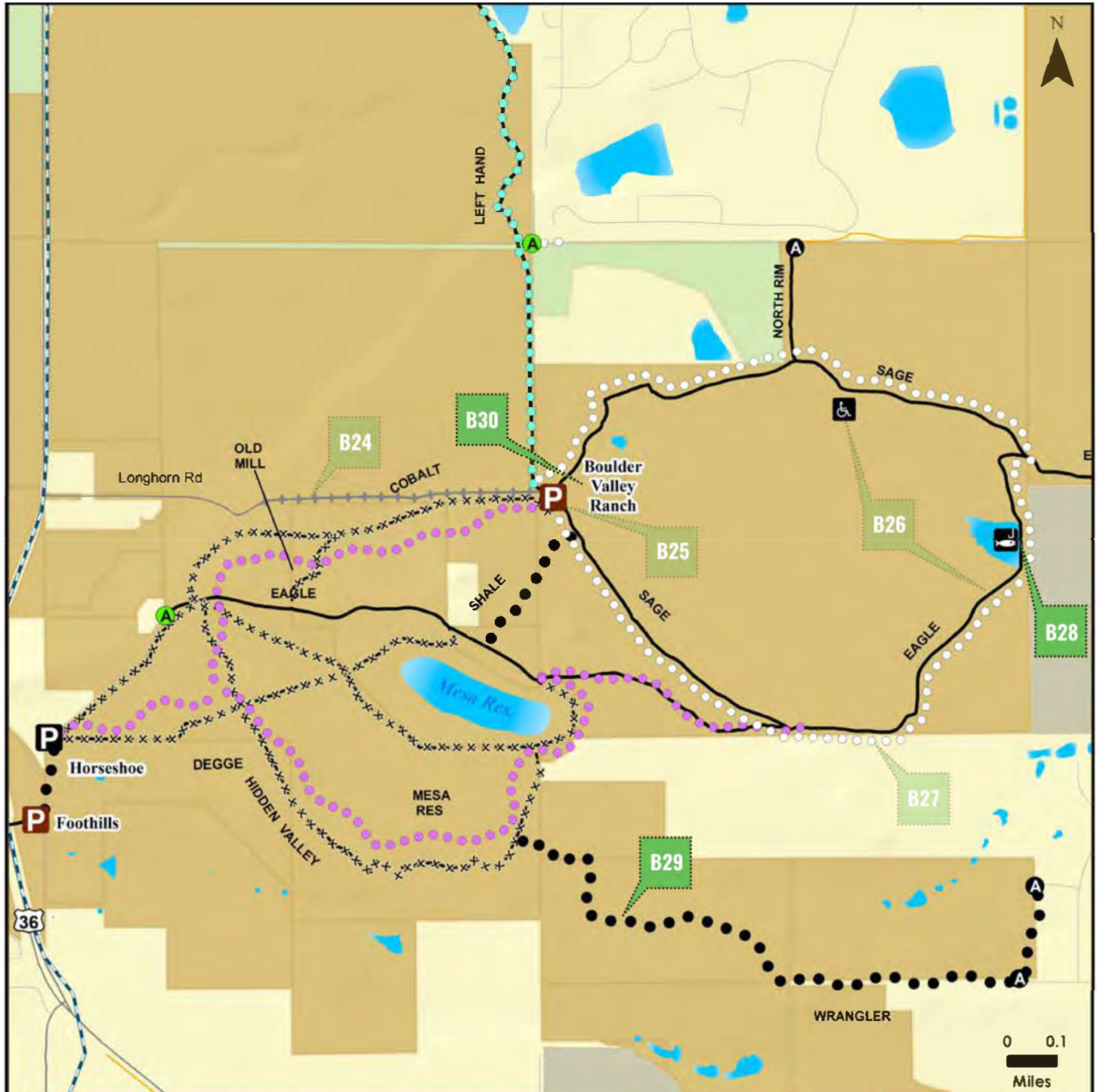
Driving Factors/Benefits

- » Action added by OSBT during approval of the draft plan.



Mesa Reservoir. Photo courtesy Bob Crifasi.

*See Appendix D for a list of interests met by each action.



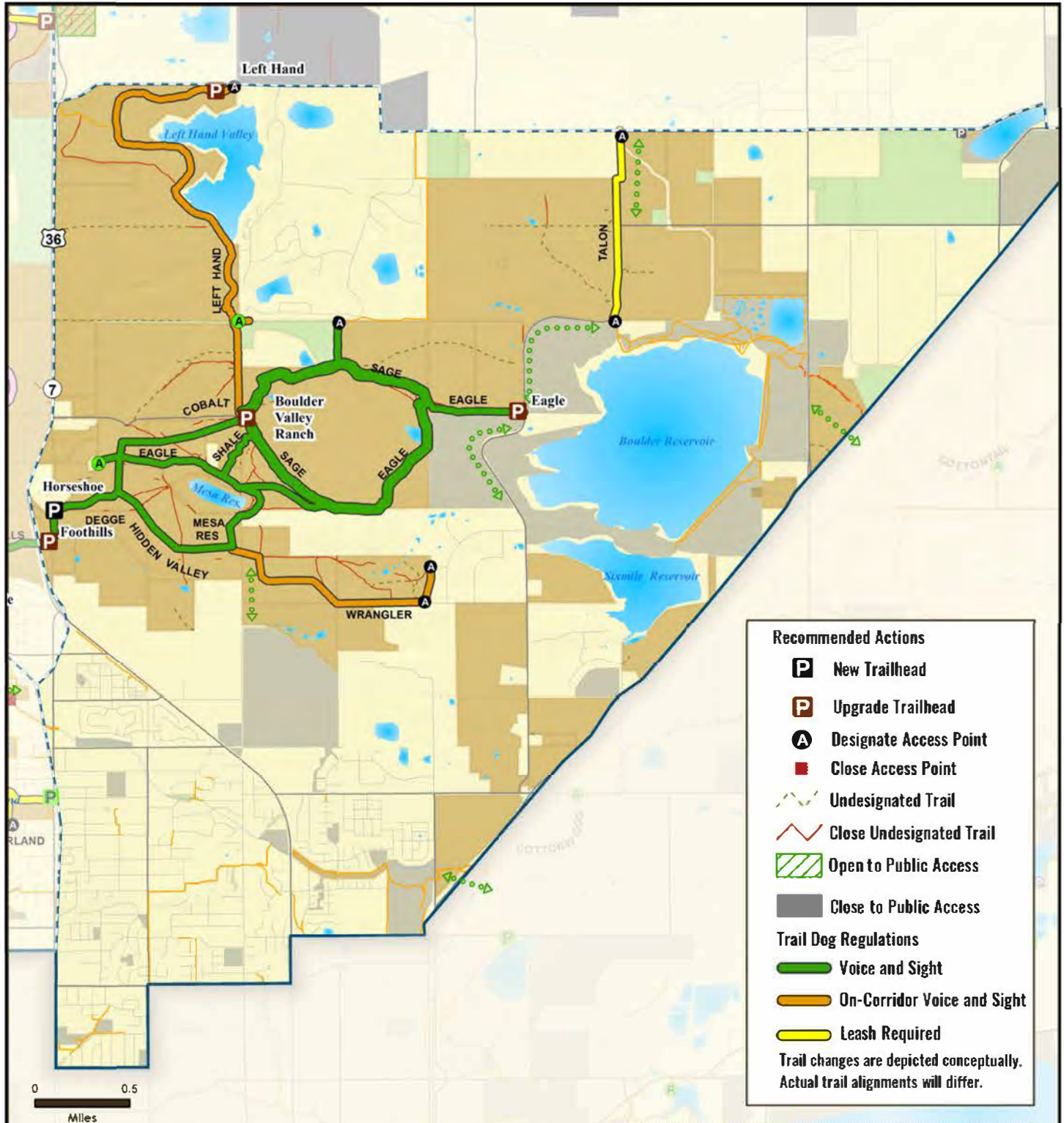
MAP 18: Boulder Valley Ranch - South Boulder Valley Ranch Focus Area, continued

- | | | |
|-----------------------------|---|---|
| OSMP Access Point | OSMP Hiking/Equestrian Trail | Create a New Connection |
| New Trailhead | OSMP Multi-Use Trail | Designate an Undesignated Trail |
| Upgrade Trailhead | Non-OSMP Managed Trails | Re-route an Existing Trail |
| Designate for Fishing | Undesignated Trail | Repair an Existing Trail |
| Maintain ADA Standards | Close Undesignated Trail | Close and Restore the Current Alignment |
| Designate Access Point | Pave an Existing Road | Other Government Land |
| OSMP Fee & Managed Property | OSMP Easement or Jointly Owned, County-Managed Land | |
- Trail changes are depicted conceptually. Actual trail alignments will differ.



MAP 19: Boulder Valley Ranch - Trail-Based Dog Regulations

TRAIL NAME	DOG REGULATION
New Trails	
Connector trail from Lefthand Trail to the Lake Valley Estates neighborhood	On-Corridor Voice and Sight
Designated single track around Eagle and Sage trails	Voice and Sight
Connector near 55th Street to Niwot Road (Talon Trail)	Leash Required
Papini connector trail (Wrangler Trail)	On-Corridor Voice and Sight
Interpretative trail to Mesa Reservoir (Shale Trail)	Voice and Sight
Connector from Foothills Trailhead to Horseshoe Trailhead	Voice and Sight
Existing and Re-routed Trails with New Dog Regulations	
Lefthand Trail	On-Corridor Voice and Sight
Existing and Re-routed Trails with No Changes to Existing Dog Regulations	
Eagle Trail	Voice and Sight
Sage Trail	Voice and Sight
North Rim Trail (OSMP section)	Voice and Sight
Re-routed Cobalt Trail / Old Mill Trail	Voice and Sight
Re-routed Hidden Valley Trail / Mesa Reservoir	Voice and Sight
Re-routed Degge Trail	Voice and Sight
New Off-Trail Dog Regulations	
Dogs required to be on leash on the properties adjacent to the Papini connector trail (Wrangler Trail). On-Corridor Voice and Sight access allowed on the Wrangler Trail.	



MAP 19: Boulder Valley Ranch - Trail-Based Dog Regulations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead

- Potential Future Connection
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Non-OSMP Planned Trails
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands**
- OSMP Fee & Managed Property

- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land

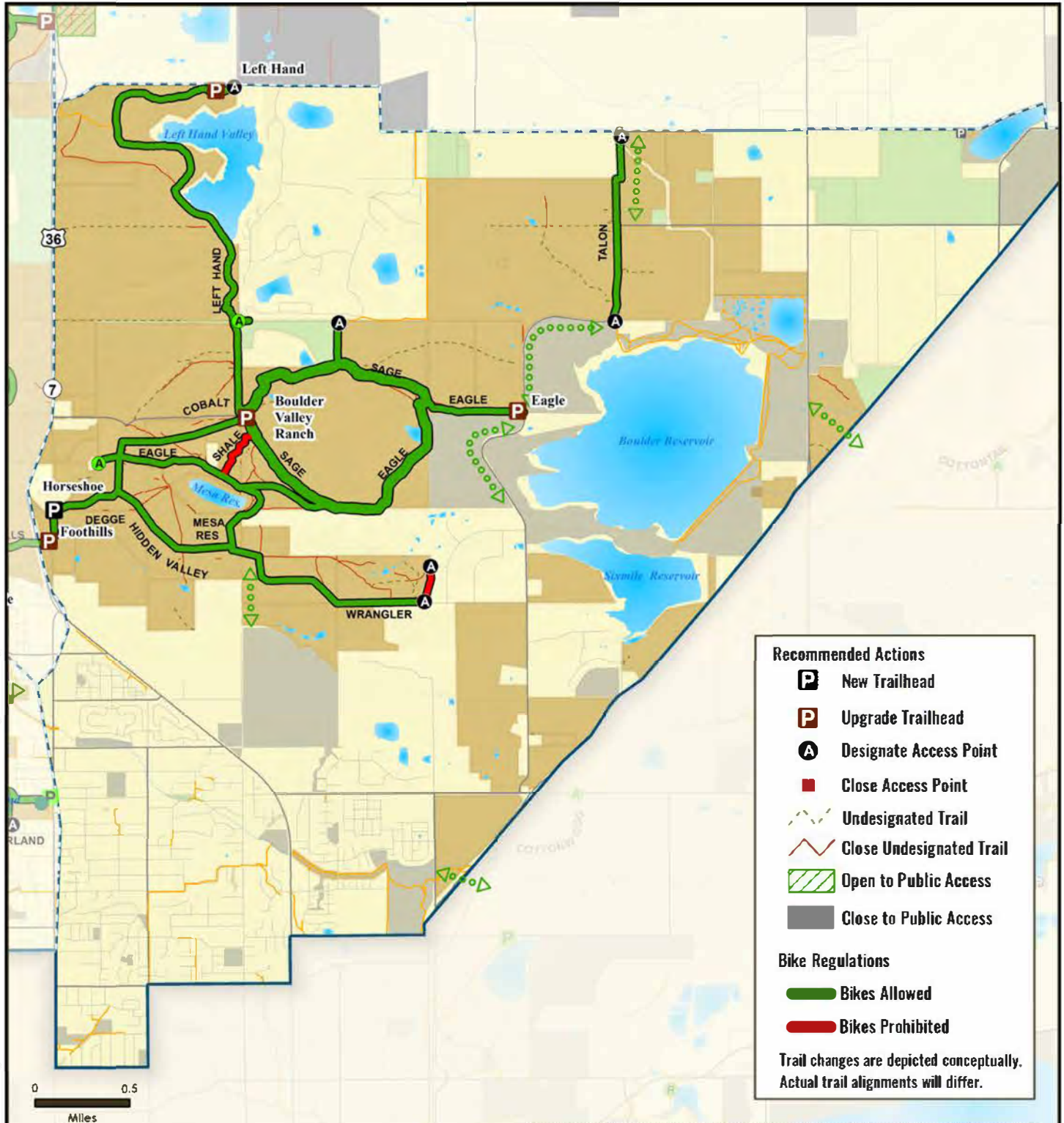


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MAP 20: Boulder Valley Ranch - Bike Regulations

TRAIL NAME	BIKE REGULATION
New Trails	
Connector trail from Lefthand Trail to the Lake Valley Estates neighborhood	Bikes Allowed
Designated single-track around Eagle and Sage trails	Bikes Allowed
Connector near 55th Street to Niwot Road (Talon Trail)	Bikes Allowed
Papini connector trail (Wrangler Trail)	Bikes Allowed, except for a neighborhood connection on the east.
Interpretive trail to Mesa Reservoir (Shale Trail)	Bikes Prohibited
Connector from Foothills Trailhead to new Horseshoe Trailhead	Bikes Allowed
Existing and Re-routed Trails with New Bike Regulations	
Re-routed Cobalt Trail / Old Mill Trail	Bikes Allowed
Re-routed Hidden Valley Trail / Mesa Reservoir	Bikes Allowed
Re-routed Degge Trail	Bikes Allowed
Existing and Re-routed Trails with No Changes to Existing Bike Regulations	
Lefthand Trail	Bikes Allowed
Eagle Trail	Bikes Allowed
Sage Trail	Bikes Allowed
North Rim Trail (OSMP section)	Bikes Allowed



MAP 20: Boulder Valley Ranch - Bike Regulations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead

- Potential Future Connection
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands**
- OSMP Fee & Managed Property

- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land



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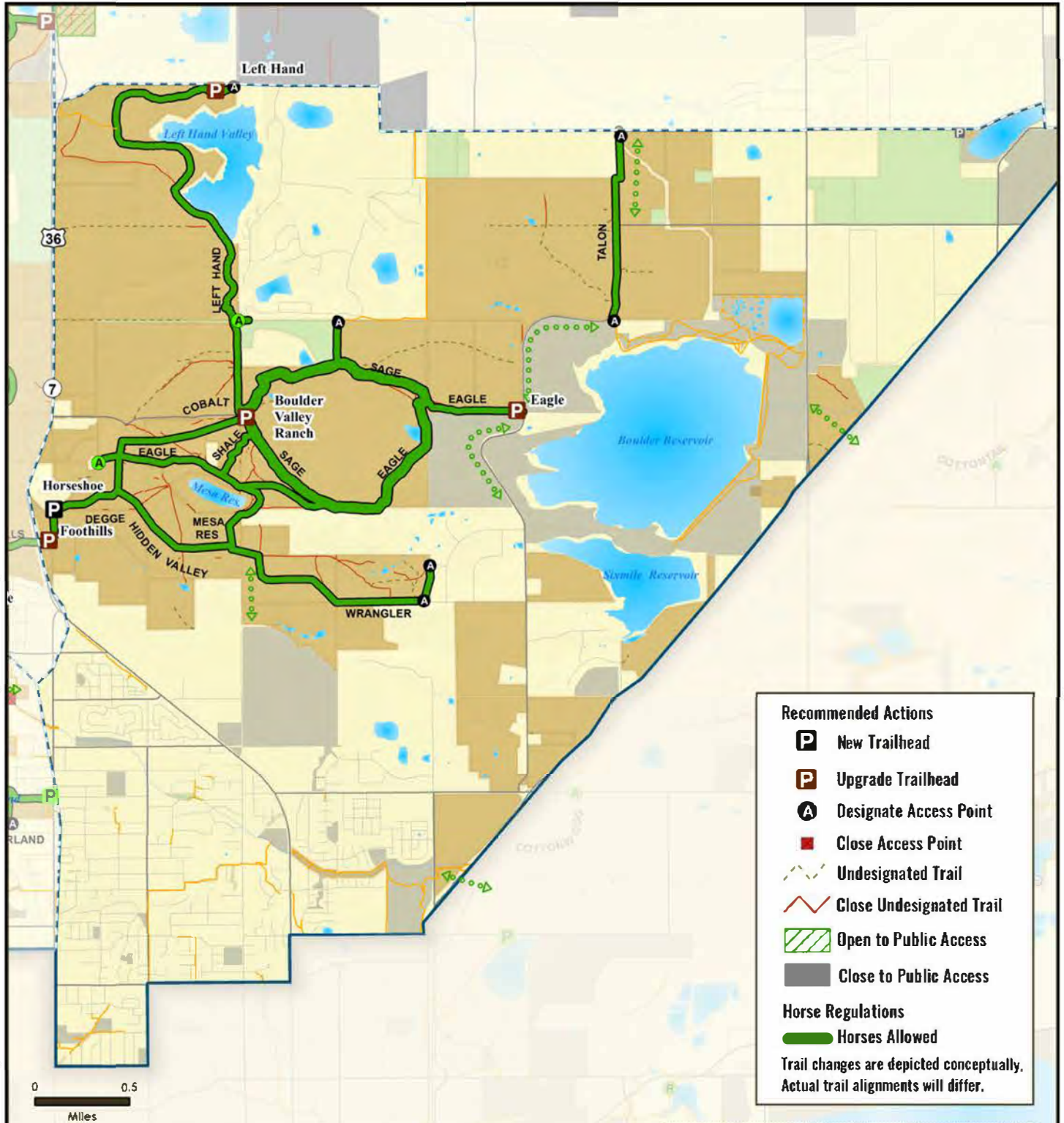
MAP 21: Boulder Valley Ranch - Trail-Based Horse Regulations

TRAIL NAME	HORSE REGULATION
New Trails	
Connector trail from Lefthand Trail to the Lake Valley Estates neighborhood	Horses Allowed
Designated single-track around Eagle and Sage trails	Horses Allowed
Connector near 55th Street to Niwot Road (Talon Trail)	Horses Allowed
Papini connector trail (Wrangler Trail)	Horses Allowed
Interpretive trail to Mesa Reservoir (Shale Trail)	Horses Allowed
Connector from Foothills Trailhead to new Horseshoe Trailhead	Horses Allowed
Existing and Re-routed Trails with No Changes to Existing Horse Regulations	
Lefthand Trail	Horses Allowed
Eagle Trail	Horses Allowed
Sage Trail	Horses Allowed
North Rim Trail (OSMP section)	Horses Allowed
Re-routed Cobalt Trail/Old Mill Trail	Horses Allowed
Re-routed Hidden Valley Trail/Mesa Reservoir Trail	Horses Allowed
Re-routed Degge Trail	Horses Allowed

Horses are allowed off trail in this subarea.



