BVCP *Open House* in the Municipal Lobby
4:30-5:15 p.m.

Boulder City Council
STUDY SESSION
Tuesday
May 24, 2016

5:30-7 p.m.
Update on Boulder Valley Comprehensive Plan (BVCP)
Phase 3 Shaping Choices

7-9 p.m.
North Trail Study Area (NTSA) Draft Plan
(This item is best viewed in Chrome or Internet Explorer.)

Council Chambers
Municipal Building
1777 Broadway

Submit Written Comments to City Council, ATTN: Lynnette Beck, City Clerk, 1777 Broadway, P.O. Box 791, Boulder, CO 80306 or Fax to 303-441-4478 or E-mail: council@bouldercolorado.gov

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STUDY SESSION MEMORANDUM

TO: Mayor and Members of City Council

FROM: Jane S. Brautigam, City Manager
Tracy Winfree, Director, Open Space and Mountain Parks
Mark Davison, Community Connections and Partnerships Manager
Mark Gershman, Environmental Planning Supervisor
Steve Armstead, Environmental Planner

DATE: May 24, 2016

SUBJECT: North Trail Study Area (TSA) Draft Plan

EXECUTIVE SUMMARY

The purpose of the study session is for the City Council and staff to discuss the North TSA Draft Plan (Draft Plan-**Attachment A**) and for the council to provide feedback on the Draft Plan. The goal of the North TSA planning process is to provide the management direction and implementation actions which will improve the visitor experience, protect natural, cultural and agricultural resources, and provide a physically and environmentally sustainable system for visitor access in the North TSA.

The Open Space Board of Trustees (OSBT), community members and staff have been working since February 2015 collecting and compiling information about the North TSA, identifying issues and interests, developing alternative management scenarios, and deciding on a preferred scenario to recommend to City Council. Working with the OSBT and community members, staff initially developed four scenarios to address and balance community issues and interests for the North TSA in different ways. Using community feedback and input from the OSBT, staff narrowed the range of scenarios to two. These two refined scenarios and associated public comment formed the basis of an OSBT study session on Jan. 13 and Jan. 14, 2016. At this study session, OSBT members shared feedback about improvements to the scenarios. Staff updated the two refined scenarios, and the revised scenarios were discussed at a public hearing during the Feb. 10, 2016 OSBT meeting. At this meeting, the OSBT recommended additional refinements and selected one of the updated refined scenarios as the basis for the Draft Plan. On March 9,

2016, the OSBT approved the Draft Plan with several modifications by a 3-2 vote. Attachment A includes staff's revisions to the Draft Plan addressing the OSBT's approved modifications.

The evaluation and recommendations regarding proposed routing of a trail connection between the Foothills Trail and the new Joder Ranch Trail was the dominant focus of public comment and disagreement during the planning process. This topic is a point of focus for the memo.

Questions for Council

1. Do City Council members have any questions or comments about the process or recommended actions included in the Draft Plan or the Alternative Scenario?
2. Are there changes to the Draft Plan or additional actions City Council members consider desirable and feasible to better balance community interests?

BACKGROUND

The North TSA

The North TSA is a geographic area that includes Open Space and Mountain Parks (OSMP) lands north of the Diagonal Highway and Linden Avenue. The North TSA Plan will include management recommendations for 7,701 acres that OSMP manages in this area. The goal of the North TSA Plan is to improve visitor experiences and increase the sustainability of trails and trailheads while conserving the area's natural, cultural and agricultural resources. Additional background on the plan and process used to develop it is available in **Attachment B**.

The Planning Process

The North TSA planning process began in February of 2015 and included four phases:

1. **Collecting and compiling information** about current conditions and management practices in the TSA, which was made available as the North TSA Inventory and Assessment Report and Appendices in June 2015.

2. **Identifying key issues and interests** that need to be addressed in the plan, which were summarized in the Interests and Issues Report. The report was distributed in July 2015.

3. **Assessing and improving scenarios** and selecting one scenario to use as the basis of the plan. Staff created four preliminary scenarios for the North TSA Plan to balance community interests and address issues through a range of actions in different ways. The four preliminary scenarios were completed and made available for public review in October 2015.

   Using input from community members and the OSBT, staff created two refined scenarios from the four preliminary ones. These were distributed in December

2015. At a January study session with the OSBT, staff asked the Board for feedback on ways that the refined scenarios could be further improved. Their feedback led staff to develop updated scenarios. During the February OSBT meeting, the Board recommended additional revisions to the scenarios and selected the scenario that should be used as the basis of the Draft Plan and the Alternative Scenario.

4. **Developing the Draft Plan** based on the preferred scenario selected by the OSBT. Staff presented the Draft Plan to the OSBT for approval and recommendation to City Council. The OSBT approved the Draft Plan with several modifications by a 3-2 vote (**Attachment C**). Staff integrated the OSBT-approved changes into a revised Draft Plan that is being presented to City Council (**Attachment A).** The revised version includes wording and map edits, and updates to background content. Board changes were also integrated into an Alternative Scenario **(Attachment D)**. A summary of recommended actions included in the Draft Plan and Alternative Scenario is included in **Attachment E**.

North TSA Sideboards

The North TSA planning process included sideboards approved by OSBT to define the decision space for public engagement and the plan. The sideboards clarified what was "on the table" for discussion, and what was considered beyond the scope of the plan. One of the sideboards (No. 3) was to integrate existing commitments.

During the development and refinement of the two final scenarios, some community members expressed concern about whether the inclusion of a trail connection in the North Foothills Habitat Conservation Area (HCA) is consistent with the sideboards. This concern was based on natural resource guidance from plans, such as the Grassland Management Plan, Visitor Master Plan, North Boulder Valley Area Management Plan (NBVAMP) and the Open Space Long Range Management Policies. An example where such guidance was thought to be inconsistent with proposing a trail connection to the Joder property in the Foothills HCA is from the NBVAMP which suggests in trail planning to "minimize the risk of invasive plant species introduction and spread."

The sideboards include a variety of OSBT and City Council approved and accepted plans that have competing purposes and require reconciliation This reconciliation is anticipated during the development of TSA plans The need for the Draft Plan to do this is addressed specifically in the sideboard document:

> *Guidance from the different plans and policies are generally compatible, but there may be situations where guidance from plans' directions conflict. This requires reconciliation in the TSA planning process.*

The Visitor Master Plan and the Grassland Plan also identify TSA planning as the forum where conflicting policy guidance affecting visitor access on OSMP lands is resolved.

Staff adhered to the North TSA sideboards in the development of the Draft Plan. Doing so was both a fundamental commitment of the North TSA process and one of the most significant challenges—with the community, OSBT and staff spending considerable time balancing recommendations through the development and revisions to scenarios and the Draft Plan.

Regional Trail Connections

OSMP is committed to working with other city departments, Boulder County and other partner agencies to advance regional trail connections envisioned in City Council-adopted plans. Regional trail connections for areas not managed by OSMP require collaborative planning, which is beyond the scope of a TSA Plan. The Draft Plan identifies trail gaps and recommends connections in the North TSA for lands managed by OSMP. The Draft Plan also acknowledges opportunities for future collaboration with partner agencies on regional trails.

Discussions with the Parks and Recreation Department and Boulder County identified improving connectivity as a joint interest for the North TSA. An example for future collaboration with the Parks and Recreation Department is connecting the Eagle Trailhead with a trail around the west side of the reservoir as proposed in the Boulder Reservoir Master Plan. Staff also continues to pursue connections with Boulder County's trail and open space system. Examples include linkages to Heil Valley Ranch, the regional desire for trail connection(s) from Boulder to Lyons and the possibility of future connections from Boulder trails to the expanding county Lagerman Reservoir trail system. The Draft Plan identifies these and other trail connections as important future opportunities for OSMP to pursue with partner agencies. Some of these connections are also envisioned as part of larger scale regional trails such as the Rocky Mountain Greenway. Due to the less developed nature of some of these regional initiatives and the wide latitude in how they might be implemented, the North TSA Plan is unable to be specific on how these connections may ultimately relate to the Rocky Mountain Greenway. These preferred connections will be the subject of future planning efforts.

Northern Properties

The Northern Properties in the North TSA include 19 dispersed OSMP-managed properties that primarily have had an agricultural history. Many remain in agricultural production. Some of these are recent acquisitions while others have been through some level of planning to integrate them into the OSMP system. The North TSA Plan has provided a planning process to determine how these properties contribute to visitor access opportunities and the conservation of natural, cultural and agricultural resources.

Currently, six Northern Properties are open to public access and 13 are not. Staff evaluated and presented a range of different combinations of partially opened, opened, and closed options. Community feedback either generally supported closing all the properties or supported a range of having some of the properties open to public access.

The OSBT sought additional public feedback about the Northern Properties leading up to their consideration of the Draft Plan on March 9. Based on community feedback and public testimony, the OSBT recommended maintaining the current access status of the properties as being open or closed. The Board also supported adding a seasonal bird nesting closure from May 1 through July 31on the Deluca, Hester, and Campbell properties.

A concern that was raised through public comment is whether the closure of a Northern Property would prevent consideration of future trail connections on the property. A statement included in the Draft Plan clarifies that future trail development on both open and closed properties will be evaluated in the context of regional public planning processes.

ANALYSIS

Joder Connector Trail

The addition in 2013 of the Joder property to the city's open space lands in the North TSA added ecologically rich lands to the North Foothills HCA. The Joder trail connecting U.S. Highway 36 and Olde Stage Road provided a much sought after trail segment to further a regional trail linking Boulder to Lyons through Boulder County's Heil Valley Ranch. An important component of the North TSA Plan is completing another missing link in this regional trail, connecting between the Foothills Trail and the new Joder trail. Options to complete this link ("the Joder Connector") ended up being focused on two trail routes – one west of U.S. Highway 36 (the "North Sky Trail"), the other east of the highway using Lefthand Trail and a new diagonal link from Longhorn Road ("East Side Route"). The evaluation and decision making around the Joder Connector was a dominant focus of public comment and disagreement during the planning process.

<u>Routing Options</u>

In developing the preliminary and refined scenarios, a wide range of different routing options were extensively explored. Important natural resources considered in assessing routes included riparian and wetland areas, shale barrens, rare plants and communities, and high-quality native grass and shrub communities and the wildlife communities they support. Visitor experience factors included terrain, trail design/sustainability, ability to see plants and wildlife, scenic views, and safety.

Staff assessed west side conceptual routes in the North Foothills HCA to reduce natural resource impacts and to locate the trail near the edge of the HCA as much as possible. Routes along the edge of the west side of the HCA were considered, but staff was unable to locate options with lower risk of impacts to ecological resources. Alternative routes east of the railroad grade were also assessed; however, they required additional impacts to intact native grasslands and extensive structural improvements to maintain a trail surface on low lying and poorly drained soils. The final conceptual route was developed as the best balance to provide a good visitor experience while reducing resource impact

as much as possible. This included integrating large portions of the existing disturbed railroad grade and social trail into the trail, but deviating if necessary to minimize resource impacts at Schneider Draw. The remainder of the route climbs from the railroad grade to follow along the east boundary of the HCA and the border of the adjacent Foothills Business Park Conservation Easement before connecting with the Joder property.

East side conceptual trail routes that were considered included developing a more direct connection to Neva Road providing a better visitor experience west of the existing Lefthand Trail. Staff also investigated options adjacent to U.S. Highway 36, a connection between Lefthand Trail and U.S. Highway 36 and ways of linking from the west end of Longhorn Road to Lefthand Trail. Considerations on the east side included reducing resource impacts to the extensive needle-and-thread mixed grass prairie and riparian corridors, and avoiding the need for extensive structural design to maintain a trail surface on clay soils. The recommendation to add a link trail along a diagonal drainage from Longhorn Road to Lefthand Trail was identified as the best option to address the evaluation criteria.

Attachment F includes detailed information comparing the factors assessed for the Joder Connector conceptual routes.

Actions Linked with the Joder Connector Options

Though the focus of much of the public comment on the plan and an important element of the plan, the Joder Connector was just one of many management recommendations that figured into the scenarios developed for the Draft Plan. Table No.1 provides examples of the associated actions that coincide with the location of the Joder Connector. The Draft Plan and the Alternative Scenario include actions that differ in the way they address tradeoffs for the Joder Connector being located east or west of the highway. For example, certain actions are included in the Alternative Scenario but not the Draft Plan:

- Allowing off-trail permits in the HCA.
- Retaining existing access along part of the railroad grade for only pedestrians and equestrians.
- Adding a new bypass trail for a steep section of the Joder Ranch Trail.
- The addition of new link trail connection to Lefthand Trail on which dogs would not be allowed.

Table 1: Linked actions associated with the Joder Connector

Draft Plan	Alternative Scenario
● Off-trail permits not allowed in North Foothills HCA between Foothills Trail and Joder trails. Allowed north of Joder trails.	● Off-trail permits allowed in North Foothills HCA.
● Dogs required to be on leash on the North Sky Trail with a seasonal dog closure for nesting birds from May 1 through July 31.	● Add a new diagonal link trail section between Longhorn Road and Lefthand Trail. Dogs prohibited on this section of trail.

Draft Plan	Alternative Scenario
● Passenger vehicle parking at Dagle/Wright property (west side of U.S. Highway 36).	● Designation of part of the railroad grade social trail as a designated (out and back) trail in the North Foothills HCA. ● Take on management of the Beech Pavilion from Boulder County. Work with partner agencies to provide a trail connection from Neva Road to the Schooley Property ● Add an optional bypass trail to a steep section of the Joder Ranch Trail ● Passenger vehicle parking at Schooley property (east side of U.S. Highway 36); underpass at the highway to connect trail and trailhead to Joder property

Implementing the Joder Connector

The OSBT approved the Draft Plan with a 3-2 vote. The Board's vote reflects the difficulty in identifying a Joder Connector that fully addresses all community interests. With the Board recommendation of the Joder Connector (North Sky Trail) west of U.S. Highway 36 and in a HCA, Trustees took additional actions to bolster resource protection and reduce natural resource impacts. These actions included not allowing off-trail permits in the area surrounding the trail, an opportunity normally allowed in HCAs, and closing the trail seasonally to dogs during the bird-nesting season (May 1-July 31). Additionally, the OSBT requested conservation-first trail design that emphasizes reduced ecological impacts even if it means that cyclists would need to dismount for short distances. The OSBT also strongly supported staff's ongoing investigation of opportunities to place part of the North Sky Trail on adjacent private property where the city and county own a conservation easement. Such a routing would reduce ecological impacts and trail construction costs but is not essential for meeting the goals of the Draft Plan.

As with trails in other HCAs, an important resource concern with constructing and extending a trail is the potential for increasing the rate of introduction and spread of weeds. The Draft Plan includes an action supporting the assessment and treatment of invasive plants with new trail construction or trail improvements. The elevated importance of this effort in the HCA ensures close adherence to OSMP's Ecological Best Management Practices (EBMPs) for trail construction and maintenance related to invasive plant management.

Staff has identified a number of *additional* objectives and actions to further enhance ecological values to improve the very high biodiversity of the area. Opportunities exist within the North Foothills HCA and adjacent areas to restore and improve areas with marginalized natural resource condition. The OSMP Grassland Ecosystem Management Plan (GMAP), approved by City Council in 2010, sets conservation objectives, strategies and measurable standards for grassland and plains riparian habitats across OSMP. Restoration planning in the North TSA is conducted within the framework of the GMAP

which identifies areas of best opportunity for conservation and restoration. Regional and local information regarding conservation of biological diversity from the Colorado Natural Heritage Program, the Boulder Valley Comprehensive Plan and the Boulder County Comprehensive Plan is incorporated into the GMAP and is also used to inform restoration objectives and priorities.

Staff has identified several examples where investment in the restoration of natural resources and habitat enhancement work can make significant improvements and help offset the impacts of providing a trail connection in the HCA. These opportunities include:

- **Restoring hydrology and riparian vegetation** along Schneider Draw and other drainages– taking actions to reduce down-cutting and erosion and reestablishing riparian hydrology to create conditions suitable for native trees and shrubs to expand. Planting native trees and shrubs and seeding native grasses and forbs
- **Restoring native grassland** east of the railroad grade. A range of strategies could be employed, including prescriptive grazing, prescribed fire, invasive plant management techniques and the conversion of non-native grassland patches to native vegetation.
- **Designing trails strategically** to minimize trampling and trail widening in areas of Bell's twinpod habitat. Eliminating undesignated trails and minimizing the width of new trail construction in Bell's twinpod habitat. Enhancing and restoring habitat for Bell's twinpod on Boulder Valley Ranch properties, including but not limited to the BLIP properties north and south of Longhorn Road.
- **Developing a prescribed fire plan** and implementing prescribed fires to maintain and improve the condition of native grassland vegetation.

<u>Monitoring</u>
During its study session and public hearings in January, February and March, OSBT members discussed monitoring of both ecological conditions and effectiveness of visitor management strategies. Some Board members expressed an interest in monitoring the degree to which invasive species might become established along the North Sky Trail or in adjacent grasslands. Others suggested that OSMP monitor the levels of visitor conflict and consider establishing temporal restrictions on the North Sky Trail if levels exceeded some threshold. There was also discussion about monitoring the area's important ecological resources and sedimentation in the drainages along the trail and learning more about the levels of and changes to visitation on trails.

OSMP's capacity to implement new monitoring is limited and will need to be factored in with the overall objectives and purpose of existing monitoring projects. OSMP has a robust on-going, systemwide monitoring program focused on management plan indicators (Visitor Master Plan, Grassland Ecosystem Management Plan and Forest Ecosystem Management Plan), providing information about the degree to which the department is meeting its overall management objectives. Objectives, indicators, and monitoring projects flow from master and resource management plans to address priority

resources and services that have been vetted through a community planning process. The ability to provide information about the status of these systemwide priorities is a fundamental business practice, which supports decision making for resource allocation, annual budget requests and work plan development. The highest priority for developing monitoring projects is for staff to develop protocols for projects called for in established plans. Consequently, developing additional objectives and monitoring plans for site specific questions, like those identified in North TSA discussions would likely come at the cost of progress on existing systemwide priorities.

The OSBT recommended that staff "endeavor to return to the Board with a recommendation for ecological monitoring for the North Sky Trail and Joder property." Staff will do so following acceptance of the plan by City Council.

Implementing the Draft Plan

Progressing from Conceptual Trails to Completed Trails

The Draft Plan includes conceptual routes for new trails and for existing trails that will be redesigned. The progression from a conceptual route to a construction-ready trail project includes detailed site analysis and evaluation, trail design, development of construction documents and obtaining required permits. The timeline for design and construction will typically range from one to three years depending on complexity.

Projects which are likely to have a high level of interest in design plans (visitor facilities including new trails, trailheads and education amenities) will include check-ins with the community, OSBT and council if requested. Design documents could be made available to the public via the department website and noticed through newsletters, webpage alerts, social media postings and with other outreach efforts. Information updates are provided to the OSBT at monthly meetings and to council as requested.

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. This estimate includes the costs of more than 86 recommended actions including:

- Design, permitting and construction of:
    - New and rerouted trail alignments (trail surface, bridges, culverts, signage, etc.).
    - Other visitor infrastructure improvements (education amenities, fishing pier, shade structure, boardwalk, etc.).
    - New and improved trailheads (parking, outhouses, kiosks, bike and horse amenities, signage, etc.).
- Assessing and managing priority invasive plants in locations of trail and trailhead improvements.
- Restoring and revegetating undesignated trails and relocated trails.
- Implementing resource protection measures, including seasonal access restrictions and site-specific area closures.
- Paving Longhorn Road.

- Designing, fabricating and installing educational amenities and signs.
- Improving wayfinding, informational and regulatory signs.
- Making changes to recreational opportunities and regulations.

Cost estimates for projects that will require future planning, additional feasibility studies and coordination with other city departments, Boulder County and other agencies are difficult to develop accurately and are not included. Potential costs for systemwide or possible TSA-specific monitoring and restoration are also not included.

The North TSA capital projects are identified in **Attachment G**. If the plan is finalized, staff will begin to include identified capital projects as part of its annual Capital Improvement Program (CIP) submission. Capital funding for these projects is available from two sources:

- **Capital Enhancement CIP**: the Capital Enhancement CIP fund includes a North TSA Implementation project to fund the expansion or significant improvement of trails, trailheads, facilities and resource protection measures.

- **Lottery Funds**: the Lottery Fund is based on proceeds from the Conservation Trust Fund and provided by the State of Colorado to the city. Lottery funds are typically used by OSMP for capital improvements for recreational purposes.

Ecological enhancement opportunities in the North TSA will be funded out of a new OSMP CIP budget item specifically added to enhance funding available for such projects.

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.

<u>Project Phasing</u>
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.

NEXT STEPS

Collectively, the recommendations in the North TSA Plan will improve trail connectivity, accomplish improvements for natural resource protection, trail sustainability, allow for the revegetation of undesignated trails and improve the experience for many visitors who enjoy a variety of activities. When fully implemented, the Draft Plan adds eight new trails and reroutes nine trails. Approximately 23 miles of undesignated trails will be revegetated and five miles of undesignated trails will be integrated into the city's system of designated trails.

With council acceptance of the plan, staff would:

1. Review project phasing and costing to affirm project priorities, and include high-priority projects in CIP budgets and department annual budgets. Projects aligned to budgets and annual work plans will include a combination of trail and trailhead improvements, visitor experience enhancements (recreation activity, volunteer opportunity, regulation changes, education projects, etc.) and natural and cultural resource management projects (restoration, conservation, weed management, etc).
2. Return to council recommending an approach for establishing the North Foothills HCA by ordinance which would include the approved visitor off-trail travel restrictions.

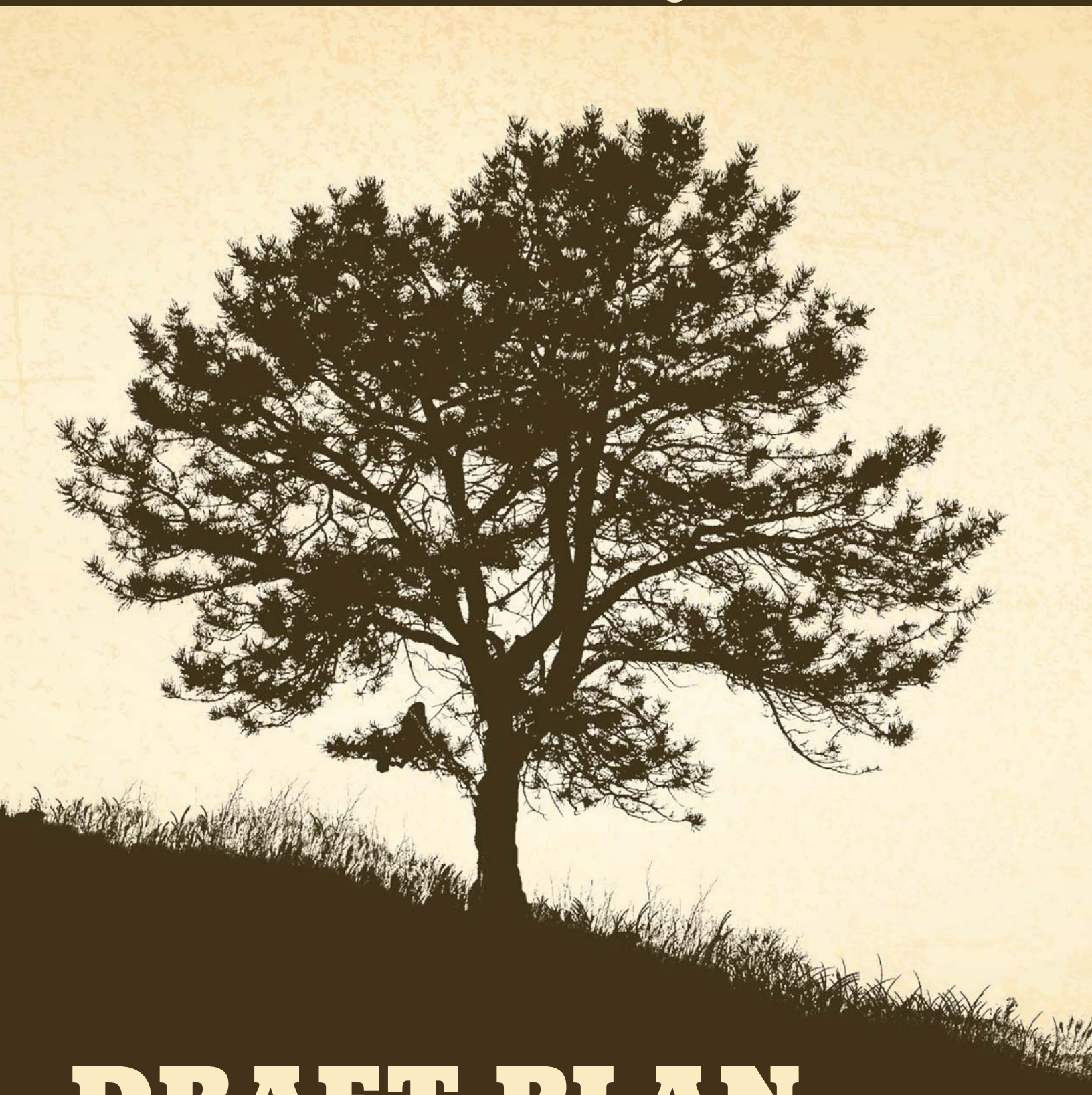
ATTACHMENTS

Attachment A: North Trail Study Area Draft Plan
Attachment B: North TSA Plan and Process Summary
Attachment C: OSBT Supported Changes to the North TSA Draft Plan (March 9, 2016)
Attachment D: Alternative Scenario
Attachment E: North TSA Recommended Actions and Alternative Comparison
Attachment F: Joder Connector Comparison
Attachment G: Implementation Costs and Phasing

Version 2

City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



DRAFT PLAN

May 2016

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Background photo: Wonderland Lake. Unless otherwise noted, all photos are courtesy of OSMP.

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E Appendix E: Scheduling and Estimated Costs for North TSA Projects

F Appendix F: Feedback Themes Not Included in the Plan

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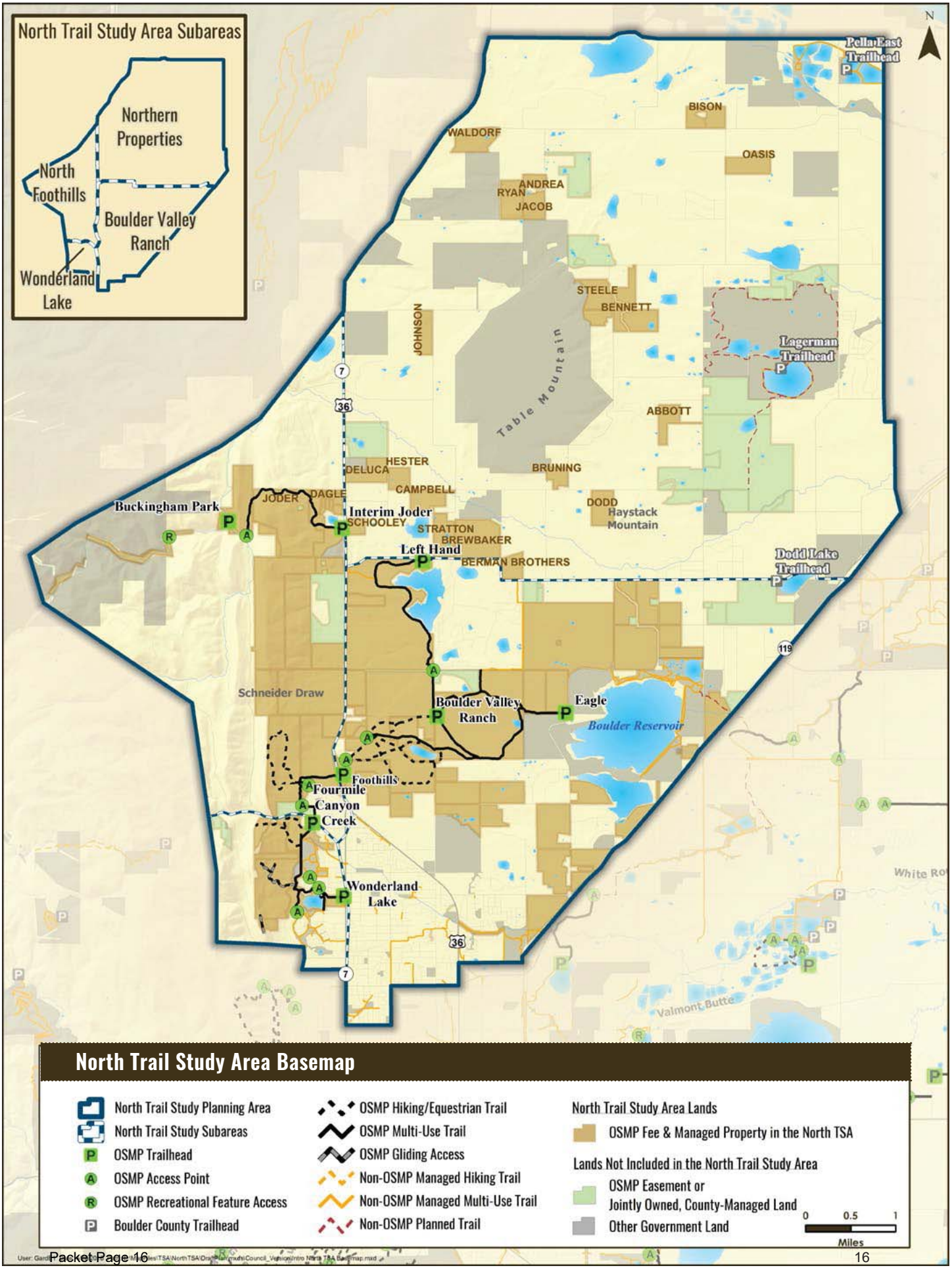
Fossil of a smooth oyster shell, found in a marine sedimentary rock layer in the North TSA. © Gary Stevens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Purpose and Goals

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.