Lefthand Trailhead



MAP 21: Boulder Valley Ranch - Trail-Based Horse Regulations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead

- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands**
- OSMP Fee & Managed Property

- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land

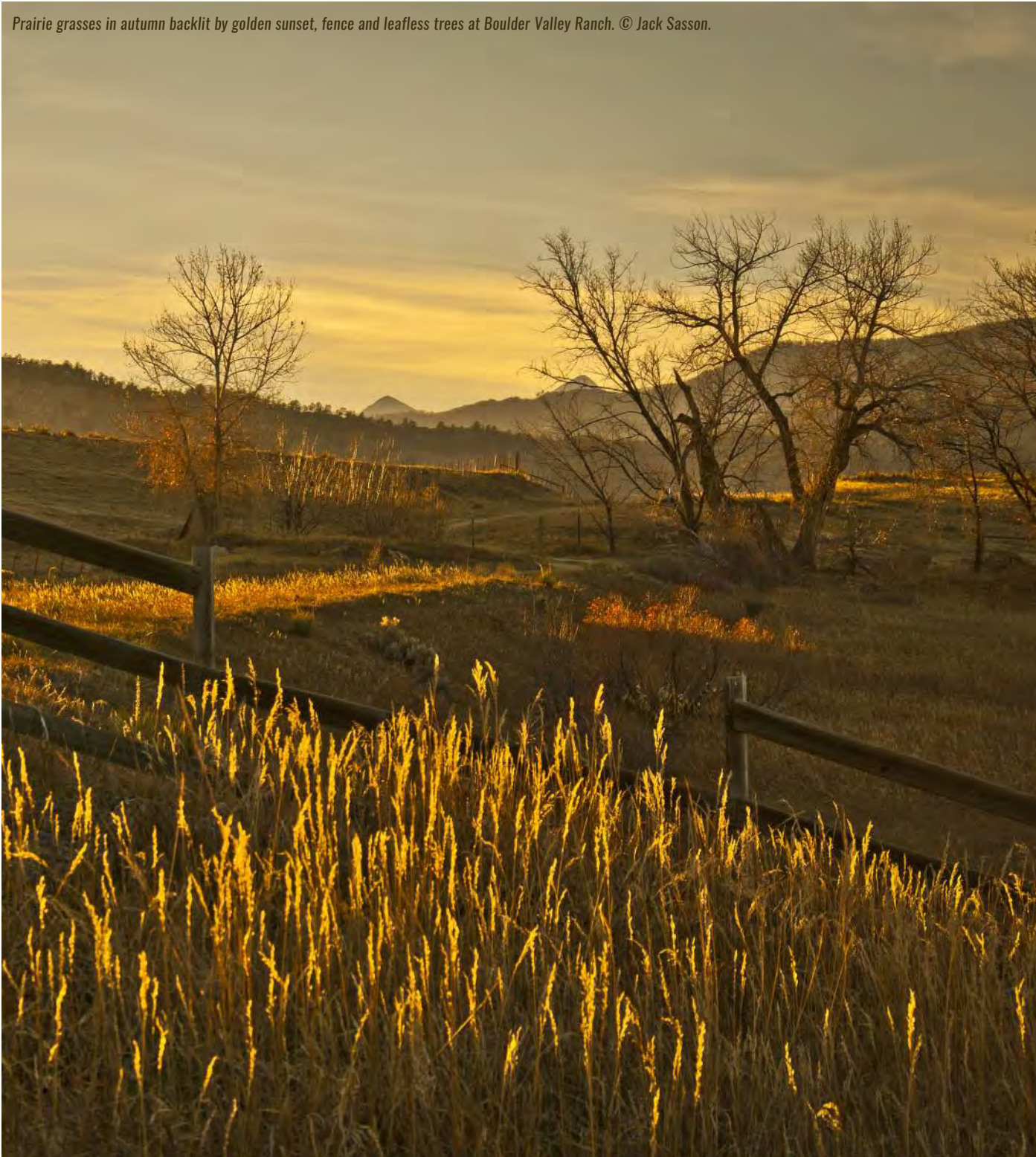


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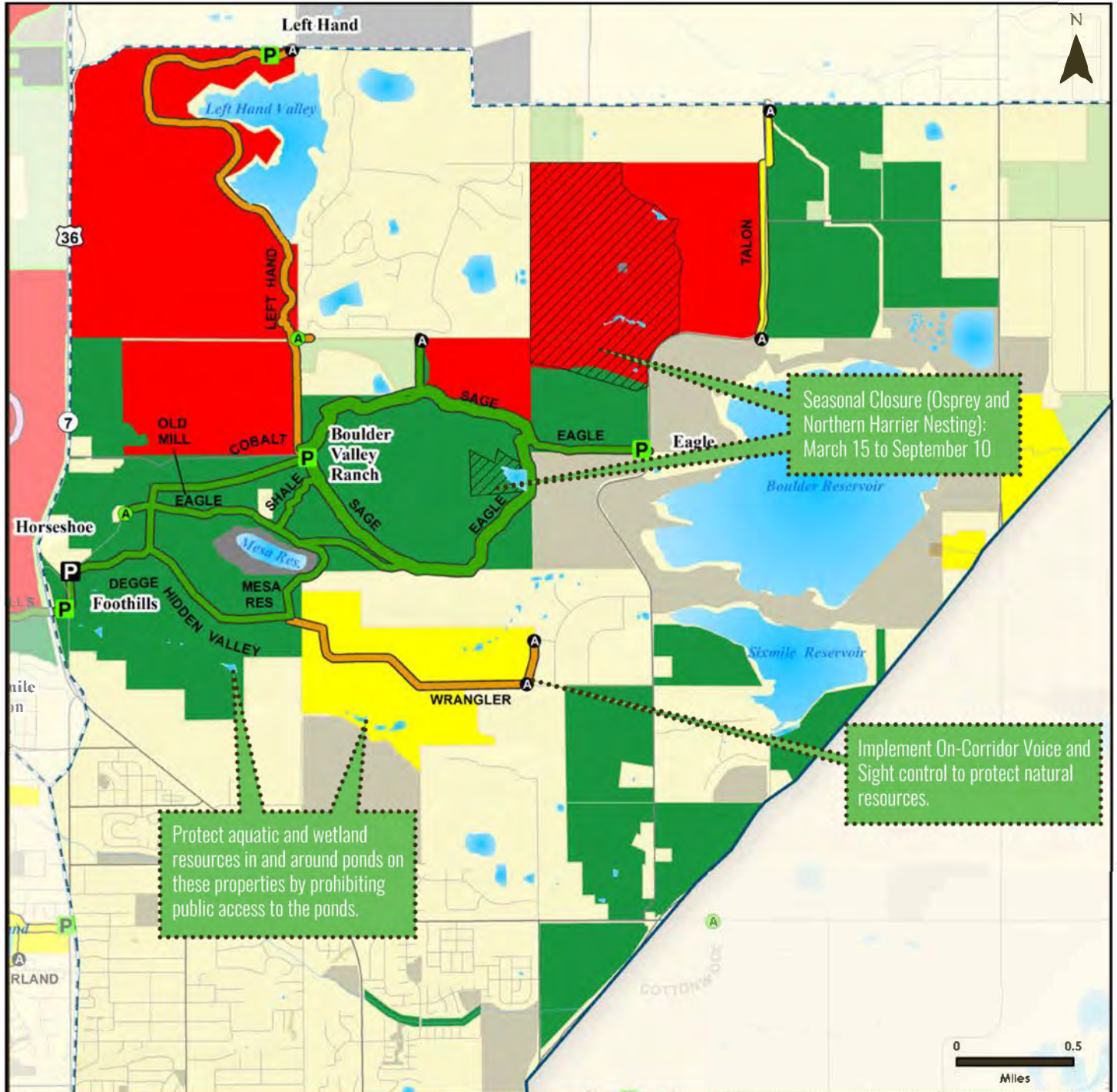


MAP 22: Boulder Valley Ranch - Regulatory Settings

Visitor access regulations pertain to the management of activities both on- and off-trail. The regulatory settings map includes on-trail and off-trail specific regulations where public access is restricted year-round, areas with seasonal wildlife closures and on-trail and off-trail dog regulations.



Prairie grasses in autumn backlit by golden sunset, fence and leafless trees at Boulder Valley Ranch. © Jack Sasson.



MAP 22: Boulder Valley Ranch - Regulatory Settings



North Trail Study Subareas

- P OSMP Trailhead
- A OSMP Access Point

Visitor Access Regulations

- P New Trailhead
- A New Access Point

Trail Dog Regulations

- Voice and Sight
- On-Corridor Voice and Sight
- Leash Required
- Dogs Prohibited

- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land

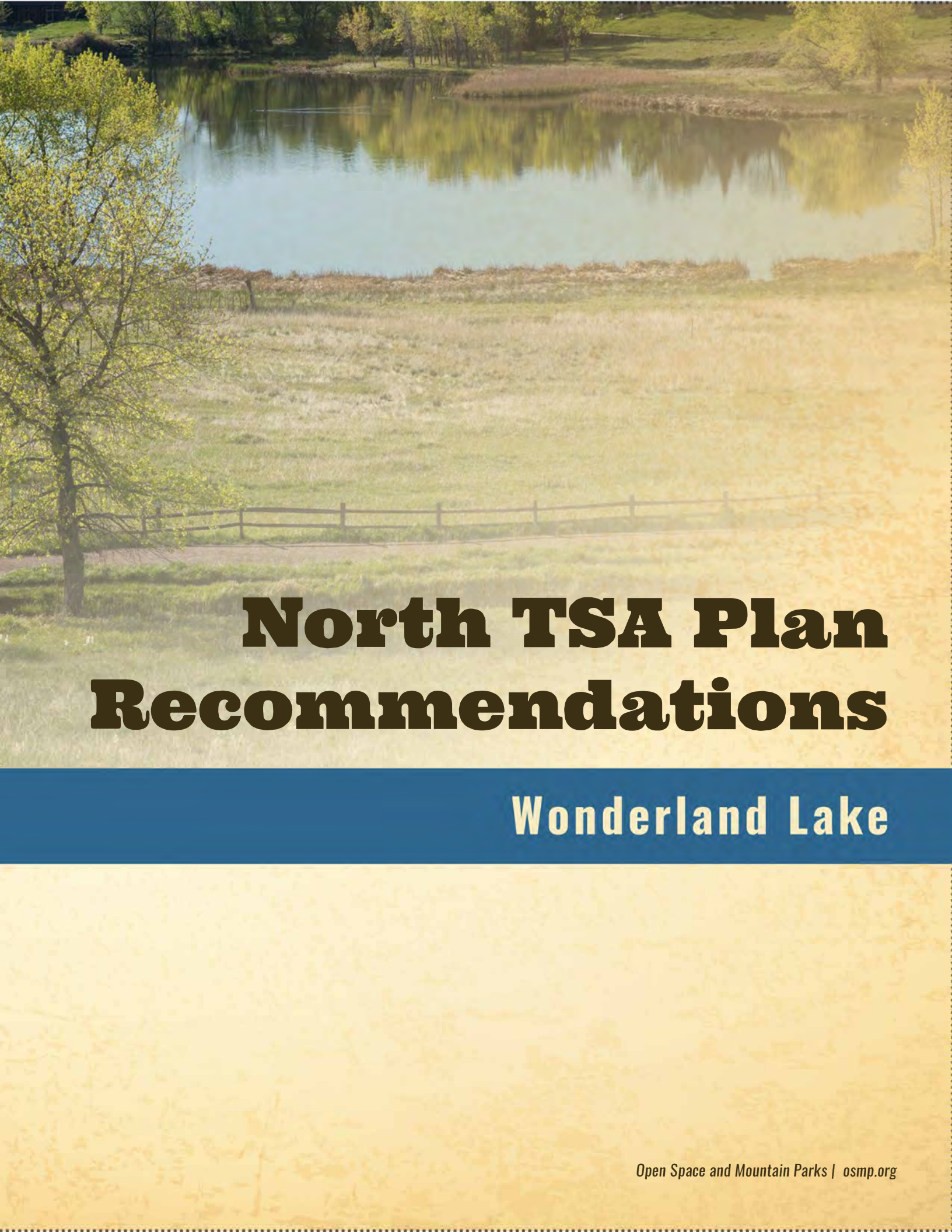
Dog Regulation Areas

- Voice and Sight Control
- Leash Required
- Dogs Prohibited
- Closed to Public Access
- Seasonal Wildlife Closure

Trail changes are depicted conceptually. Actual trail alignments will differ.



Background photo: Wonderland Lake.



North TSA Plan Recommendations

Wonderland Lake

ACTION W1 Collaborate with Parks and Recreation to support nature play experiences on their adjacent properties.

*Interests Met: 1**

ACTION W2 Assess vision for Foothills Nature Center.

*Interests Met: 2**

ACTION W3 Construct a shade structure near Wonderland Lake Trailhead.

*Interests Met: 2**

ACTION W4 Improve safety at Broadway crossing.

*Interests Met: 3**

Note: There are no new management area designations in this subarea.

*See Appendix D for a list of interests met by each action.

MAP 23: Wonderland Lake - Subarea-Wide Recommendations

- » Collaborate with City of Boulder Parks and Recreation Department to support designed nature play experiences on their property and support appropriate passive recreation aspects of this type of experience on adjacent OSMP land.

Primary Goal

- » Support the creation of places designed for children on Parks and Recreation properties to gain a greater appreciation for, and awareness of, the natural environment.

Driving Factors/Benefits

- » Promote daily contact with the natural environment and outdoor space consistent and suitable for OSMP lands.

- » OSMP is assessing and preparing plans for the future vision of the Foothills Nature Center and associated trailhead.

Primary Goal

- » A separate building and site assessment process will determine potential changes to the Foothills Nature Center and Trailhead.

Primary Goal

- » Provide a shaded area where education and other groups can gather when accessing the Wonderland Lake area.

Driving Factors/Benefits

- » Provide shade for the safety and comfort of educational groups and other visitors.

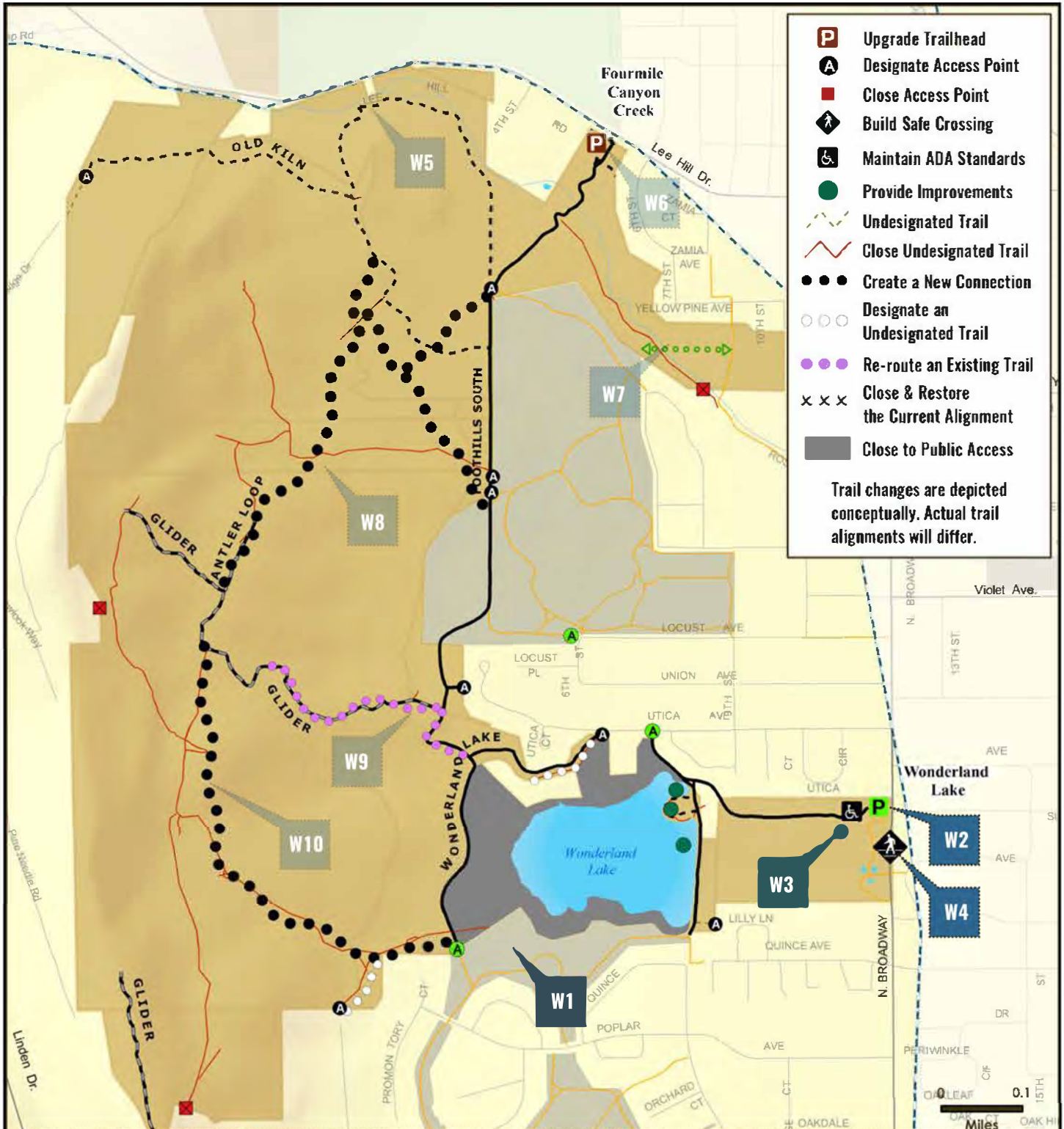
- » Support and encourage improvements to crossing between Sumac Avenue, RTD bus stop and the Foothills Nature Center.

Primary Goal

- » Encourage and support creating a safer and more visible way to cross Broadway for visitors accessing Foothills Nature Center and Wonderland Lake by bus.

Driving Factors/Benefits

- » Improve accessibility of North TSA to visitors who rely upon public transit.



MAP 23: Wonderland Lake - Subarea-Wide Recommendations

- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point

- Potential Future Connection
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Multi-Use Trail

- North Trail Study Area Lands**
- OSMP Fee & Managed Property
- Lands Not Included in the North Trail Study Area**
- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land

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ACTION W5 Revegetate the flood-damaged northern loop section of Old Kiln Trail.

*Interests Met: 2**

ACTION W6 Rename Four Mile Creek Trailhead as Fourmile Canyon Creek Trailhead.

*Interests Met: 2**

ACTION W7 Collaborate to create a connection from Fourmile Canyon Creek Greenway path to Foothills Community Park.

*Interests Met: 3**

MAP 24: Wonderland Lake - Fourmile Canyon Creek Focus Area

Primary Goal

- » Protect rare plants and unique geological features in this area.

Driving Factors/Benefits

- » Rebuilding the trail is not feasible given the extensive damage from the 2013 flood.
- » Restore/improve riparian habitat.

Primary Goal

- » Align trailhead name with Fourmile Canyon Creek.

- » As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts.

Primary Goal

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.

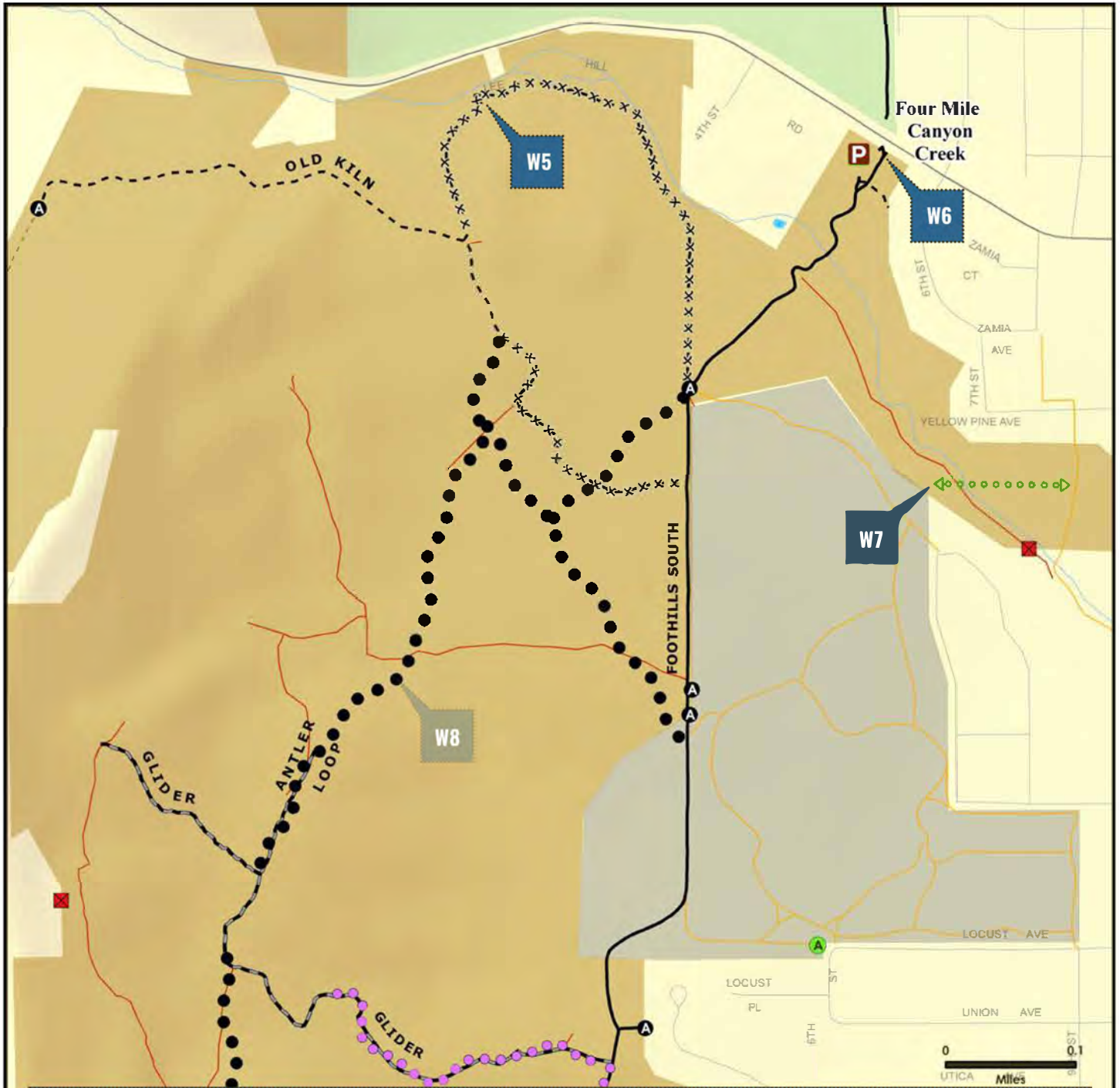
Driving Factors/Benefits

- » Increase coordination/consistency among OSMP and partner agencies to advance local trail connections that also conserve natural and agricultural resources.
- » Connection accepted by City Council in the Greenways Master Plan.



Staff Steve Mertz by historical limestone kiln after flood of September 2013 washed out Fourmile Canyon Creek channel.

*See Appendix D for a list of interests met by each action.



MAP 24: Wonderland Lake - Fourmile Canyon Creek Focus Area

- | | | |
|---|------------------------------|---|
| P Upgrade Trailhead | Potential Future Connection | OSMP Fee & Managed Property |
| A Designate Access Point | OSMP Hiking/Equestrian Trail | OSMP Easement or Jointly Owned, County-Managed Land |
| OSMP Access Point | OSMP Multi-Use Trail | Other Government Land |
| Close Access Point | OSMP Gliding Access | |
| Create a New Connection | Non-OSMP Managed Trails | |
| Close and Restore the Current Alignment | Undesignated Trail | |
| Re-route an Existing Trail | Close Undesignated Trail | |
- Trail changes are depicted conceptually. Actual trail alignments will differ.



ACTION W8 Create Wonderland Lake backdrop loop trail connection by re-routing trails. (Antler Loop)

*Interests Met: 4**

MAP 25: Wonderland Lake - South Foothills Focus Area

- » Re-route existing designated and undesignated trails to provide more sustainable connections to the paragliding launch sites and visitors seeking a trail experience on the Wonderland hogback.

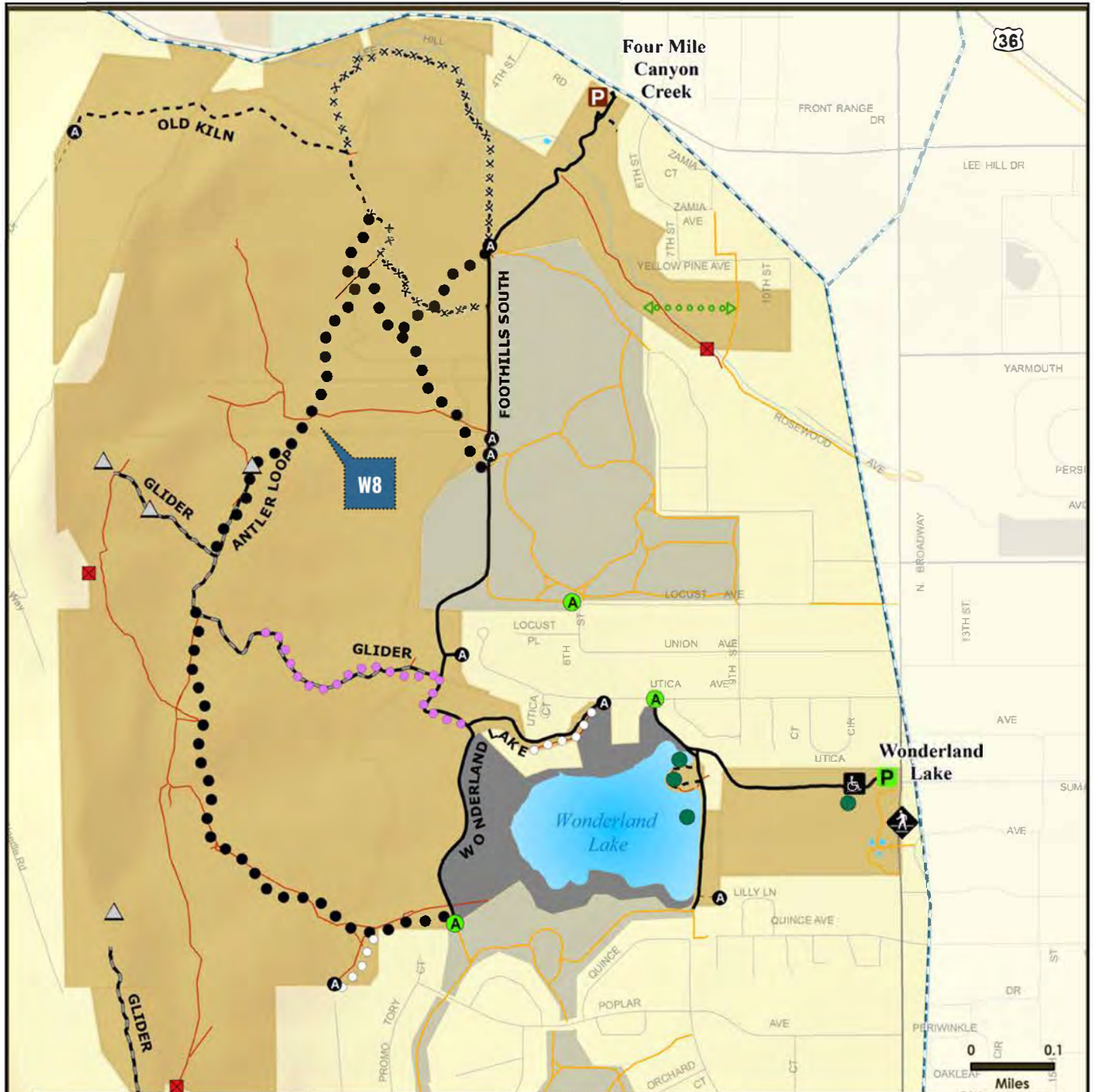
Primary Goal

- » Provide new trail access to improve visitor experience, replace undesignated trails and reduce maintenance and management costs.