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

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.

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

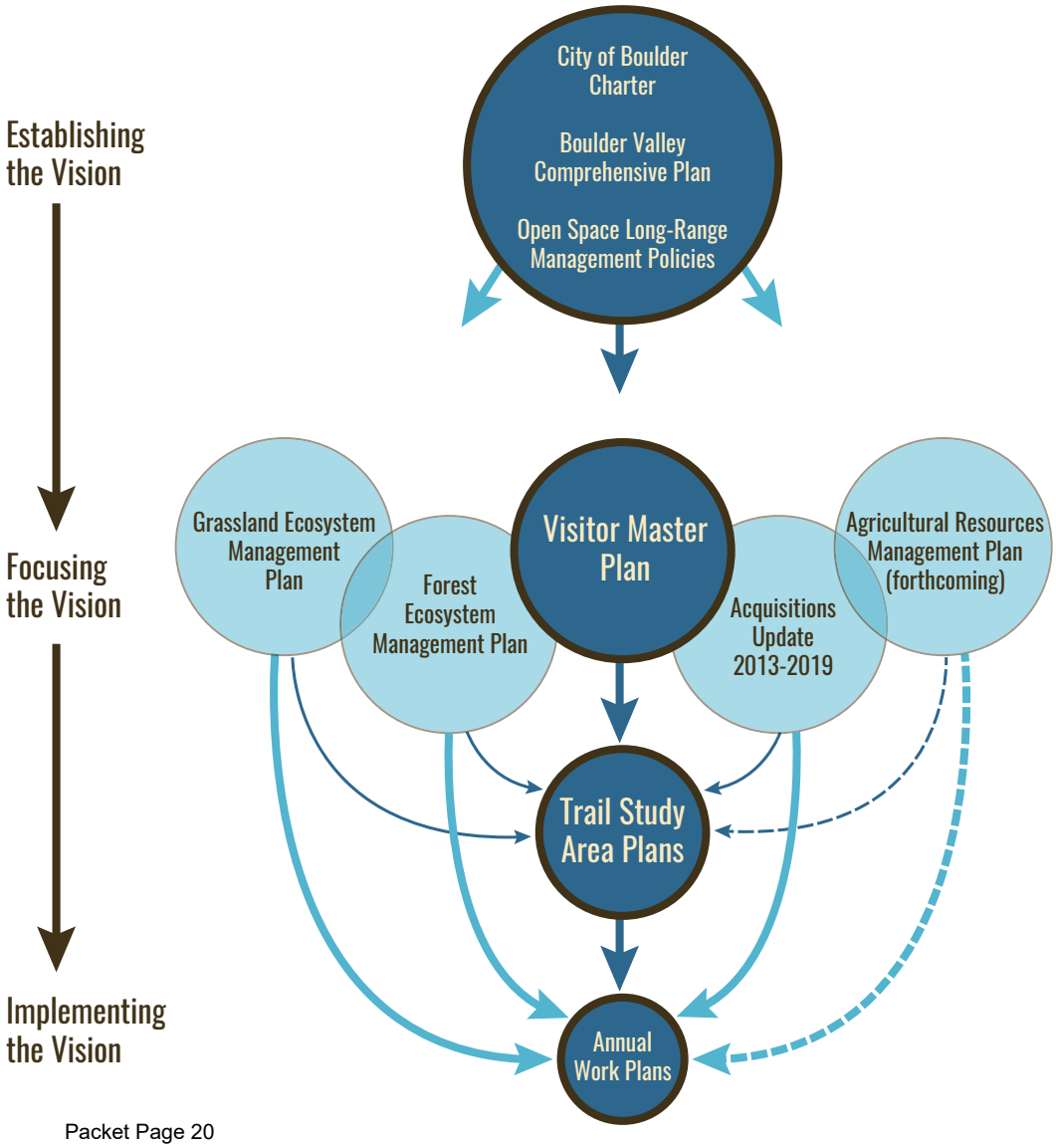
Boulder area youths participated in North TSA youth engagement efforts.

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.

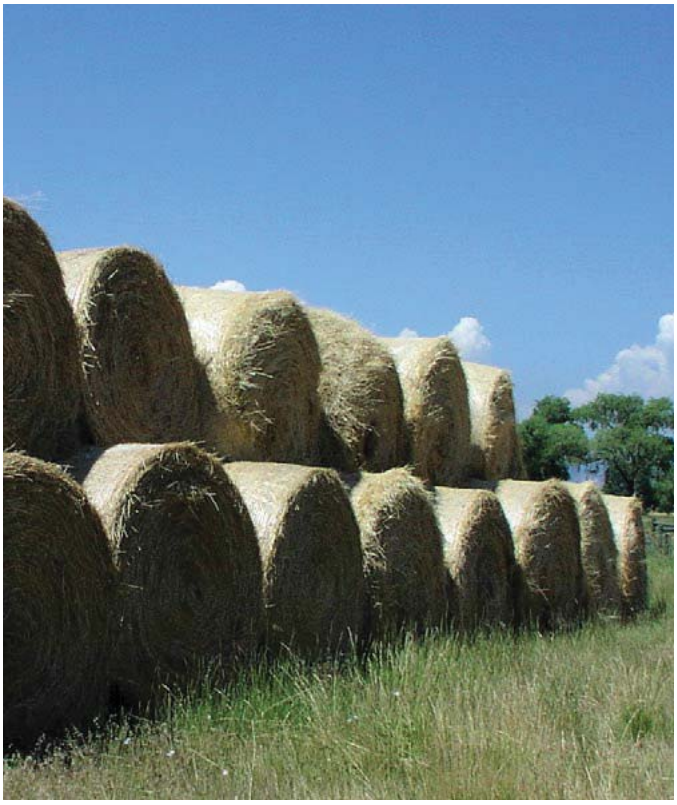
Some of these rare or uncommon species can be threatened by visitor activities. A focus of the North TSA Plan is to maintain or increase the level of natural resource protection and restoration so OSMP can continue to achieve the community's natural resource conservation goals. The Grassland Ecosystem 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

Conservation of Resources Natural, Agricultural, Cultural

Improved Access and Accessibility

Honoring Community Values and Commitments

Increased Education and Understanding

Improved Connectivity

Balance of Recreation and Resource Conservation

Increased Safety

Decreased Visitor Conflict

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

MAP 1: North TSA-Wide - Management Area Designations

Actions T1 to T9

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

*Interests Met: 4**

- *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.*

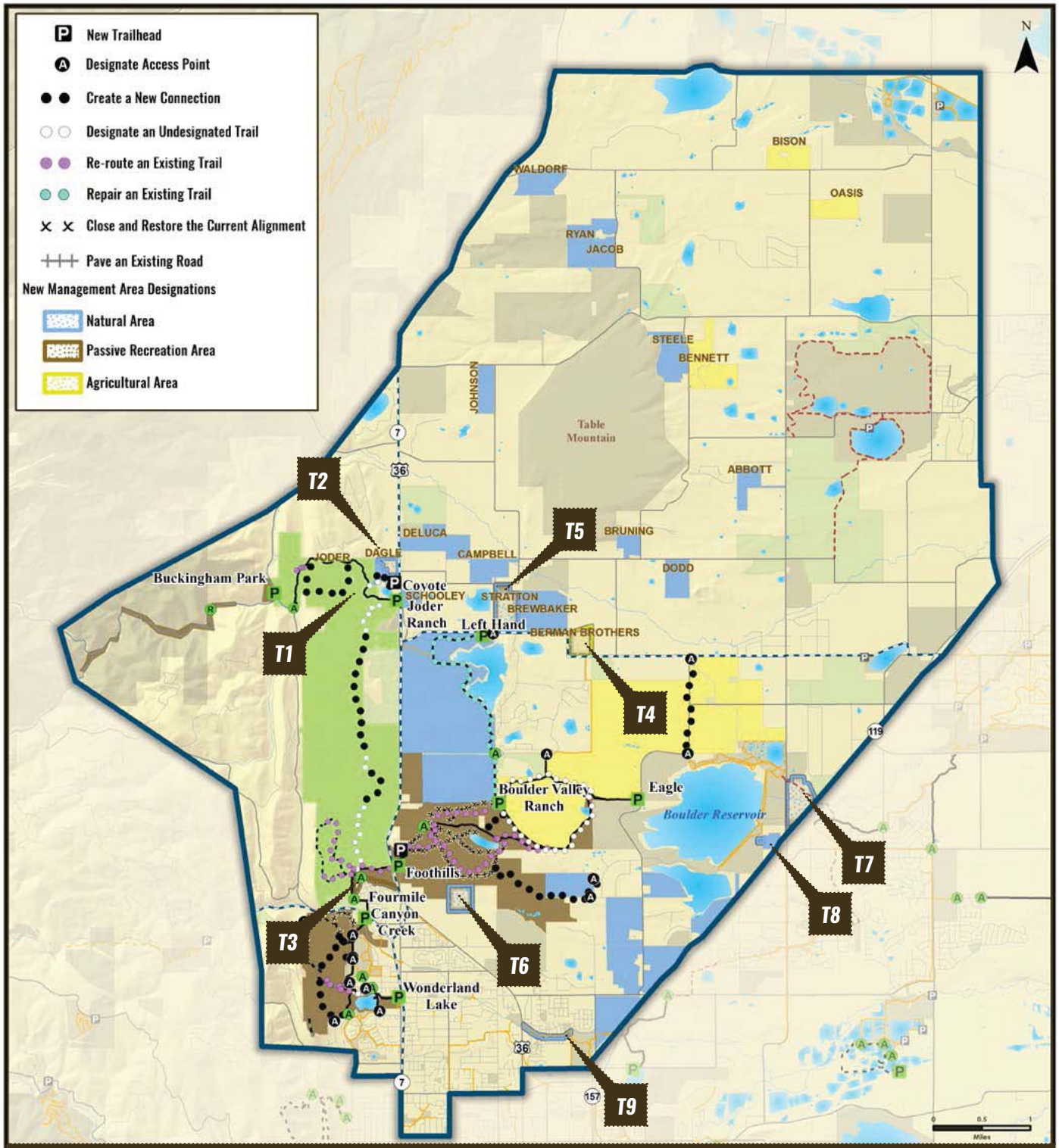
Primary Goal

- *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
- 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
- Agricultural Area
- Habitat Conservation Area
- Natural Area
- Passive Recreation Area
- OSMP Easement or Jointly Owned, County-Managed Land
- Other Government Land

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

MAP 2: North TSA-Wide - Recommendations

Actions T10 to T15

Collaborate with partner agencies to create regional connections.

*Interests Met: 3**

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

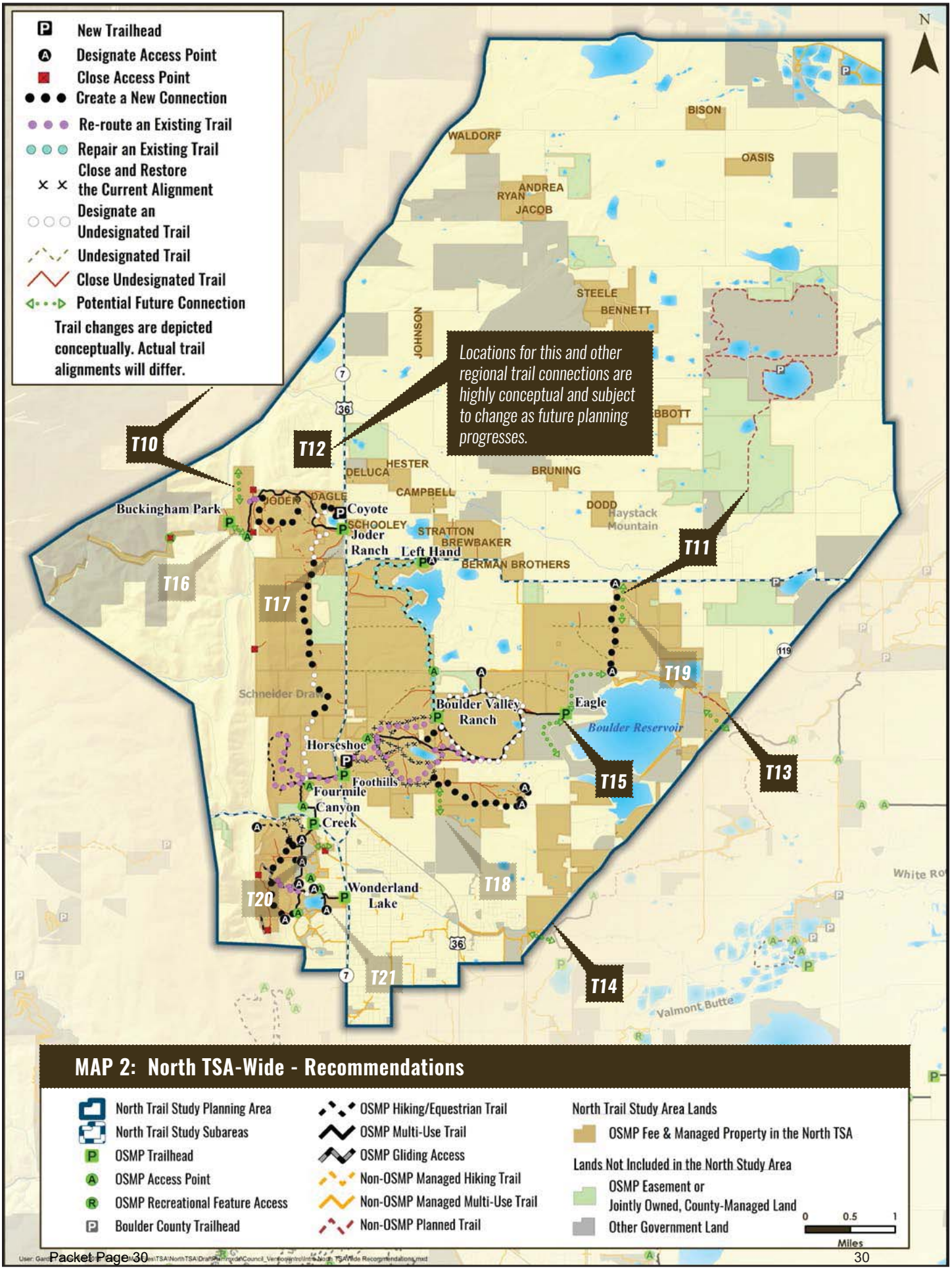
- *Enhance regional trail connectivity.*

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.


New Trailhead
Designate Access Point
Close Access Point
Create a New Connection
Re-route an Existing Trail
Repair an Existing Trail
Close and Restore the Current Alignment
Designate an Undesignated Trail
Undesignated Trail
Close Undesignated Trail
Potential Future Connection
Trail changes are depicted conceptually. Actual trail alignments will differ.
Locations for this and other regional trail connections are highly conceptual and subject to change as future planning progresses.
T10
T11
T12
T13
T14
T15
T16
T17
T18
T19
T20
T21
N
BISON
WALDORF
OASIS
ANDREA
RYAN
JACOB
STEELE
BENNETT
JOHNSON
BBOTT
HESTER
DELUCA
BRUNING
CAMPBELL
DODD
Haystack Mountain
Buckingham Park
JODER
DAGLE
Coyote
SCHOOLEY
Joder Ranch
STRATTON
BREWBAKER
Left Hand
BERMAN BROTHERS
Schneider Draw
Boulder Valley Ranch
Eagle
Boulder Reservoir
Horseshoe
Foothills
Fourmile Canyon Creek
Wonderland Lake
White Ro
Valmont Butte
MAP 2: North TSA-Wide - 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 Study Area
OSMP Easement or Jointly Owned, County-Managed Land
Other Government Land
0 0.5 1
Miles

MAP 2: North TSA-Wide - Recommendations, continued

Actions T16 to T20

Collaborate with partner agencies to create local trail connections.

*Interests Met: 3**

- *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**

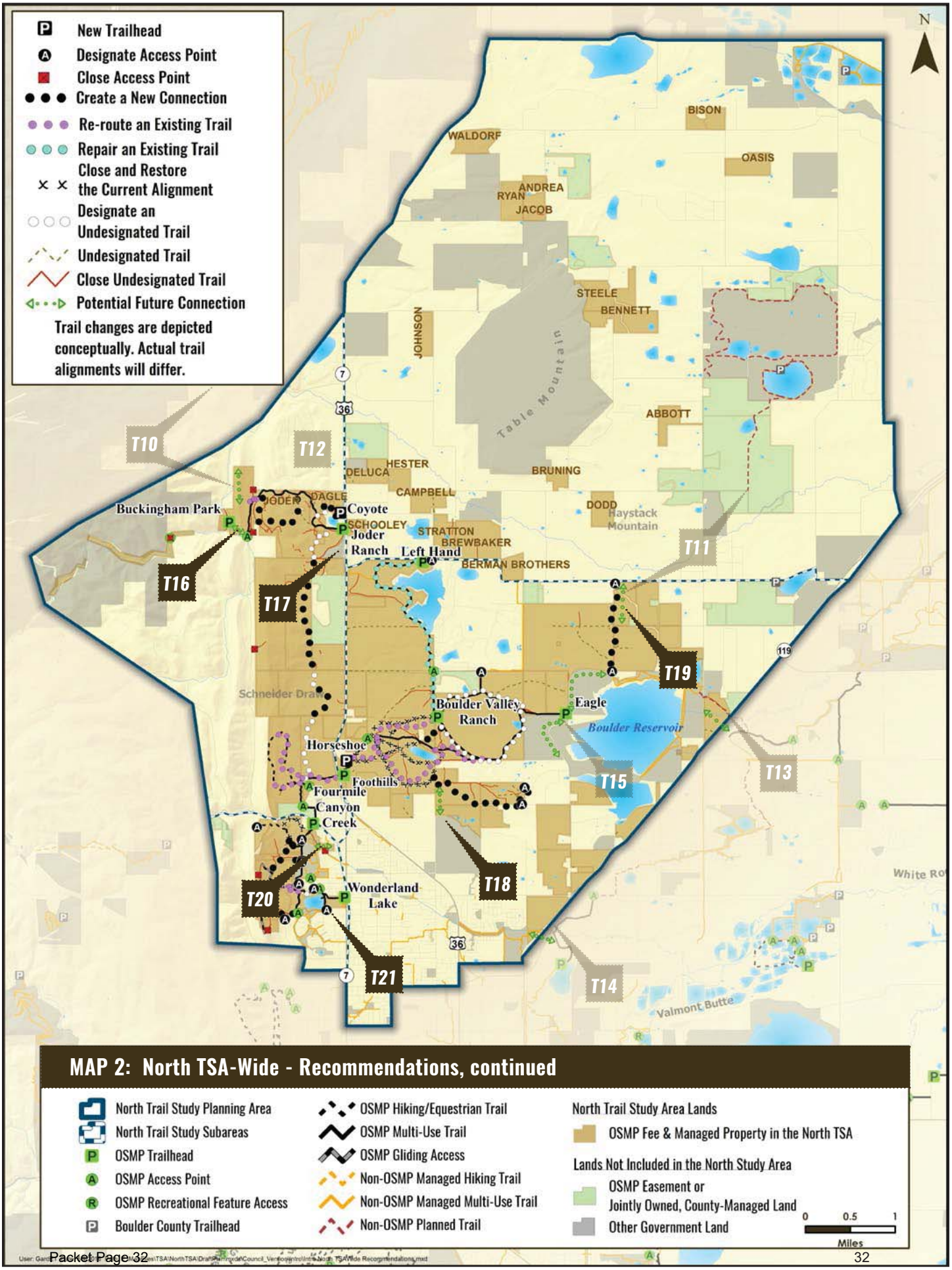
Primary Goal

- *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.


New Trailhead
Designate Access Point
Close Access Point
Create a New Connection
Re-route an Existing Trail
Repair an Existing Trail
Close and Restore the Current Alignment
Designate an Undesignated Trail
Undesignated Trail
Close Undesignated Trail
Potential Future Connection
Trail changes are depicted conceptually. Actual trail alignments will differ.
N
BISON
WALDORF
OASIS
ANDREA
RYAN
JACOB
STEELE
BENNETT
JOHNSON
Table Mountain
ABBOTT
BRUNING
HESTER
DELUCA
CAMPBELL
DODD
Haystack Mountain
Buckingham Park
JODER
DAGLE
Coyote
SCHOOLEY
Joder Ranch
STRATTON
BREWBAKER
Left Hand
BERMAN BROTHERS
Schneider Draw
Boulder Valley Ranch
Eagle
Boulder Reservoir
Horseshoe
Foothills
Fourmile Canyon Creek
Wonderland Lake
Valmont Butte
White Ro
T10
T12
T11
T16
T17
T19
T13
T15
T18
T20
T21
T14
MAP 2: North TSA-Wide - Recommendations, continued
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 Study Area
OSMP Easement or Jointly Owned, County-Managed Land
Other Government Land
0 0.5 1
Miles

ADDITIONAL ACTIONS: North TSA-Wide - Recommendations

Action T22 Bring all trails up to standards.

*Interests Met: 4**

» *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.*

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

*Interests Met: 4**

» *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.*

Action T24 Remove unnecessary fencing and use wildlife friendly fencing.

*Interests Met: 3**

» *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

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

*Interests Met: 4**

» *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.*

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

*Interests Met: 2**

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 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

MAP 3: North Foothills - Management Area Designations

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

*Interests Met: 4**

» *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.*

ACTION NF2 Designate Dagle II property as a Natural Area.

*Interests Met: 2**

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.*

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

*Interests Met: 2**

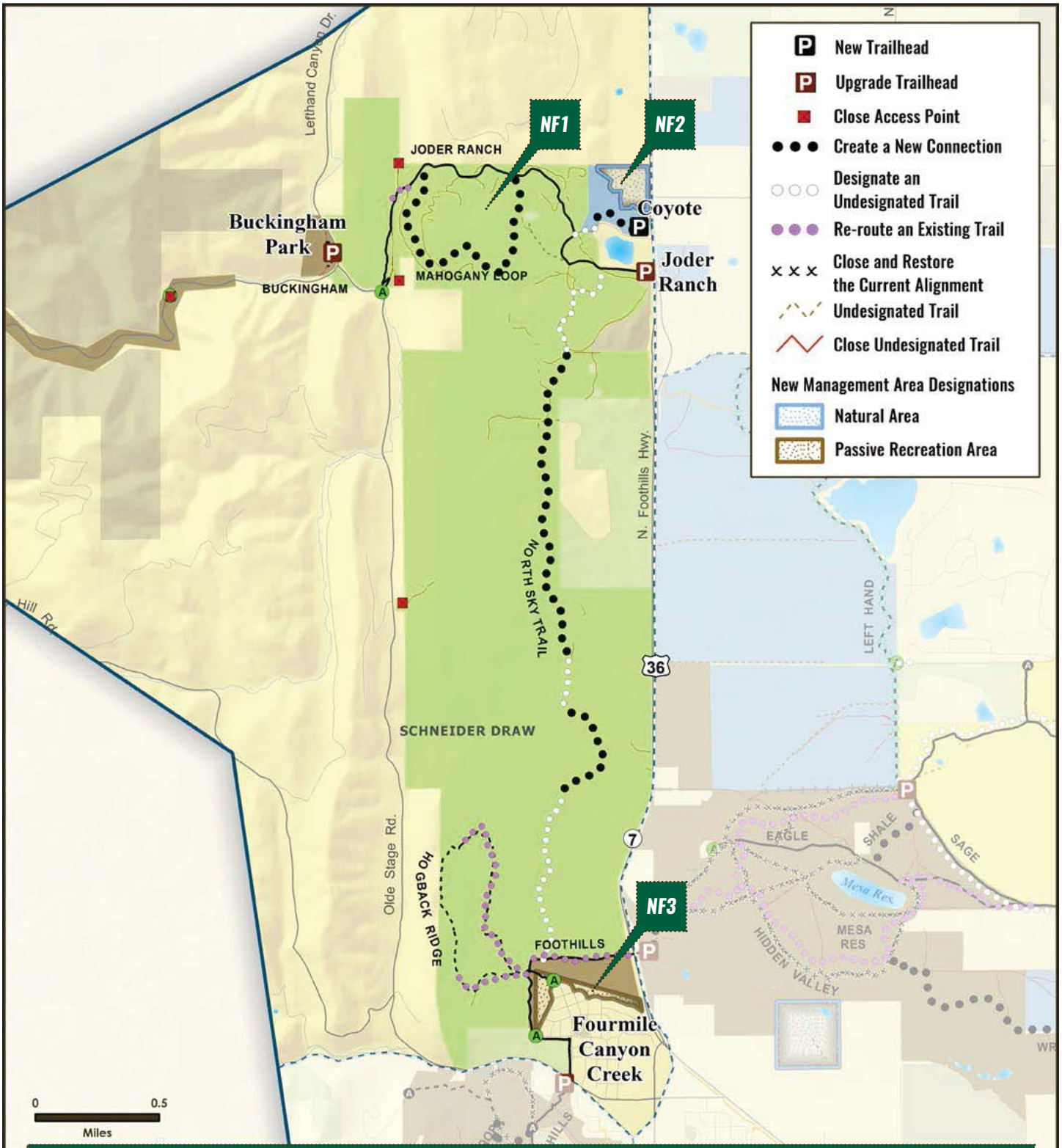
Primary Goal

» *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

N

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

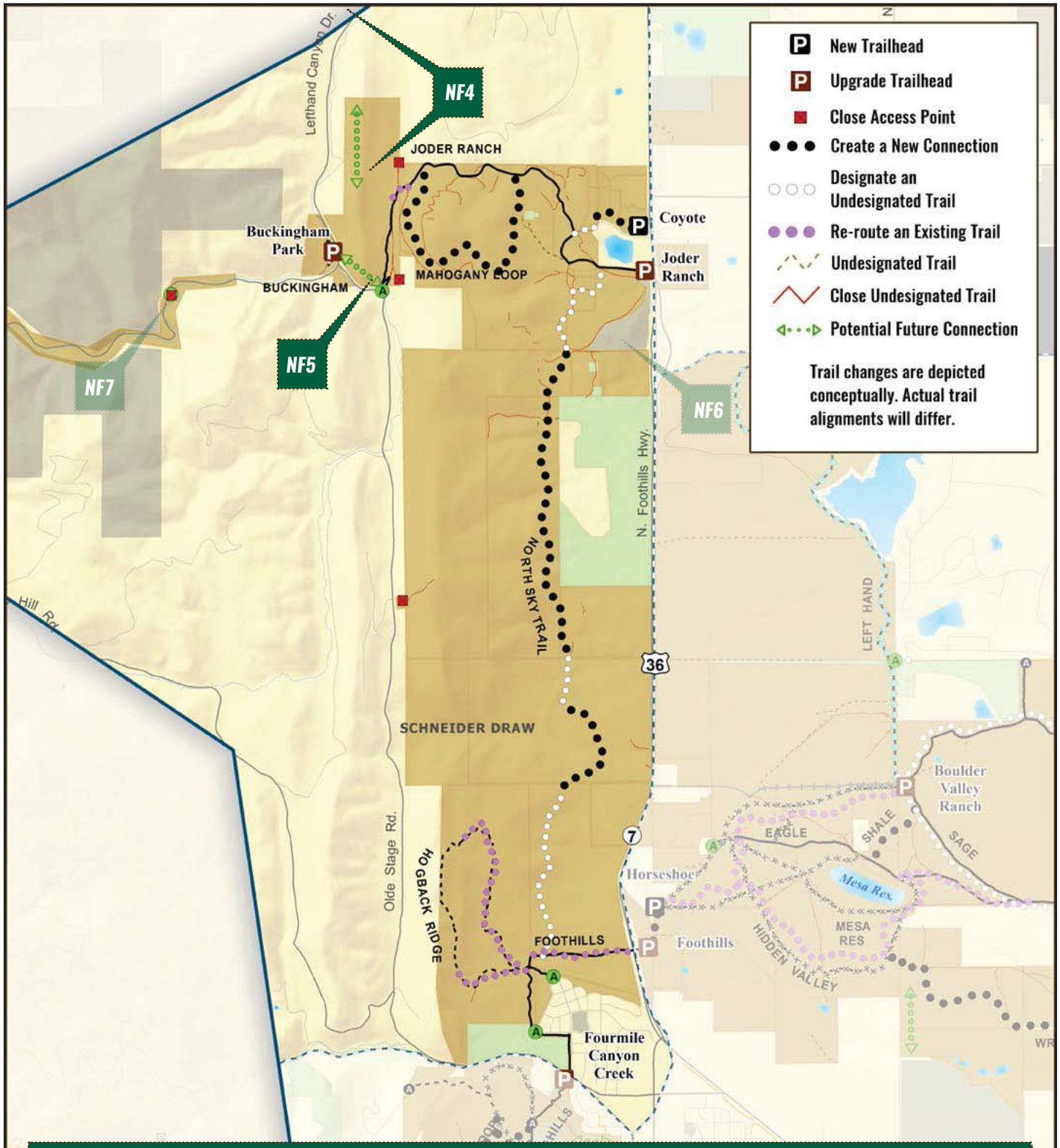
» *Enhance local trail connectivity.*

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

N

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

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

*Interests Met: 3**

- *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.*

Action NF7 Close Cottonwood Recreation Area.

*Interests Met: 2**

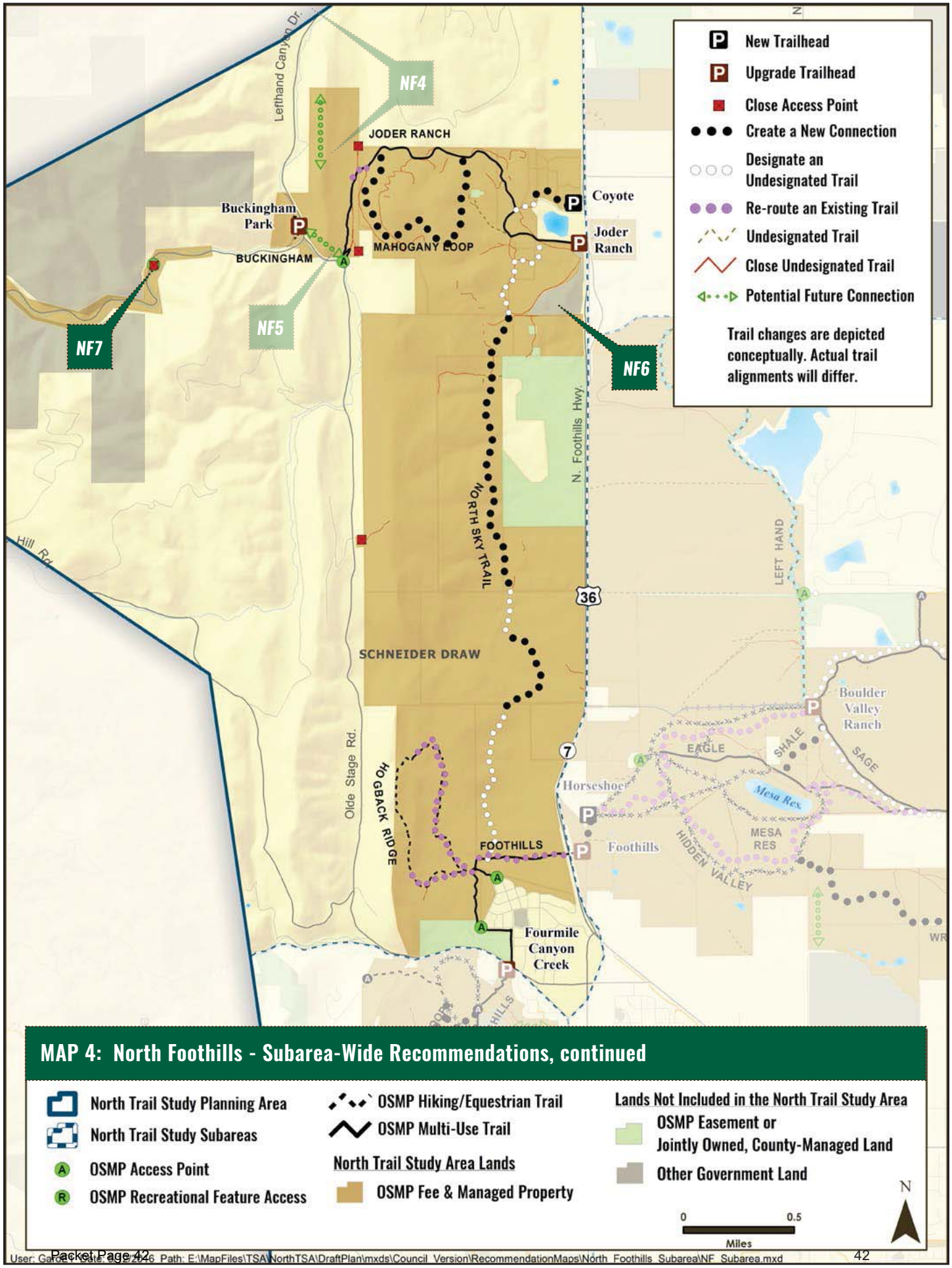
Primary Goal

- *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.


New Trailhead
Upgrade Trailhead
Close Access Point
Create a New Connection
Designate an Undesignated Trail
Re-route an Existing Trail
Undesignated Trail
Close Undesignated Trail
Potential Future Connection
Trail changes are depicted conceptually. Actual trail alignments will differ.
NF4
NF5
NF6
NF7
JODER RANCH
Buckingham Park
BUCKINGHAM
MAHOGANY LOOP
Coyote
Joder Ranch
Lefthand Canyon Dr.
NORTH SKY TRAIL
N. Foothills Hwy.
LEFT HAND
SCHNEIDER DRAW
Olde Stage Rd.
HOGBACK RIDGE
FOOTHILLS
Horseshoe
Foothills
EAGLE
SHALE
SAGE
Boulder Valley Ranch
Mesa Res.
MESA RES
HIDDEN VALLEY
Fourmile Canyon Creek
36
7
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
0
0.5
Miles
N

MAP 5: North Foothills - Joder Focus Area

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

*Interests Met: 4**

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.*

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

*Interests Met: 4**

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.*

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

*Interests Met: 4**

Primary Goal

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

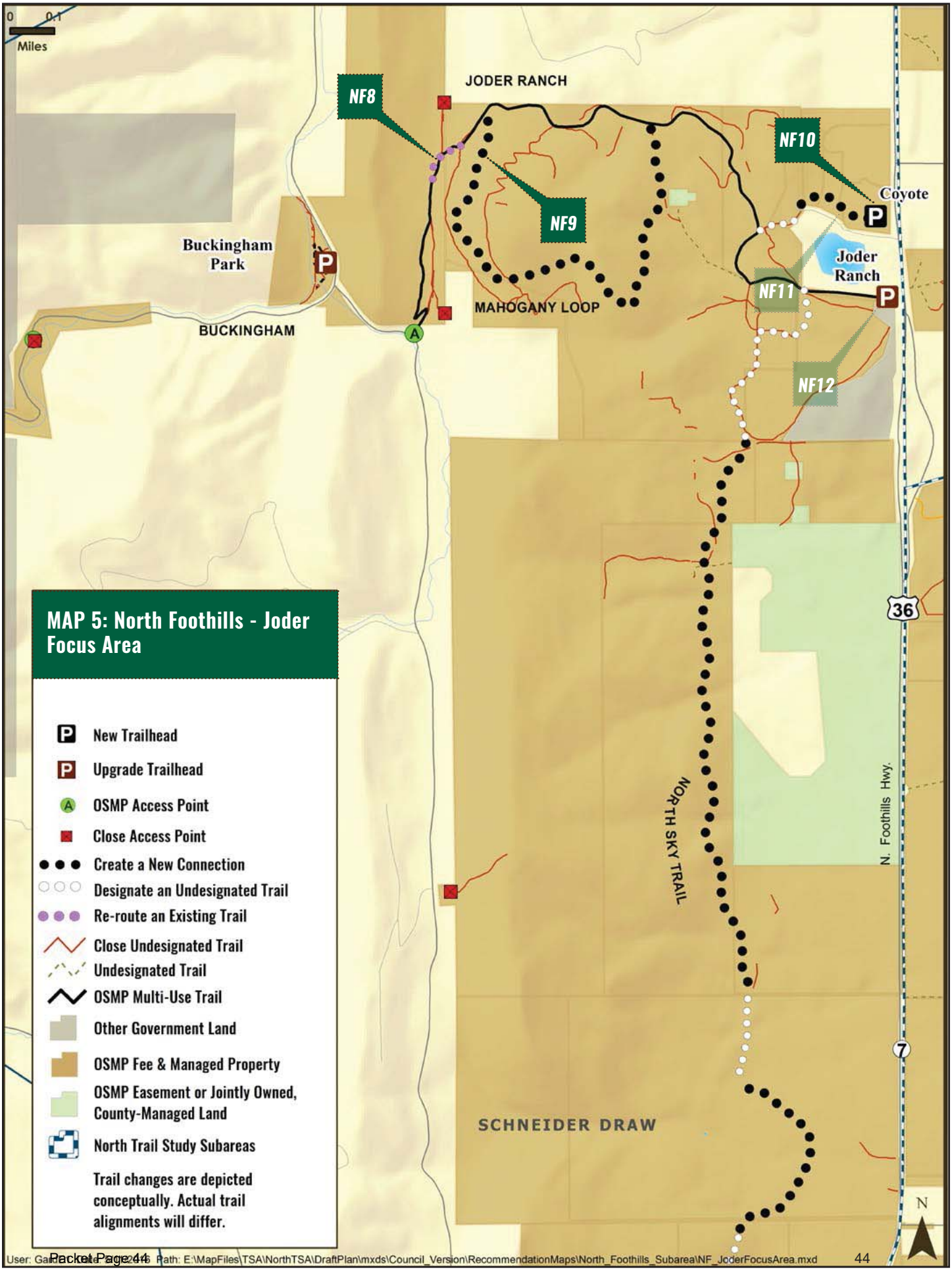
Driving Factors/Benefits

» *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.


0 0.1
Miles
JODER RANCH
NF8
NF9
NF10
NF11
NF12
Coyote
Joder Ranch
Buckingham Park
BUCKINGHAM
MAHOGANY LOOP
NORTH SKY TRAIL
N. Foothills Hwy.
36
7
SCHNEIDER DRAW
N
MAP 5: North Foothills - Joder Focus Area
New Trailhead
Upgrade Trailhead
OSMP Access Point
Close Access Point
Create a New Connection
Designate an Undesignated Trail
Re-route an Existing Trail
Close Undesignated Trail
Undesignated Trail
OSMP Multi-Use Trail
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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44

MAP 5: North Foothills - Joder Focus Area, continued

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

*Interests Met: 5**

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.*

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

*Interests Met: 4**

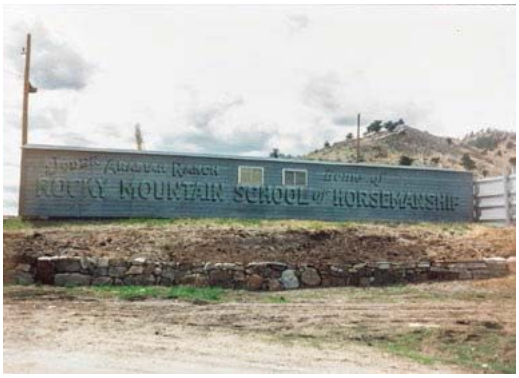
Primary Goal

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

Driving Factors/Benefits

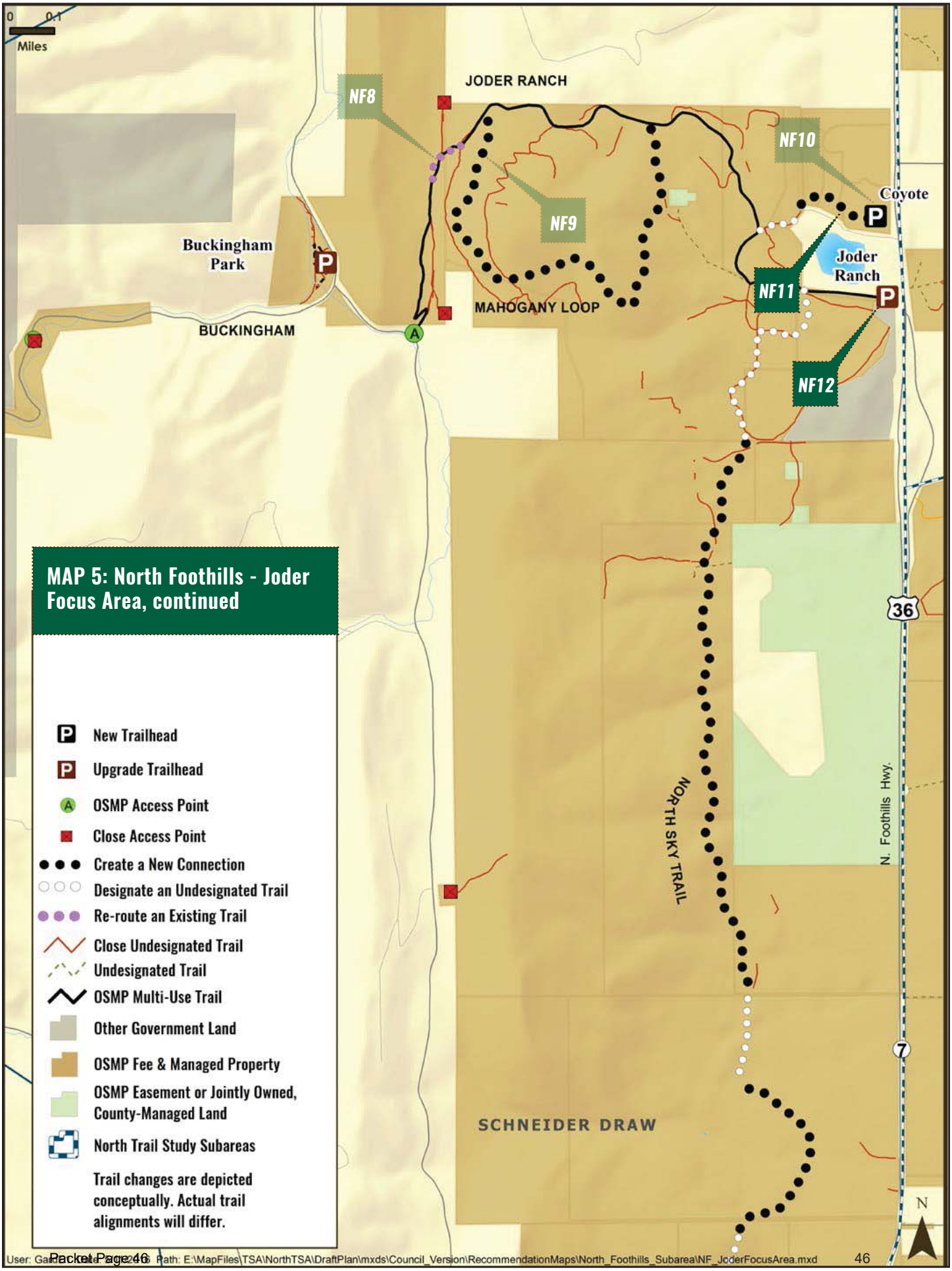
» *Provide access for equestrians and school groups to the Joder property and Boulder County's Six-Mile Fold property.*

» *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.



MAP 5: North Foothills - Joder Focus Area, continued

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

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**

- *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.*

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

*Interests Met: 3**

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.*

Schneider Draw

*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.
0
0.5
Miles
NF13
NF14
NF15
NF16
NF17
NORTH SKY TRAIL
SCHNEIDER DRAW
HOGBACK RIDGE
N FOO
36
7
LONGHORN RD
Horseshoe
Foothills
FOOTHILLS
MESA RESERVOIR
HIDDEN VALLEY
EAGLE
SHALE
Fourmile Canyon Creek
N
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MAP 6: North Foothills - Hogback and North Sky Focus Area, continued

Action NF15 Post educational signs about the North Foothills HCA.

*Interests Met: 4**

- *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.*

Action NF16 Re-route Hogback Trail.

*Interests Met: 5**

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.*

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

*Interests Met: 5**

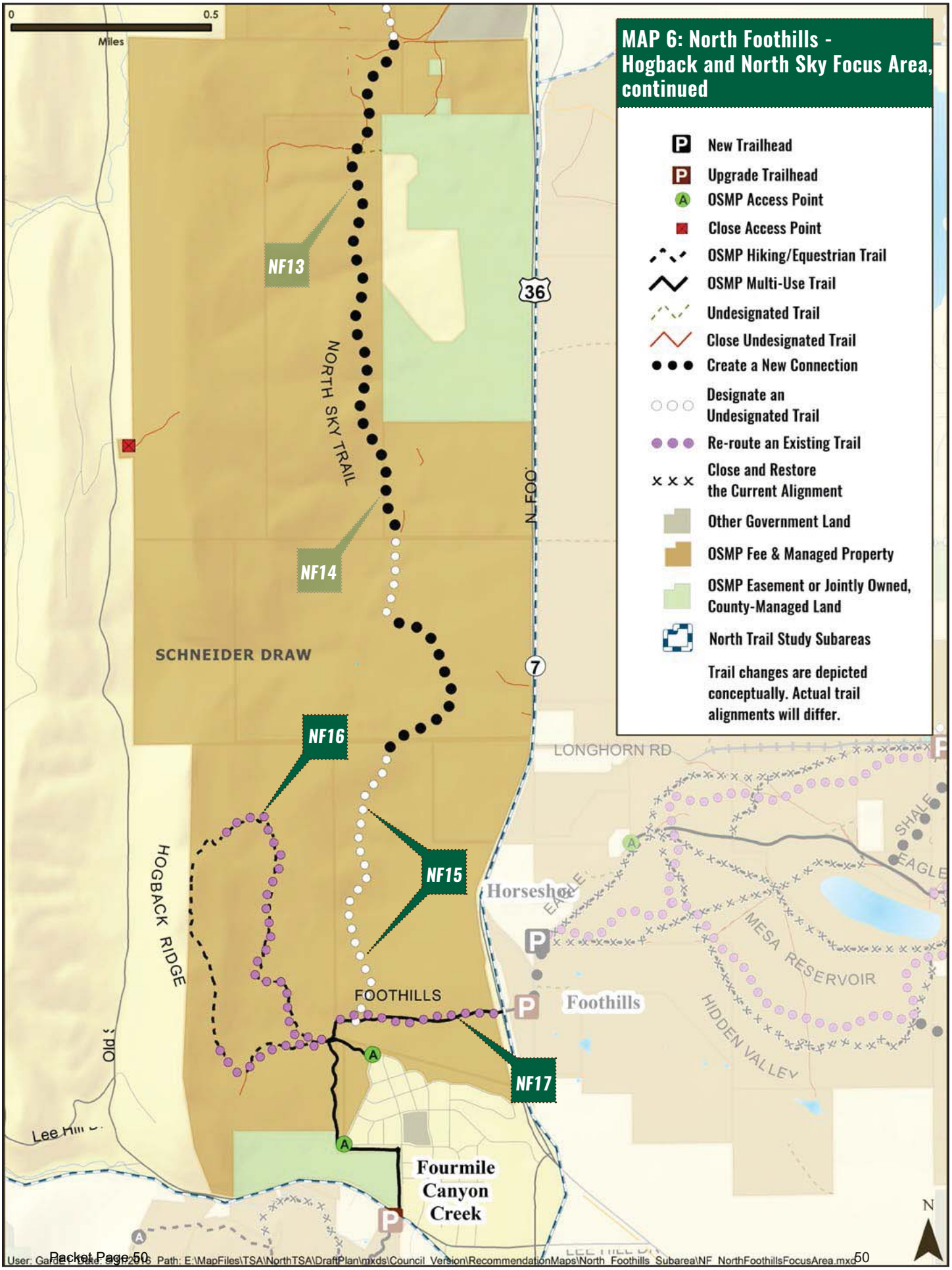
Primary Goal

- *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.
0
0.5
Miles
NF13
NF14
NF15
NF16
NF17
NORTH SKY TRAIL
SCHNEIDER DRAW
HOGBACK RIDGE
N FOO
36
7
LONGHORN RD
Horseshoe
Foothills
FOOTHILLS
MESA RESERVOIR
HIDDEN VALLEY
EAGLE
Fourmile Canyon Creek
N

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

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**

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.*

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

*Interests Met: 2**

» *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.*

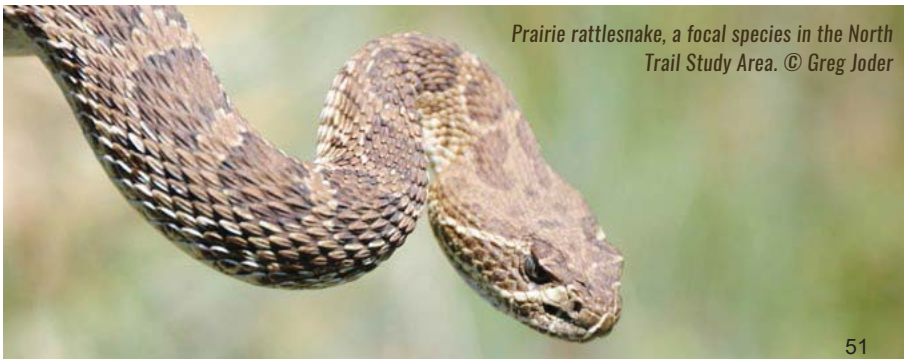
ACTION NF20 After City Council approval of the North TSA Plan, staff will return to the OSBT with monitoring recommendations for the North Foothills HCA, the North Sky Trail and the Joder property.

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.*

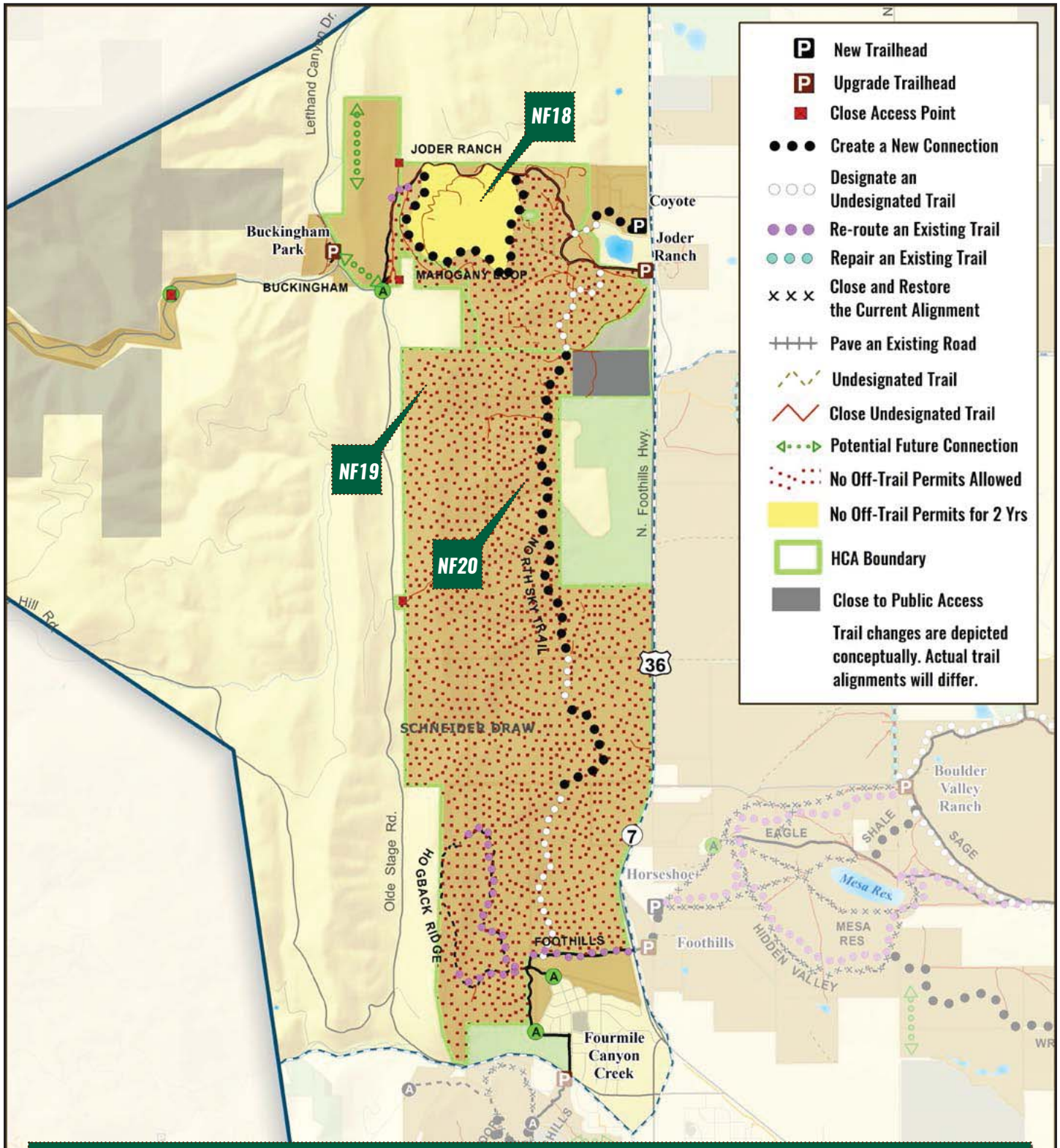
Driving Factors/Benefits

» *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

0 0.5 Miles

N

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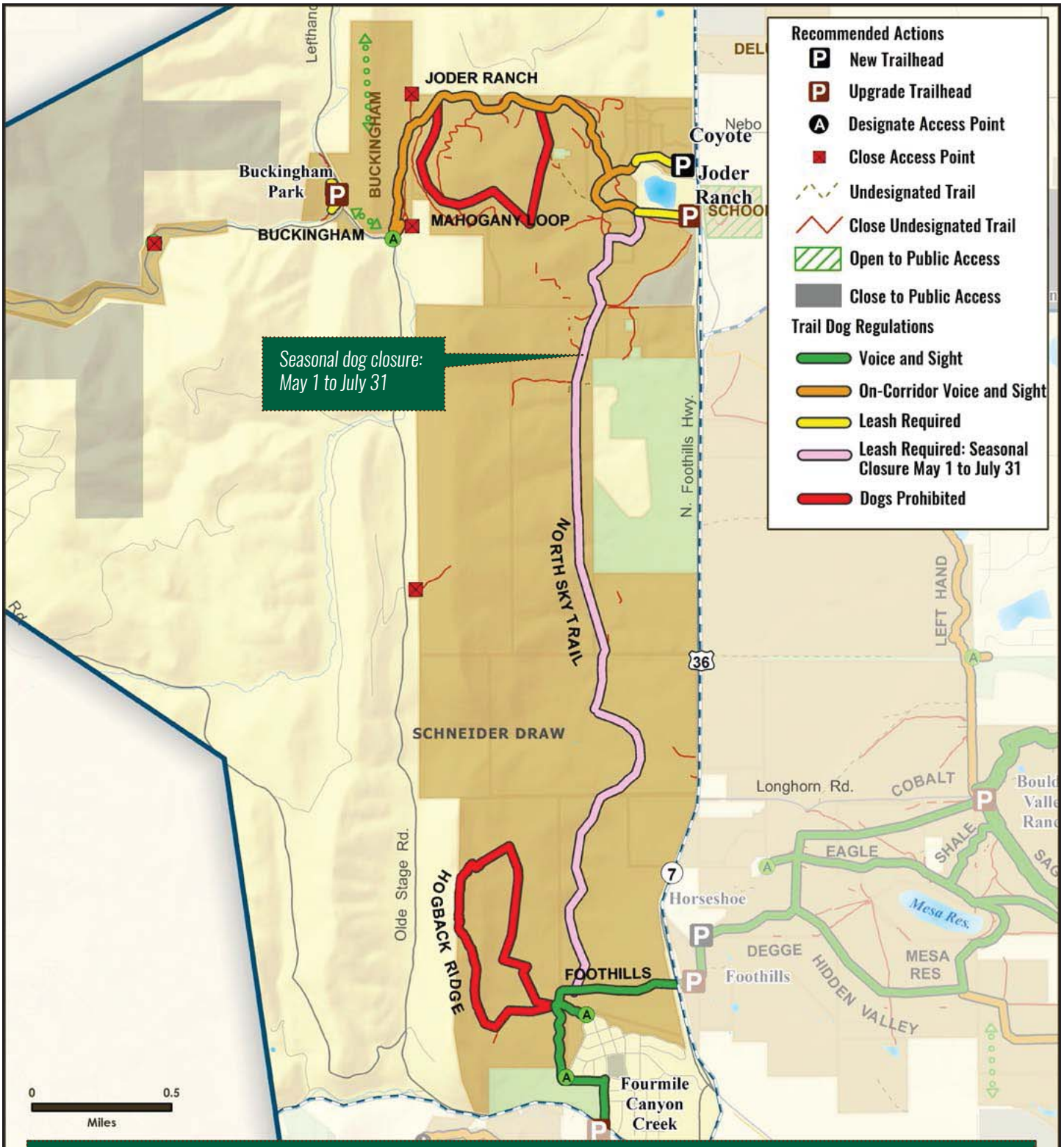
MAP 8: North Foothills - Trail-Based Dog Regulations