Driving Factors/Benefits

- » Avoid sensitive natural resources through the addition of sustainable trails, re-routing of unsustainable trails and closure of undesignated trails.

*See Appendix D for a list of interests met by each action.



MAP 25: Wonderland Lake - South Foothills Focus Area

- | | | |
|---------------------------------|---|---|
| A Designate Access Point | OSMP Hiking/Equestrian Trail | Potential Future Connection |
| Provide Improvements | OSMP Multi-Use Trail | Close to Public Access |
| P Upgrade Trailhead | OSMP Gliding Access | OSMP Fee & Managed Property |
| Close Access Point | Non-OSMP Managed Trails | OSMP Easement or Jointly Owned, County-Managed Land |
| Maintain ADA Standards | Close Undesignated Trail | Other Government Land |
| Build Safe Crossing | Undesignated Trail | Trail changes are depicted conceptually. Actual trail alignments will differ. |
| Paragliding Launch Sites | Create a New Connection | |
| | Designate an Undesignated Trail | |
| | Re-route an Existing Trail | |
| | Close and Restore the Current Alignment | |

\\user\GardE1 Date: 5/11/2016 Path: F:\MapFiles\TSA\NorthTSA\Draft\Recommendations\Council_Version\RecommendationMap\Wonderland_Lake_Subarea\Wonderland_Backdrop.mxd



ACTION W9 Re-route portion of the Wonderland Lake Trail.

*Interests Met: 2**

ACTION W10 Create a second, smaller Wonderland Lake backdrop loop trail. (Glider Access Trail)

*Interests Met: 3**

MAP 26: Wonderland Lake - Wonderland Lake Backdrop Focus Area

- » Re-route the steep downhill section of trail just north of where it connects into Foothills South Trail.

Primary Goal

- » Increase sustainability of this section of trail while minimizing impacts to rare plant communities including New Mexico feathergrass in this area.

- » Create a more sustainable trail connection to replace the existing glider access trail.

Primary Goal

- » Increase recreation and loop trail opportunities for visitors.

Driving Factors/Benefits

- » Increase connectivity among trails.
- » Increase trail sustainability.



Blooming New Mexico feathergrass. © Bill May.

*See Appendix D for a list of interests met by each action.



MAP 26: Wonderland Lake - Wonderland Lake Backdrop Focus Area

- | | | |
|---------------------------------|------------------------------|---------------------------------|
| P OSMP Trailhead | OSMP Hiking/Equestrian Trail | Create a New Connection |
| A OSMP Access Point | OSMP Multi-Use Trail | Designate an Undesignated Trail |
| Close Access Point | OSMP Gliding Access | Re-route an Existing Trail |
| A Designate Access Point | Close Undesignated Trail | Close to Public Access |
| Build Safe Crossing | Undesignated Trail | OSMP Fee & Managed Property |
| Maintain ADA Standards | Non-OSMP Managed Trails | Other Government Land |
| Provide Improvements | | |

Trail changes are depicted conceptually. Actual trail alignments will differ.



MAP 27: Wonderland Lake - Wonderland Lake Focus Area

ACTION W11 Improve Americans with Disabilities Act (ADA) access on Wonderland Lake Trail.

*Interests Met: 5**

Primary Goal

- » Provide more inclusive access to all types of visitors at Wonderland Lake Trail.

Driving Factors/Benefits

- » This trail is suitable for improving ADA accessibility due to its grade, out-slope, trail width and lack of obstacles in the trail tread.

ACTION W12 Prohibit boats and belly boats on Wonderland Lake.

*Interests Met: 2**

Primary Goal

- » Provide greater protection of lake and wetland natural resources.

Driving Factors/Benefits

- » Minimize disturbance to waterfowl and shorebirds.
- » Designate fishing access off of the dam, peninsula and a pier where visitor impacts to wetland resources can be minimized.

ACTION W13 Prohibit ice skating on Wonderland Lake.

*Interests Met: 2**

Primary Goal

- » Creates consistent visitor access regulations and increases visitor safety.

Driving Factors/Benefits

- » Consistent with restrictions to prohibit access on the lake in order to protect wetlands.

ACTION W14 Allow sledding on Wonderland Lake dam.

*Interests Met: 2**

Primary Goal

- » Provide sledding access in an area that does not damage natural resources or have safety concerns.

Driving Factors/Benefits

- » Formalize an area where children/families can sled.

ACTION W15 Do not provide access to Wonderland Lake's south, west and north shores.

*Interests Met: 1**

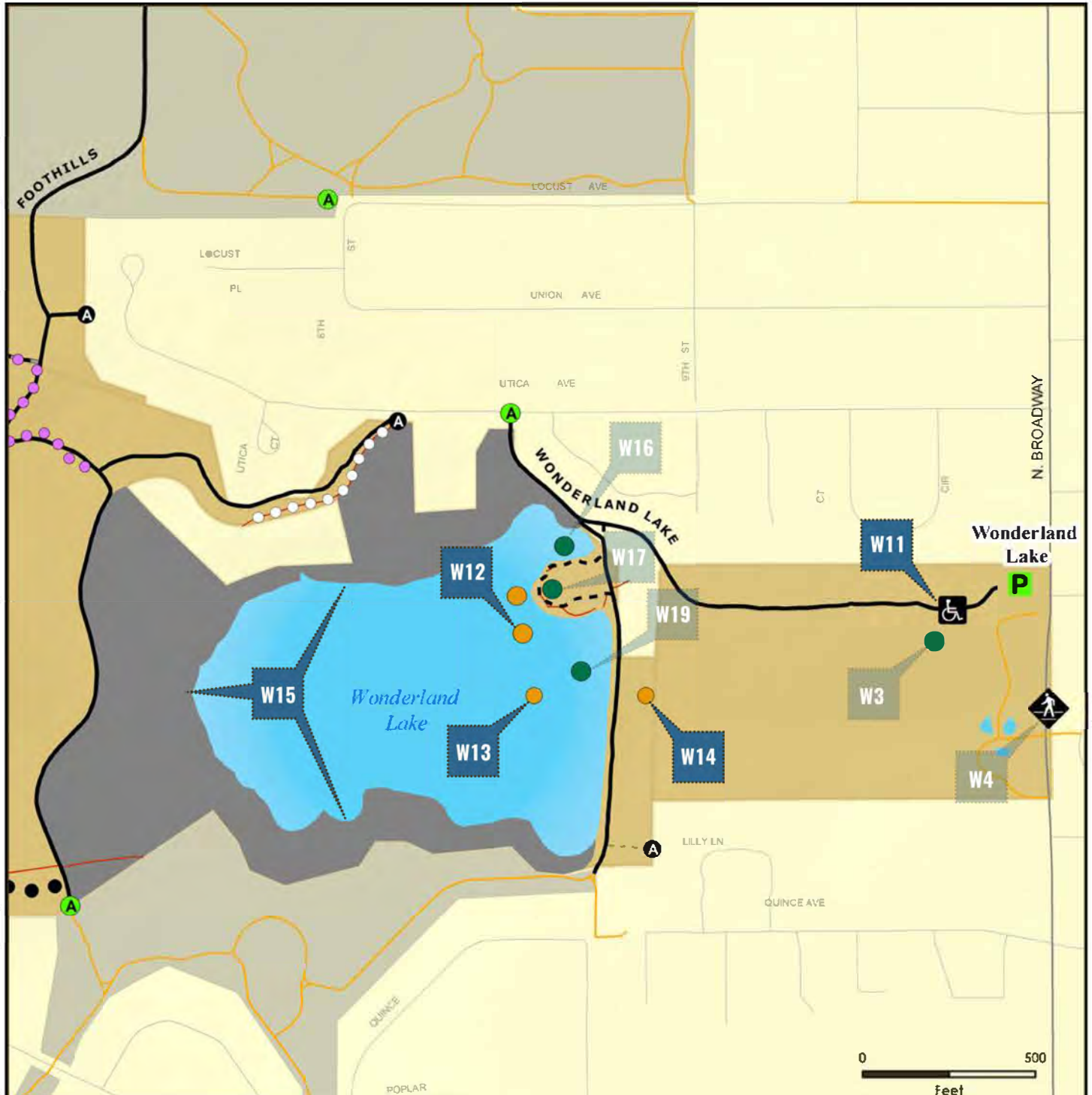
Primary Goal

- » Protect sensitive wetland resources on the south, west and north shores of Wonderland Lake.

Driving Factors/Benefits

- » Minimize disturbance to waterfowl, shorebirds and other wildlife.
- » Areas of the east shore are accessible for water access, fishing access and interpretive opportunities.

*See Appendix D for a list of interests met by each action.



MAP 27: Wonderland Lake - Wonderland Lake Focus Area

- | | | |
|------------------------|---------------------------------|-----------------------------|
| OSMP Trailhead | OSMP Hiking/Equestrian Trail | OSMP Fee & Managed Property |
| OSMP Access Point | OSMP Multi-Use Trail | Other Government Land |
| Designate Access Point | Close Undesignated Trail | Close to Public Access |
| Build Safe Crossing | Undesignated Trail | |
| Maintain ADA Standards | Non-OSMP Managed Trails | |
| Provide Improvements | Create a New Connection | |
| Regulatory Change | Designate an Undesignated Trail | |
| | Re-route an Existing Trail | |
- Trail changes are depicted conceptually. Actual trail alignments will differ.



ACTION W16 Provide access to the cattail marsh on north side of peninsula.

*Interests Met: 4**

ACTION W17 Establish hardened pullout areas on the peninsula for educational programming and a hardened wading access.

*Interests Met: 4**

ACTION W18 Allow Wonderland Lake wading access from designated areas on the peninsula.

*Interests Met: 3**

ACTION W19 Create Wonderland Lake fishing pier.

*Interests Met: 6**

MAP 28: Wonderland Lake - Peninsula Focus Area

Primary Goal

- » Increase opportunities for education and interpretive experiences, especially for families and youth.

Driving Factors/Benefits

- » Provide out and back interpretive boardwalk access to the cattail marsh adjacent to peninsula where impacts can be minimized at this site and by protecting other wetland areas around the lake.

- » Provide increased beach access on the western edge of the peninsula.

Primary Goal

- » Increase and define opportunities to access water to foster education and interpretive experiences.

Driving Factors/Benefits

- » Mitigate conflicts among interpretive programs with children and families and other visitor activities.
- » Concentrate access into defined areas on to the peninsula, protecting wetland vegetation in other areas on the peninsula and around the lake.

Primary Goal

- » Provide a special water access opportunity for improved visitor experience and nature study for youth.

Driving Factors/Benefits

- » Access to water for visitors would be limited to peninsula and occur in location where impacts to natural resources can be minimized.
- » Increase consistency and compliance of regulations in this area.

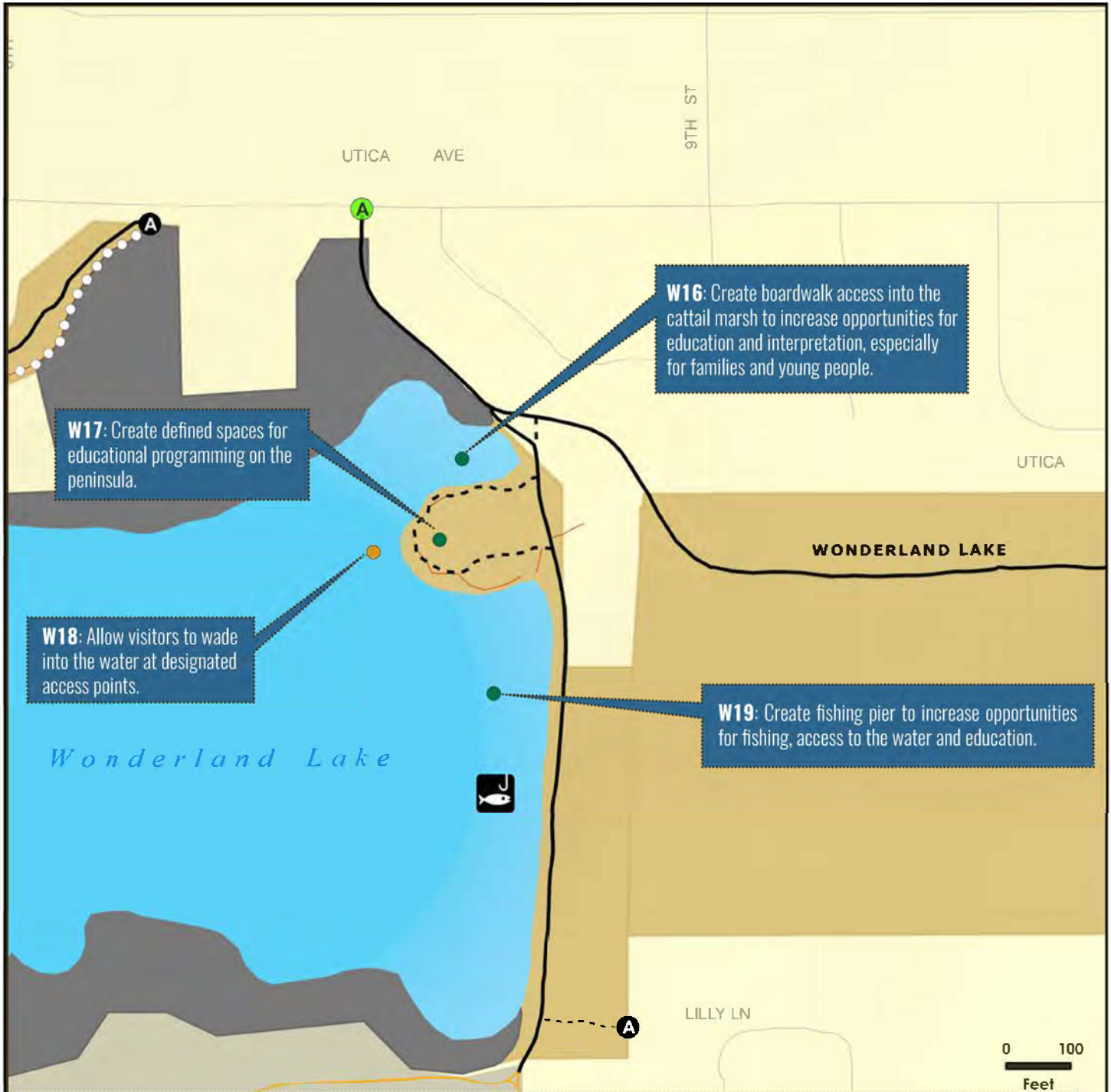
Primary Goal

- » Increase opportunities to fish, access water and provide education and interpretive experiences.

Driving Factors/Benefits

- » Provide fishing access alternative to enhance the safety for visitors traveling along the dam around those who are fishing.
- » Concentrate fishing and lake access to protect wetland vegetation in other areas around the lake.

*See Appendix D for a list of interests met by each action.



MAP 28: Wonderland Lake - Peninsula Focus Area

- | | | |
|---------------------------------|------------------------------|---|
| OSMF Access Point | OSMF Hiking/Equestrian Trail | OSMF Fee & Managed Property |
| Designate Access Point | OSMF Multi-Use Trail | Other Government Land |
| Fishing Access | Close Undesignated Trail | Close to Public Access |
| Regulatory Change | Undesignated Trail | Trail changes are depicted conceptually. Actual trail alignments will differ. |
| Provide Improvements | Non-OSMF Managed Trails | |
| Designate an Undesignated Trail | | |

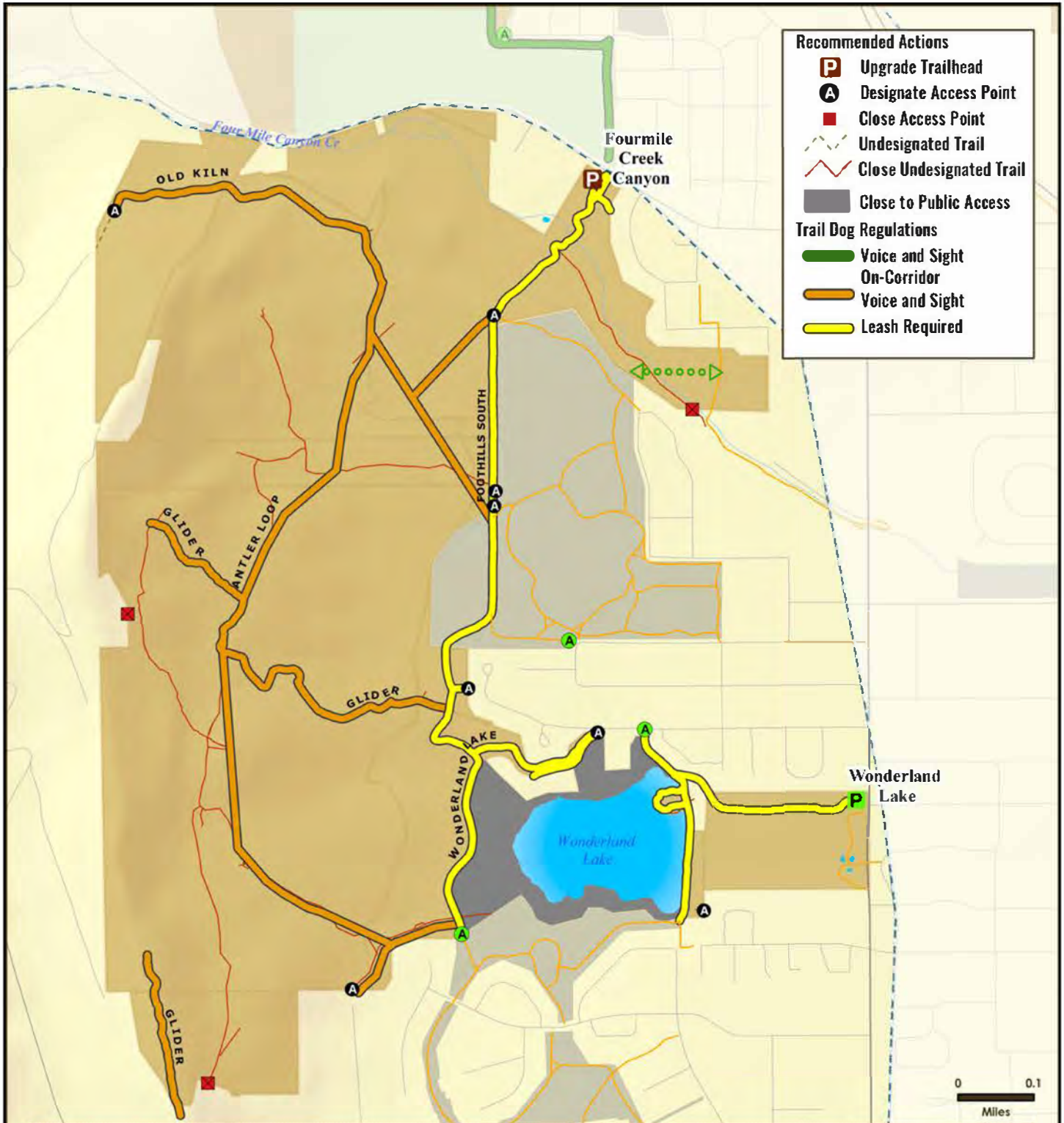




MAP 29: Wonderland Lake - Trail-Based Dog Regulations

TRAIL NAME	DOG REGULATION
New Trails	
Wonderland Hill loop (Antler Loop)	On-Corridor Voice and Sight
Existing and Re-routed Trails with New Dog Regulations	
Old Kiln Trail	On-Corridor Voice and Sight
Re-routed Wonderland Hill glider access (Glider Access Trail)	On-Corridor Voice and Sight
Wonderland Hill south glider access off Pine Needle Road	On-Corridor Voice and Sight
Existing and Re-routed Trails with No Changes to Existing Dog Regulations	
Foothills South Trail	Leash Required
Wonderland Lake trails	Leash Required
Wonderland Lake peninsula trail	Leash Required

There are no new off-trail regulations in this subarea. Dogs are required to be on leash when off-trail in this subarea.



MAP 29: Wonderland Lake - Trail-Based Dog Regulations



North Trail Study Planning Area



North Trail Study Subareas



OSMP Trailhead



OSMP Access Point

Trail changes are depicted conceptually.
Actual trail alignments will differ.