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

N

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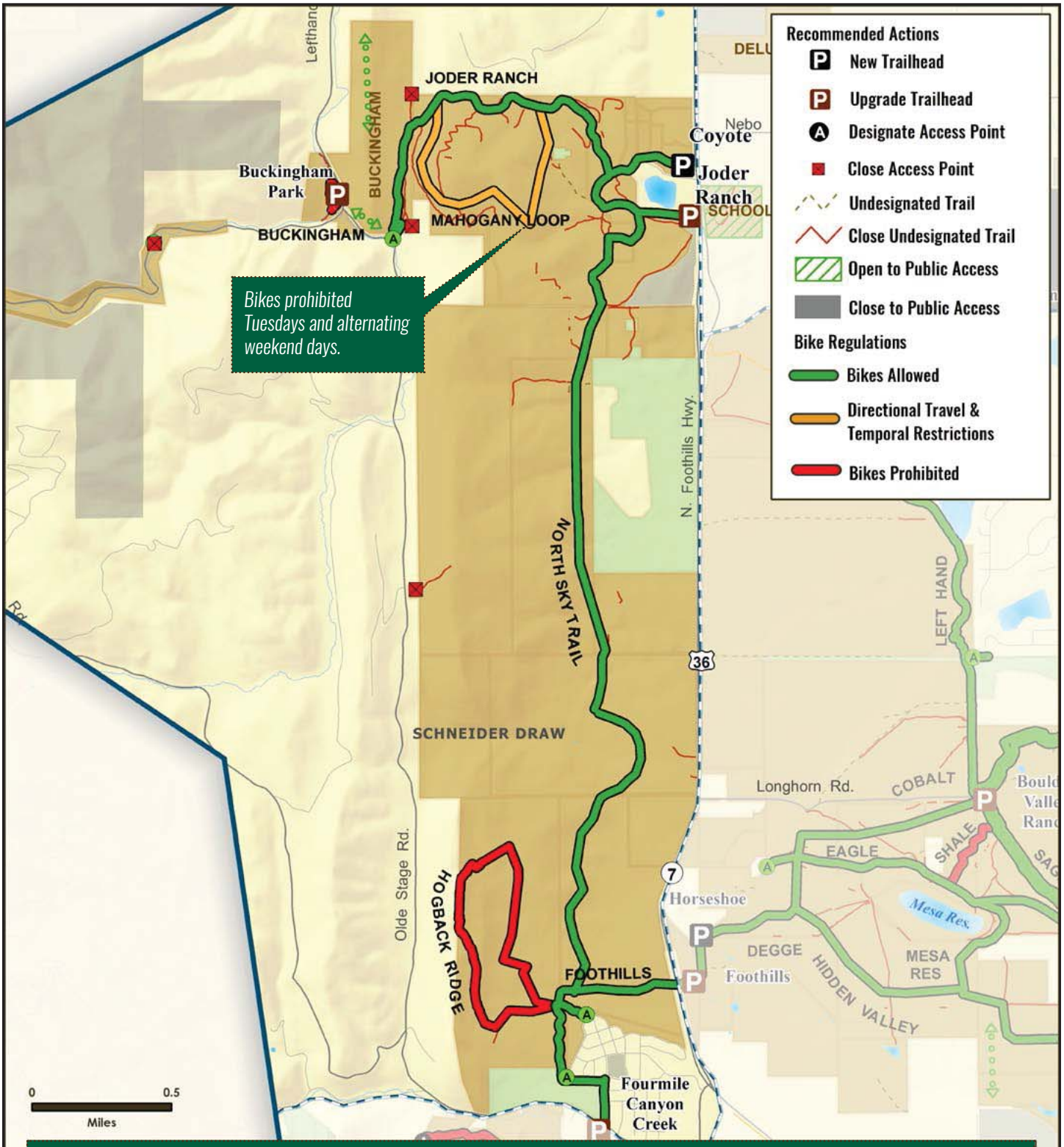
MAP 9: North Foothills - Bike Regulations

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

N

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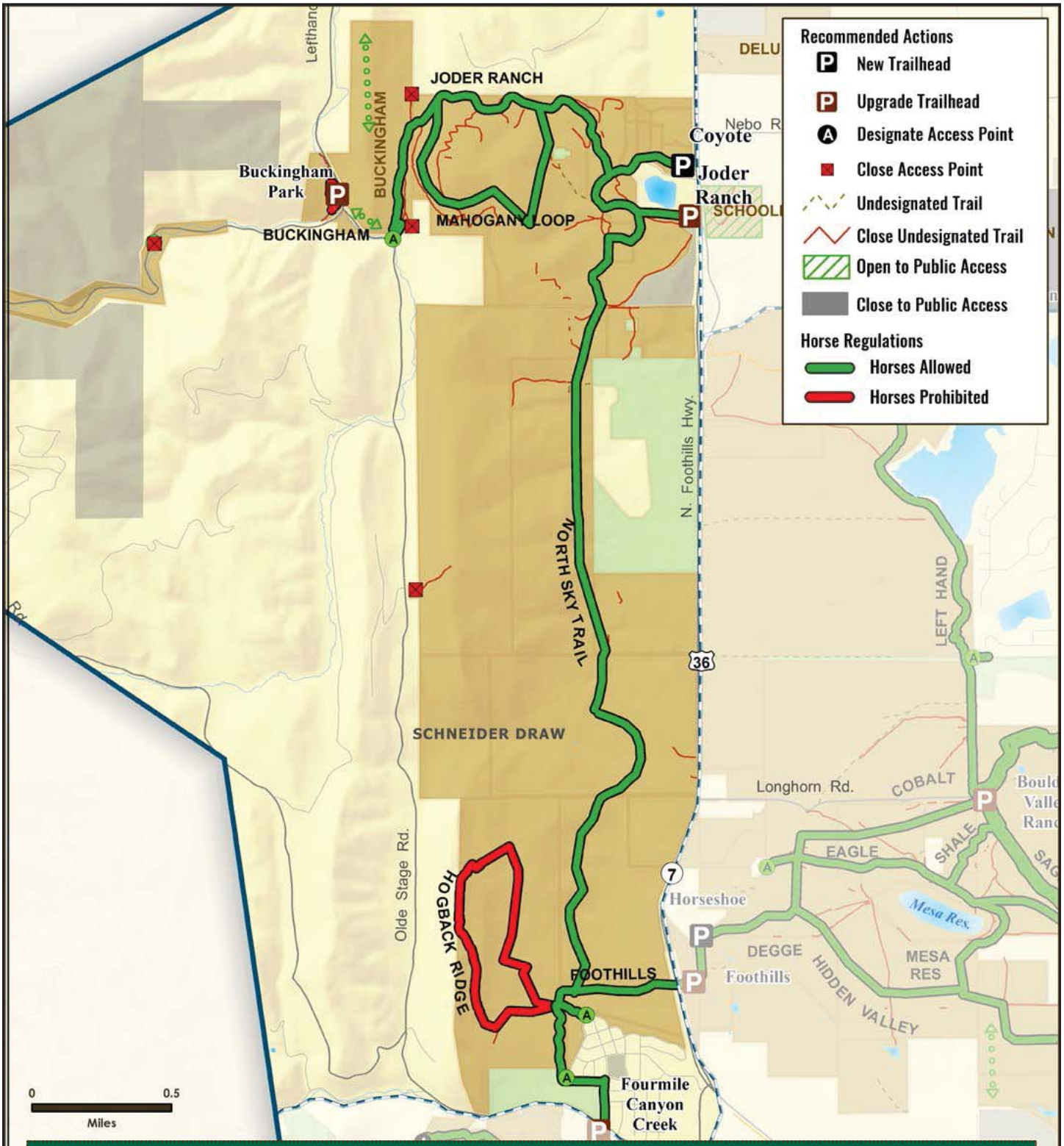
MAP 10: North Foothills - Trail-Based Horse Regulations

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
- 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

N

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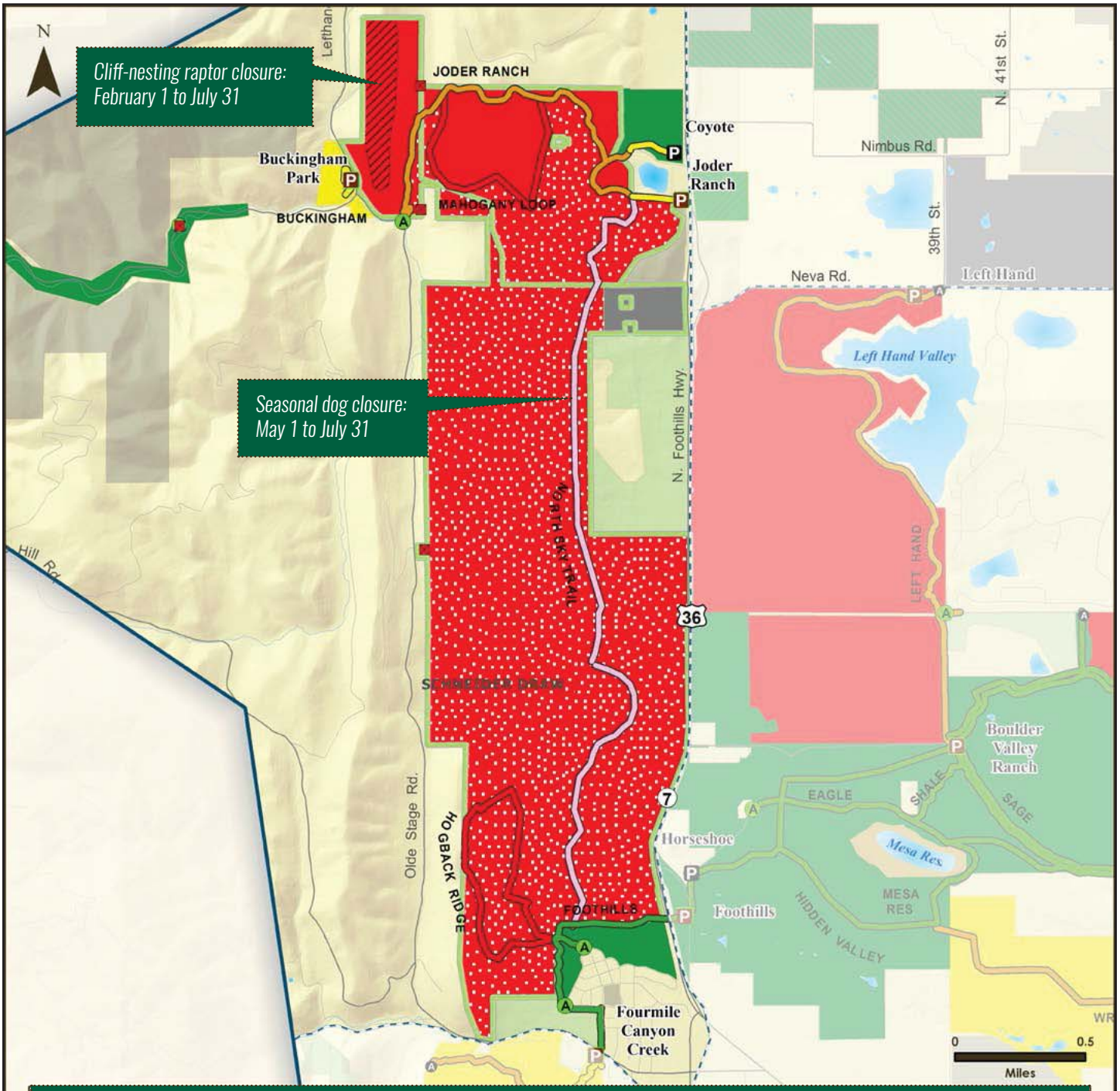
MAP 11: North Foothills - Regulatory Settings

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.



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.*

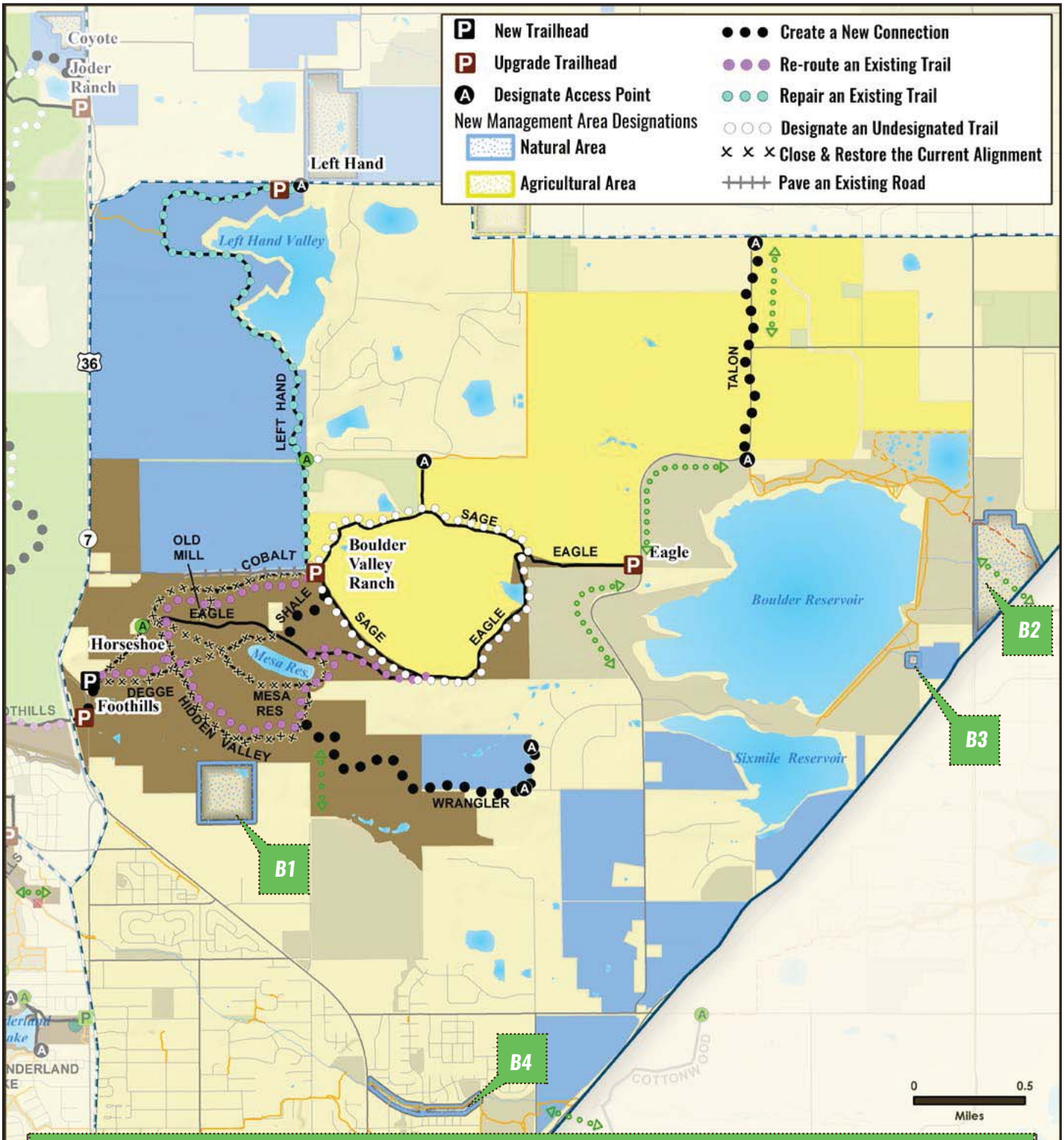
» *Protect habitat for rare plants.*

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.

N

MAP 13 : Boulder Valley Ranch - Subarea-Wide Recommendations

Actions B5 to B9
Collaborate with partner agencies to create regional trail connections.

*Interests Met: 5**

- *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

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

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

*Interests Met: 4**

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.*

ACTION B12 Bring Lefthand Trailhead up to standards.

*Interests Met: 4**

» *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.*

ACTION B13 Improve Lefthand Trail.

*Interests Met: 5**

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.*

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

*Interests Met: 3**

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.*

N
Left Hand
Neva Rd.
7
36
B11
B12
B13
B14
Left Hand Valley
Boulder Valley Ranch
LEFT HAND
Longhorn Rd.
COBALT
OLD MILL
SHALE
EAGLE
0 0.1
Miles
MAP 14: Boulder Valley Ranch - East Beech and Lefthand Focus Area
OSMP Access Point
Designate Access Point
Upgrade Trailhead
OSMP Hiking/Equestrian Trail
OSMP Multi-Use Trail
Non-OSMP Managed Trails
Close Undesignated Trail
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
OSMP Easement or Jointly Owned, County-Managed Land
OSMP Fee & Managed Property
Other Government Land
North Trail Study Subareas
Trail changes are depicted conceptually. Actual trail alignments will differ.

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

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

*Interests Met: 7**

» *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.*

Action B16 Bring Eagle Trailhead up to standards.

*Interests Met: 5**

» *Include horse trailer parking at Eagle Trailhead.*

Primary Goal

» *Provide designated horse trailer parking.*

Driving Factors/Benefits

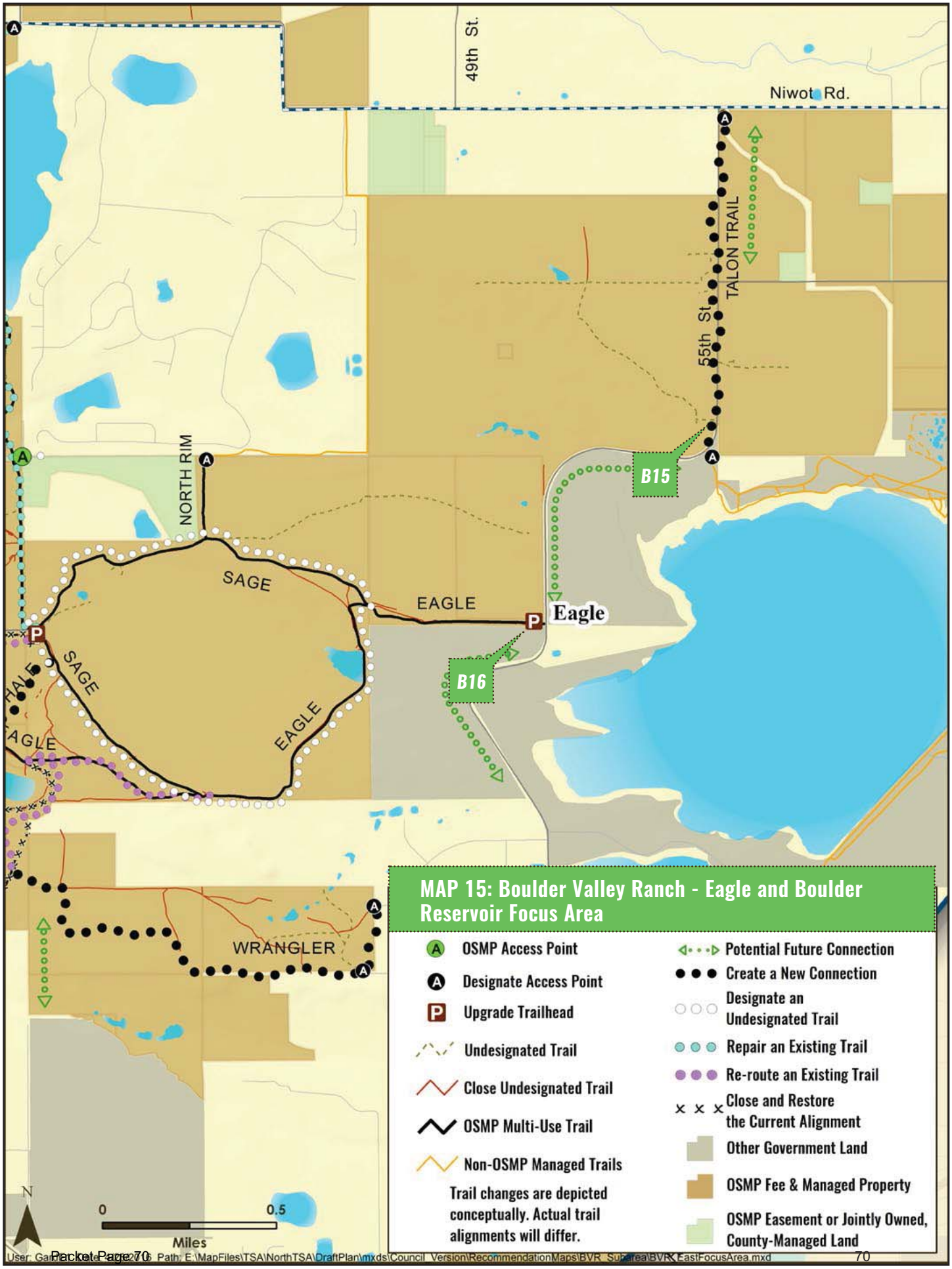
» *Reconfigure trailhead to improve safety.*

» *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.


49th St.
Niwot Rd.
TALON TRAIL
55th St
B15
NORTH RIM
SAGE
EAGLE
Eagle
B16
SAGE
EAGLE
WRANGLER
MAP 15: Boulder Valley Ranch - Eagle and Boulder Reservoir Focus Area
OSMP Access Point
Designate Access Point
Upgrade Trailhead
Undesignated Trail
Close Undesignated Trail
OSMP Multi-Use Trail
Non-OSMP Managed Trails
Trail changes are depicted conceptually. Actual trail alignments will differ.
Potential Future Connection
Create a New Connection
Designate an Undesignated Trail
Repair an Existing 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
N
0
0.5
Miles

MAP 16: Boulder Valley Ranch - Degge Focus Area

Action B17 Bring Foothills Trailhead up to standards.

*Interests Met: 6**

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.*

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

*Interests Met: 2**

» *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.*

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

*Interests Met: 5**

» *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.*

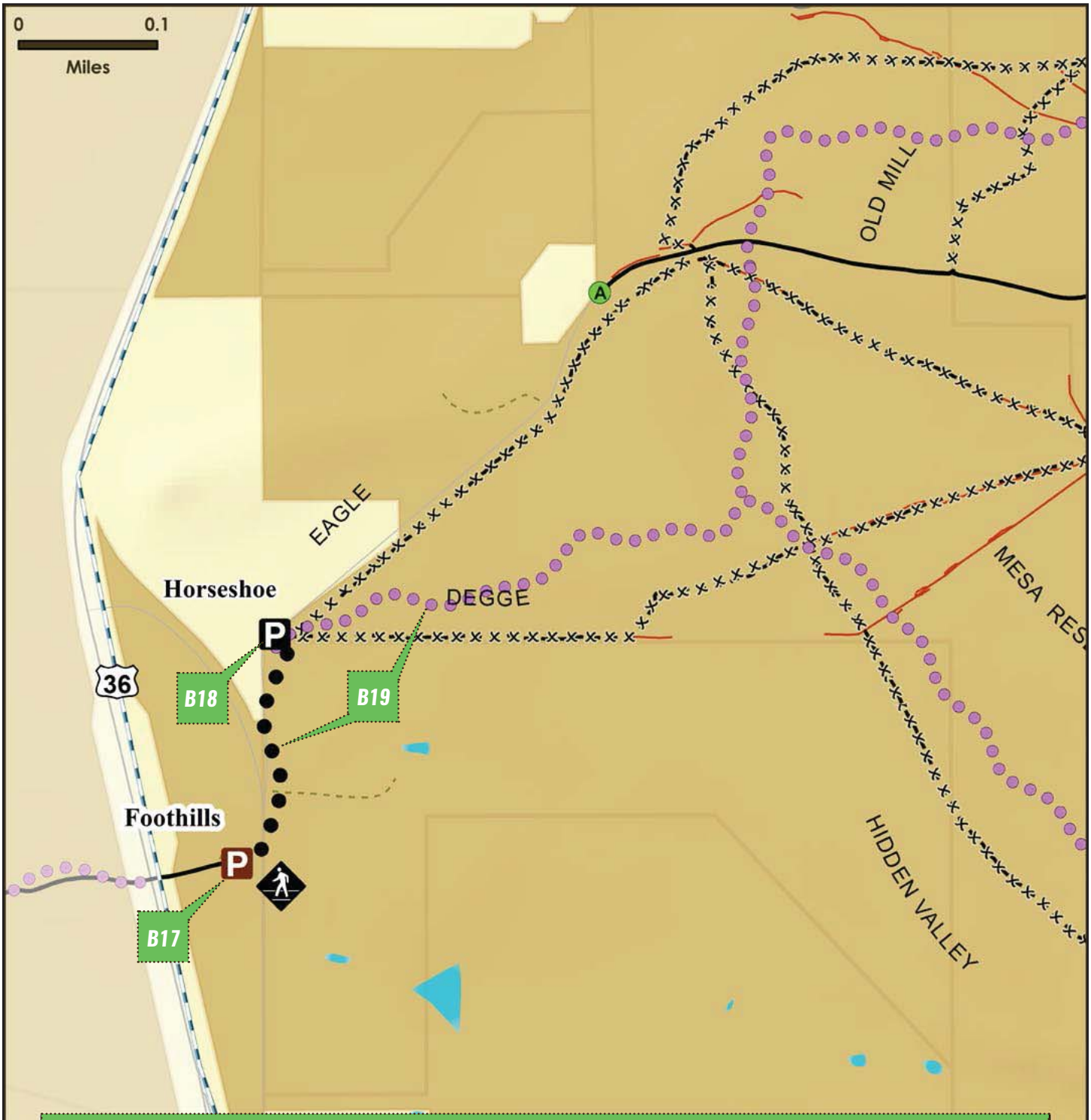
Driving Factors/Benefits

» *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.

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MAP 17: Boulder Valley Ranch - Mesa Reservoir Focus Area

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

*Interests Met: 5**

» *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.*

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

*Interests Met: 4**

» *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.*

ACTION B22 Provide nature-viewing access at Mesa Reservoir.

*Interests Met: 5**

Primary Goal

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

Driving Factors/Benefits

» *Provide access to view wetland resources.*

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

*Interests Met: 5**

» *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.*

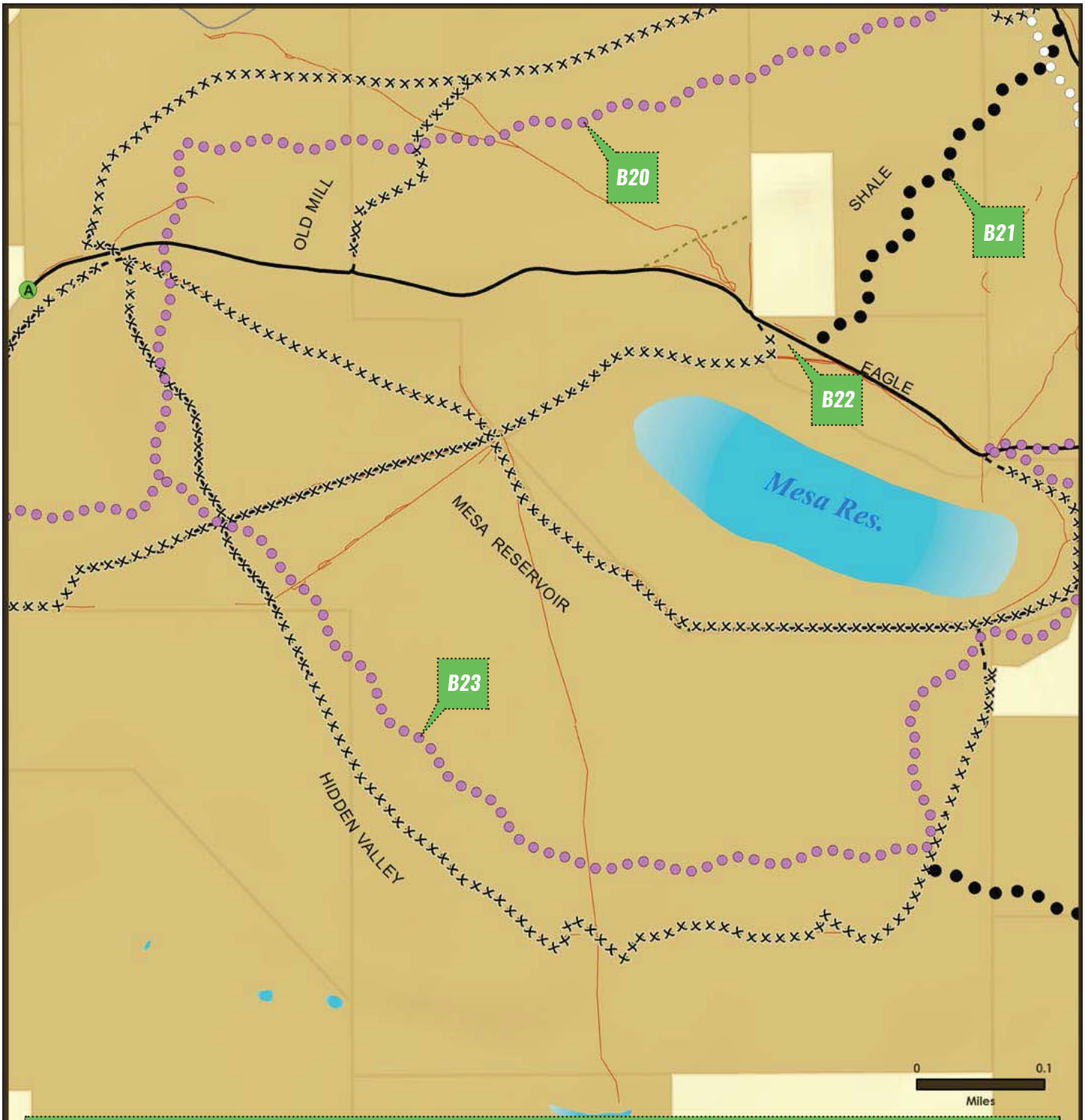
Driving Factors/Benefits

» *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
- 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

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

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

Action B24 Pave Longhorn Road.

*Interests Met: 2**

» *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.*

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

*Interests Met: 5**

» *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.*

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

*Interests Met: 4**

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.*

Action B27 Provide a parallel single track trail at BVR.

*Interests Met: 3**

» *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.*

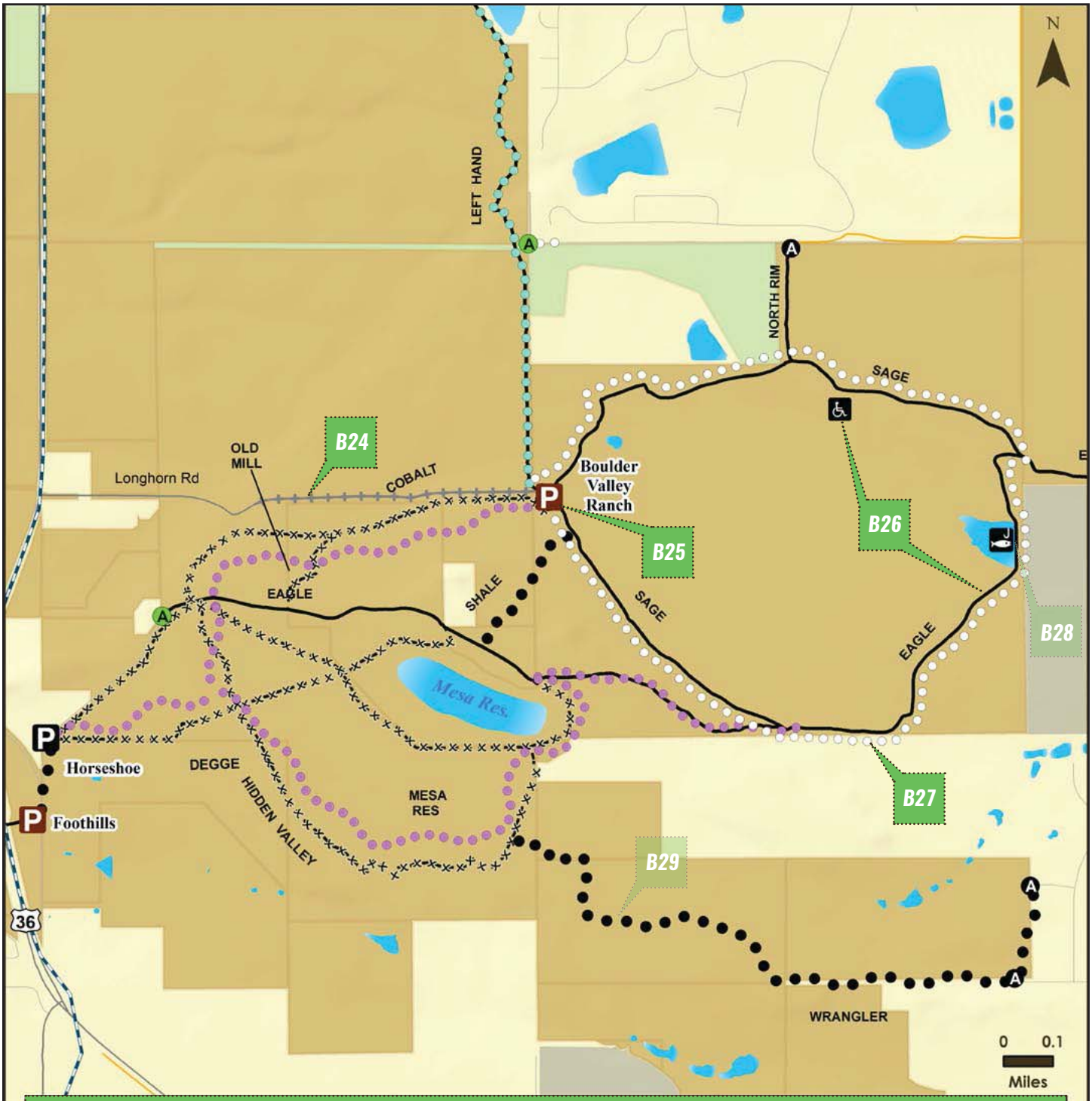
Driving Factors/Benefits

» *Improve visitor experience.*

» *Consolidate multiple undesignated 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
- New Trailhead
- Upgrade Trailhead
- Designate for Fishing
- Maintain ADA Standards
- Designate Access Point
- OSMP Fee & Managed Property
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Non-OSMP Managed Trails
- Undesignated Trail
- Close Undesignated Trail
- Pave an Existing Road
- OSMP Easement or Jointly Owned, County-Managed Land
- Create a New Connection
- Designate an Undesignated Trail
- Re-route an Existing Trail
- Repair an Existing Trail
- Close and Restore the Current Alignment
- Other Government Land

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

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

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

*Interests Met: 4**

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.*

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

*Interests Met: 6**

» *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.*

ACTION B30 Public access to BVR arena.

Primary Goal

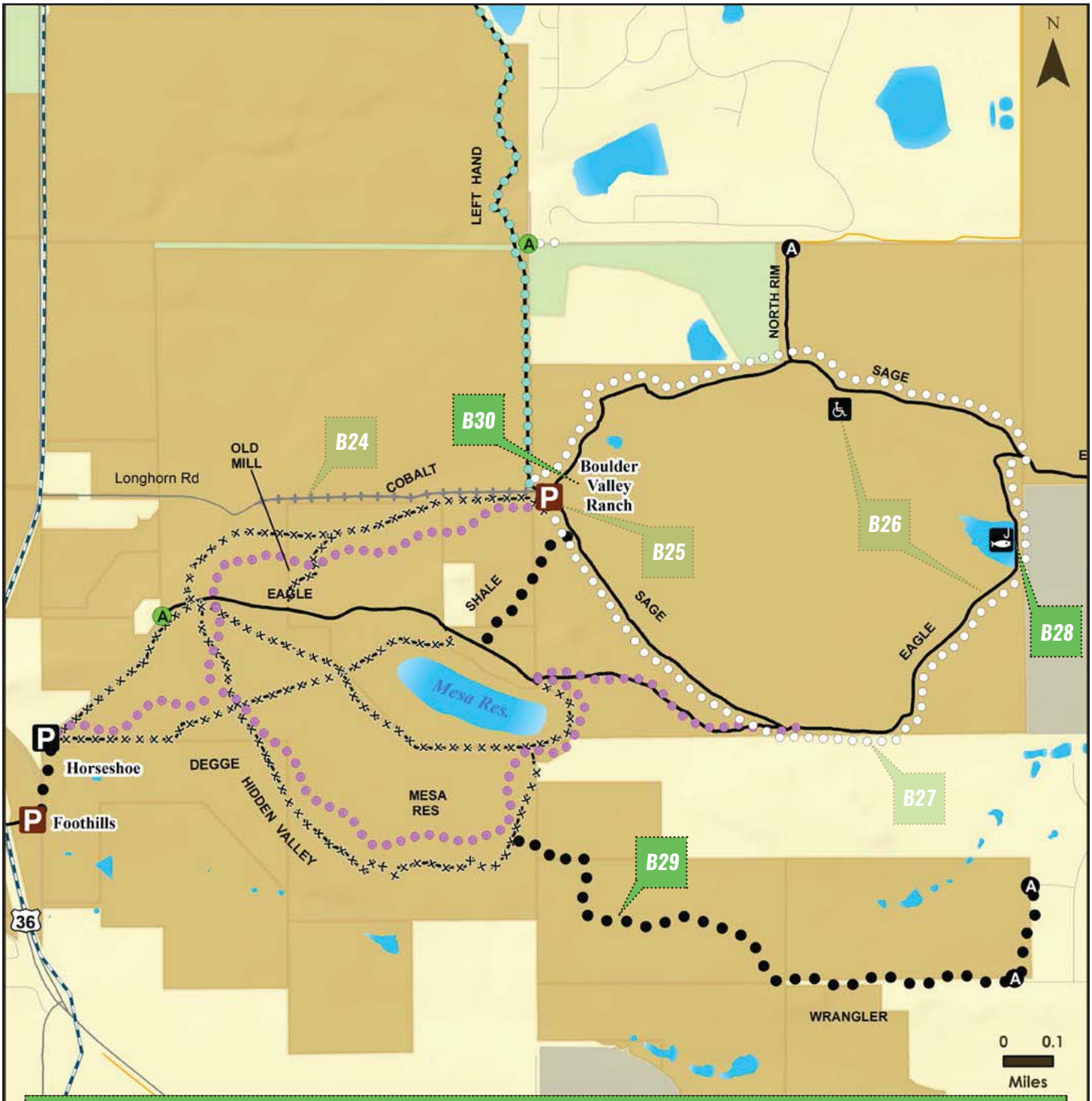
» *Continue to follow the terms of the lease regarding public access to the BVR equestrian arena and concurrently develop options for nearby horse trailer parking and/or seek to provide an equivalent and suitable corral option that will be determined in cooperation with stakeholders that will be vetted 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
- New Trailhead
- Upgrade Trailhead
- Designate for Fishing
- Maintain ADA Standards
- Designate Access Point
- OSMP Fee & Managed Property
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Non-OSMP Managed Trails
- Undesignated Trail
- Close Undesignated Trail
- Pave an Existing Road
- OSMP Easement or Jointly Owned, County-Managed Land
- Create a New Connection
- Designate an Undesignated Trail
- Re-route an Existing Trail
- Repair an Existing Trail
- Close and Restore the Current Alignment
- Other Government Land

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

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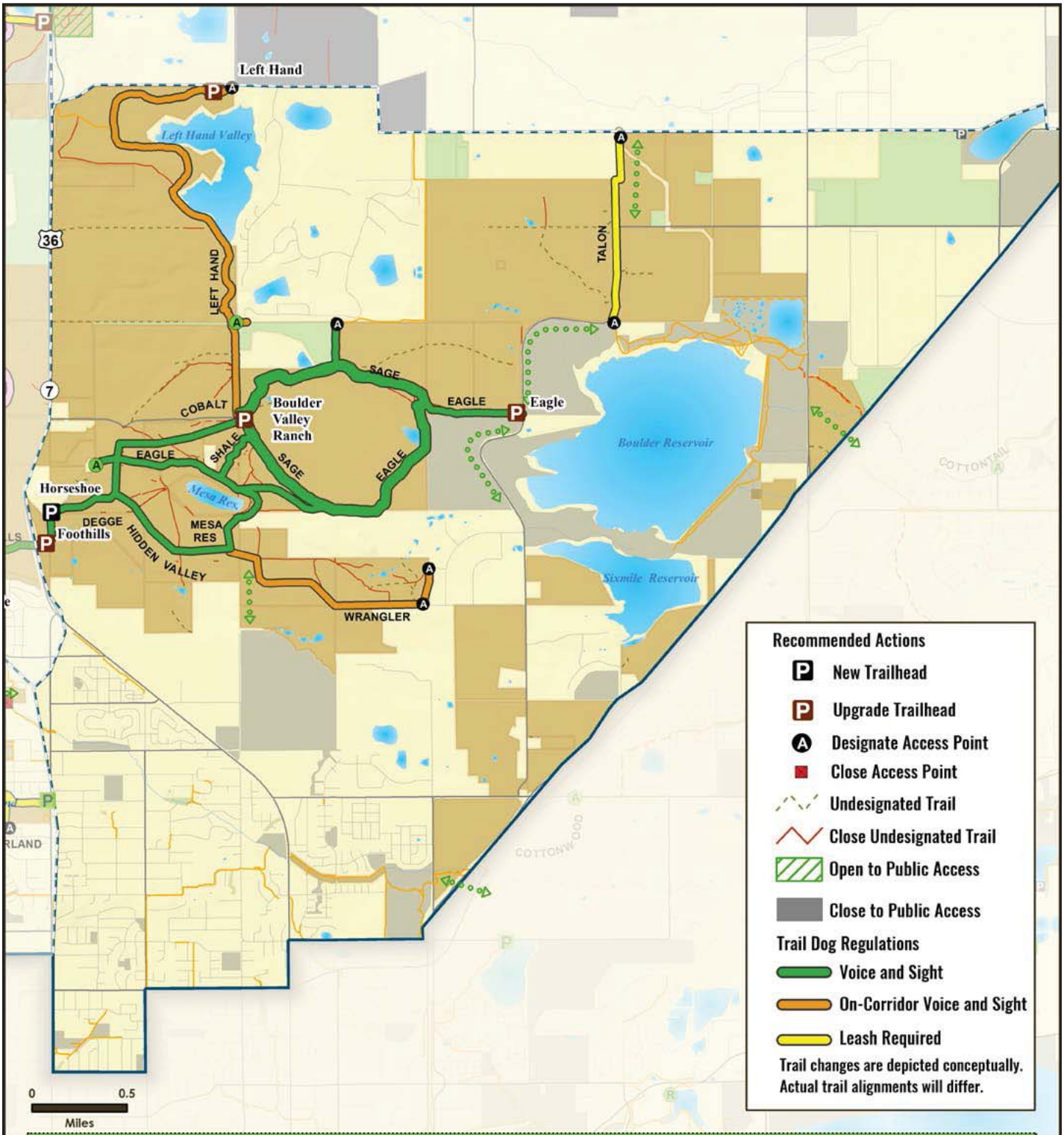
MAP 19: Boulder Valley Ranch - Trail-Based Dog Regulations

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

N

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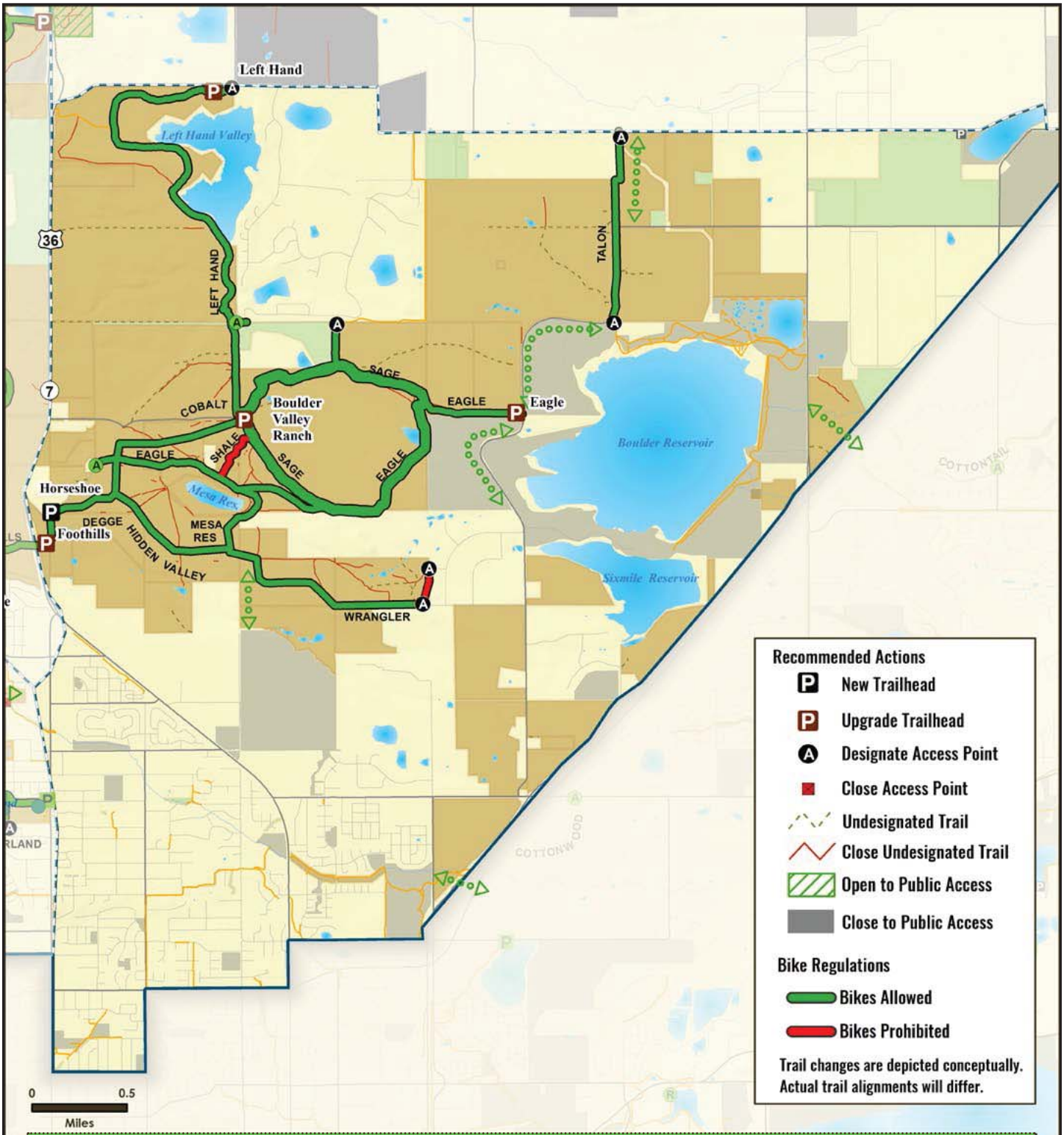
MAP 20: Boulder Valley Ranch - Bike Regulations

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

N

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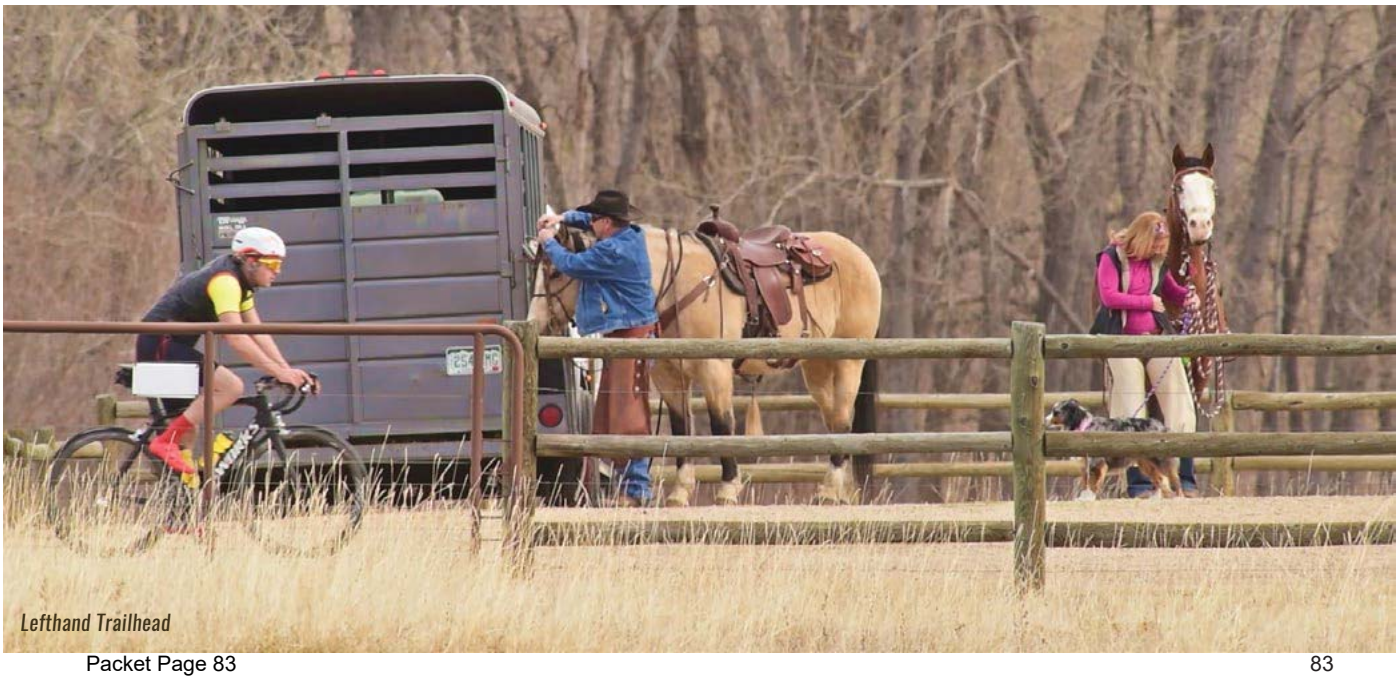
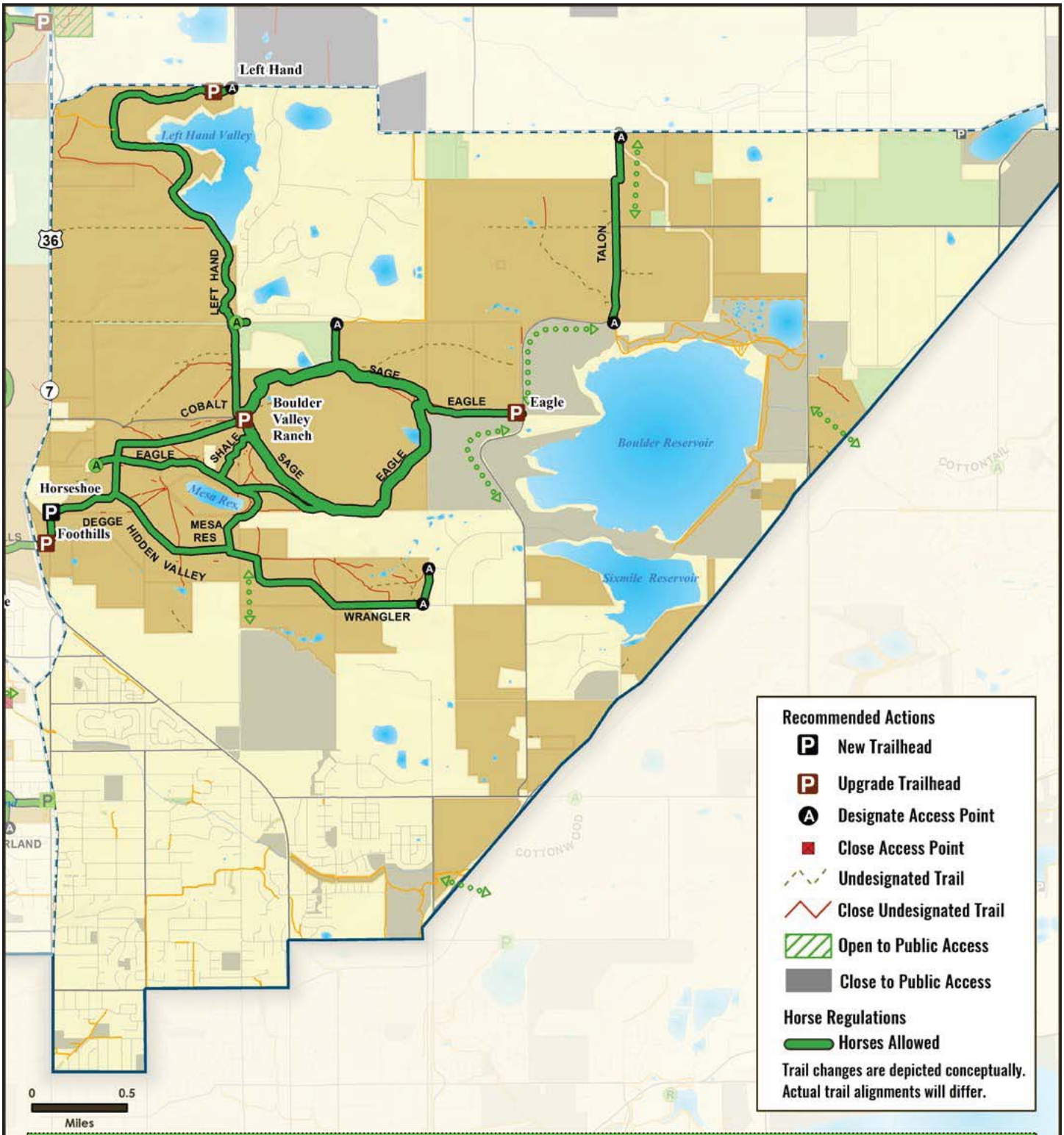
MAP 21: Boulder Valley Ranch - Trail-Based Horse Regulations

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

N

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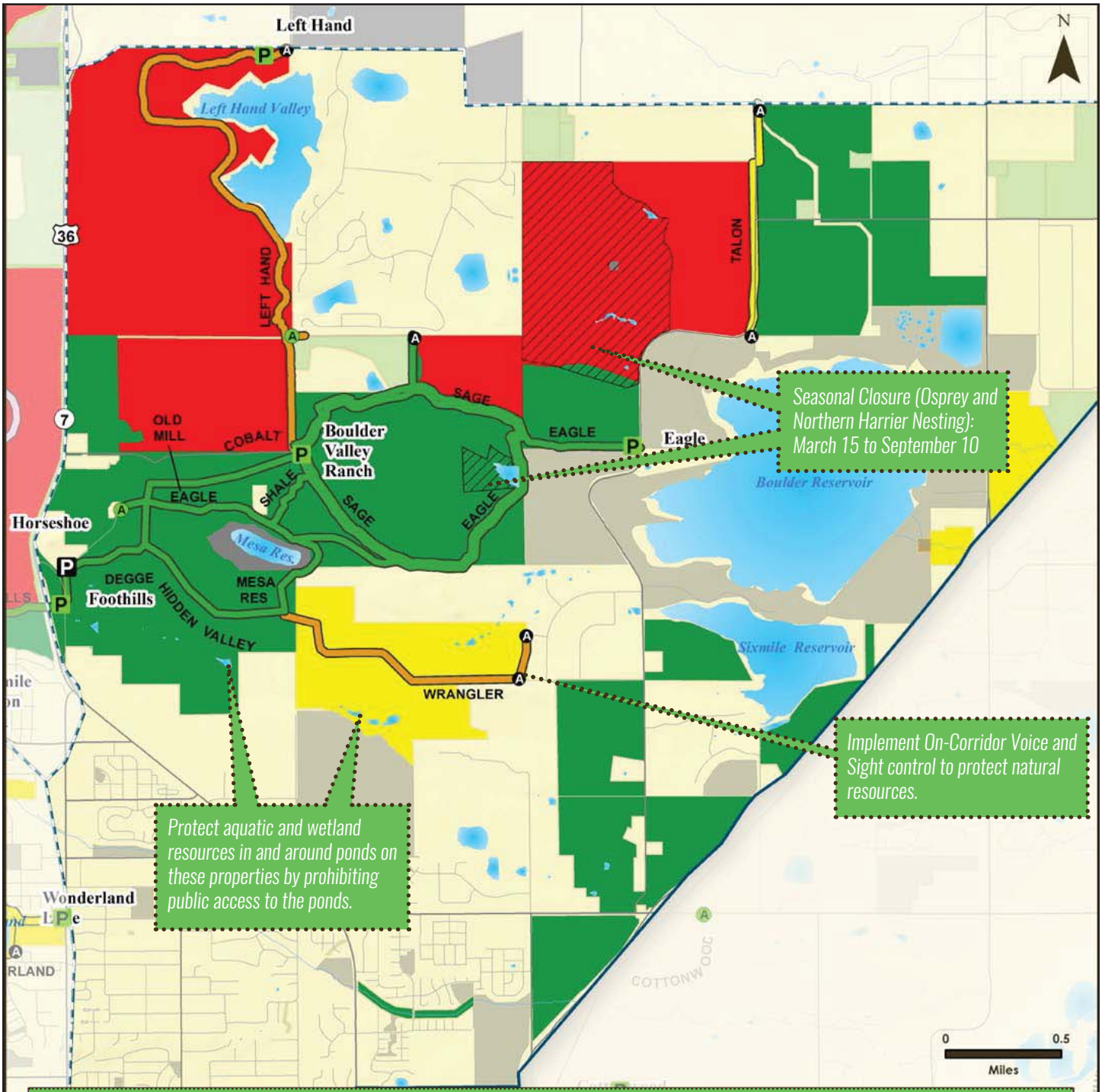
MAP 22: Boulder Valley Ranch - Regulatory Settings

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

OSMP Trailhead

OSMP Access Point

Visitor Access Regulations

New Trailhead

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.