Potential Future Connection



OSMP Hiking/Equestrian Trail



OSMP Multi-Use Trail



OSMP Gliding Access



Non-OSMP Managed Hiking Trail



Non-OSMP Managed Multi-Use Trail

North Trail Study Area Lands

OSMP Fee & Managed Property

Lands Not Included in the North Trail Study Area

OSMP Easement or
Jointly Owned, County-Managed Land

Other Government Land





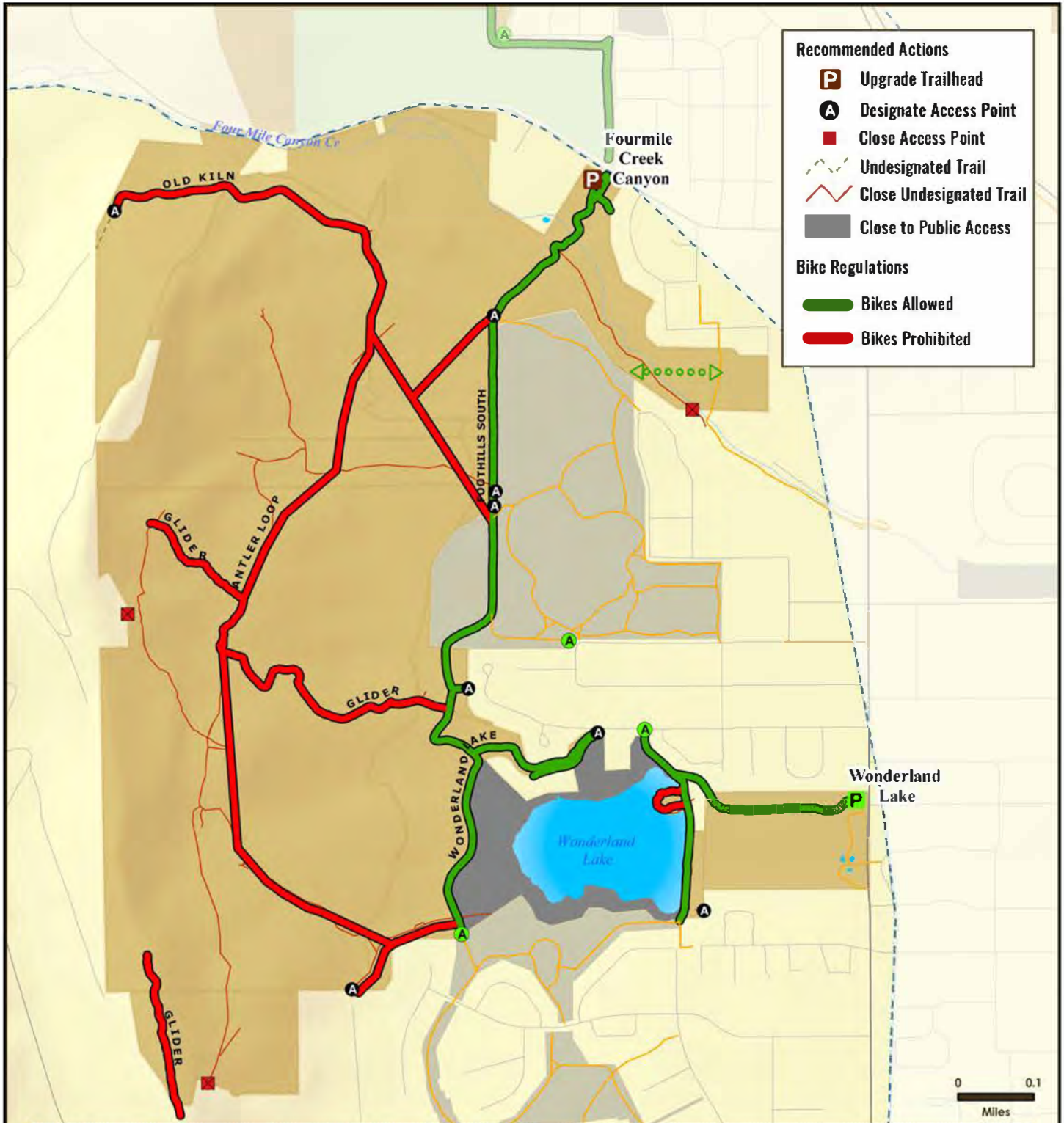
MAP 30: Wonderland Lake - Bike Regulations

TRAIL NAME	BIKE REGULATION
New Trails	
Wonderland Hill loop (Antler Loop)	Bikes Prohibited
Existing and Re-routed Trails with No Changes to Existing Bike Regulations	
Wonderland Lake trails	Bikes Allowed
Foothills South Trail	Bikes Allowed
Old Kiln Trail	Bikes Prohibited
Re-routed Wonderland Hill glider access (Glider Access Trail)	Bikes Prohibited
Wonderland Hill south glider access off Pine Needle Road	Bikes Prohibited
Wonderland Lake peninsula trail	Bikes Prohibited

There are no existing and re-routed trails with new bike regulations in this subarea.

Cyclists demonstrating the Fruita Lean, a practice that allows other visitors to pass while minimizing resource impacts.





MAP 30: Wonderland Lake - Bike Regulations



North Trail Study Planning Area



North Trail Study Subareas



OSMP Trailhead



OSMP Access Point

Trail changes are depicted conceptually.
Actual trail alignments will differ.



Potential Future Connection



OSMP Hiking/Equestrian Trail



OSMP Multi-Use Trail



OSMP Gliding Access



Non-OSMP Managed Hiking Trail



Non-OSMP Managed Multi-Use Trail

North Trail Study Area Lands

OSMP Fee & Managed Property

Lands Not Included in the North Trail Study Area

OSMP Easement or
Jointly Owned, County-Managed Land

Other Government Land

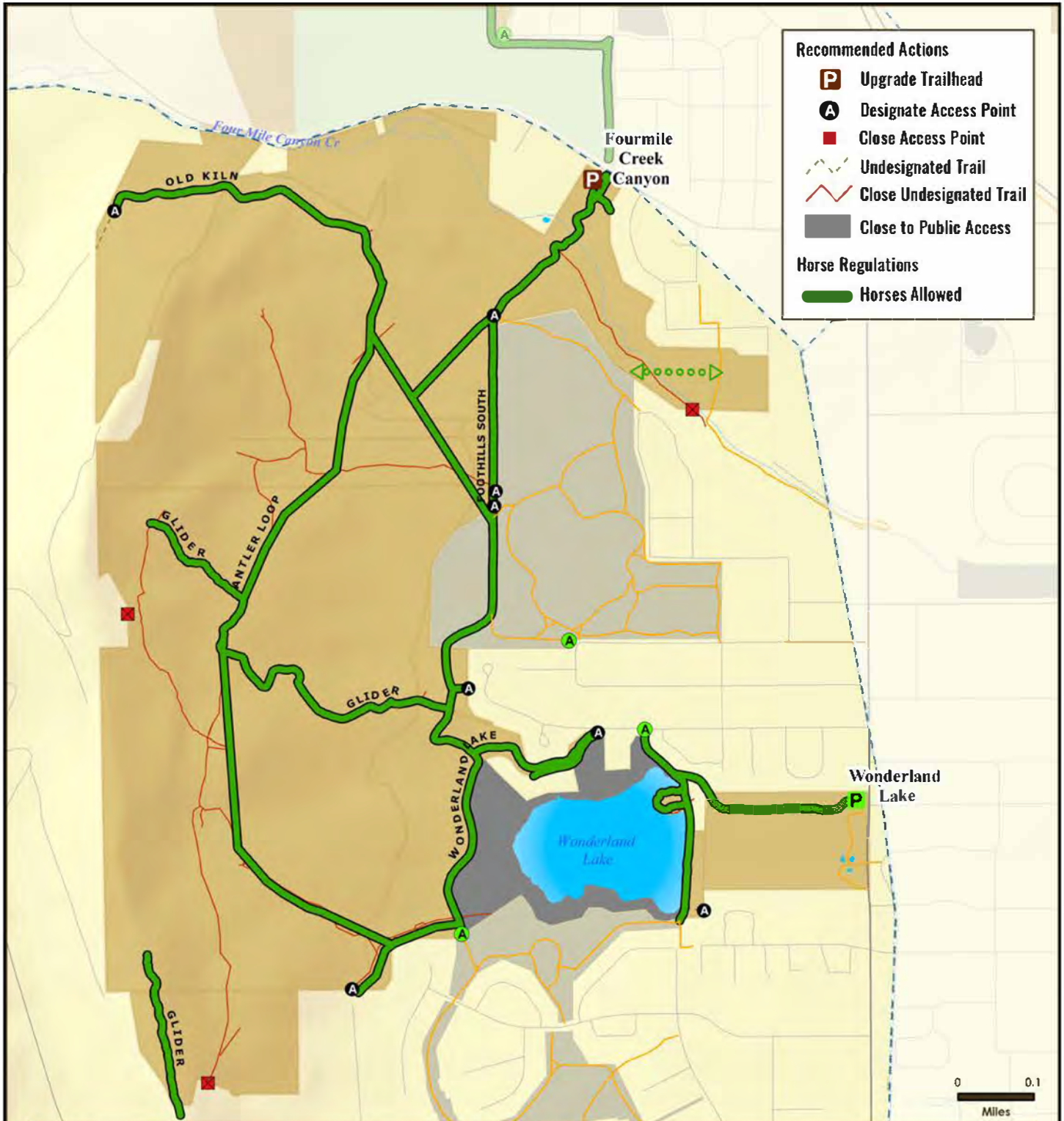




MAP 31: Wonderland Lake - Trail-Based Horse Regulations

TRAIL NAME	HORSE REGULATION
New Trails	
Wonderland Hill loop (Antler Loop)	Horses Allowed
Existing and Re-routed Trails with No Changes to Existing Horse Regulations	
Foothills South Trail	Horses Allowed
Old Kiln Trail	Horses Allowed
Re-routed Wonderland Hill glider access (Glider Access Trail)	Horses Allowed
Wonderland Hill south glider access off Pine Needle Road	Horses Allowed
Wonderland Lake trails	Horses Allowed
Wonderland Lake peninsula trail	Horses Allowed

Horses are allowed off-trail in this subarea.



- Recommended Actions**
- P** Upgrade Trailhead
 - A** Designate Access Point
 - Close Access Point
 - Undesignated Trail
 - Close Undesignated Trail
 - Close to Public Access
- Horse Regulations**
- Horses Allowed

MAP 31: Wonderland Lake - Trail-Based Horse Regulations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Trailhead

OSMP Access Point

Trail changes are depicted conceptually.
Actual trail alignments will differ.

Potential Future Connection

OSMP Hiking/Equestrian Trail

OSMP Multi-Use Trail

OSMP Gliding Access

Non-OSMP Managed Hiking Trail

Non-OSMP Managed Multi-Use Trail

North Trail Study Area Lands

OSMP Fee & Managed Property

Lands Not Included in the North Trail Study Area

OSMP Easement or
Jointly Owned, County-Managed Land

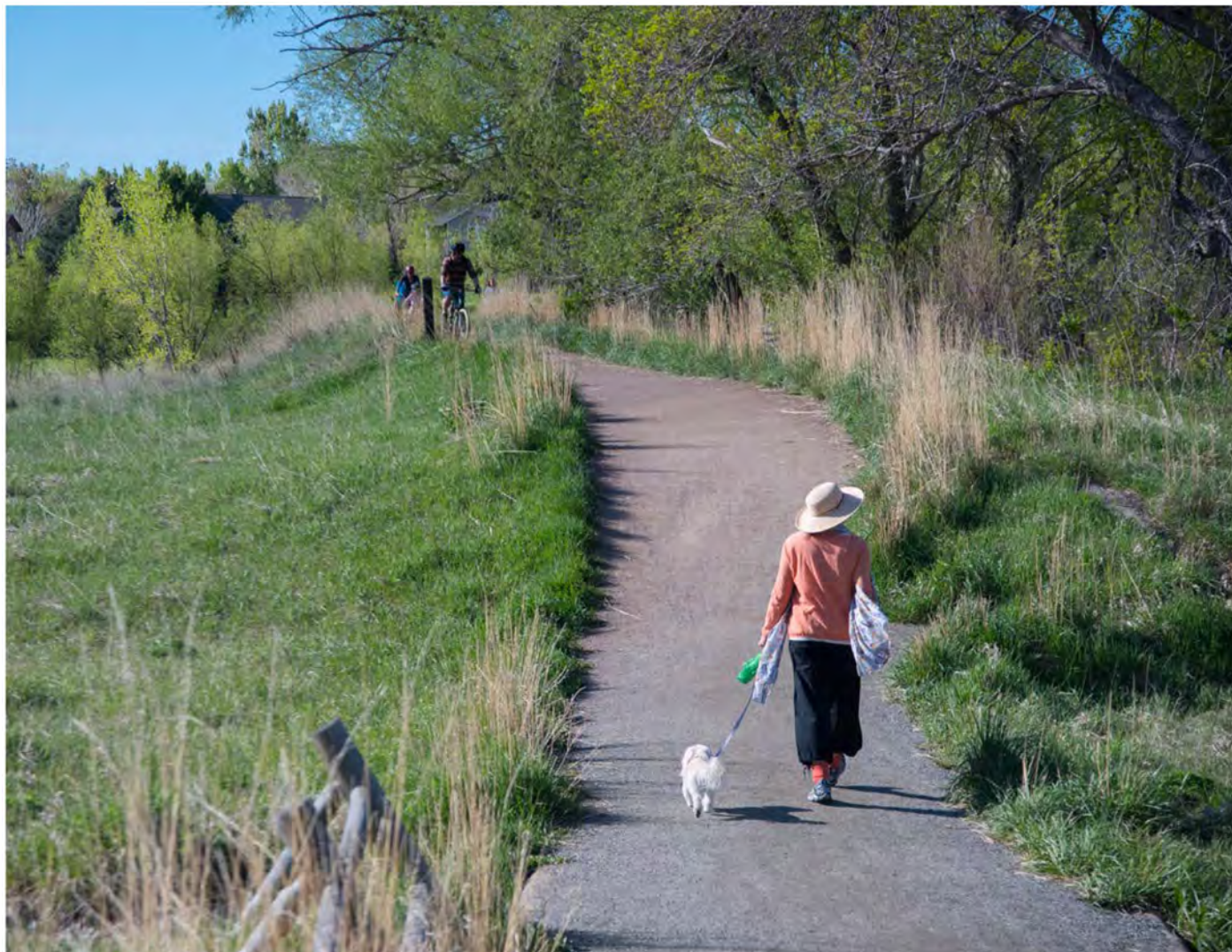
Other Government Land



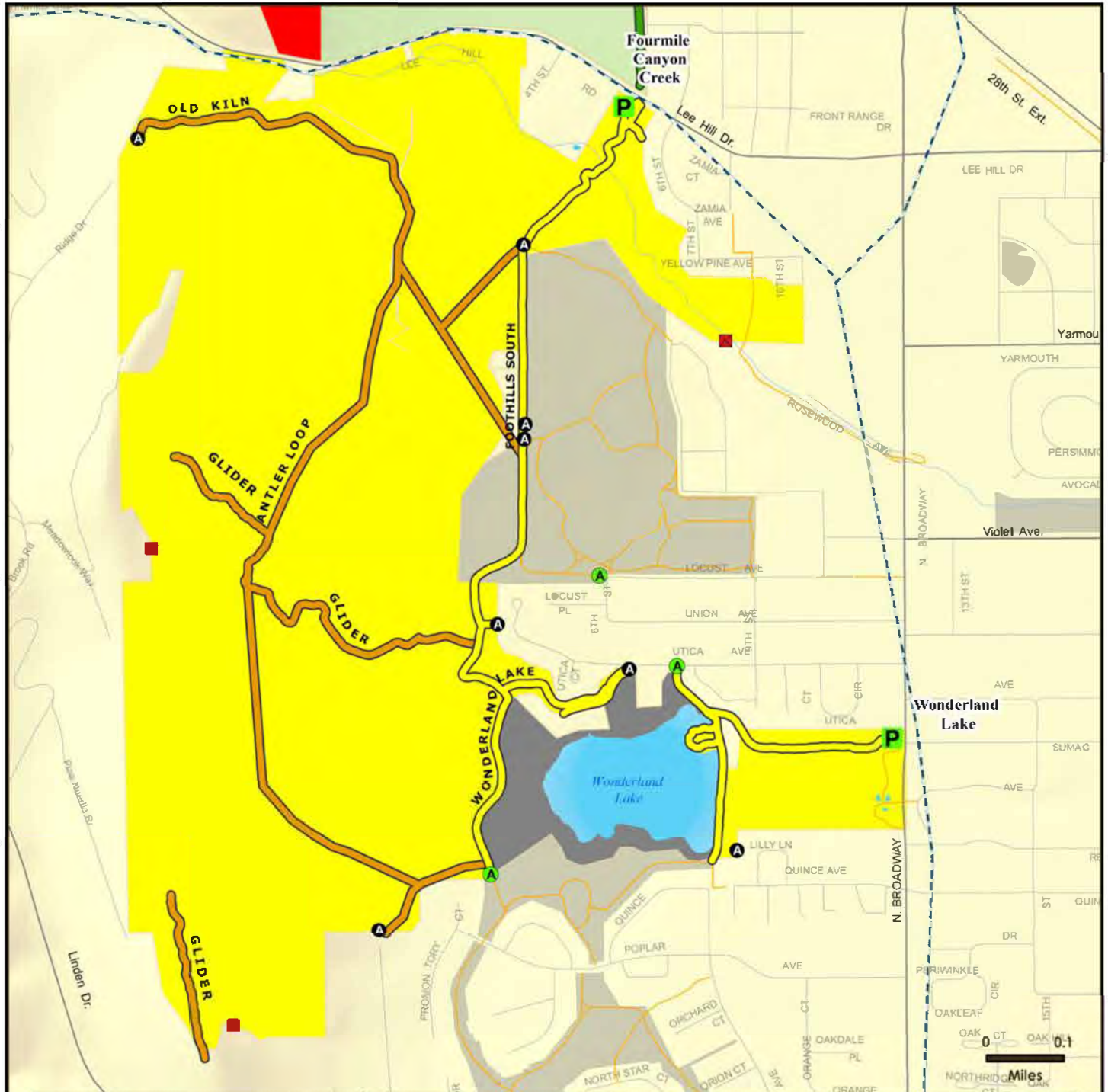


MAP 32: Wonderland Lake - Regulatory Settings

Visitor access regulations pertain to the management of activities both on- and off-trail. The regulatory settings map includes on-trail and off-trail specific regulations where public access is restricted year-round, areas with seasonal wildlife closures and on-trail and off-trail dog regulations.



Dog walker and cyclists at Wonderland Lake.



MAP 32: Wonderland Lake - Regulatory Settings



North Trail Study Planning Area



North Trail Study Subareas



OSMP Trailhead



OSMP Access Point

Visitor Access Regulations



New Access Point



Close Access Point

Trail Dog Regulations

Voice and Sight

On-Corridor Voice and Sight

Leash Required

Dogs Prohibited

Trail changes are depicted conceptually.
Actual trail alignments will differ.

Dog Regulation Areas

Voice and Sight Control

Leash Required

Dogs Prohibited

Closed to Public Access

Other Government Land

N





Background photo: View towards Haystack Mountain across hayfields.



North TSA Plan Recommendations

Northern Properties



MAP 33: Northern Properties - Management Area Designations

ACTION NP1 Designate Berman Brothers as an Agricultural Area.

*Interests Met: 3**

ACTION NP2 Designate Stratton property as a Natural Area.

*Interests Met: 4**

Primary Goal

- » Implement VMP direction to provide management area designations for undesignated properties.

Driving Factors/Benefits

- » Berman Brothers property has been designated as an agricultural land of statewide importance- suitable for hay or grazing with irrigation ditches.

Primary Goal

- » Implement VMP direction to provide management area designations for undesignated properties.

Driving Factors/Benefits

- » Protect important natural resources throughout the property.
- » Create healthy habitats for native amphibians, native fish and potentially Preble's meadow jumping mouse.

*See Appendix D for a list of interests met by each action.





ACTION NP3 Collaborate to create a connection between the North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex.

*Interests Met: 3**

ACTION NP4 Prohibit public access on Waldorf, Ryan, Andrea, Jacob, Bison, Oasis, Steele, Bennett, Stratton, Brewbaker, Berman Brothers, Dodd and Abbott properties.

ACTION NP5 Allow public access on Deluca, Hester and Campbell properties with seasonal closure (May 1 - July 31) for ground nesting bobolinks.

ACTION NP6 Allow public access on Johnson, Bruning and Schooley properties.

MAP 34: Northern Properties - Subarea-Wide Recommendations

- » As opportunities arise, collaborate with partner agencies to create regional connections in a way that minimizes natural resource impacts.

Primary Goal

- » Enhance regional connectivity and the creation of safe road crossings and trail connections.

Driving Factors/Benefits

- » Provide greater opportunities for visitors and interconnectivity among adjacent trail systems.
- » Coordination/collaboration among OSMP and partner agencies to accomplish regional connections.

Primary Goal

- » Conserve natural and agricultural resources.

Driving Factors/Benefits

- » The OSBT supported maintaining the current closed to public access status of these Northern Properties.

Primary Goal

- » Allow access to properties while protecting bobolinks and their habitat.

Driving Factors/Benefits

- » The OSBT supported the current access status of the Northern Properties except that the Deluca, Hester and Campbell properties be closed May 1 - July 31 for protection of ground nesting bobolinks.

Primary Goal

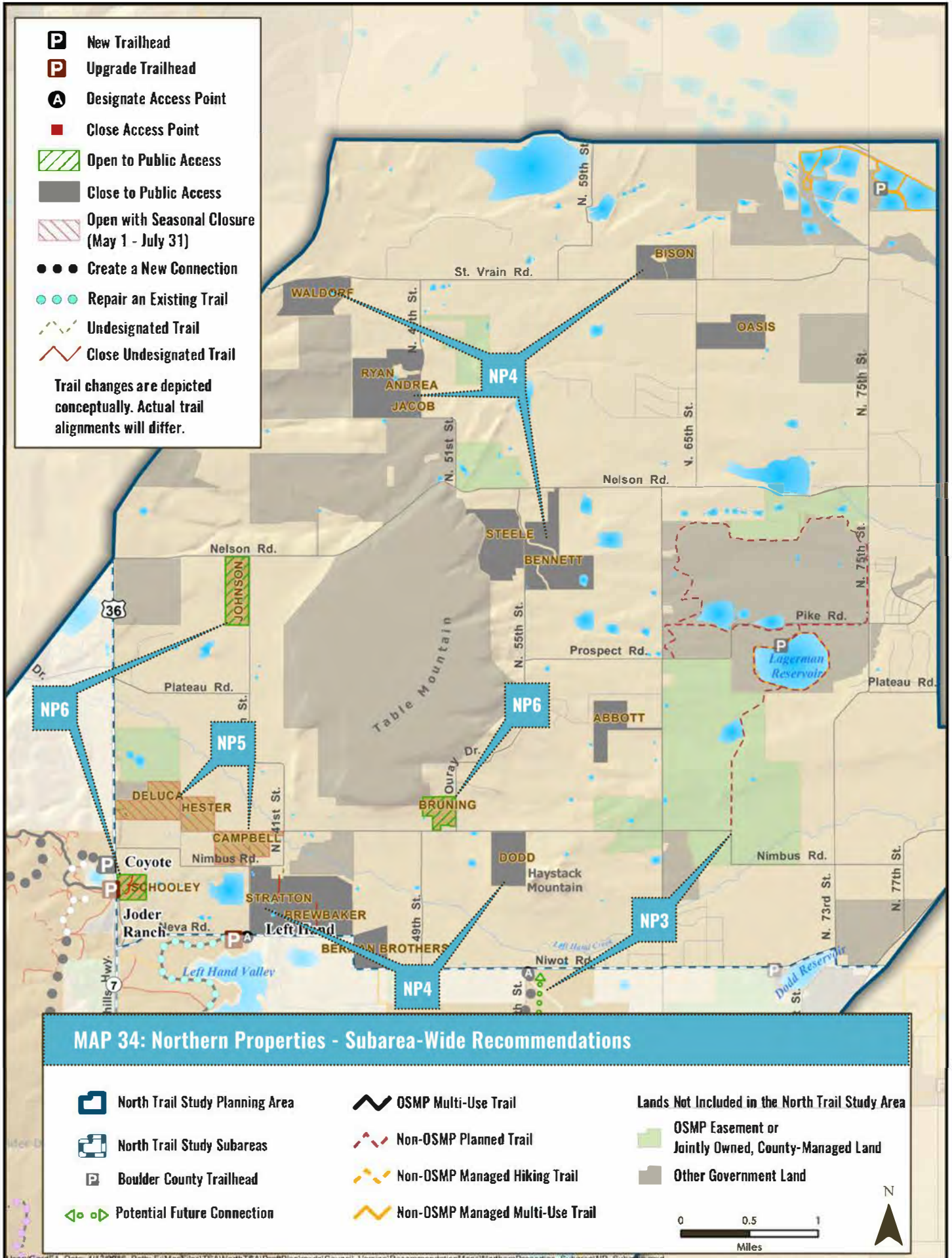
- » Allow access to properties where impacts to natural and agricultural resources are less of a concern.