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Background photo: Wonderland Lake.

North TSA Plan Recommendations

Wonderland Lake

MAP 23: Wonderland Lake - Subarea-Wide Recommendations

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

*Interests Met: 1**

» *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.*

Action W2 Assess vision for Foothills Nature Center.

*Interests Met: 2**

» *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.*

Action W3 Construct a shade structure near Wonderland Lake Trailhead.

*Interests Met: 2**

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.*

Action W4 Improve safety at Broadway crossing.

*Interests Met: 3**

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

Primary Goal

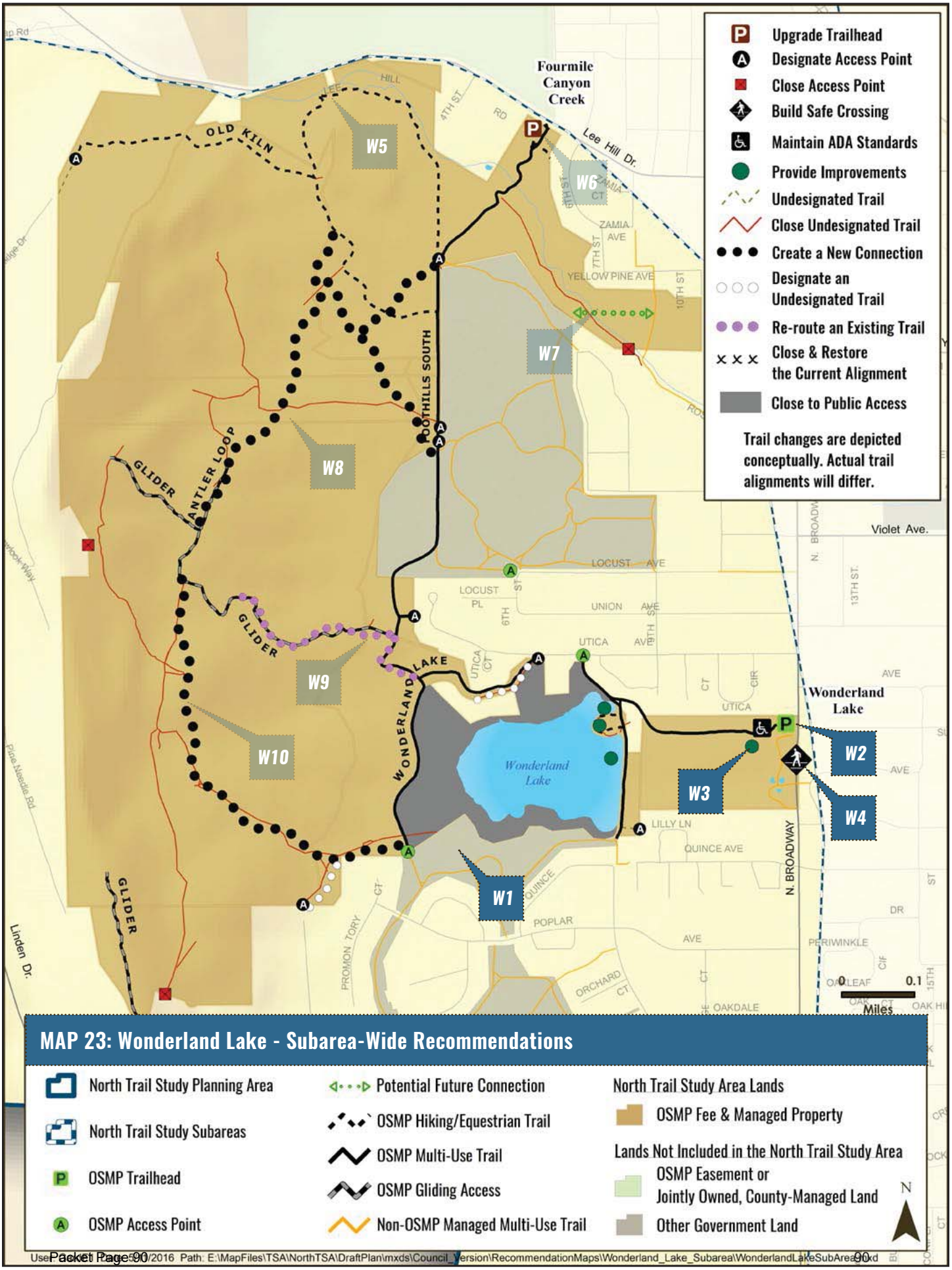
» *Encourage and support creating a safer and more visible way to cross Broadway for visitors accessing Foothills Nature Center and Wonderland Lake by bus.*

Driving Factors/Benefits

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

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

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


Upgrade Trailhead
Designate Access Point
Close Access Point
Build Safe Crossing
Maintain ADA Standards
Provide Improvements
Undesignated Trail
Close Undesignated Trail
Create a New Connection
Designate an Undesignated Trail
Re-route an Existing Trail
Close & Restore the Current Alignment
Close to Public Access
Trail changes are depicted conceptually. Actual trail alignments will differ.
Fourmile Canyon Creek
Lee Hill Dr.
OLD KILN
W5
W6
W7
W8
W9
W10
W1
W2
W3
W4
FOOTHILLS SOUTH
ANTLER LOOP
GLIDER
WONDERLAND LAKE
Wonderland Lake
Violet Ave.
N. BROADWAY
LOCUST AVE
UNION AVE
UTICA AVE
LILLY LN
QUINCE AVE
POPLAR AVE
PERIWINKLE
OAKDALE
ZAMIA AVE
YELLOW PINE AVE
Linden Dr.
0
0.1
Miles
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
N

MAP 24: Wonderland Lake - Fourmile Canyon Creek Focus Area

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

*Interests Met: 2**

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.*

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

*Interests Met: 2**

Primary Goal

» *Align trailhead name with Fourmile Canyon Creek.*

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

*Interests Met: 3**

» *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.*

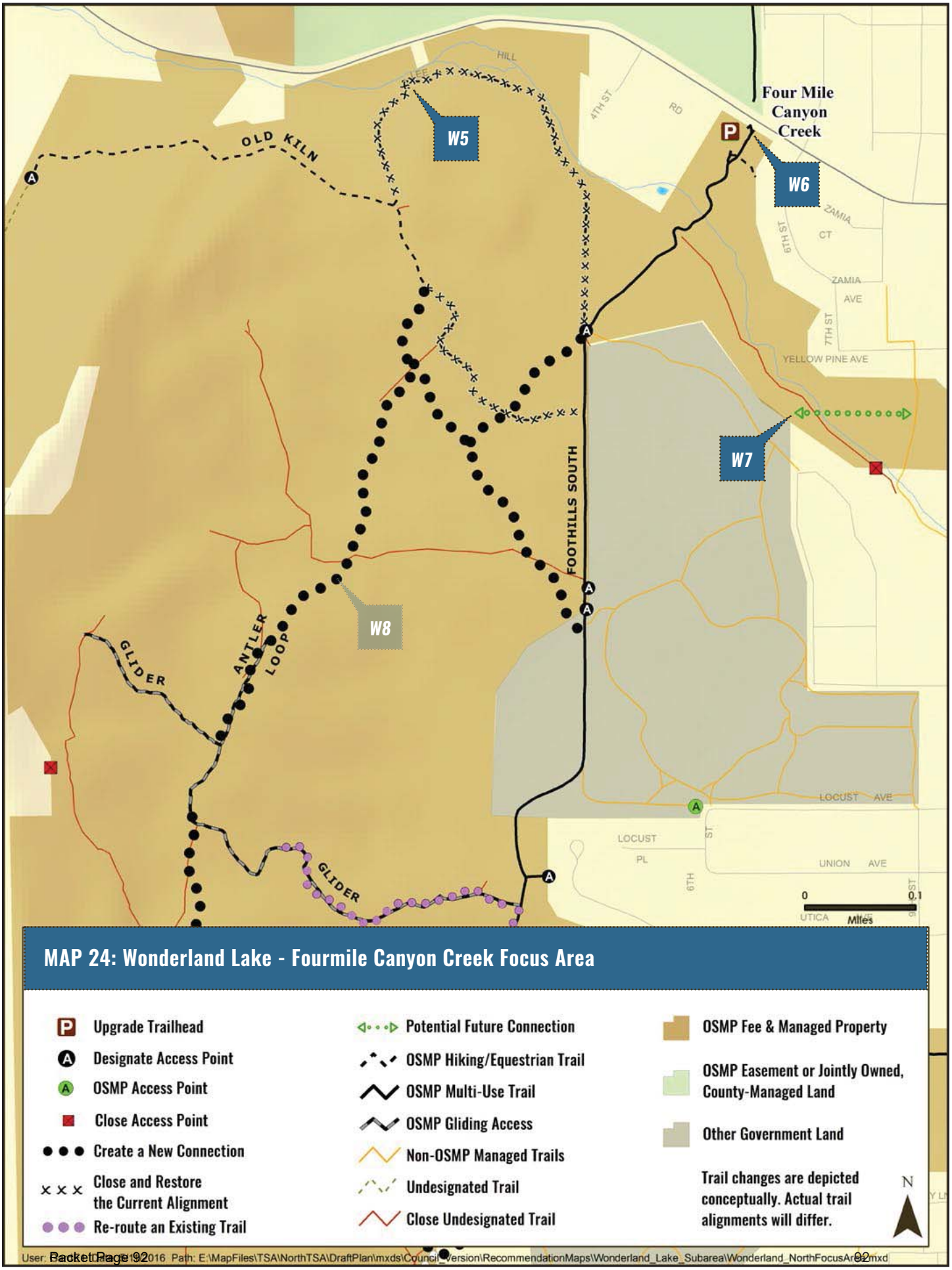
Driving Factors/Benefits

» *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

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

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

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

MAP 26: Wonderland Lake - Wonderland Lake Backdrop Focus Area

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

*Interests Met: 2**

» *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.*

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

*Interests Met: 3**

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

Primary Goal

» *Increase recreation and loop trail opportunities for visitors.*

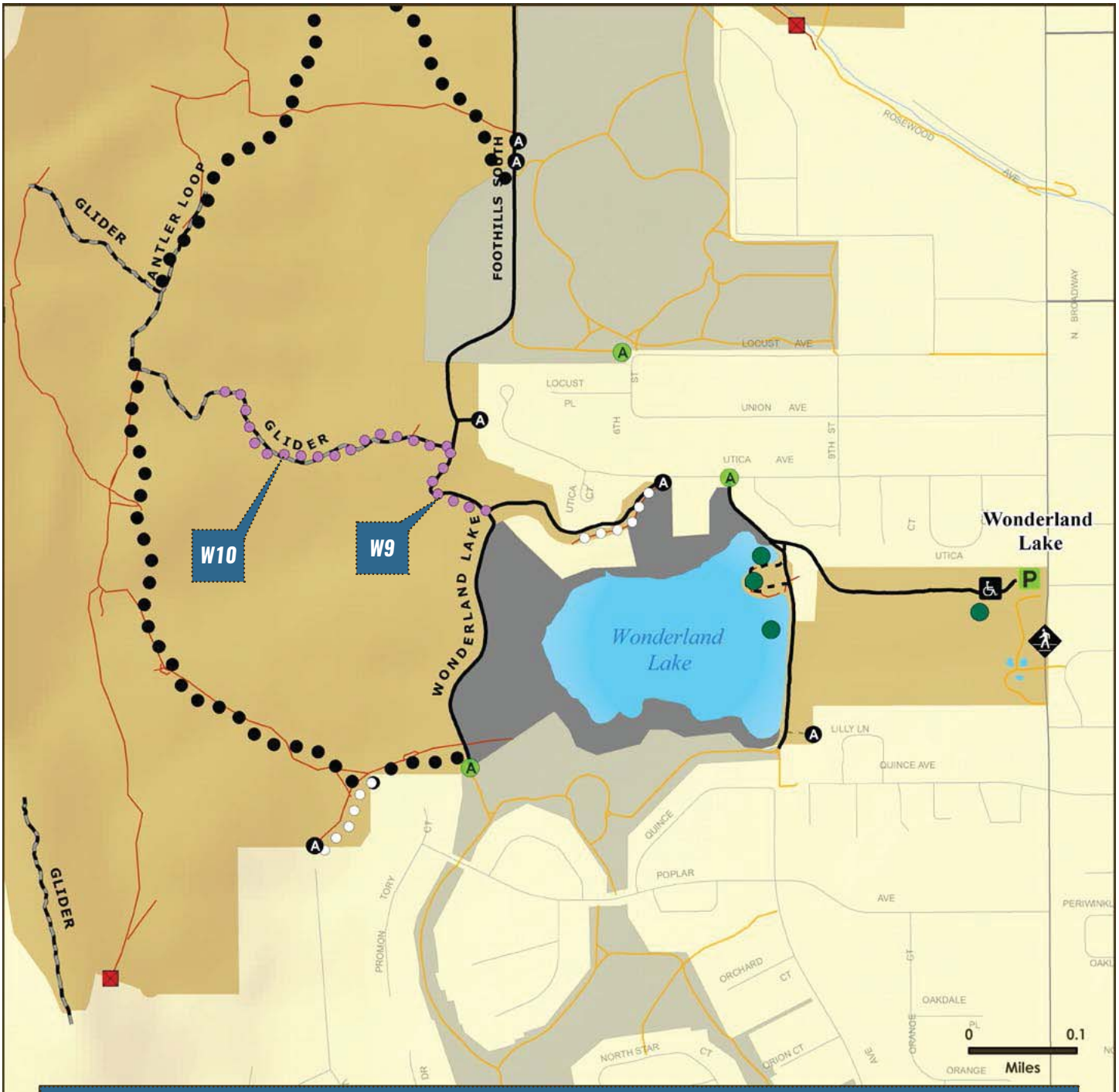
Driving Factors/Benefits

» *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

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

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

N

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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

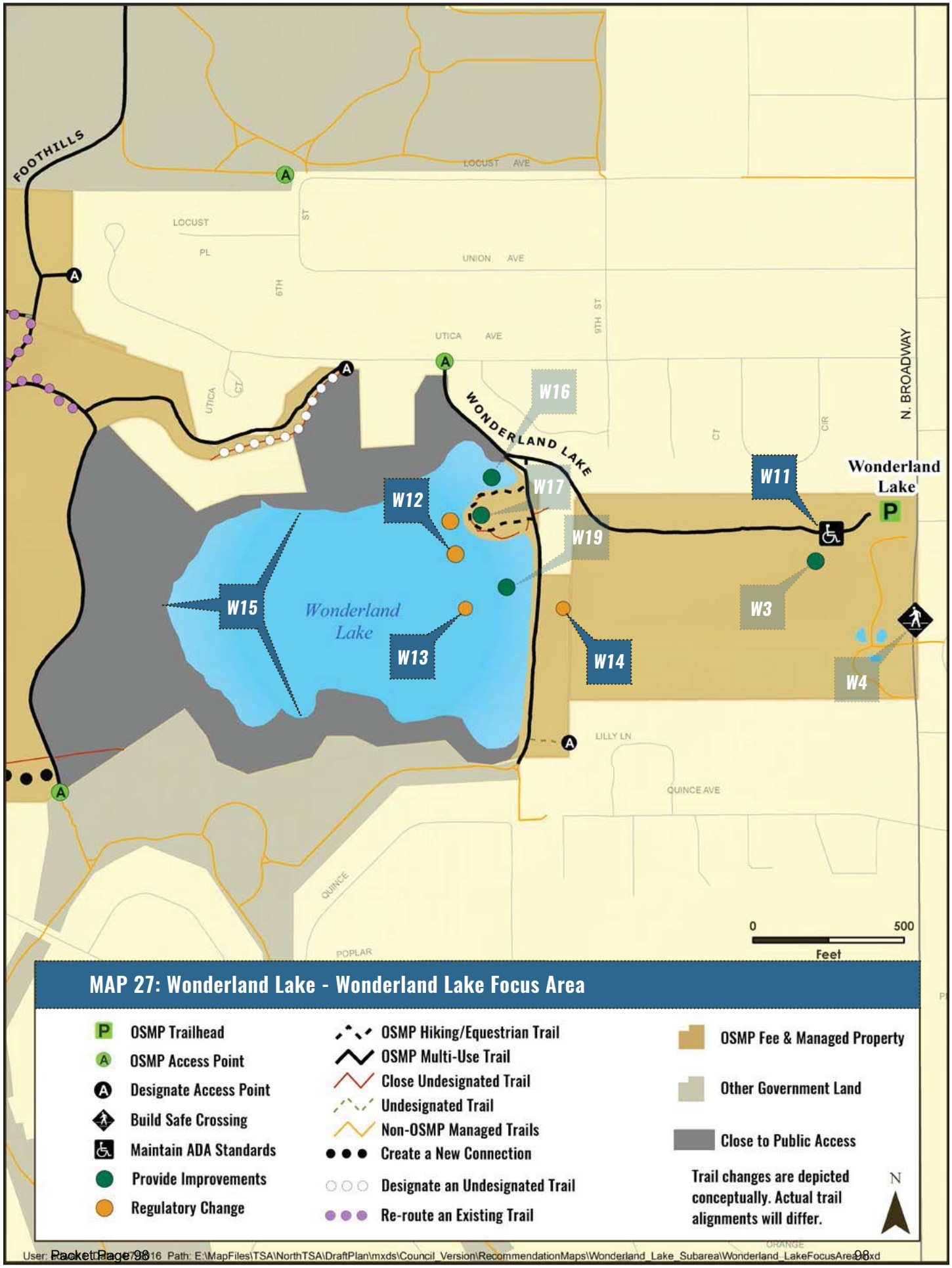
» *Protect sensitive wetland resources on the south, west and north shores of Wonderland Lake.*

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.


FOOTHILLS
LOCUST AVE
LOCUST
PL
ST
UNION AVE
6TH
9TH ST
UTICA AVE
UTICA
CT
WONDERLAND LAKE
N. BROADWAY
CT
CIR
W16
W17
W12
W19
W11
Wonderland Lake
W15
Wonderland Lake
W13
W14
W3
W4
LILLY LN
QUINCE AVE
QUINCE
POPLAR
0
500
Feet
MAP 27: Wonderland Lake - Wonderland Lake Focus Area
OSMP Trailhead
OSMP Access Point
Designate Access Point
Build Safe Crossing
Maintain ADA Standards
Provide Improvements
Regulatory Change
OSMP Hiking/Equestrian Trail
OSMP Multi-Use Trail
Close Undesignated Trail
Undesignated Trail
Non-OSMP Managed Trails
Create a New Connection
Designate an Undesignated Trail
Re-route an Existing Trail
OSMP Fee & Managed Property
Other Government Land
Close to Public Access
Trail changes are depicted conceptually. Actual trail alignments will differ.
N
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MAP 28: Wonderland Lake - Peninsula Focus Area

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

*Interests Met: 4**

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.*

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

*Interests Met: 4**

» *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.*

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

*Interests Met: 3**

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.*

Action W19 Create Wonderland Lake fishing pier.

*Interests Met: 6**

Primary Goal

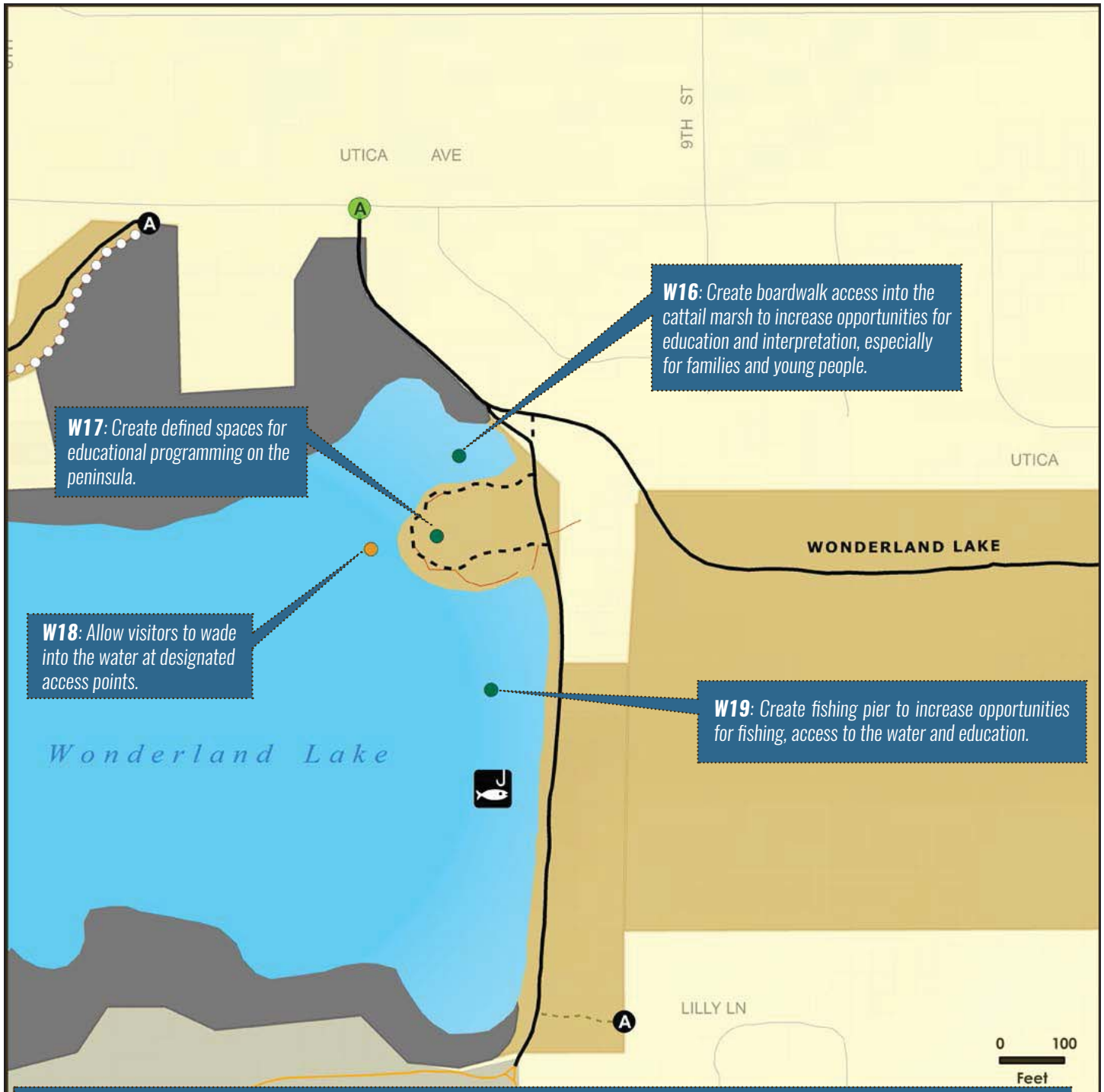
» *Increase opportunities to fish, access water and provide education and interpretive experiences.*

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

- OSMP Access Point
- Designate Access Point
- Fishing Access
- Regulatory Change
- Provide Improvements
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- Close Undesignated Trail
- Undesignated Trail
- Non-OSMP Managed Trails
- Designate an Undesignated Trail
- OSMP Fee & Managed Property
- Other Government Land
- Close to Public Access

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

N

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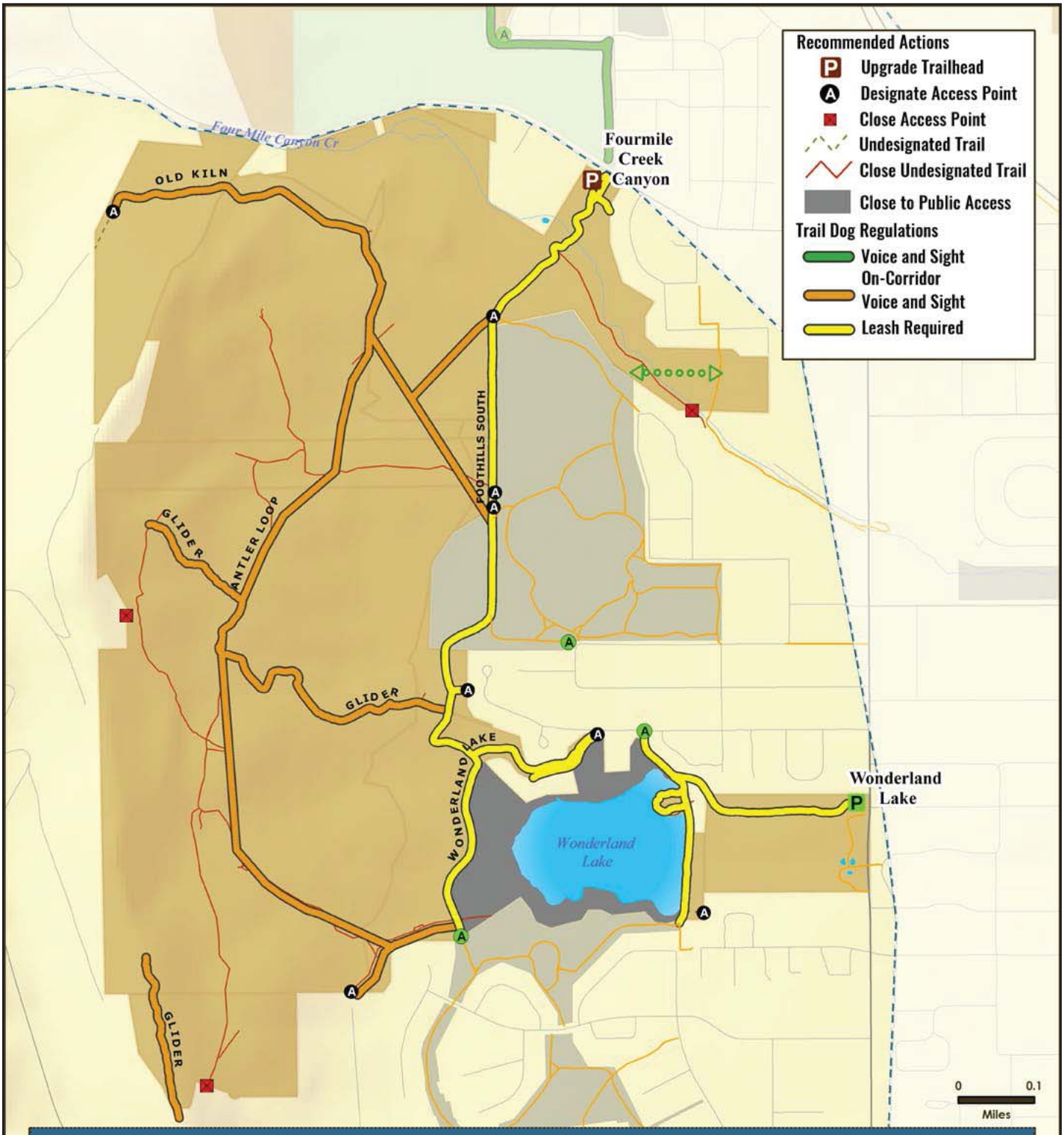
MAP 29: Wonderland Lake - Trail-Based Dog Regulations