Driving Factors/Benefits

- » The OSBT supported maintaining the current open to public access status of these Northern Properties.

IMPORTANT NOTE: The development of undesigned trails will be discouraged in the management of northern properties open to public access. Generally, future trail development on both open and closed northern properties will be evaluated in the context of regional trail connectivity, OSMP resources and be evaluated through regional planning processes to link existing trail networks and conserve important resources.

*See Appendix D for a list of interests met by each action.



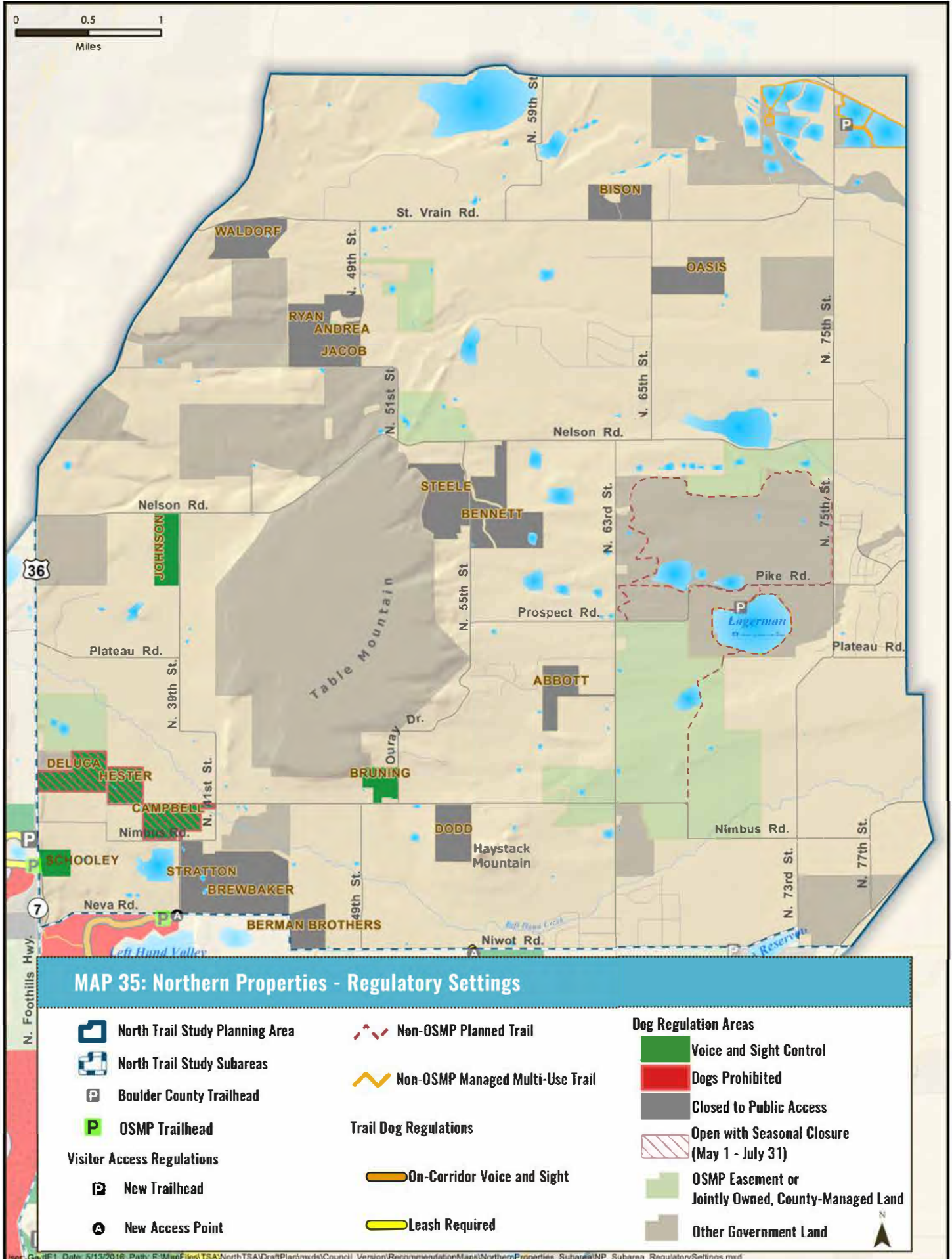


MAP 35: Northern Properties - Regulatory Settings

Visitor access regulations pertain to the management of activities both on- and off-trail. The regulatory settings map includes on-trail and off-trail specific regulations where public access is restricted year-round, areas with seasonal wildlife closures and on-trail and off-trail dog regulations.



A historic house on the Johnson property.





Background photo: Female Northern Harrier flying low over a field. © Dan Baldwin.



North TSA Plan Appendices

APPENDIX A: TSA-Wide and Subarea Maps

**APPENDIX B: City Council Meetings, Open Space Board of
Trustees Meetings and Summary of Community Engagement**

**APPENDIX C: Existing Infrastructure and
Recommended Improvements for Trailheads**

APPENDIX D: Recommended Actions and Interests Table

APPENDIX E: Scheduling and Estimated Costs for North TSA Projects

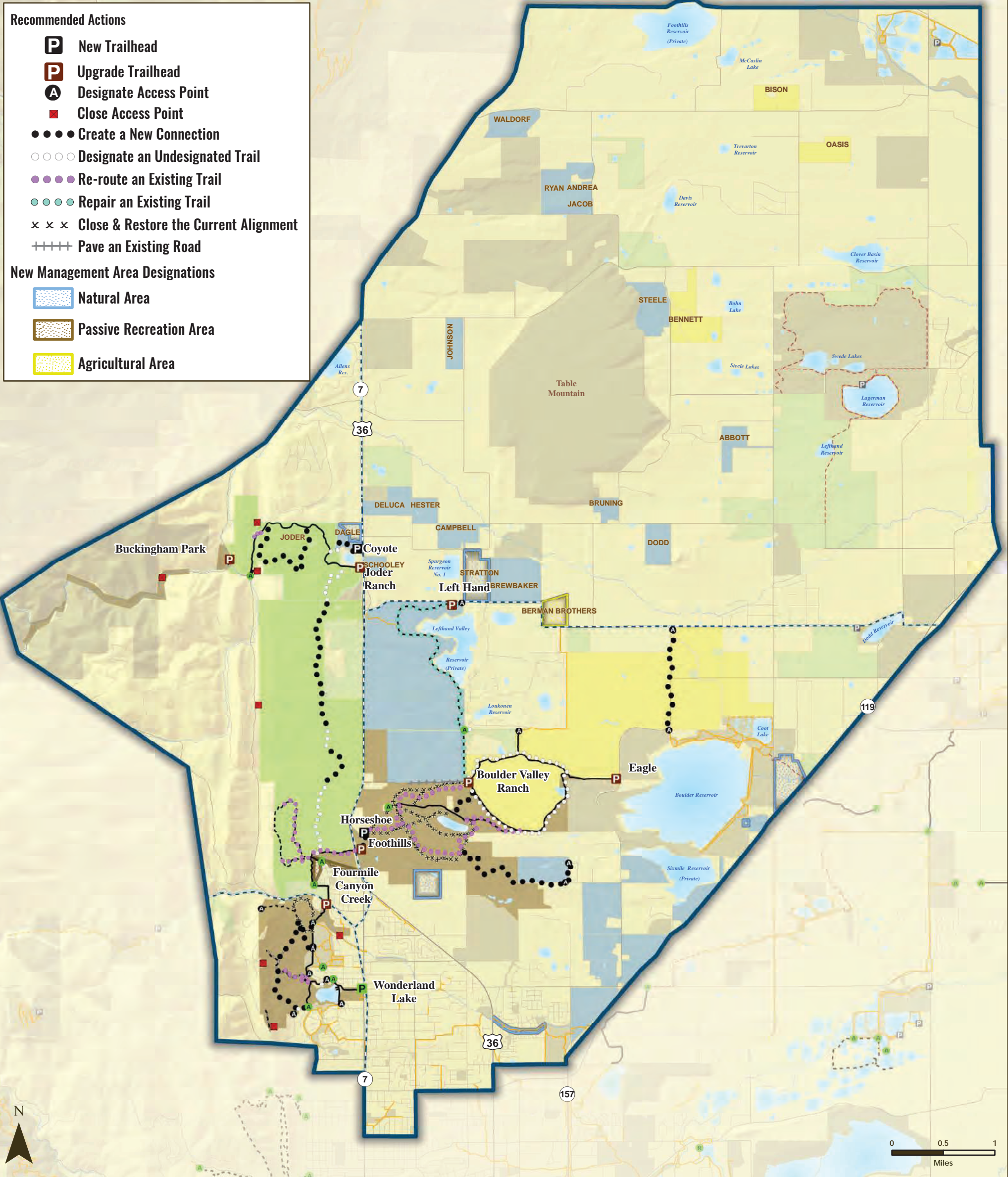
APPENDIX F: Feedback Themes Not Included in the Plan

APPENDIX G: Glossary

Appendix A



North Trail Study Area Plan



Management Area Designations





City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan

Recommended Actions

P

New Trailhead

A

Designate Access Point

■

Close Access Point

Undesignated Trail

Close Undesignated Trail

●●●

Create a new connection

○ ○ ○

Designate an undesignated trail

●●●

Re-route an Existing Trail

●●●

Repair an Existing Trail

× × ×

Close and Restore the current alignment

+++

Pave an Existing Road

◀●●●▶

Potential Future Connection

▨

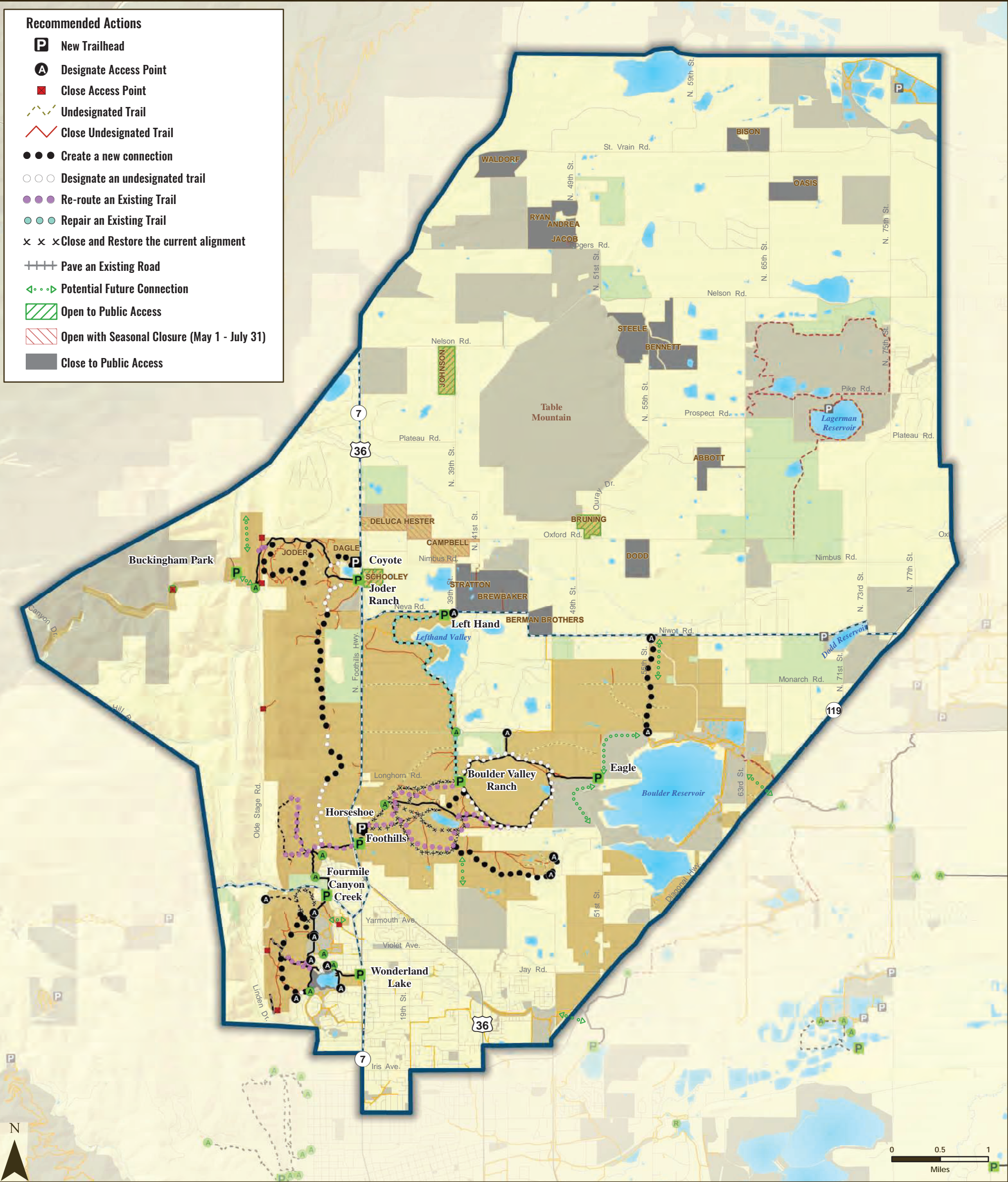
Open to Public Access

▨

Open with Seasonal Closure (May 1 - July 31)

■

Close to Public Access



North Trail Study Area Plan Recommendations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Trailhead

OSMP Access Point

OSMP Recreational Feature Access

Boulder County Trailhead

OSMP Hiking/Equestrian Trail

OSMP Multi-Use Trail

OSMP Gliding Access

Non-OSMP Managed Hiking Trail

Non-OSMP Managed Multi-Use Trail

Non-OSMP Planned Trail

OSMP Fee & Managed Property in the North TSA

OSMP Easement or Jointly Owned, County-Managed Land

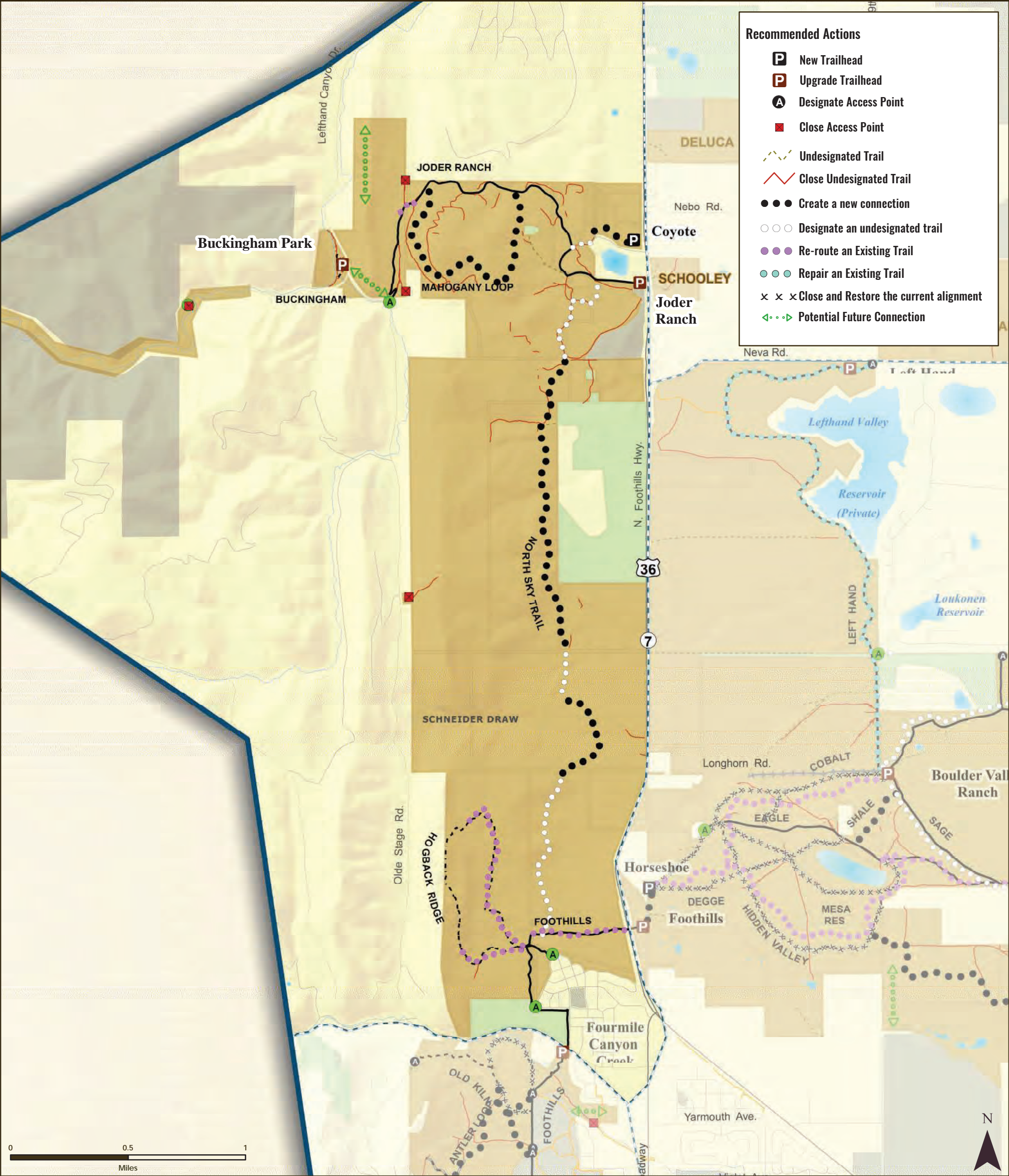
Other Government Land

Trail changes are depicted conceptually. Actual trail alignments will differ.



City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



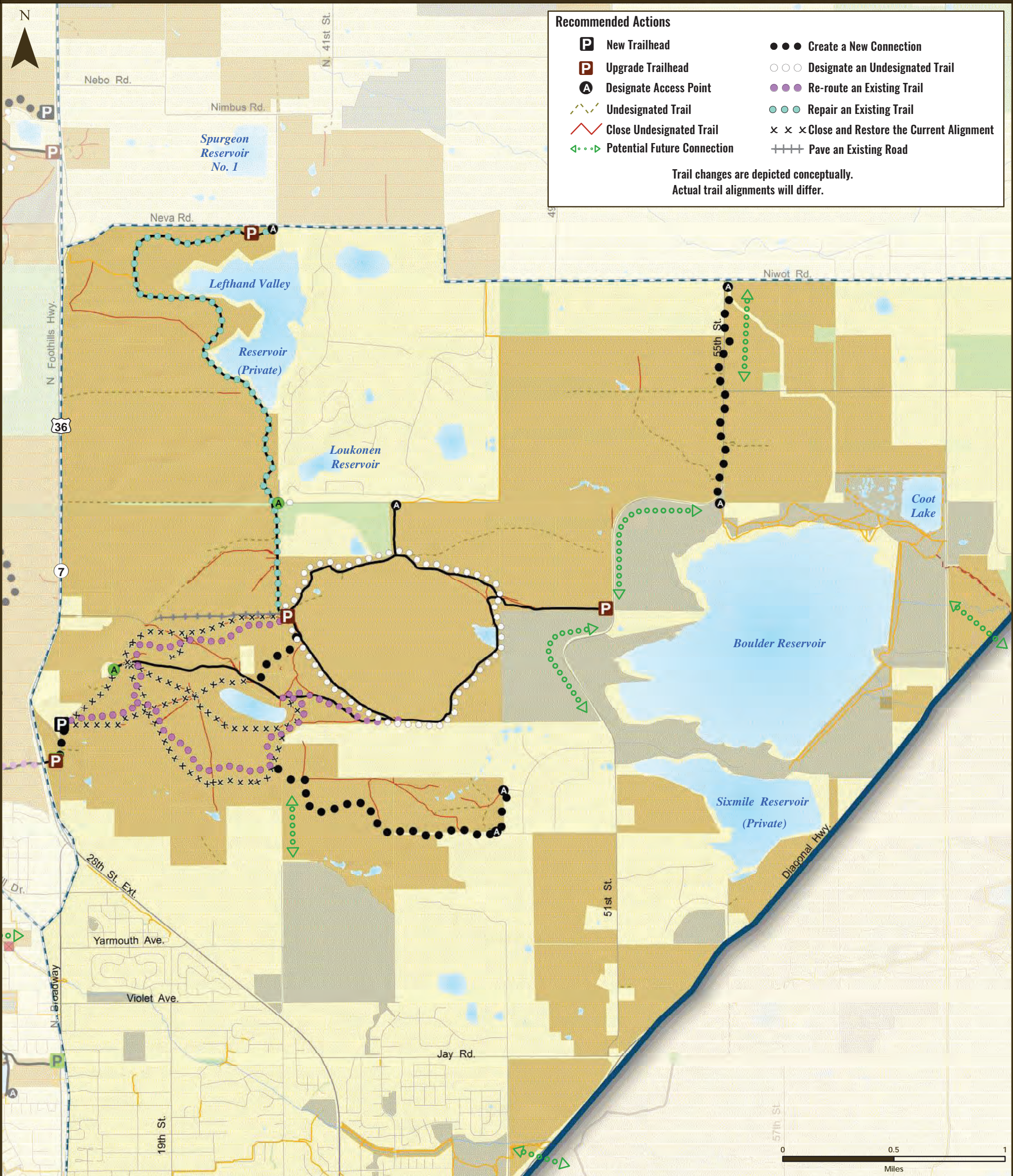
North Foothills Subarea Recommendations





City of Boulder Open Space and Mountain Parks North Trail Study Area Plan

Date: 5/11/2016



Boulder Valley Ranch Subarea Recommendations

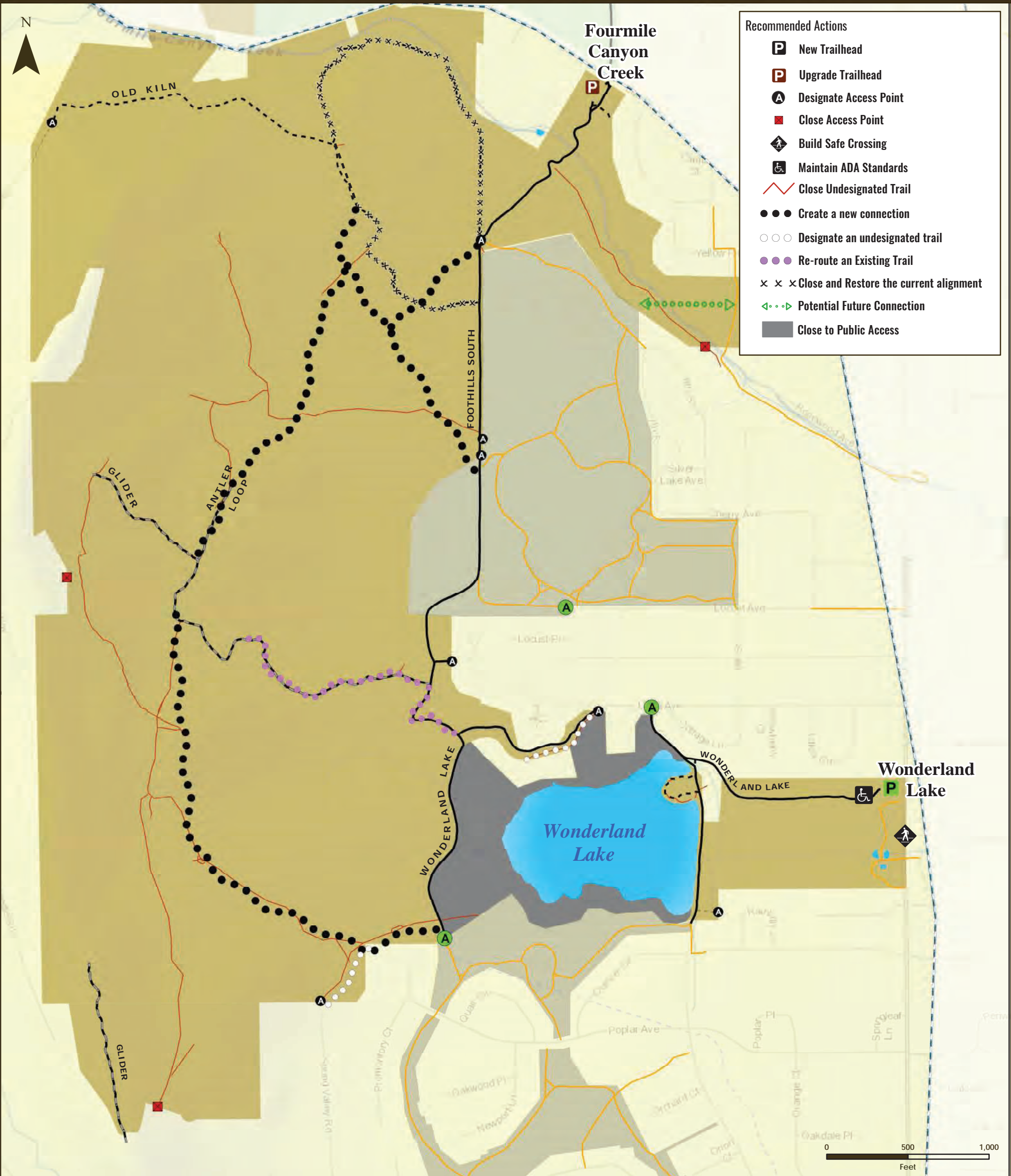
- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail
- Non-OSMP Planned Trail

- ### North Trail Study Area Lands
- OSMP Fee & Managed Property in the North TSA
- ### Lands Not Included in the North Trail Study Area
- OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land



North Trail Study Area Plan

Date: 5/11/2016



Wonderland Lake Subarea Recommendations

- | | | |
|----------------------------------|----------------------------------|---|
| North Trail Study Planning Area | OSMP Hiking/Equestrian Trail | OSMP Fee & Managed Property in the North TSA |
| North Trail Study Subareas | OSMP Multi-Use Trail | OSMP Easement or Jointly Owned, County-Managed Land |
| OSMP Trailhead | OSMP Gliding Access | Other Government Land |
| OSMP Access Point | Non-OSMP Managed Hiking Trail | |
| OSMP Recreational Feature Access | Non-OSMP Managed Multi-Use Trail | |
| Boulder County Trailhead | Non-OSMP Planned Trail | |

Trail changes are depicted conceptually. Actual trail alignments will differ.



City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan

Recommended Actions

P

New Trailhead

P

Upgrade Trailhead

A

Designate Access Point

■

Close Access Point

Undesignated Trail

Close Undesignated Trail

●●●

Create a new connection

○ ○ ○

Designate an undesignated trail

● ● ●

Re-route an Existing Trail

● ● ●

Repair an Existing Trail

× × ×

Close and Restore the current alignment

◀ ◯ ▶

Potential Future Connection

▨

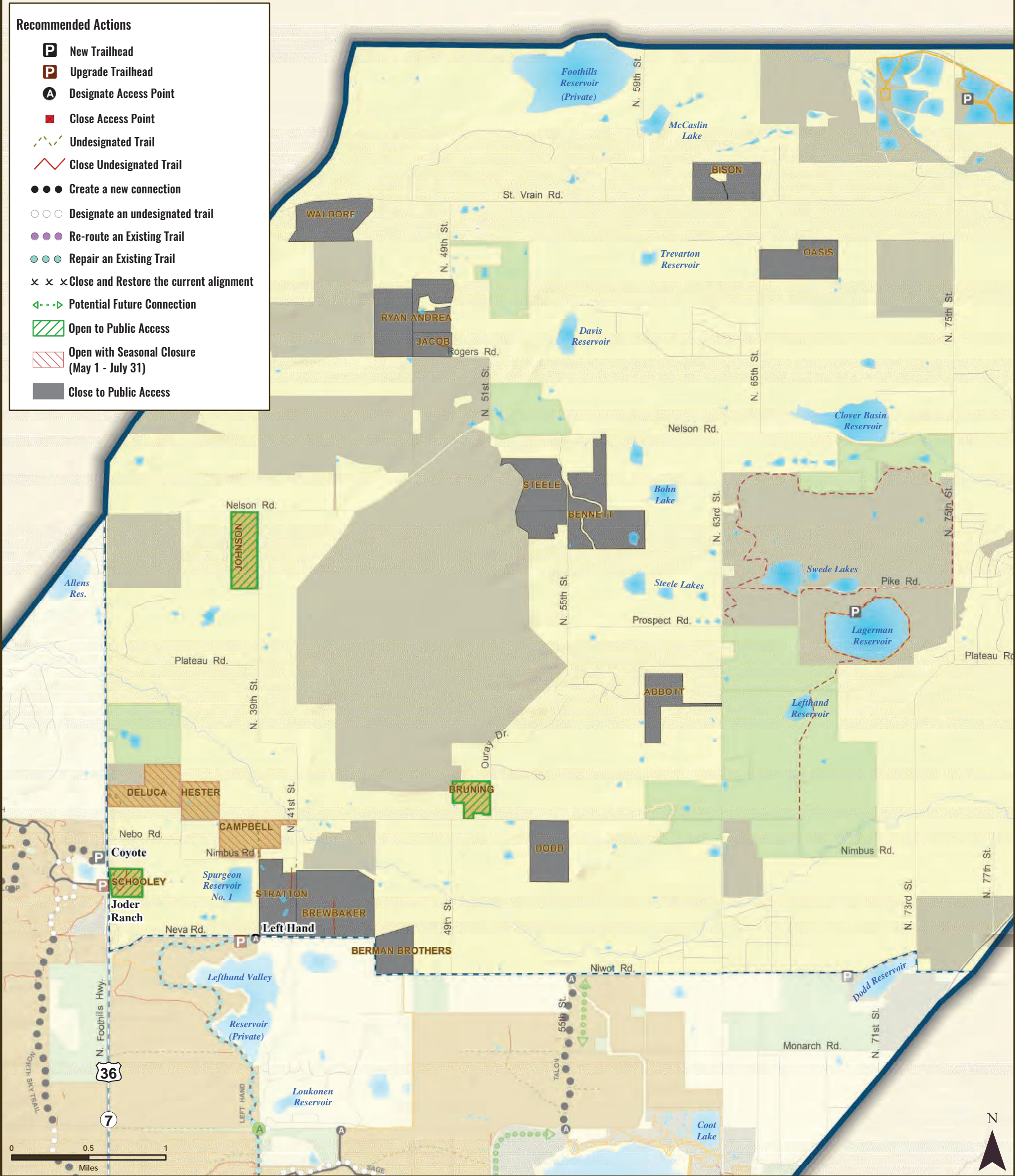
Open to Public Access

▨

Open with Seasonal Closure
(May 1 - July 31)

■

Close to Public Access



Northern Properties Subarea Recommendations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Trailhead

OSMP Access Point

OSMP Recreational Feature Access

Boulder County Trailhead

OSMP Hiking/Equestrian Trail

OSMP Multi-Use Trail

OSMP Gliding Access

Non-OSMP Managed Hiking Trail

Non-OSMP Managed Multi-Use Trail

Non-OSMP Planned Trail

OSMP Fee & Managed Property in the North TSA

OSMP Easement or Jointly Owned, County-Managed Land

Other Government Land

Trail changes are depicted conceptually. Actual trail alignments will differ.

A-8



City of Boulder Open Space and Mountain Parks

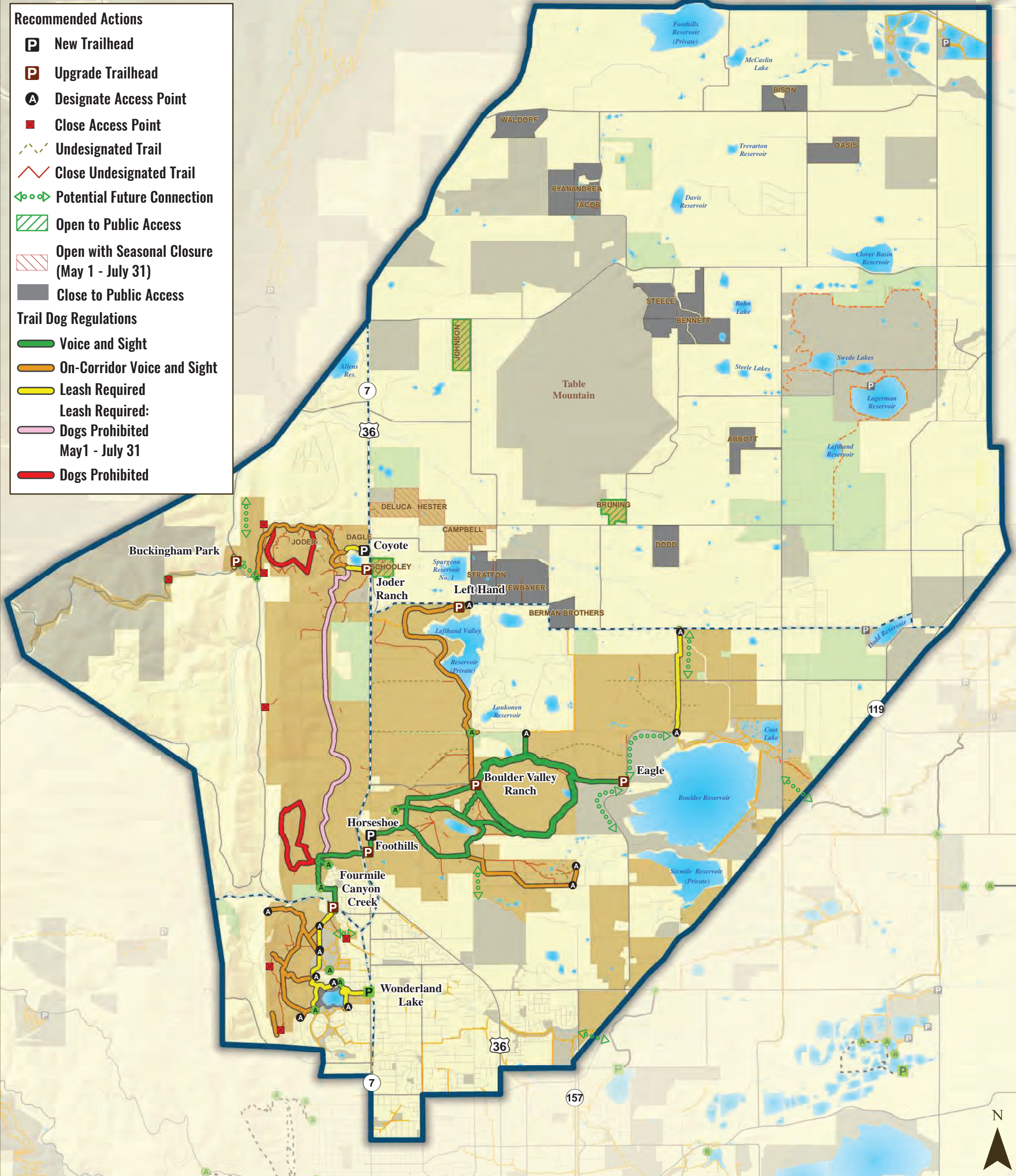
North Trail Study Area Plan

Recommended Actions

- New Trailhead
- Upgrade Trailhead
- Designate Access Point
- Close Access Point
- Undesignated Trail
- Close Undesignated Trail
- Potential Future Connection
- Open to Public Access
- Open with Seasonal Closure (May 1 - July 31)
- Close to Public Access

Trail Dog Regulations

- Voice and Sight
- On-Corridor Voice and Sight
- Leash Required
- Leash Required: Dogs Prohibited May 1 - July 31
- Dogs Prohibited



North Trail Study Area Dog Recommendations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Trailhead

OSMP Access Point

OSMP Recreational Feature Access

Boulder County Trailhead

Non-OSMP Managed Hiking Trail

Non-OSMP Managed Multi-Use Trail

Non-OSMP Planned Trail

North Trail Study Area Lands

- OSMP Fee & Managed Property in the North TSA
- Lands Not Included in the North Trail Study Area**
 - OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land



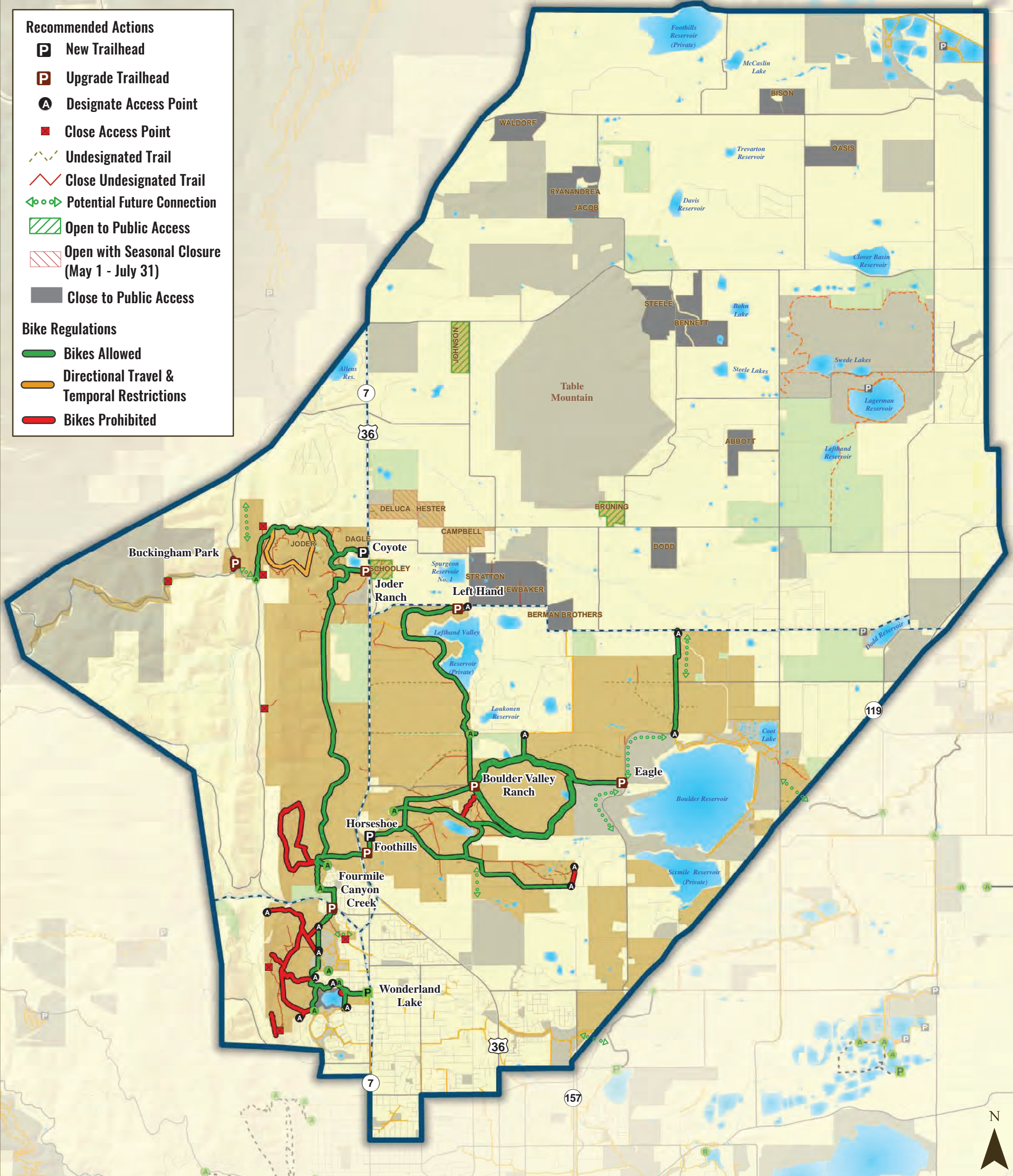
North Trail Study Area Plan

Recommended Actions

- New Trailhead
- Upgrade Trailhead
- Designate Access Point
- Close Access Point
- Undesignated Trail
- Close Undesignated Trail
- Potential Future Connection
- Open to Public Access
- Open with Seasonal Closure (May 1 - July 31)
- Close to Public Access

Bike Regulations

- Bikes Allowed
- Directional Travel & Temporal Restrictions
- Bikes Prohibited



North Trail Study Area Bike Recommendations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Trailhead

OSMP Access Point

OSMP Recreational Feature Access

Boulder County Trailhead

Non-OSMP Managed Hiking Trail

Non-OSMP Managed Multi-Use Trail

Non-OSMP Planned Trail

North Trail Study Area Lands

OSMP Fee & Managed Property in the North TSA

Lands Not Included in the North Trail Study Area

OSMP Easement or Jointly Owned, County-Managed Land

Other Government Land

0 0.5 1 Miles



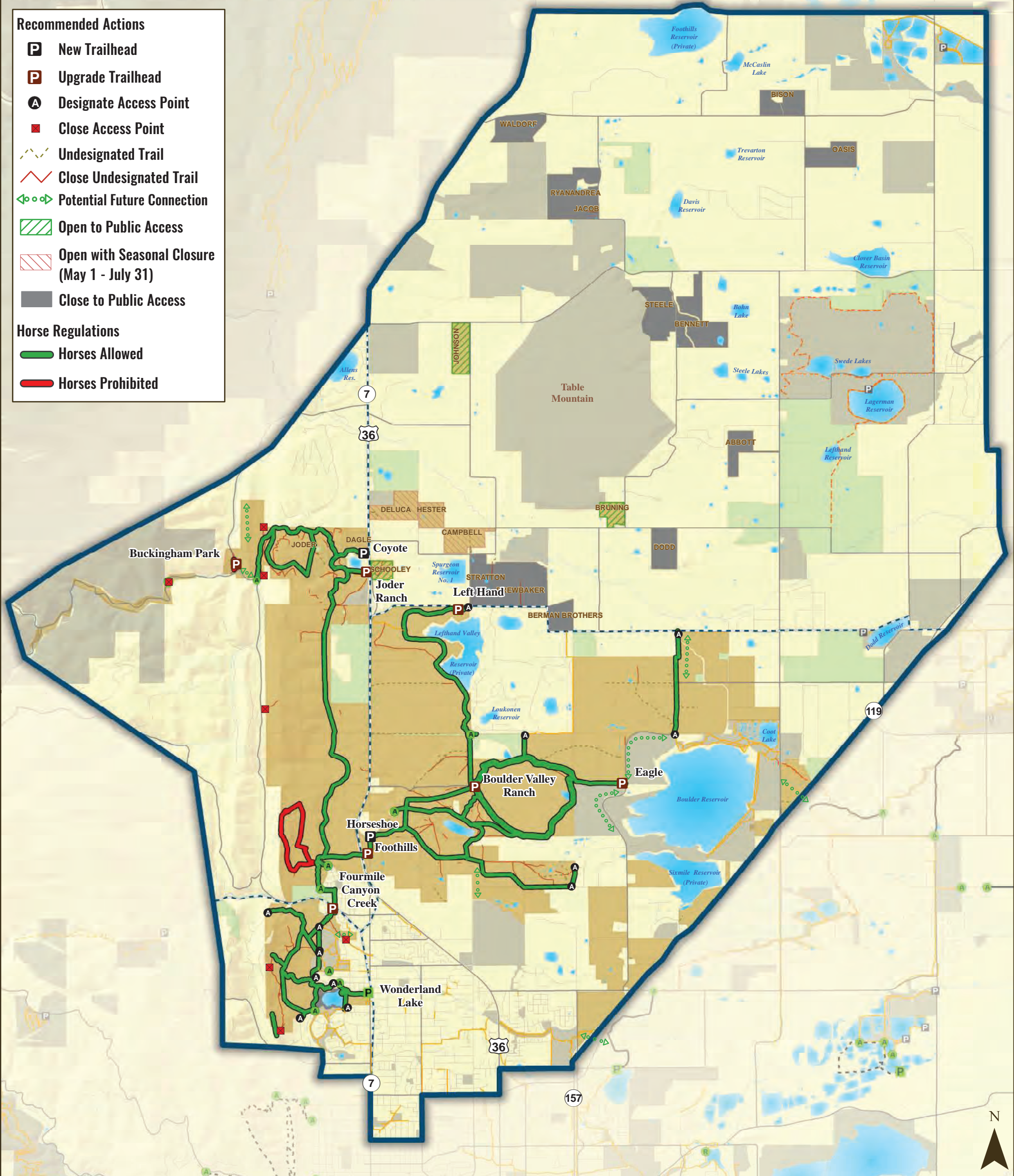
North Trail Study Area Plan

Recommended Actions

- New Trailhead
- Upgrade Trailhead
- Designate Access Point
- Close Access Point
- Undesignated Trail
- Close Undesignated Trail
- Potential Future Connection
- Open to Public Access
- Open with Seasonal Closure (May 1 - July 31)
- Close to Public Access

Horse Regulations

- Horses Allowed
- Horses Prohibited



North Trail Study Area Horse Recommendations

North Trail Study Planning Area

North Trail Study Subareas

OSMP Trailhead

OSMP Access Point

OSMP Recreational Feature Access

Boulder County Trailhead

Non-OSMP Managed Hiking Trail

Non-OSMP Managed Multi-Use Trail

Non-OSMP Planned Trail

North Trail Study Area Lands

OSMP Fee & Managed Property in the North TSA

Lands Not Included in the North Trail Study Area

OSMP Easement or Jointly Owned, County-Managed Land

Other Government Land

0 0.5 1 Miles



- North Trail Study Planning Area**

 - North Trail Study Subareas
 - HCA Boundary
 - OSMP Access Point

Visitor Access Regulations

 - New Trailhead
 - New Access Point
 - Close Access Point

Trail Dog Regulations

 - Voice and Sight
 - On-Corridor Voice and Sight
 - Leash Required
 - Leash Required; Seasonal Closure May 1 - July 31
 - Dogs Prohibited

Dog Regulation Areas

 - Voice and Sight Control
 - Leash Required
 - Dogs Prohibited
 - Seasonal Raptor Closure
 - Open with Seasonal Closure (May 1 - July 31)
 - Closed to Off-Trail Public Access
 - Closed to Public Access

Land Ownership

 - OSMP Easement or Jointly Owned, County-Managed Land
 - Other Government Land

Appendix B

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Appendix B: City Council Meetings, Open Space Board of Trustees Meetings and Summary of Community Engagement

The City Council held one study session and one public hearing to review and ultimately accept the North TSA Plan.

City Council Meetings and Study Sessions		
Date	Type of Meeting Discussion	Topic
June 7, 2016	Public Hearing	North TSA Plan
May 24, 2016	Study Session	North TSA Draft Plan

The OSBT hosted the North TSA process and with Open Space and Mountain Parks (OSMP) staff held nine public meetings, four study sessions and three public hearings to gather public input and comment, to provide feedback to staff on the planning process, to evolve plan scenarios, to approve plan sideboards, to determine which scenario to use as the basis for the draft plan and to review and recommend the draft plan for Boulder City Council acceptance.