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

N

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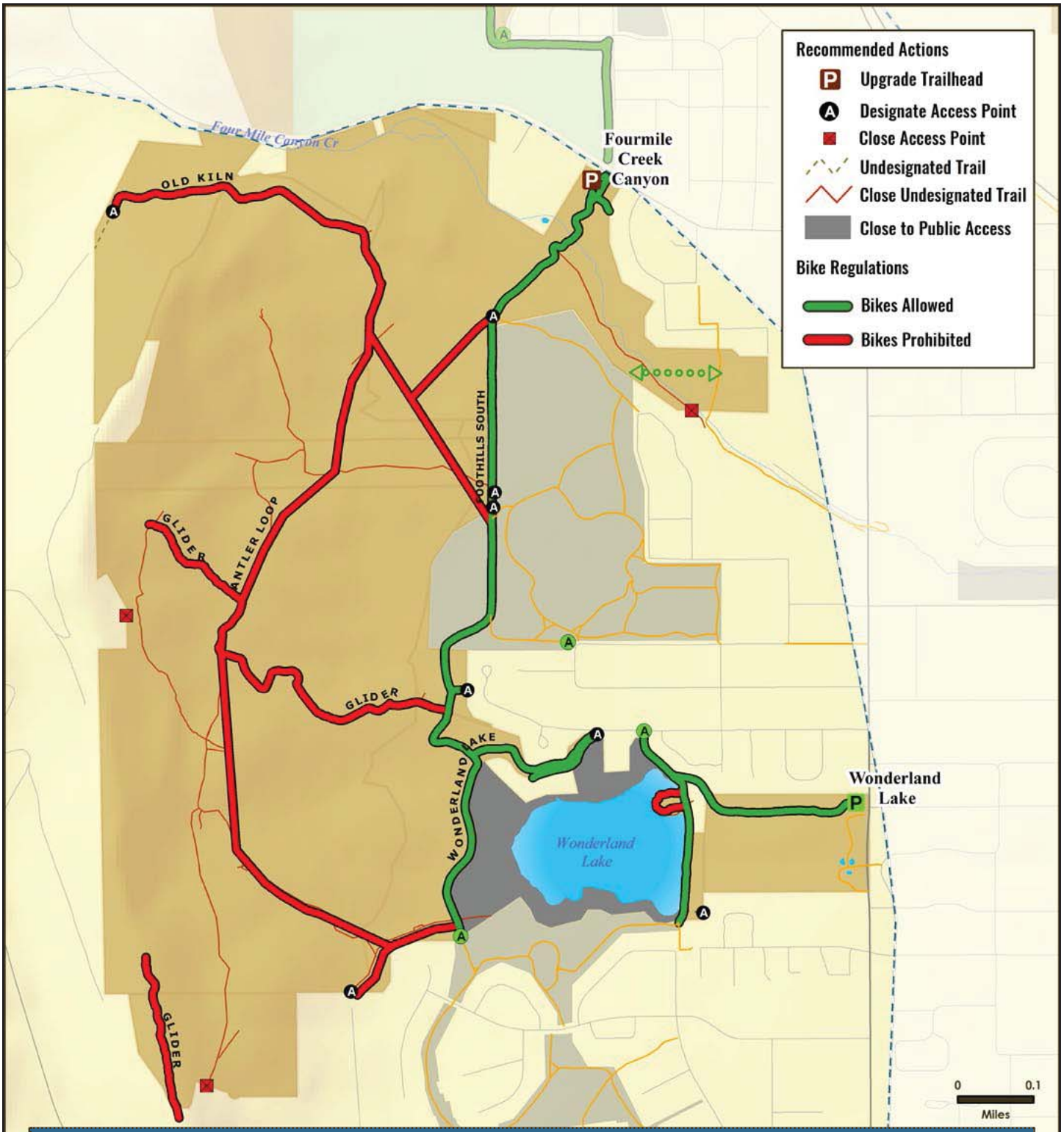
MAP 30: Wonderland Lake - Bike Regulations

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

N

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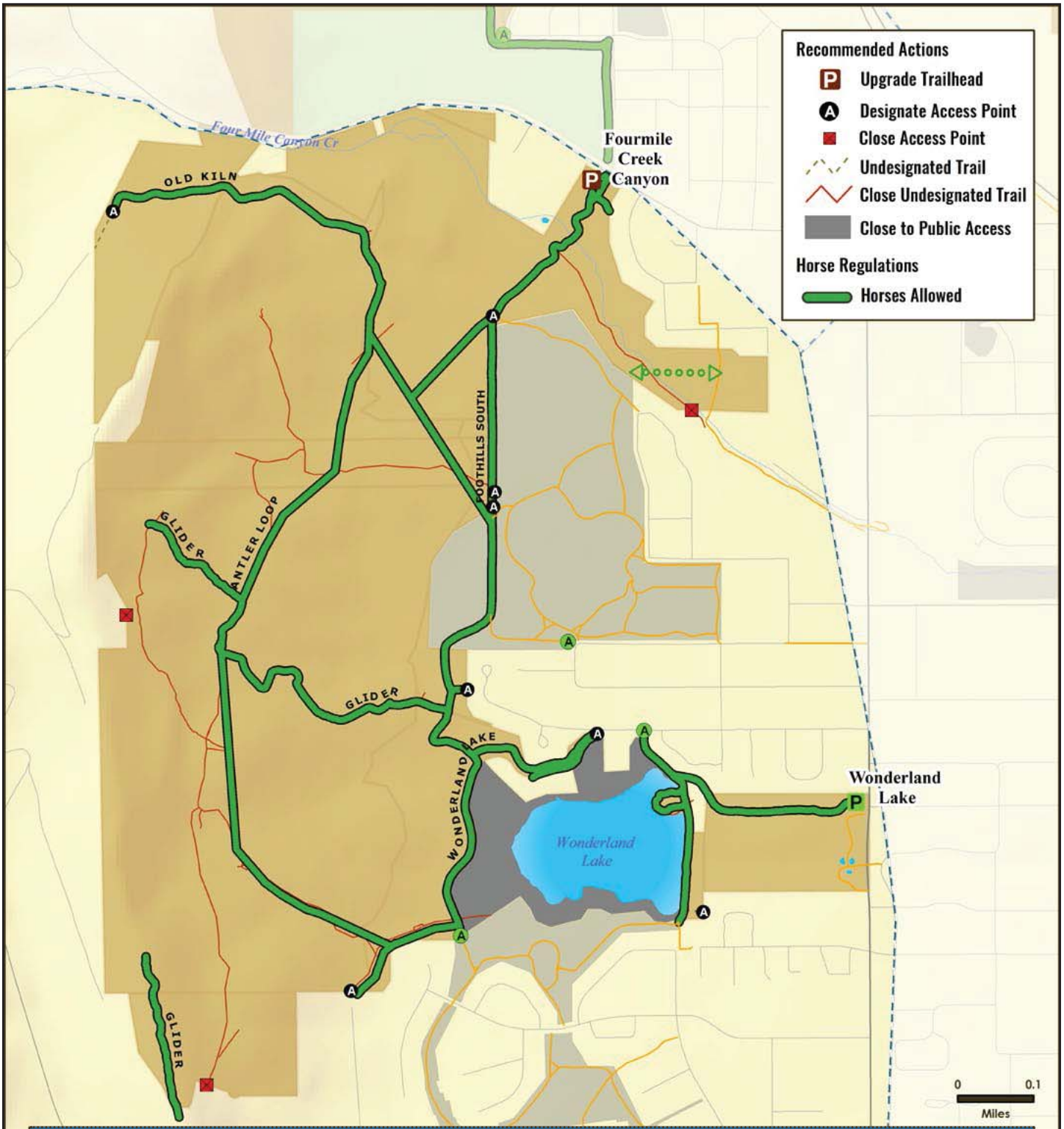
MAP 31: Wonderland Lake - Trail-Based Horse Regulations

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.



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

N

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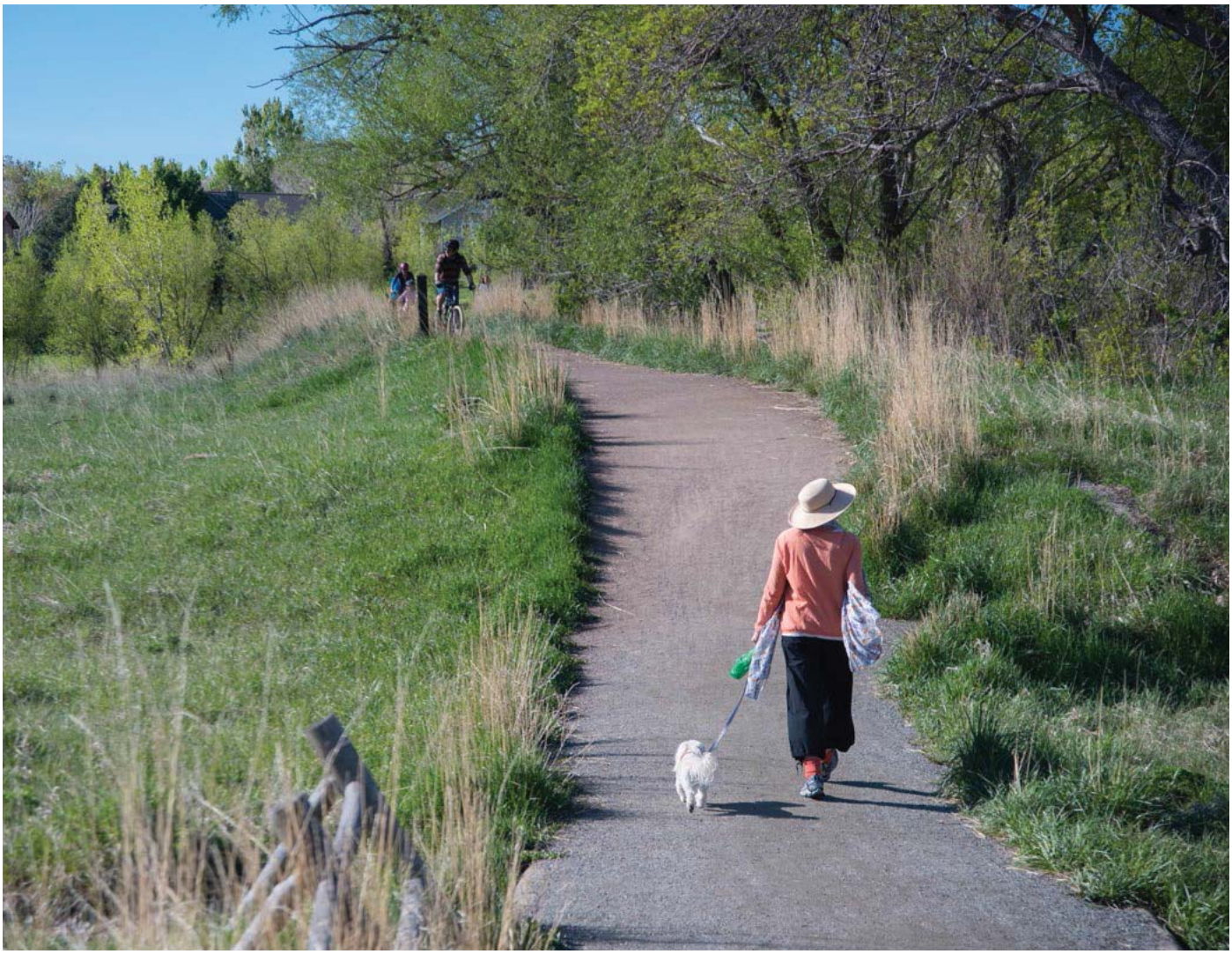
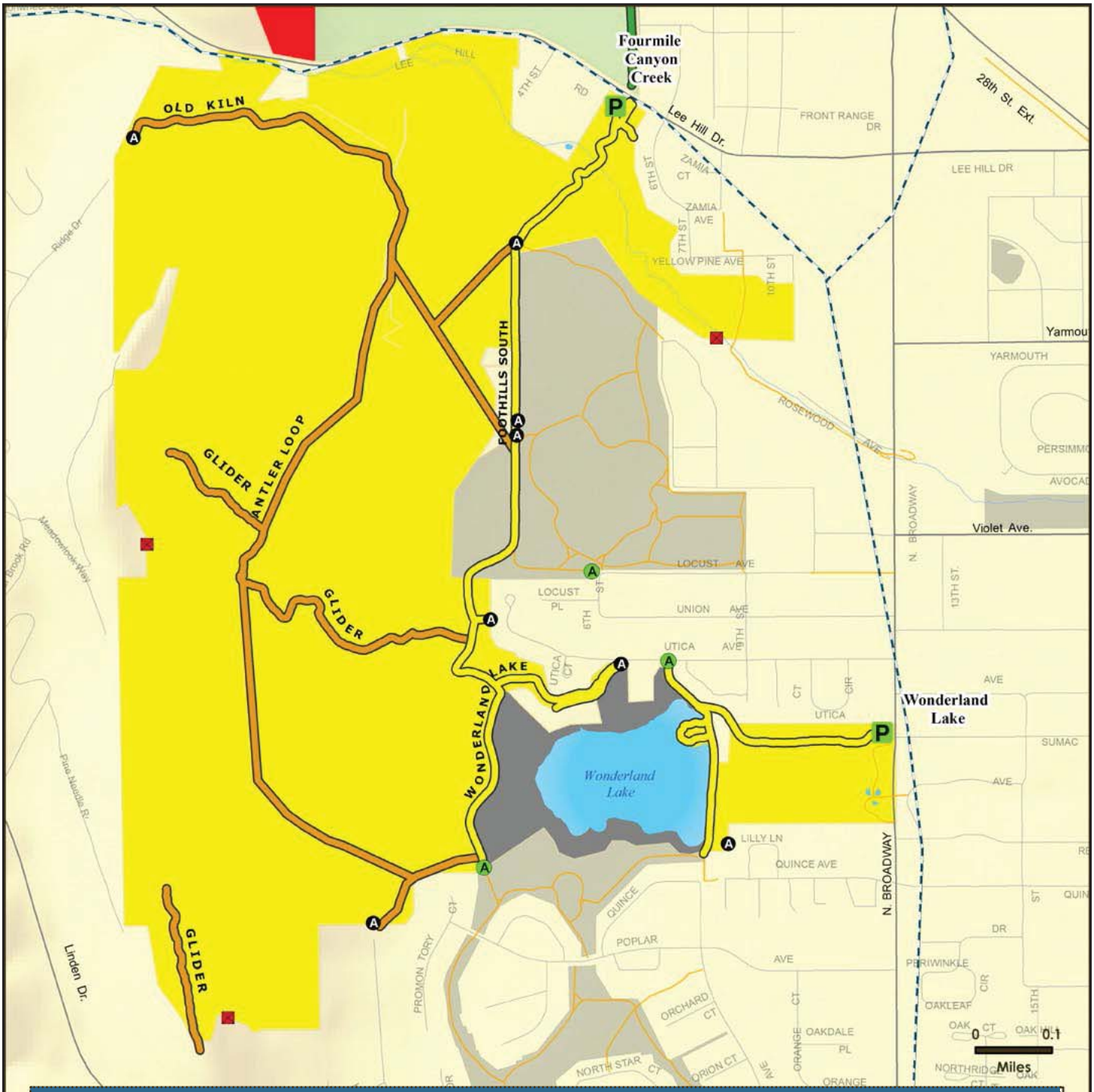
MAP 32: Wonderland Lake - Regulatory Settings

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

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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**

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.*

ACTION NP2 Designate Stratton property as a Natural Area.

*Interests Met: 4**

Primary Goal

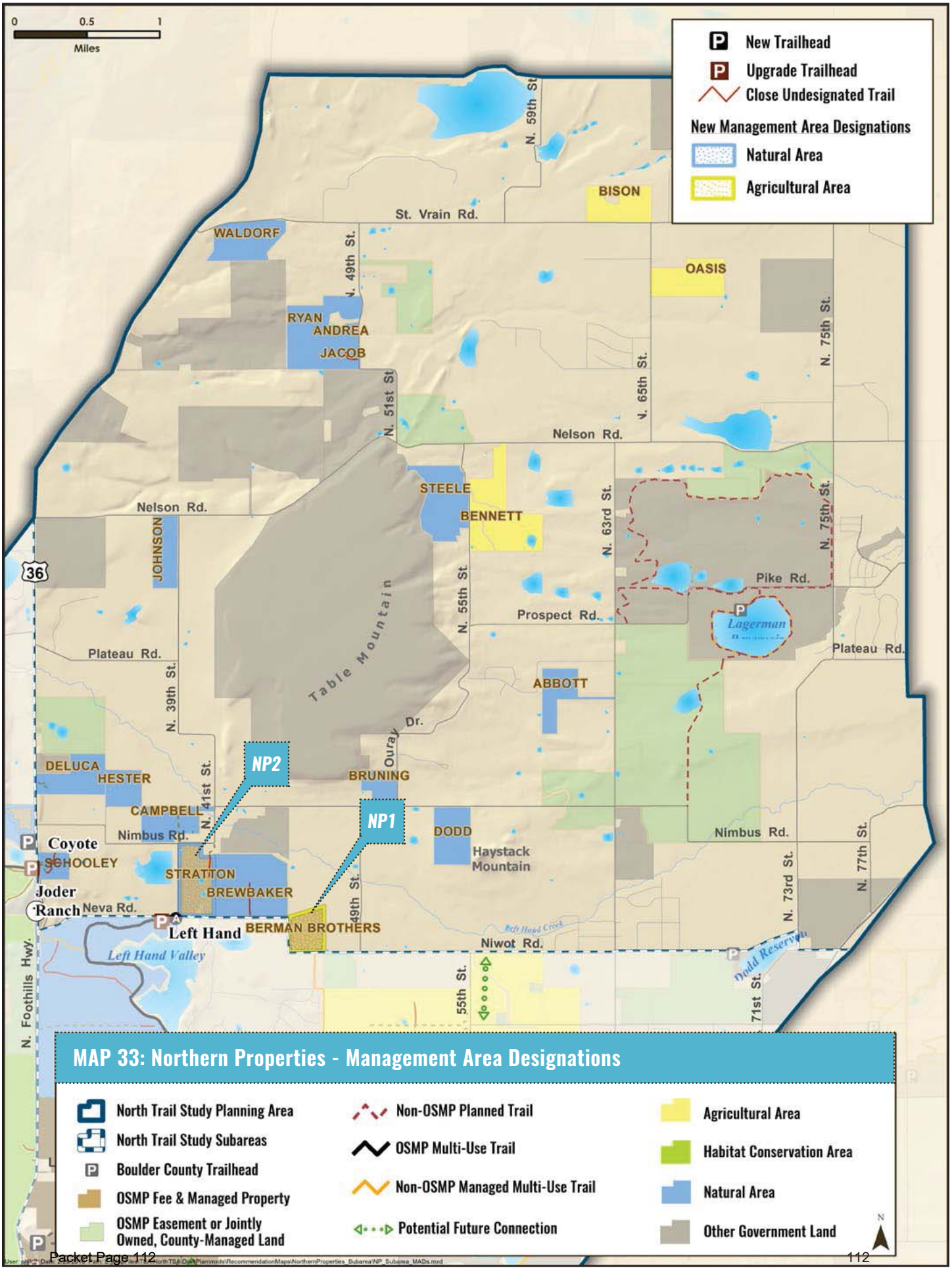
» *Implement VMP direction to provide management area designations for undesignated properties.*

Driving Factors/Benefits

» *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.


0 0.5 1
Miles
New Trailhead
Upgrade Trailhead
Close Undesignated Trail
New Management Area Designations
Natural Area
Agricultural Area
St. Vrain Rd.
BISON
WALDORF
OASIS
RYAN
ANDREA
JACOB
N. 59th St.
N. 49th St.
N. 51st St.
N. 65th St.
N. 75th St.
Nelson Rd.
STEELE
BENNETT
JOHNSON
36
Table Mountain
N. 55th St.
N. 63rd St.
Pike Rd.
Prospect Rd.
Lagerman
Plateau Rd.
ABBOTT
N. 39th St.
Ouray Dr.
DELUCA
HESTER
N. 41st St.
BRUNING
NP2
NP1
CAMPBELL
Nimbus Rd.
DODD
Haystack Mountain
Coyote
SCHOOLEY
STRATTON
BREWBAKER
Joder Ranch
Neva Rd.
Left Hand
BERMAN BROTHERS
Left Hand Valley
N. 49th St.
Niwot Rd.
N. 73rd St.
N. 77th St.
55th St.
71st St.
N. Foothills Hwy.
MAP 33: Northern Properties - Management Area Designations
North Trail Study Planning Area
North Trail Study Subareas
Boulder County Trailhead
OSMP Fee & Managed Property
OSMP Easement or Jointly Owned, County-Managed Land
Non-OSMP Planned Trail
OSMP Multi-Use Trail
Non-OSMP Managed Multi-Use Trail
Potential Future Connection
Agricultural Area
Habitat Conservation Area
Natural Area
Other Government Land
N

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

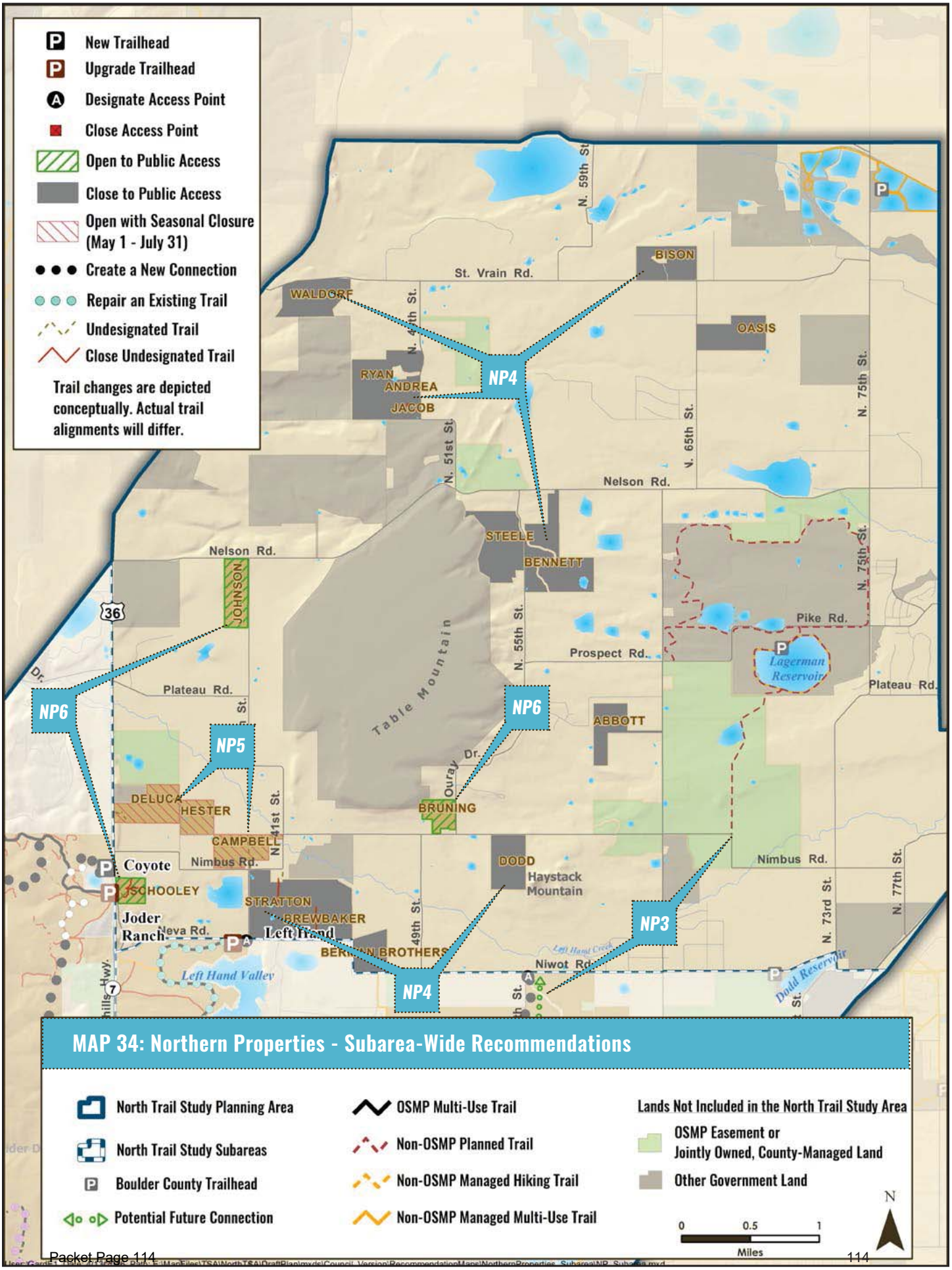
» *Allow access to properties where impacts to natural and agricultural resources are less of a concern.*

Driving Factors/Benefits

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

***IMPORTANT NOTE*: The development of undesignated 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.**

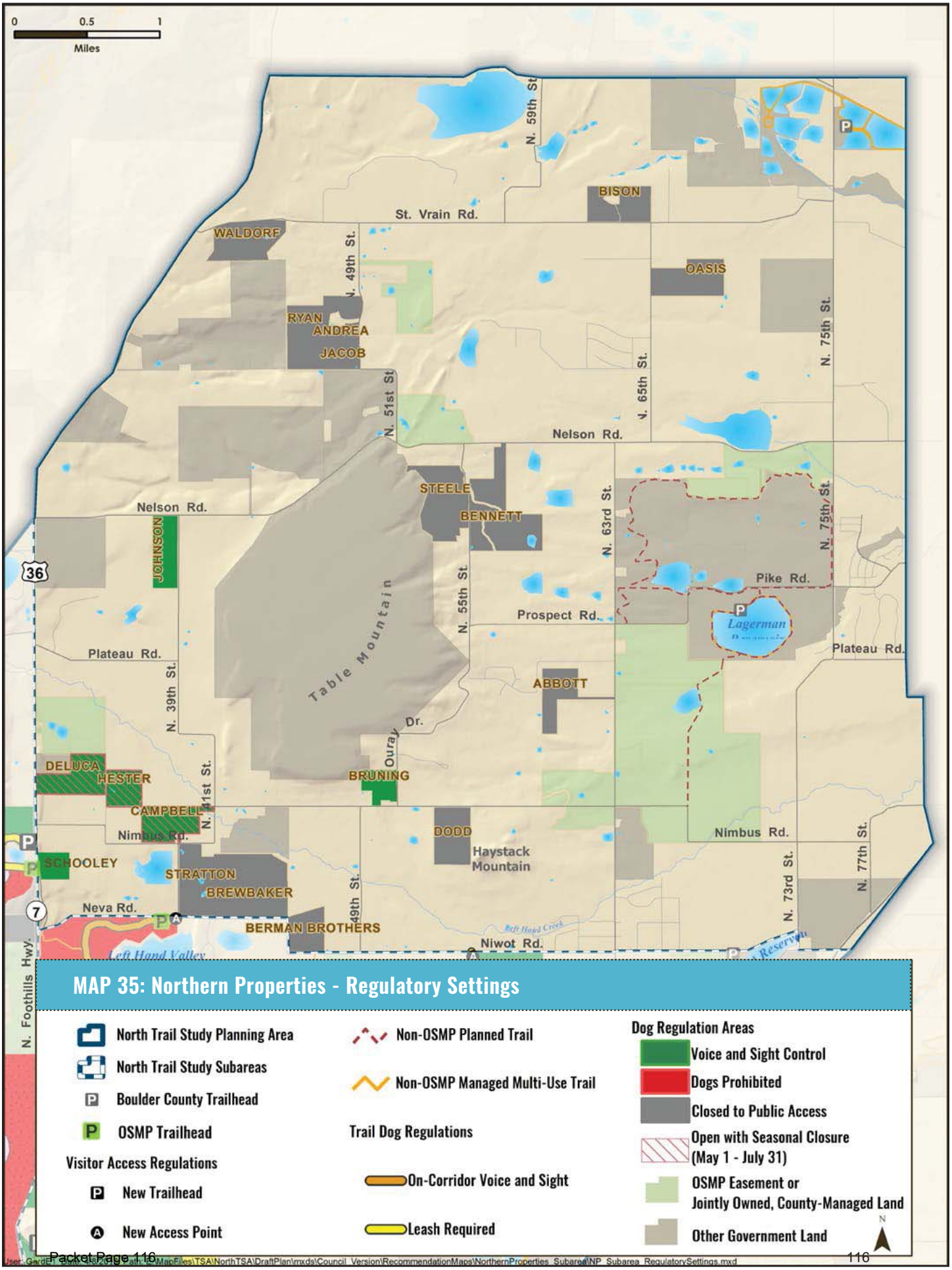
**See Appendix D for a list of interests met by each action.*

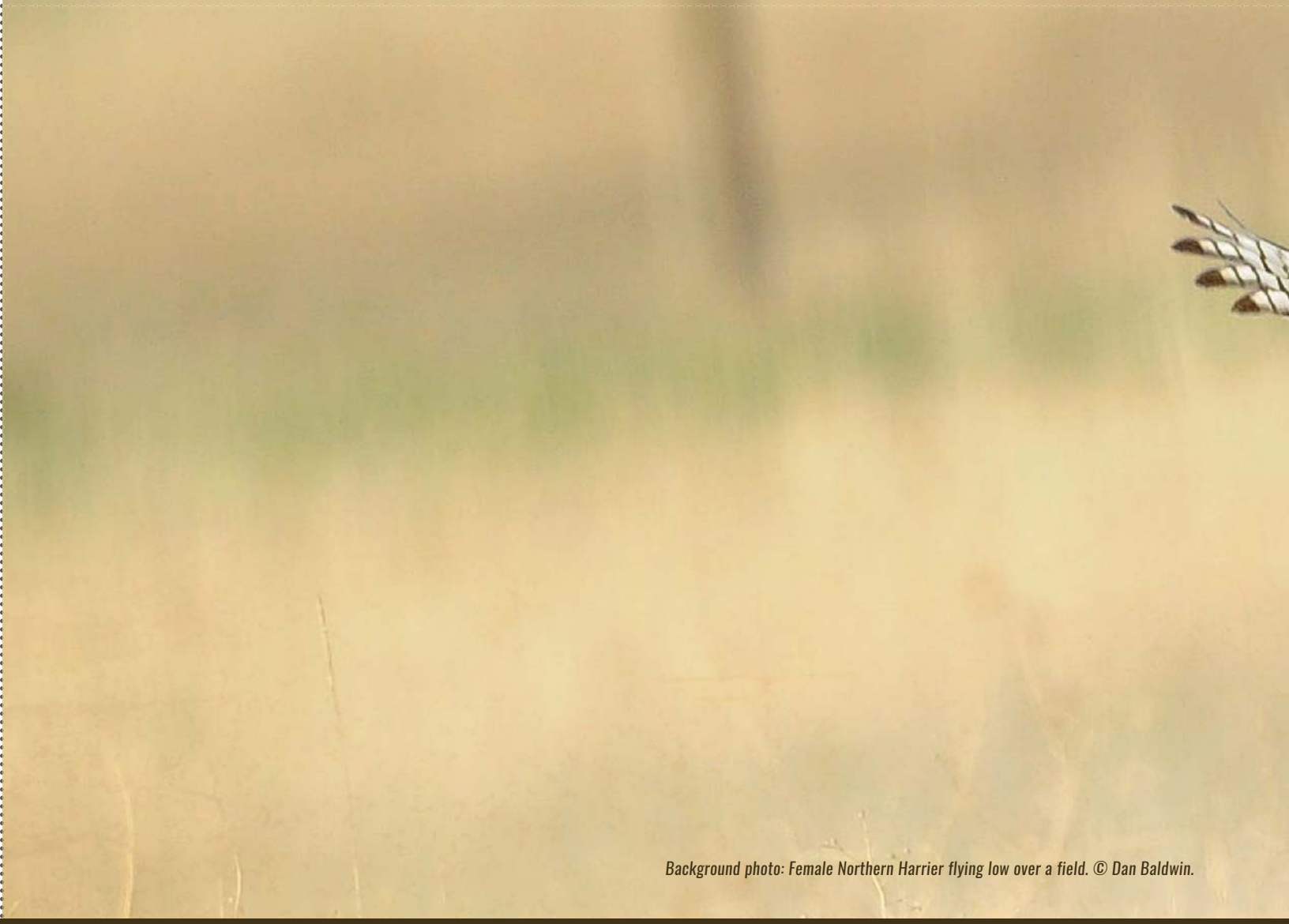

New Trailhead
Upgrade Trailhead
Designate Access Point
Close Access Point
Open to Public Access
Close to Public Access
Open with Seasonal Closure (May 1 - July 31)
Create a New Connection
Repair an Existing Trail
Undesignated Trail
Close Undesignated Trail
Trail changes are depicted conceptually. Actual trail alignments will differ.
NP4
NP6
NP5
NP3
St. Vrain Rd.
Nelson Rd.
Plateau Rd.
Prospect Rd.
Pike Rd.
Nimbus Rd.
Niwot Rd.
Neva Rd.
Table Mountain
Haystack Mountain
Lagerman Reservoir
Dodd Reservoir
Left Hand Valley
Coyote
Joder Ranch
WALDORF
BISON
OASIS
RYAN
ANDREA
JACOB
STEELE
BENNETT
JOHNSON
ABBOTT
DELUCA
HESTER
CAMPBELL
BRUNING
DODD
SCHOOLEY
STRATTON
BREWBAKER
BERRYMAN BROTHERS
N. 59th St.
N. 47th St.
N. 51st St.
N. 65th St.
N. 75th St.
N. 55th St.
N. 41st St.
N. 49th St.
N. 73rd St.
N. 77th St.
Ouray Dr.
36
7
MAP 34: Northern Properties - Subarea-Wide Recommendations
North Trail Study Planning Area
North Trail Study Subareas
Boulder County Trailhead
Potential Future Connection
OSMP Multi-Use Trail
Non-OSMP Planned Trail
Non-OSMP Managed Hiking Trail
Non-OSMP Managed Multi-Use Trail
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
N

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.