OSBT Meetings and Study Sessions		
Date	Type of Meeting Discussion	Topic
March 9, 2016	Public Hearing	North TSA Draft Plan
February 10, 2016	Public Hearing	North TSA Updated Refined Scenarios
January 13 and 14, 2016	Study Session	North TSA Refined Scenarios
December 9, 2015	Update	North TSA Update
November 16, 2015	Study Session	North TSA Preliminary Scenarios
October 14, 2015	Update	North TSA Update
September 9, 2015	Update	North TSA Update
August 12, 2015	Study Session	North TSA Interests
July 8, 2015	Update	North TSA and Youth Engagement Update
June 15, 2015	Public Hearing and Update	North TSA Sideboards and Update on North TSA Planning Process and Inventory and Assessment Report
May 15, 2015	Update	North TSA Update
April 8, 2015	Matters	Draft Board Editorial for the North TSA Plan

March 11, 2015	Update	North TSA Update
February 18, 2015	Study Session	North TSA Scope, Goals, Process and Public Engagement Strategy

How the public engaged in the North TSA Plan

- Nine community workshops
- On-site, local store-front, neighborhood and Latino community engagement
- Inspire Boulder, the city's internet-based participatory platform
- Email and social media submissions
- Youth engagement

Community Workshops

Four community workshops were held during which the community shared their thoughts on important resources within the North TSA, the proposed plan sideboards and their interests in the North TSA. Two informational panels were held where experts informed the community about visitor and natural resource management strategies. Two workshops were held to unveil and refine preliminary scenarios and a final workshop was held to unveil and continue to revise the refined scenarios.

Community Workshops	
Date	Topic
December 10, 2015	Community Information Session and Workshop for Refined Scenarios for the North TSA
October 19, 2015	Community Workshop to Refine Preliminary Scenarios for the North TSA
October 5, 2015	Community Workshop to Learn About and Provide Feedback on Preliminary Scenarios for the North TSA
September 2, 2015	Expert Panel on Natural Resources
August 26, 2015	Expert Panel on Trail Sustainability and Visitor Experience
June 27, 2015	Community Workshop to Discuss Interests in the North TSA
June 24, 2015	Community Workshop to Discuss Interests in the North TSA
May 6, 2015	Community Workshop to Kick Off Development of the North TSA Plan
May 2, 2015	Community Workshop to Kick Off Development of the North TSA Plan

On-site, local store-front, neighborhood and Latino community engagement

OSMP staff conducted on-site engagement in the North TSA and went into the community to collect information from community members at trailheads and local coffee shops. Community members shared what they thought needed to be improved, changed or preserved within the North TSA and why. OSMP staff also engaged with the Latino community by attending an event at Holiday Park.

Written and Electronic Communications

OSMP received close to 1,000 separate comments during the development of the North TSA Plan from the NorthTSA.org web page, e-mails, comments submitted through Inspire Boulder, social media submissions and written letters. OSMP created several compendia of public input containing the individual comments submitted as part of the North TSA planning process.

Youth Engagement

Open Space and Mountain Parks partnered with Growing Up Boulder to engage children and youth in the North TSA planning process through the following events.

Youth Engagement	
Date	Event/Topic
July 11, 2015	Family Day at Wonderland Lake was an opportunity for children and families to provide feedback on what they'd like to see in the North TSA and why.
June - July, 2015	Five OSMP Junior Ranger crews provided feedback on what they do and don't like about the conditions in the North TSA.
June 2015	Boulder Journey School pre-schoolers shared what they value about open space during a fieldtrip to Wonderland Lake.
May 1, 2015	Youth Advisory Board high school students provided input on effective ways to involve youth in the North TSA planning process.

Appendix C

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Appendix C: Existing Infrastructure and Recommended Improvements for Trailheads

In 2008, OSMP classified all trailheads based on visitation levels. Information from the 2004-05 Visitor Survey and staff knowledge was used to estimate the visitation levels. The following table displays types of trailheads. The estimated visitation for each category breaks down as follows: 1-9,999 visits per year were classified as very low, 10-24,999 as low, 25,000-74,999 as medium and $\geq 75,000$ as high.

Types of Trailheads		
Class	Description	Estimated Use
TH1	Simple/Minor Developed Trailhead	Very Low to Low Use
TH2	Developed/Improved Trailhead	Medium Use
TH3	Fully Developed Trailhead	High Use

Each class has associated amenities that must be present to comply with the standard. OSMP inventoried all the trailheads in the North TSA and identified the improvements needed to bring sites up to standards. The following table lists what is currently present at the sites and what is needed.

Trailhead Name	Class	Existing Infrastructure	What is Needed
Joder Interim	T1	Kiosk Dog Station Dog Compost Station Parking Bollard (wooden) Bike Rack Trash Can Parking Spaces (5) Horse Trailer Parking Spaces (2)	Reflector Sticks Near Large Rocks and Other Hazards Fencing
Lefthand	T1	Kiosk Fencing Bike Rack Trash Can Parking Bollard (wooden) Parking Spaces (36)	Reflectors on Fence Parking ADA Parking Space (1) Vehicle Gate at Entry Dog Station Dog Compost Station
Sage/Boulder Valley Ranch	T2	Kiosk	Replace Outhouse











Trailhead Name	Class	Existing Infrastructure	What is Needed
		Dog Station Dog Compost Station Fencing Outhouse (ADA toilet is not up to standards) Bike Rack Trash Can Parking Spaces (18) ADA Parking Space (1)	Parking Bollard Reflectors on Fence Parking No Parking Along Longhorn Road
Eagle	T2	Kiosk Dog Station Dog Compost Station Fencing Bike Rack Trash Can Parking Spaces (24)	ADA Parking Space Parking Bollard Vehicle Gate at Entry Reflectors on Fence Parking Horse Trailer Parking
Foothills	T2	Kiosk Dog Station Fencing Bike Rack Trash Can Parking Spaces (17)	ADA parking space Parking Bollard Reflectors on Fence Parking Larger/wider vehicle entrance Widen Trailhead to the South Dog Compost Station Horse Trailer Parking
Fourmile Canyon Creek	T3	Kiosk Dog Station Fencing Bike Rack Trash Can Parking Spaces (37) ADA Parking Spaces (4)	Resurface Trailhead Parking Bollard Reflector Sticks Near Large Rocks and Other Hazards Reflectors on Fence Parking Larger/wider vehicle entrance Re-align kiosk/dog station Dog Compost Station New Kiosk and Entrance Sign
Wonderland Lake	T2	Kiosk Dog Station Fencing Picnic Tables Bike Rack Trash Can Parking Spaces (20) ADA Parking Spaces (2)	To be determined with Foothills Nature Center site planning.
Buckingham Park	T3	Kiosk Fencing Outhouse (ADA toilet)	Replace Outhouse Parking Bollard Reflectors on Fence Parking








Trailhead Name	Class	Existing Infrastructure	What is Needed
		Picnic Tables (3) Bike Rack Trash Cans (2 sets of 2; 1 recycle) Grills (1) Parking Spaces (35) ADA Parking Space (1)	Reflector Sticks Near Large Rocks and Other Hazards Dog Station Dog Compost Station





















Appendix D
























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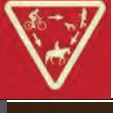



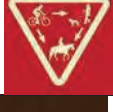



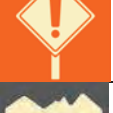




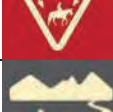

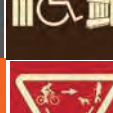






Appendix D: Recommended Actions and Interests Table















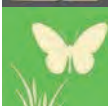
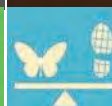





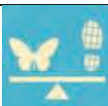

North TSA Interests			
Improved Visitor Experience		Improved Connectivity	
Conservation of Resources (Natural/Agricultural/Cultural)		Balance of Recreation and Resource Conservation	
Improved Access and Accessibility		Increased Safety	
Honoring Community Values and Commitments		Decreased Visitor Conflict	
Increased Education and Understanding		Effective Planning Process and Plan Implementation	




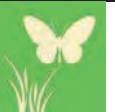

















Reference Number(s) and Action Title	Action	Interests
TSA-Wide		
T1 to T9 Provide management area designations for properties without designations to guide management actions.	<ul style="list-style-type: none"> Retain the Joder and Cox property designation (T1) as a Habitat Conservation Area (HCA) and implement as part of the North Foothills HCA. Designate Dagle II (T2), Stratton (T5), Lappin (T6), IBM open space easement (T7), Hart-Jones Exchange (T8) and Palo Park (T9) properties as Natural Areas. Limit public access to on trail travel on IBM open space easement property. Designate Dakota Ridge Village (T3) property as a Passive Recreation Area. Designate Berman Brothers (T4) as an Agricultural Area. 	   
T10 to T15 Collaborate with partner agencies to create regional connections.	<p>As opportunities arise, collaborate with partner agencies to create the following regional trail connections in a way that minimizes natural resource impacts.</p> <ul style="list-style-type: none"> (T10) North TSA to Boulder County Parks and Open Space's Heil Valley Ranch. The North TSA Plan does not preclude future public planning processes to assess a regional connector trail connection to Heil Ranch on the Buckingham property. (T11) North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex. (T12) A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project. (T13) IBM Connector Trail underpass and trail (<i>construction pending</i>). (T14) Fourmile Canyon Creek Trail underpass to Cottonwood Trail (<i>construction pending</i>). 	  

Reference Number(s) and Action Title	Action	Interests
T16 to T20 Collaborate with partner agencies to create local trail connections.	<ul style="list-style-type: none"> • (T15) Eagle Trail to the planned Boulder Reservoir Trail. <p>As opportunities arise, collaborate with partner agencies to create the following local trail connections in a way that minimizes natural resource impacts.</p> <ul style="list-style-type: none"> • (T16) Joder Trail to Buckingham Park via Olde Stage Road (<i>in progress</i>). • (T17) Joder Ranch and Boulder County's Six-Mile Fold. Boulder County will conduct its own public planning process to determine access and management of visitors on Six Mile Fold. OSMP will coordinate with the county's planning efforts to determine if and where trails could be located in this area. • (T18) City of Boulder's Area III park site to the North TSA. • (T19) Boulder Reservoir to Niwot Road. • (T20) Fourmile Canyon Creek Greenway path to Foothills Community Park. 	  
T21 Designate undesignated access points that connect with new or existing designated trails.		   
T22 Bring all trails up to standards.	Conduct maintenance activities to bring trails up to OSMP sustainable trail guidelines.	   
T23 Bring all trailheads and access points up to standards.	Update, replace and install infrastructure to bring existing trailheads and access points up to OSMP standards.	   
T24 Remove unnecessary fencing and use wildlife friendly fencing.	Remove fencing that is no longer serving a function and when modifying or installing fencing in implementation of the North TSA, ensure fencing is wildlife friendly.	  
T25 Allow natural revegetation or restore all undesignated trails not integrated into designated trail connections.		 




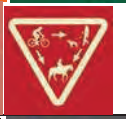






Reference Number(s) and Action Title	Action	Interests
		 
T26 Assess and prevent the introduction and spread of priority invasive plants.	Assess and prevent the introduction and spread of priority invasive plants along new trail connections and decommissioned or undesignated trail sections under restoration.	 
T27 Create interpretive information and messages about unique, rare and sensitive resources.		 
North Foothills Subarea		
NF1 Retain the Joder property as a Habitat Conservation Area (HCA).	Retain the management area designation and include as part of the North Foothills HCA.	   
NF2 Designate Dagle II property as a Natural Area.		 
NF3 Designate Dakota Ridge Village property as a Passive Recreation Area.		 
NF4 Collaborate to create a trail connection from North TSA to Boulder County Parks and Open Space's Heil Valley Ranch.	As opportunities arise, collaborate with partner agencies to create regional trail connections in a way that minimizes natural resource impacts. The North TSA Plan does not preclude future public planning processes to assess a regional trail connection to Heil Ranch on the Buckingham property.	  
NF5 Collaborate to create a connection from Joder Ranch Trail to Buckingham Park via Olde Stage Road (in progress).	As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts.	  
NF6 Collaborate to create a connection between Joder Ranch and Boulder County's Six-Mile Fold property.	As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts. Boulder County will conduct its own public planning process to determine access and management of visitors onto Six-Mile Fold. OSMP will coordinate with the county's planning efforts to determine if and where trails could be located to provide access to	  























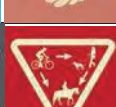

Reference Number(s) and Action Title	Action	Interests
	this area and minimize natural resource impacts.	
NF7 Close Cottonwood Recreation Area.		 
NF8 Realign western section of the Interim Joder Trail near the Buckingham property. (Joder Ranch Trail)		   
NF9 Construct one loop trail on the northwest section of the Joder property. (Mahogany Loop)		   
NF10 Construct a new trailhead for passenger vehicle parking on the Dagle/Wright properties. (Coyote Trailhead)		   
NF11 Construct a connector trail from the new trailhead (Coyote Trailhead) on the Dagle property to the Joder Ranch Trail.		    
NF12 Retain Interim Joder Trailhead. (Joder Ranch Trailhead)		   
NF13 Construct a north-south connector trail from Foothills Trail to the Joder Ranch Trail west of U.S. 36. (North Sky Trail)	<p>Construct a trail from the southern section of the Railroad Grade, west of Foothills Business Park, connecting to the Joder Ranch Trail.</p> <p>Use best efforts to locate connector trail through the conservation easement.</p>	   











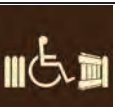

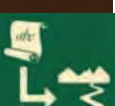

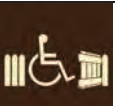




Reference Number(s) and Action Title	Action	Interests
NF14 Include the North Sky Trail in the muddy closure program.		  
NF15 Post educational signs about the North Foothills HCA.	Include information about the area's important natural resources as well as safety concerns such as rattlesnakes.	   
NF16 Re-route Hogback Trail.		    
NF17 Re-route Foothills Trail where it connects to Hogback Trail and eastward to U.S. 36.		    
NF18 Do not allow off-trail permits for the area inside the Joder loop trail for two years following the trail's construction. (Mahogany Loop)		 
NF19 Do not allow off-trail permits within the North Foothills HCA.	Off-trail permits not allowed in the North Foothills HCA except for areas west and north of Joder Ranch Trail and inside the Mahogany Loop.	 
NF20 After City Council approval of the North TSA Plan, staff will return to the		 
























Reference Number(s) and Action Title	Action	Interests
OSBT with monitoring recommendations for the North Foothills HCA, the North Sky Trail and the Joder property.		 
No Reference Number: Regulation Change: Leash required with seasonal closure from May 1 – July 31 on Joder connector trail. (North Sky Trail)		 
No Reference Number: Regulation Change: Dogs prohibited on the Joder loop trail. (Mahogany Loop)		 
Boulder Valley Ranch Subarea		
B1 to B4 Provide management area designations for properties without designations to guide management actions.	Designate Lappin property (B1), IBM open space easement property (B2), Hart-Jones Exchange property (B3) and Palo Park property (B4) as Natural Areas. Limit public access to on-trail travel on IBM open space easement property.	   
B5 to B9 Collaborate with partner agencies to create regional trail connections.	As opportunities arise, collaborate with partner agencies to create the following regional trail connections in a way that minimizes natural resource impacts. <ul style="list-style-type: none"> • (B5) City of Boulder's Area III park site to the North TSA. • (B6) A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project. • (B7) IBM Connector Trail underpass and trail (<i>construction pending</i>). • (B8) Fourmile Canyon Creek Trail underpass to Cottonwood Trail (<i>construction pending</i>). • (B9) Eagle Trail to the planned Boulder Reservoir Trail. 	    
B10 Provide public access to portions of Lappin, Lousberg, Papini and B.L.I.P. properties while protecting sensitive natural resources.	Protect aquatic and wetland resources in and around ponds on these properties by not allowing public access to the ponds.	 
B11 Designate access point for where Lefthand Trail connects to Neva Road.		   













Reference Number(s) and Action Title	Action	Interests
B12 Bring Lefthand Trailhead up to standards.	Include horse trailer parking at Lefthand Trailhead.	   
B13 Improve Lefthand Trail.		    
B14 Designate a connector trail from Lefthand Trail to the Lake Valley Estates neighborhood.		  
B15 Create a connection via the Boulder Reservoir to Niwot Road. (Talon Trail)	Create a regional trail connection in a way that minimizes natural resource impacts. Work with partner agencies to determine the most feasible trail alignment with a preference for an alignment along 55 th Street.	      
B16 Bring Eagle Trailhead up to standards.	Include horse trailer parking at Eagle Trailhead.	   



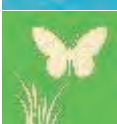













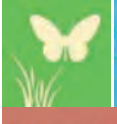

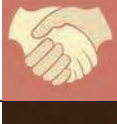


Reference Number(s) and Action Title	Action	Interests
		
B17 Bring Foothills Trailhead up to standards.		     
B18 Add a new trailhead at the Degge Trail access point. (Horseshoe Trailhead)	Provide additional parking capacity and horse trailer parking.	 
B19 Create a trail connection between Foothills and Degge trails, re-route Degge Trail.	Provide a trail connection from Foothills Trail to re-routed west end of Degge Trail.	     
B20 Replace existing trails north of Mesa Reservoir with new trail connections.	Replace Old Mill and Cobalt trails with a single new trail and replace western section of Eagle Trail and steep, downhill section of Eagle Trail with new re-routed connections.	     
B21 Replace undesignated trails through sensitive resources with a single trail. (Shale Trail)	Provide a sustainable connection with Sage Trailhead, by replacing undesignated trails through shale barrens and rare plant habitat with one new designated trail with educational signs for pedestrians and equestrians north of Mesa Reservoir.	   





Reference Number(s) and Action Title	Action	Interests
B22 Provide nature-viewing access at Mesa Reservoir.		    
B23 Replace existing trails with a new trail connection south of Mesa Reservoir.	Replace southern sections of Mesa Reservoir Trail and the Hidden Valley Trail with a new single trail connection.	    
B24 Pave Longhorn Road.	Pave or resurface Longhorn Road with an alternative permeable surface material.	 
B25 Bring Sage (BVR) Trailhead up to standards.	Improve restroom facilities.	    
B26 Improve Americans with Disabilities Act (ADA) access on Eagle and Sage trails.		   
B27 Provide a parallel single track trail at BVR.	Designate and slightly re-route in some locations one parallel single track tread adjacent to the Eagle and Sage loop at BVR.	  

Reference Number(s) and Action Title	Action	Interests
B28 Allow fishing access on eastern shore of BVR pond.		   
B29 Create new trail connection on the south side of the Papini property. (Wrangler Trail)	Provide a trail connection along the south side of the Papini property connecting Kelso Road to the Mesa Reservoir trail system.	     
B30 Continue to follow the terms of the lease regarding public access to the BVR equestrian arena and concurrently develop options for nearby horse trailer parking and/or seek to provide an equivalent and suitable corral option that will be determined in cooperation with stakeholders that will be vetted and approved in a future public process.	The board recommends that staff proactively address any conflict issues resulting from public access in future lease negotiations.	   
No Reference Number: Regulation Change: Dogs allowed with On-Corridor Voice and Sight access on Lefthand Trail.		 
Wonderland Lake Subarea		
W1 Collaborate with Parks and Recreation to support nature play experiences on their adjacent properties.	Collaborate with Parks and Recreation to support designed nature play experiences on their property and support appropriate passive recreation aspects of this type of experience on adjacent OSMP land.	
W2 Assess vision for Foothills Nature Center.	OSMP is assessing and preparing plans for the future vision of the Foothills Nature Center and associated trailhead.	 

Reference Number(s) and Action Title	Action	Interests
W3 Construct shade structure near Wonderland Lake Trailhead.		 
W4 Improve safety at Broadway crossing.	Support and encourage improvements to crossing between Sumac Avenue, RTD bus stop and the Foothills Nature Center.	  
W5 Revegetate the flood damaged northern loop section of Old Kiln Trail.		 
W6 Rename Four Mile Trailhead as Fourmile Canyon Creek Trailhead.		 
W7 Collaborate to create a connection from Fourmile Canyon Creek Greenway path to Foothills Community Park.	As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts.	  
W8 Create Wonderland Lake backdrop loop trail connection by re-routing trails. (Antler Loop)	Re-route existing designated and undesignated trails to provide more sustainable connections to the paragliding launch sites and visitors seeking a trail experience on the Wonderland hogback.	   
W9 Re-route portion of Wonderland Lake Trail.	Re-route the steep downhill section of trail just north of where it connects into Foothills South Trail.	 
W10 Create a second, smaller Wonderland Lake backdrop loop trail. (Glider Access Trail)	Create a more sustainable trail connection to replace the existing glider access trail.	  
W11 Improve Americans with Disabilities Act (ADA) access on Wonderland Lake Trail.		 

Reference Number(s) and Action Title	Action	Interests
		  
W12 Prohibit boats and belly boats on Wonderland Lake.		 
W13 Prohibit ice skating on Wonderland Lake.		 
W14 Allow sledding on Wonderland Lake dam.		 
W15 Do not provide access to Wonderland Lake's south, west and north shores.		
W16 Provide access to the cattail marsh on north side of peninsula.		   
W17 Establish hardened pullout areas on the peninsula for educational programming and a hardened wading access.	Provide increased beach access on the western edge of the peninsula.	   
W18 Allow Wonderland Lake wading access from designated areas on the peninsula.		   
W19 Create Wonderland Lake fishing pier.		 

Reference Number(s) and Action Title	Action	Interests
		   
No Reference Number: Regulation Change: Dogs allowed On-Corridor Voice and Sight access on Wonderland Hill loop. (Antler Loop)		 
Northern Properties Subarea		
NP1 Designate Berman Brothers property as an Agricultural Area.		  
NP2 Designate Stratton property as a Natural Area.		   
NP3 Collaborate to create a connection between the North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex.	As opportunities arise, collaborate with partner agencies to create regional trail connections in a way that minimizes natural resource impacts.	  
NP4 Prohibit public access on Waldorf, Ryan, Andrea, Jacob, Bison, Oasis, Steele, Bennett, Stratton, Brewbaker, Berman Brothers, Dodd and Abbott properties.		  
NP5 Allow public access on Deluca, Hester and Campbell properties with seasonal closure (May 1 - July 31) for ground nesting bobolinks.		 

Reference Number(s) and Action Title	Action	Interests
		
NP6 Allow public access on Johnson, Bruning and Schooley properties.		  

Appendix E

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Appendix E: Scheduling and Estimated Costs for North TSA Projects

Plan Implementation Costs

The current total estimated cost of implementing the draft plan, not including the personnel expenses of standard employees, is \$4.3 million. Costs are estimated and may be subject to change as additional evaluation and planning occurs for project implementation.

OSMP would also look for additional opportunities to fund projects in the Draft Plan, including grants and partnerships. Some projects may also be suitable for completion by or with the assistance of volunteers.

Project Phasing

Project scheduling will be subject to change based on the integration of North TSA projects into future departmental budgeting and work planning.

The draft plan recommendations were ranked by considering the benefits of each strategy based on trail sustainability, visitor experience and environmental benefits. A strategy received a higher ranking if there was greater benefit across all three factors and if that strategy had especially widespread or long-lasting benefit.

Additional factors integrated into project phasing include:

- Project cost, staff capacity or other fiscal constraints.
- Specific timing requirements (i.e. completion of flood related projects for FEMA reimbursement).
- Sequencing (i.e., projects that are necessarily precursors or dependents or that can leverage staff and cost efficiencies through sequencing).
- Prior commitments and projects already planned for completion in upcoming years
- Projects with a high level of community support/anticipation are given greater priority than projects which are otherwise the same.
- The need to coordinate partner agency collaboration.

Smaller scale projects and those that have fewer timing or cost constraints (i.e. management area designations, sign projects, regulatory changes) may be included in annual work plans as opportunity allows and accomplished as a part of ongoing core departmental services and infrastructure maintenance as shown in both **Table 1: Ongoing Projects and Actions to Implement North TSA Plan** and **Table 2: Projects that can be Added as Opportunity, Staffing and Funding Allows to 2016-2022 Timeline**.

Projects that require future planning, feasibility studies and coordination with other City departments, Boulder County and other agencies are included in **Table 3: Projects that are Dependent on Collaboration with Other Departments, Boulder County and External Entities**. Cost estimates are not available for these projects.

The recommended scheduling of remaining North TSA projects is included in **Table 4: Recommended Schedule for North TSA Projects and Actions**.

Table 1: Ongoing Projects and Actions to Implement North TSA Plan

Action #	Plan Ref #	Action	Estimated Cost	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
1	T1	Provide management area designations for properties without designations to guide management actions: Retain the Joder and Cox property designation as a Habitat Conservation Area (HCA) and implement as part of the North Foothills HCA.	\$10,000	Medium
20	T21	Designate undesignated access points that connect with new or existing designated trails.	\$12,600	Medium
23	T24	Remove unnecessary fencing and use wildlife friendly fencing.	\$17,800	Medium
24	T25	Allow natural revegetation or restore all undesignated trails not integrated into designated trail connections.	\$25,500	High
25	T26	Assess and prevent the introduction and spread of priority invasive plants along new trail connections and decommissioned or undesignated trail sections under restoration.	\$91,000	High
26	T27	Create interpretive information and messages about unique, rare and sensitive resources.	\$31,000	Medium
65	B30	Continue to follow the terms of the lease regarding public access to the BVR equestrian arena and concurrently develop options for nearby horse trailer parking and/or seek to provide an equivalent and suitable corral option that will be determined in cooperation with stakeholders that will be vetted and approved in a future public process. The board recommends that staff proactively address any conflict issues resulting from public access in future lease negotiations.	\$20,000	Low
79	NF19	Do not allow off-trail permits within the North Foothills HCA.	Costs combined with HCA designation and implementation	Medium
82	REG	Joder HCA designation and off trail permit implementation	Costs combined with HCA designation and implementation	Low
		TOTAL ESTIMATED COST	\$207,900	

Table 2: Projects that can be Added as Opportunity, Staffing and Funding Allows to 2016-2022 Timeline

Action #	Plan Ref #	Action	Estimated Cost	Benefit Rank 0-2 = Low 2-3 = Medium 4-6 = High
34	W10	Create a second, smaller Wonderland Lake backdrop loop trail (Glider Access Trail). Create a more sustainable trail connection to replace the existing glider access trail.	\$95,000	High
66	REG	Lefthand Trail: Dogs Voice and Sight On Corridor	\$500	Low
		TOTAL ESTIMATED COST	\$95,500	

Table 3: Projects that are Dependent on Collaboration with Other Departments, Boulder County and External Entities

Action #	Plan Ref #	Action	Estimated Cost	Benefit Rank 0-3 = Low 2-3 = Medium 4-6 = High
10	T10	Collaborate with partner agencies to create regional connections in a way that minimizes natural resource impacts. North TSA to Boulder County Parks and Open Space's Heil Valley Ranch. The North TSA Plan does not preclude future planning processes to assess and recommend a regional connector trail connection to Heil Ranch on the Buckingham property.	Unknown	Medium
11	T11	Regional Connections: North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex.	Unknown	Medium
12	T12	Regional Connections: A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project	Unknown	Medium
13	T13	Regional Connections: IBM Connector Trail underpass and trail (construction pending)	Boulder County Project	Low
14	T14	Regional Connections: Fourmile Canyon Creek Trail underpass to Cottonwood Trail (construction pending)	Boulder County Project	Low
15	T15	Regional Connections: Eagle Trail to the planned Boulder Reservoir Trail	Unknown	Medium
17	T17	Local Connections: Joder Ranch and Boulder County's Six-Mile Fold. Boulder County will conduct its own planning process to determine access and management of visitors onto Six-Mile Fold. OSMP will coordinate with the county's planning efforts to determine if and where trails could be located in this area.	Unknown	Low
18	T18	Local Connections: City of Boulder's Area III park site to the North TSA	Unknown	Low
19	T20	Local Connections: Fourmile Canyon Creek Greenway path to Foothills Community Park	City of Boulder Greenways Project	Low
27	W1	Collaborate with City of Boulder Parks and Recreation Department to support designed nature play experiences on their property and support appropriate passive recreation aspects of this type of experience on adjacent OSMP land.	Core Service	Low
29	W4	Improve safety at Broadway crossing between Sumac Avenue, RTD bus stop and the Foothills Nature Center.	Core Service	Medium

Table 4: Recommended Schedule for North TSA Projects and Actions

Action #	Plan Ref #	Action	2016	2017	2018	2019	2020	2021	2022	2023 and Later	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
2	T2	Management Area Designation: Designate Dagle II as a Natural Area.	Core Service								Low
3	T3	Management Area Designation: Designate Dakota Ridge Village property as a Passive Recreation Area.	Core Service								Low
4	T4	Management Area Designation: Designate Berman Brothers property as an Agricultural Area.	Core Service								Low
5	T5	Management Area Designation: Designate Stratton as a Natural Area.	Core Service								Low
6	T6	Management Area Designation: Designate Lappin as a Natural Area.	Core Service								Low
7	T7	Management Area Designation: Designate IBM open space easement as a Natural Area. Limit public access to on trail travel on IBM open space easement property.	Core Service								Low
8	T8	Management Area Designation: Designate Hart-Jones Exchange as a Natural Area.	Core Service								Low
9	T9	Management Area Designation: Designate Palo Park as a Natural Area.	Core Service								Low
16	T16	As opportunities arise, collaborate with partner agencies to create local trail connections in a way that minimizes natural resource impacts. Joder Trail to Buckingham Park via Olde Stage Road (in progress)	\$8,500 Underway								Medium
30	W5	Revegetate the flood damaged northern loop section of Old Kiln Trail.	\$3,640 Underway								Medium
56	B21	Provide a sustainable connection with Sage Trailhead by replacing undesignated trails through shale barrens and rare plant habitat with one new designated trail with educational signs for pedestrians and equestrians north of Mesa Reservoir.	\$140,000 Design	Build							High
80	NF20	After City Council approval of the North TSA Plan, staff will return to the OSBT with monitoring recommendations for the North Foothills HCA, the North Sky Trail and the Joder property.	Core Service								Low
84	NP4	Prohibit public access on Waldorf, Ryan, Andrea, Jacob, Bison, Oasis, Steele, Bennett, Stratton, Brewbaker, Berman Brothers, Dodd and Abbott properties.	\$3,000								Medium
85	NP5	Allow public access on Deluca, Hester and Campbell properties with seasonal closure (May 1-July 31) for ground nesting bobolinks.	\$1,000								Medium
86	NP6	Allow public access on Johnson, Bruning, and Schooley properties.	\$1,000								Low
21	T22	Bring all trails up to standards. (South Foothills Trail)		\$100,000							Medium
28	W3	Construct a shade structure near Wonderland Lake Trailhead.		\$25,000							Low
35	W11	Improve Americans with Disabilities (ADA) access on Wonderland Lake Trail.		\$9,000							Medium
45	B10	Provide public access to portions of Lappin, Lousberg, Papini and B.L.I.P. properties while protecting sensitive natural resources. Protect aquatic and wetland resources in and around ponds on these properties by prohibiting public access to the ponds.		\$9,000							Medium
52	B17	Bring Foothills Trailhead up to standards.		\$12,500							Medium
61	B26	Improve Americans with Disabilities Act (ADA) access on Eagle and Sage trails.		\$130,000							Medium
67	NF7	Close Cottonwood Recreation Area.		\$800							Low
69	NF9	Construct one loop trail on the northwest section of the Joder property. (Mahogany Loop)		\$131,000 Design	Build	Build					Medium
70	NF10	Construct a new trailhead for passenger vehicle parking on the Dagle/Wright properties. (Coyote Trailhead)		\$137,000 Initial Design	Final Design and Permits	Build					Medium
72	NF12	Retain Interim Joder Trailhead. (Joder Ranch Trailhead)		\$7,000 Initial Design	Final Design	Build					Low

Action #	Plan Ref #	Action	2016	2017	2018	2019	2020	2021	2022	2023 and Later	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
73	NF13	Construct a north-south connector trail from Foothills Trail to the Joder Ranch Trail west of US 36 (North Sky Trail). Construct a trail from the southern section of the Railroad Grade, west of Foothills Business Park, connecting to the Joder Ranch Trail. Use best efforts to locate connector trail through the conservation easement.		\$805,000 Initial Design	Final Design and permitting	Build	Build	Build			Medium
76	NF16	Re-route Hogback Trail.		Initial Design				\$146,000 Final Design, Permits	Build		High
77	NF17	Re-route Foothills Trail where it connects to Hogback Trail and eastward to US 36.		Initial Design				\$113,000 Final Design, Permits	Build		High
85	NP5	Allow public access on Deluca, Hester and Campbell properties with seasonal closure (May 1-July 31) for ground nesting bobolinks.		\$1,000							Medium
36	W12	Prohibit boats and belly boats on Wonderland Lake.			\$500						Low
37	W13	Prohibit ice skating on Wonderland Lake.			\$500						Low
38	W14	Allow sledding on Wonderland Lake dam.			\$500						Low
39	W15	Do not provide access to Wonderland Lake's south, west and north shores.			\$3,500						Low
40	W16	Provide access to the cattail marsh on north side of peninsula.			\$8,000						Medium
41	W17	Establish hardened pullout areas on the peninsula for educational programming and a hardened wading access. Provide increased beach access on the western edge of the peninsula.			\$14,000						Medium
42	W18	Allow Wonderland Lake wading access from designated areas on the peninsula.			\$700						Low
43	W19	Create Wonderland Lake fishing pier.			\$45,000						Low
60	B25	Bring Sage (BVR) Trailhead up to standards. Improve restroom facilities.			\$71,500 Amenity Updates	Design and build outhouse					High
68	NF8	Realign western section of the Interim Joder Trail near the Buckingham Property. (Joder Ranch Trail)			\$14,000 Design	Build					Low
53	B18	Add a new trailhead at the Degge Trail access point (Horseshoe Trailhead). Provide additional parking capacity and horse trailer parking.				\$97,500 Design	Build				Medium
54	B19	Create trail connection between Foothills and Degge trails, re-route Degge Trail. Provide a trail connection from Foothills Trail to re-routed west end of Degge Trail.				\$35,000 Design	Build				Medium
55	B20	Replace existing trails north of Mesa Reservoir with new trail connections. Replace Old Mill and Cobalt trails with a single new trail connection and replace western section of Eagle Trail and steep, downhill eastern portion section of Eagle Trail with new re-routed connections.				\$156,000 Initial Design	Final Design and Permits	Build	Build		High
57	B22	Provide nature-viewing access at Mesa Reservoir.				\$2,500 Initial Design	Final Design and Permits	Build	Build		Low
58	B23	Replace southern sections of Mesa Reservoir Trail and the Hidden Valley Trail with a new single trail connection.				\$176,000 Initial Design	Final Design and Permits	Build	Build		High
62	B27	Designate and slightly re-route in some locations one parallel single track tread adjacent to the Eagle and Sage loop at BVR.				\$35,000 Initial Design	Final Design and Permits	Build	Build		Medium
71	NF11	Construct a connector trail from the new trailhead (Coyote Trailhead) on the Dagle property to the Joder Ranch Trail.				Complete with new Coyote Trailhead					Low

Action #	Plan Ref #	Action	2016	2017	2018	2019	2020	2021	2022	2023 and Later	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
78	NF18	Do not allow off-trail permits for the area inside the Joder loop trail for two years following the trail's construction. (Mahogany Loop)				\$3,000					Low
83	REG	Mahogany Loop: Dogs Prohibited				\$1,000					Low
51	B16	Bring Eagle Trailhead up to standards.					\$57,000 Design	Build			High
32	W8	Create Wonderland Lake backdrop loop trail connection by re-routing trails (Antler Loop). Re-route existing designated and undesignated trails to provide more sustainable connections to the paragliding launch sites and visitors seeking a trail experience on the Wonderland hogback.						Initial Design	Final Design and Permits	\$131,000 Build	High
47	B12	Bring Lefthand Trailhead up to standards.						\$56,500 Design	Build		Medium
74	NF14	Include the North Sky Trail in the muddy closure program.						Core Service			Medium
75	NF15	Post educational signs about the North Foothills HCA. Include information about the area's important natural resources as well as safety concerns such as rattlesnakes.						\$20,500			Low
81	REG	N/A North Sky Trail: Dogs Leash Required (August 1 – April 30) and Seasonal Prohibited (May 1 – July 31)						\$1,000			Low
46	B11	Designate access point for where Lefthand Trail connects to Neva Road.							\$300		Low
59	B24	Pave Longhorn Road.							\$ 700,000		Medium
22	T23	Bring all trailheads and access points up to standards.								\$128,000	Medium
31	W6	Rename Four Mile Creek Trailhead as Fourmile Canyon Creek Trailhead.								\$10,100	Low
33	W9	Re-route portion of Wonderland Lake Trail. Re-route the steep downhill section of trail just north of where it connects into Foothills South Trail.								\$10,000	Medium
44	REG	Wonderland Loop (Antler Loop): Voice and Sight On Corridor								\$2,000	Low
48	B13	Improve Lefthand Trail.								\$145,000	High
49	B14	Designate a connector trail from Lefthand Trail to the Lake Valley Estates neighborhood.								\$300	Medium
50	B15	Create a connection via the Boulder Reservoir to Niwot Road (Talon Trail). Create a regional trail connection that minimizes natural resource impacts. Work with partner agencies to determine the most feasible trail alignment with a preference for an alignment along 55th Street.								\$200,000	Medium
64	B29	Create a new trail connection on the south side of the Papini property (Wrangler Trail). Provide a trail connection along the south side of Papini property connecting Kelso Road to the Mesa Reservoir trail system.								\$75,000	High
		TOTALS	\$157,140	\$1,367,300	\$158,200	\$506,000	\$57,000	\$337,000	\$700,300	\$701,400	

Appendix F

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Appendix F: Feedback Themes Not Included in the Draft North TSA Plan

Area/Topic	Feedback	Why It Wasn't Included in Draft Plan
Changing the Joder property Management Area Designation from a Habitat Conservation Area	Some community support for Joder property to be designated as a Passive Recreation Area or Natural Area.	The Open Space Board of Trustees (Board) supported a review of the Habitat Conservation Area designation as part of the North TSA Plan. Given the sensitive and rare resources on the Joder property and the broader community, board and staff support for maintaining the Habitat Conservation Area (HCA) designation, it was determined the existing Joder HCA designation would be retained.
Joder dog regulations	Some community support for dogs on leash on Joder Interim Trail (Joder Ranch Trail).	Community support and board support for On-Corridor Voice and Sight access on the Interim Trail (Joder Ranch Trail) resulted in its inclusion in the Draft Plan.
Joder bike regulations	Some community support for spatial and temporal separation for bikes on the Joder loop trail (Mahogany Loop), Joder Ranch Trail and Joder connector trail (North Sky Trail).	Community support and board support for both directional and temporal regulations for bikes on the Joder loop (Mahogany Loop) and no temporal bike restrictions on the North Sky Trail due to the importance of this trail as part of a regional connection resulted in these inclusions in the Draft Plan.
West Beech/North Foothills HCA Management Area Designation	Some community support for changing the North Foothills HCA Management Area Designation to a Natural Area Designation.	The North Foothills HCA was designated by the Visitor Master Plan and is outside the scope of the North TSA Plan.
Railroad grade undesignated trail.	Some community support for closing and restoring this undesignated trail.	Sections of the railroad grade will be incorporated into the North Sky Trail.
Create two stacked loop trails using re-routes of Hogback Trail and/or extend a loop down to the railroad grade.	Some community support for an additional Hogback loop or extension of the trail.	Staff assessment and evaluation of this action indicate that the length of additional trail in the North Foothills HCA, terrain and resource impacts make this an action not recommended in the Draft Plan.
Provide trail connection from Boulder Valley Ranch to Niwot Road by connecting North Rim Trail to 55 th Street.	Some community support for providing this trail connection on the Axelson property.	The trail connection across the Axelson property to Niwot Road will not be included in the Draft Plan because this trail would need to be closed eight months out of the year to protect nesting osprey. An alternate connection via 55 th St. to Niwot Road is included in the Draft Plan.
Management of the North Rim Trail	County support for OSMP taking over management of the North Rim Trail.	OSMP will not take on management of the North Rim Trail from the county. The low level of community interest for making improvements does not make this a priority for inclusion in the North

Area/Topic	Feedback	Why It Wasn't Included in Draft Plan
		TSA Plan. OSMP and the county will coordinate on improvements to this trail if the need arises in the future.
Dog regulations for Boulder Valley Ranch.	Some community support for retaining on-leash dog access for Lefthand Trail.	Broad community support and Board support for On-Corridor Voice and Sight access being allowed for Lefthand Trail resulted in its inclusion in the Draft Plan.
Fourmile Trailhead	Some community support for horse trailer parking at Fourmile Trailhead.	Staff assessment of this action indicated space constraints, costs for modifications and complexity of access off of Leehill into trailhead make this an action that staff and the Board didn't recommend in the Draft Plan.
Create trail connection from west end of Old Kiln Trail to the Wonderland Hill loop trail (Antler loop).	Some community support for Old Kiln connector trail.	Further staff assessment and evaluation of this action indicate the level of trail construction required, complexity, safety issues and cost make this an action staff and the Board didn't recommend in the Draft Plan.
Create an out-and-back trail on the eastern section of Old Kiln that ends before the section where the trail was extensively damaged from the flood.	Some community support for out-and-back trail.	Further staff evaluation indicated that due to the extensive flood damage there is no way to build a sustainable trail in this area.
Allow bikes on Old Kiln Trail only Monday through Friday.	Some community support for bike access on Old Kiln Trail.	Broad community concern about visitor conflict and the Board's recommendation against allowing bikes on the Old Kiln Trail resulted in this action not being recommended in the Draft Plan.
Dog regulations in Wonderland Lake.	Some community support for retaining the existing dogs on leash regulations in all of the Wonderland Lake area.	The Board recommended On-Corridor Voice and Sight access be allowed on the Wonderland Hill loop trails west of the Foothills Trail.

Appendix G

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Appendix G: Glossary

Boardwalk: An elevated, fixed-planked structure, usually built on pilings in areas of wet soil or water to provide dry crossings.

Braiding: Parallel, redundant trail tread(s) adjacent to an established trail caused by visitors avoiding the established trail and wearing in a new path(s).

Corridor, Trail: The full dimensions of the trail, including the area (2 to 3 feet) on either side of the tread and the space overhead (10 to 12 feet) from which brush and obstacles need to be cleared. The area of passage of the trail, including all cleared and managed parts above, below and adjacent to the tread.

Cultural Resource: A building, structure, district, site or object that is significant in our history, architecture, archaeology or culture.

Designated Trails: Trails which have a way-finding sign with a trail name and are maintained.

Designed Use: Refers to the allowed use (activity) on the trail which dictates how it is designed, built and maintained. All City of Boulder Open Space and Mountain Parks trails fall into one of six designed uses: Official Vehicle, ADA accessible, Equestrian, Biking, Hiking or Climbing Access.

Drainage Structure: A water diversion structure constructed across the trail tread to remove water flowing down the trail tread or to prevent it from entering the tread.

Ecosystem: The dynamic complex of organisms and their environment contained within a specified area during a specified time. Systemic elements include interactions and feedbacks between components.

Ecotones/Ecotonal: A transitional zone between two biological communities containing the characteristics of each.

Erosion: Natural processes (water, wind, ice or other physical processes) by which soil particles are detached from the ground surface and moved down slope, principally by the actions of running water (gully, rill or sheet erosion). The combination of water falling on the trail, running down the trail, and freezing and thawing, and the wear and tear from traffic create significant erosion problems on trails.

Fall Line: Steepest line across a given contour or the direction water flows down a slope (path of least resistance) under most circumstances. Constructing a trail on the fall line encourages water to run down the trail and leads to erosion.

Grade: The vertical distance of ascent or descent of the trail expressed as a percentage of the horizontal distance, commonly measured as a ratio of rise to length or as a percent. For example, a trail that rises 8 vertical feet in 100 horizontal feet has an 8% grade. Grad is different than angle; angle is measured with a straight vertical as 90° and a straight horizontal as 0°. A grade of 100% would have an angle of 45°.

Grade, Sustained: The steepest acceptable grade permitted over the majority of the trail length.

Grade, Trail: The average grade over the length of a trail or long section of trail.

Habitat: The environment where a plant or animal naturally or normally lives and grows.

Habitat Effectiveness: An area that meets a range of required characteristics, including environmental factors and lack of disturbance, and supports all stages of a species lifecycle.

Highly Suitable Habitat: An area in which a species can potentially or does occur due to favorable environmental variables such as vegetation characteristics, slope, aspect, size of habitat patch.

Interpretation: The educational methods by which the history and meaning of historic sites, buildings, objects, districts and structures are explained by use of docents, leaflets, tape recordings, signs, film and other means.

Invasive Species: A species that is non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Resilience: The ability of a community to prepare for and respond effectively to stress.

Riparian Areas: Areas along streams and rivers, including related vegetation community.

Site Classification: All trailheads, access points and recreation sites on OSMP lands are classified based on visitor use levels. Each class identifies a set of required facilities, optional facilities and a maintenance schedule. For current information about OSMP standards, visit osmp.org

Strategy: A systematic long-term plan to deploy a sequence of actions toward achieving one or more goals and associated set of management objectives.

Sustainable, Trails/Infrastructure: Trails that have negligible erosion, minimal braiding and seasonal muddiness and will not require re-routing and major maintenance over long periods of time. Sustainable trails, trailheads and infrastructure support the current and anticipated uses with minimal impacts to the adjoining natural systems and cultural resources.

Switchback: A sustainable sharp turn on a hillside (usually on a slope of more than 15%) to reverse the direction of travel and to gain elevation. The landing is the turning portion of the switchback. The approaches are the trail sections upgrade and downgrade from the landing.

Trail Infrastructure: Any managed or constructed features or components of those features on or associated with a trail. Examples include: walls, steps, bridges, water bars, culverts (this is not an exhaustive list).

Tread (Treadway): The surface portion of a trail upon which visitors travel excluding backslope, ditch and shoulder. Common tread surfaces are native material, gravel, soil cement, asphalt, concrete or shredded, recycled tires.

Undesignated Trails: Trails created or worn into the landscape by visitors repeatedly walking off of designated trails. Sometimes, undesignated trails begin as wildlife or cattle trails that attract the interest of hikers or other visitors. They are not shown on public trail maps and are not maintained.

Unfragmented Habitat: Habitat across the landscape that is uninterrupted by barriers to movement.

Visitor Survey: Exit survey of people leaving OSMP system and typically repeated every five years. The main purpose of the survey is to obtain demographic information, trip characteristics, and experience evaluations.

Wetlands: Where water is present above or near the surface of soil. Wetlands vary depending on soils, topography, climate, water chemistry and vegetation.