0
0.5
1
Miles
St. Vrain Rd.
N. 59th St.
BISON
WALDORF
N. 49th St.
OASIS
RYAN
ANDREA
JACOB
N. 75th St.
N. 65th St.
N. 51st St.
Nelson Rd.
STEELE
BENNETT
N. 63rd St.
JOHNSON
36
Table Mountain
N. 55th St.
Pike Rd.
Prospect Rd.
Lagerman
Plateau Rd.
ABBOTT
N. 39th St.
Ouray Dr.
DELUCA
HESTER
BRUNING
N. 41st St.
CAMPBELL
Nimbus Rd.
DODD
Haystack Mountain
SCHOOLEY
STRATTON
BREWBAKER
N. 73rd St.
N. 77th St.
7
Neva Rd.
BERMAN BROTHERS
N. 49th St.
Left Hand Creek
Niwot Rd.
Left Hand Valley
N. Foothills Hwy.
MAP 35: Northern Properties - Regulatory Settings
North Trail Study Planning Area
North Trail Study Subareas
Boulder County Trailhead
OSMP Trailhead
Visitor Access Regulations
New Trailhead
New Access Point
Non-OSMP Planned Trail
Non-OSMP Managed Multi-Use Trail
Trail Dog Regulations
On-Corridor Voice and Sight
Leash Required
Dog Regulation Areas
Voice and Sight Control
Dogs Prohibited
Closed to Public Access
Open with Seasonal Closure (May 1 - July 31)
OSMP Easement or Jointly Owned, County-Managed Land
Other Government Land
N



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: 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

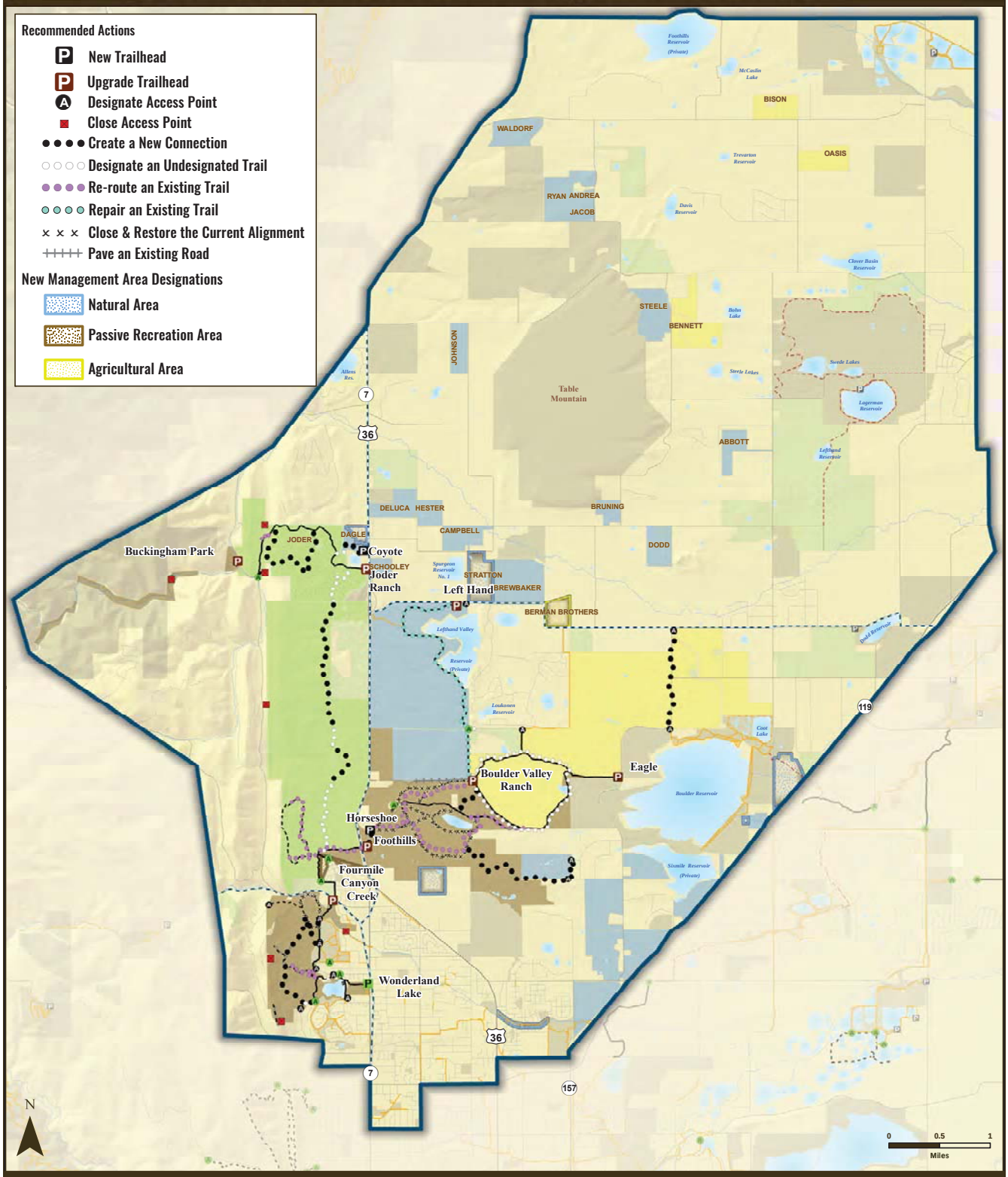
APPENDIX F: Feedback Themes Not Included in the Plan

APPENDIX G: Glossary

Appendix A

City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



Management Area Designations

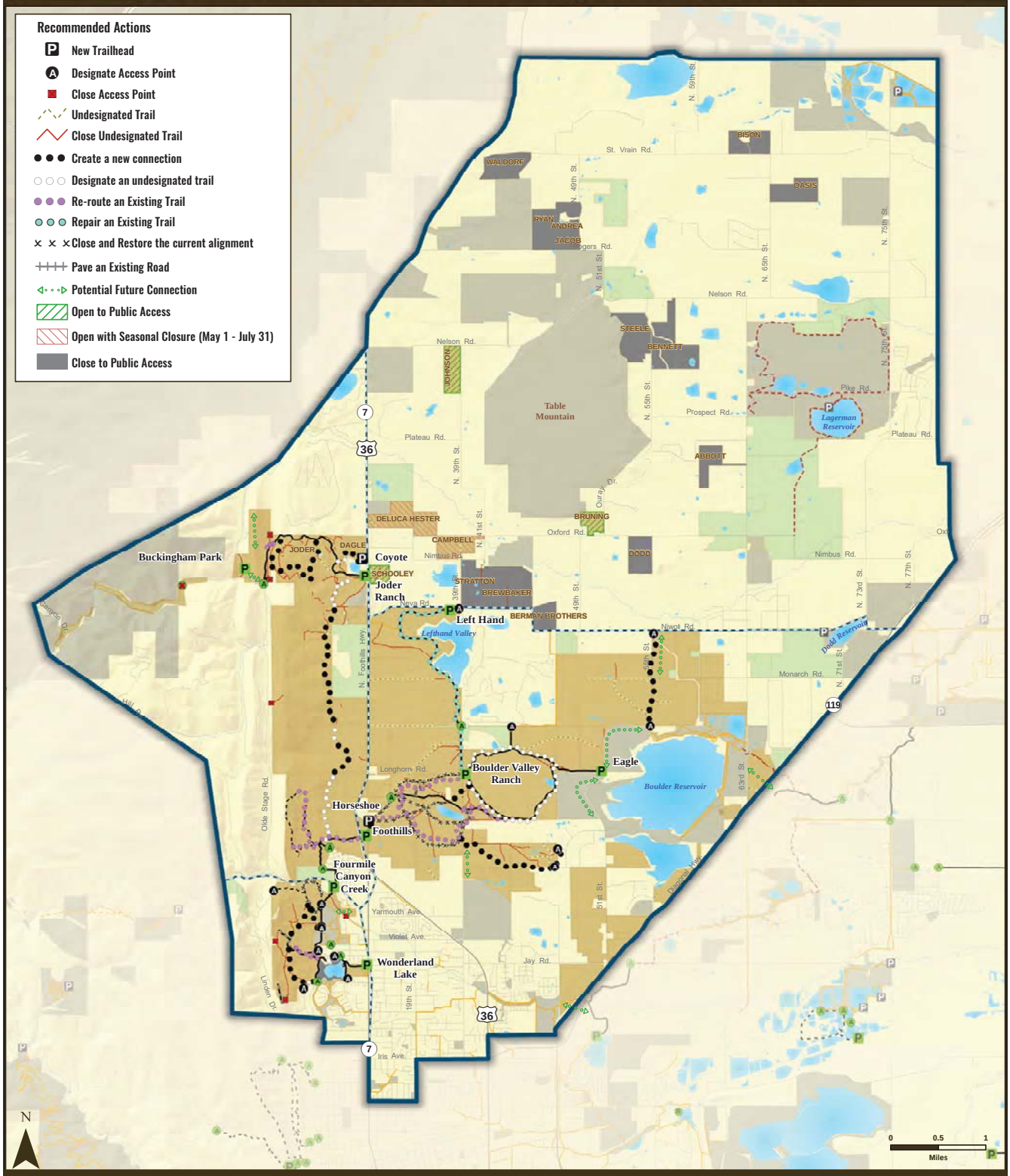
- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail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

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

User: GardE1 Date: 5/11/2016 Path: E:\MapFiles\TSA\NorthTSA\DraftPlan\mxds\Council_Version\AppendixMaps\Management_Area_Designations.mxd

City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Trail Study Area Draft 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.

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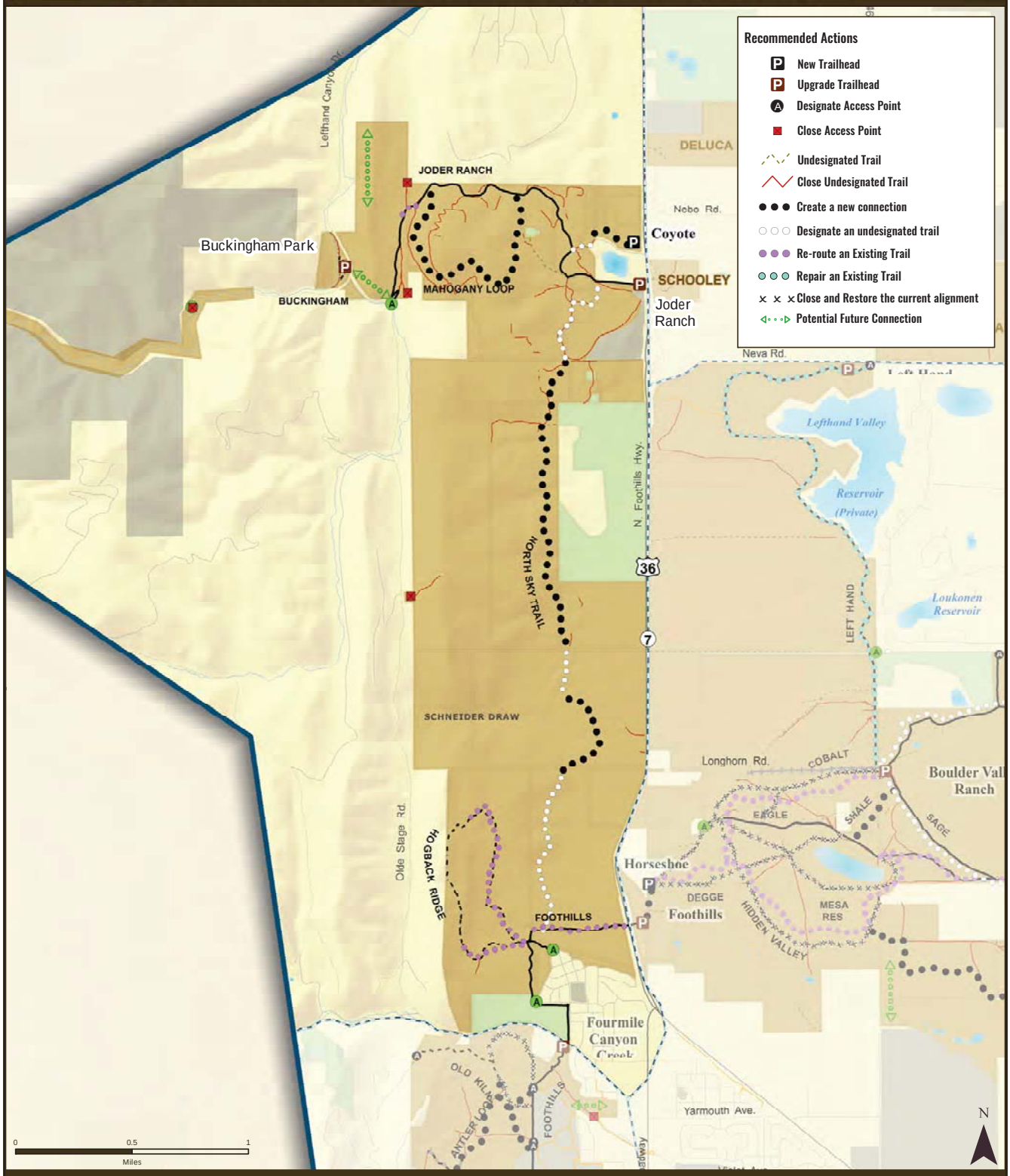
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Foothills 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.

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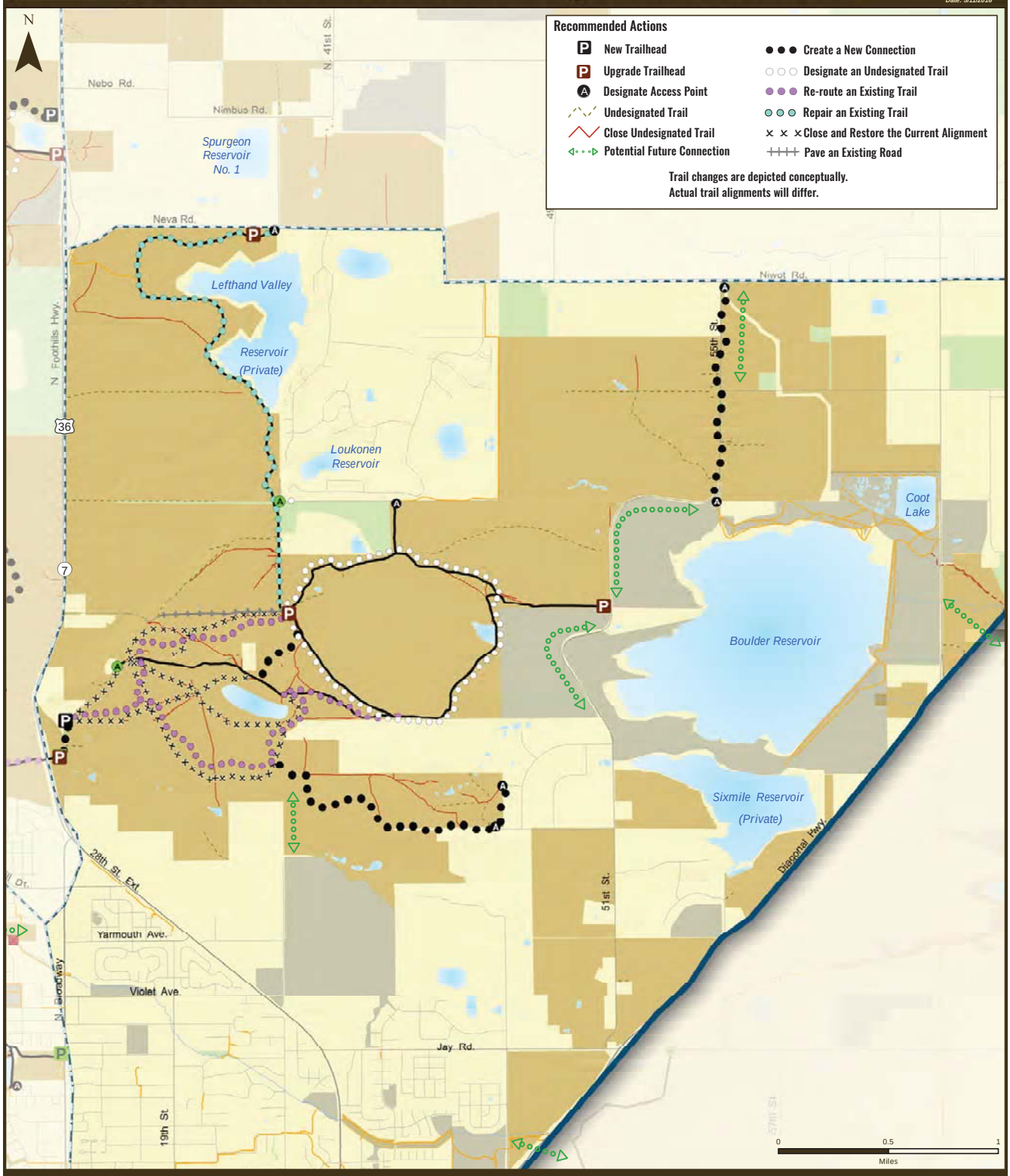
City of Boulder Open Space and Mountain Parks

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

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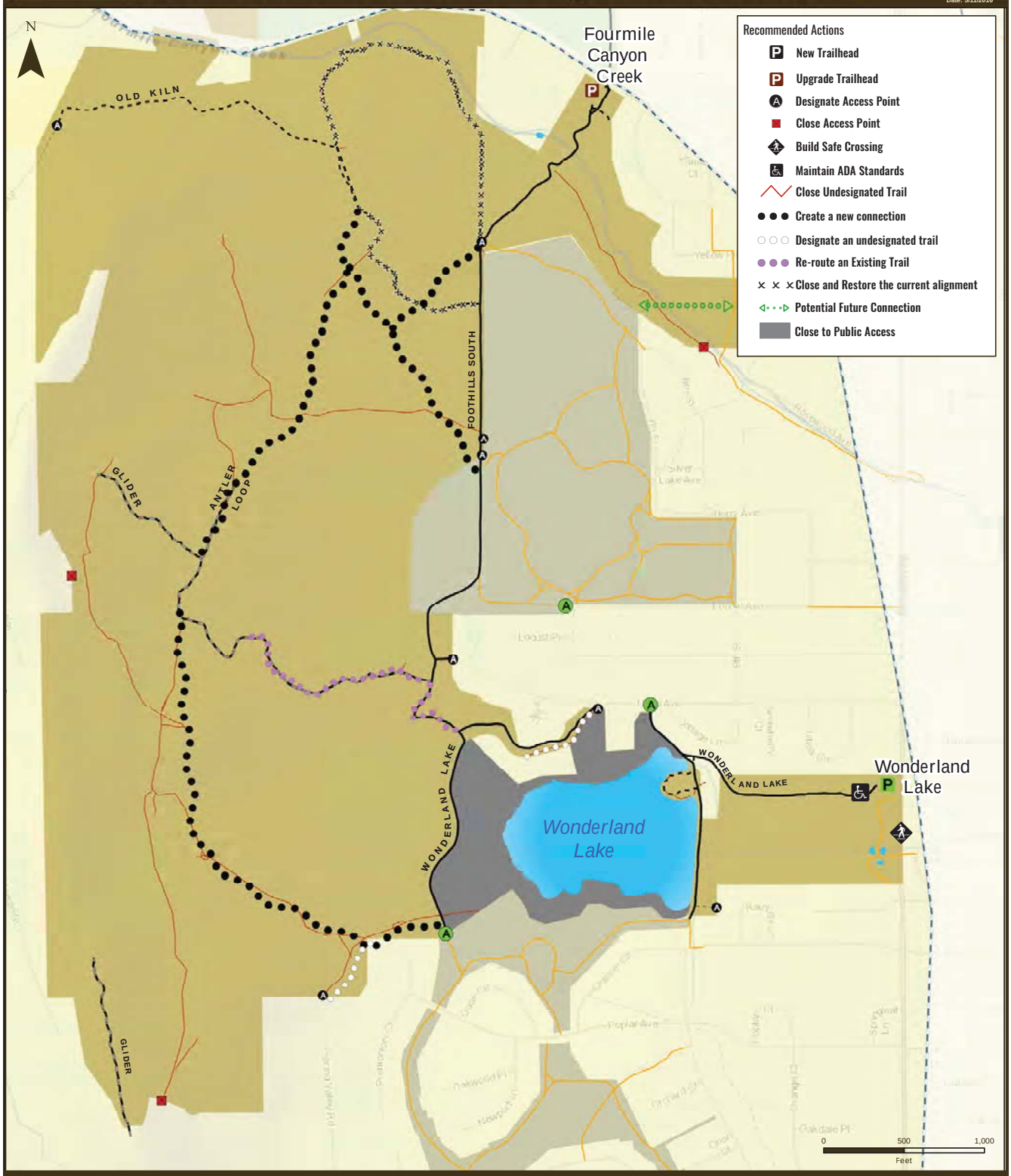
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan

Date: 5/11/2016



Wonderland Lake 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.

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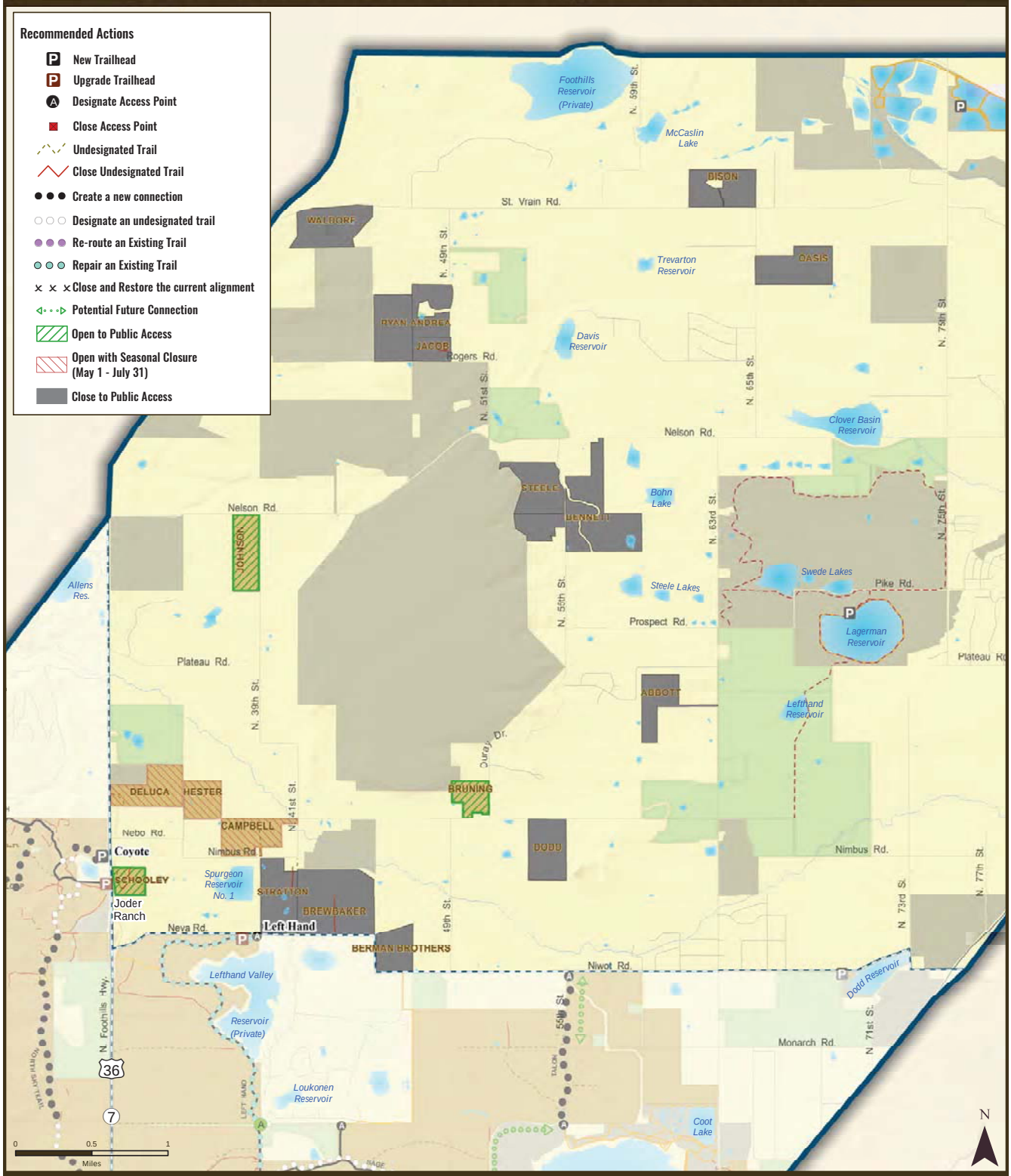
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



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.

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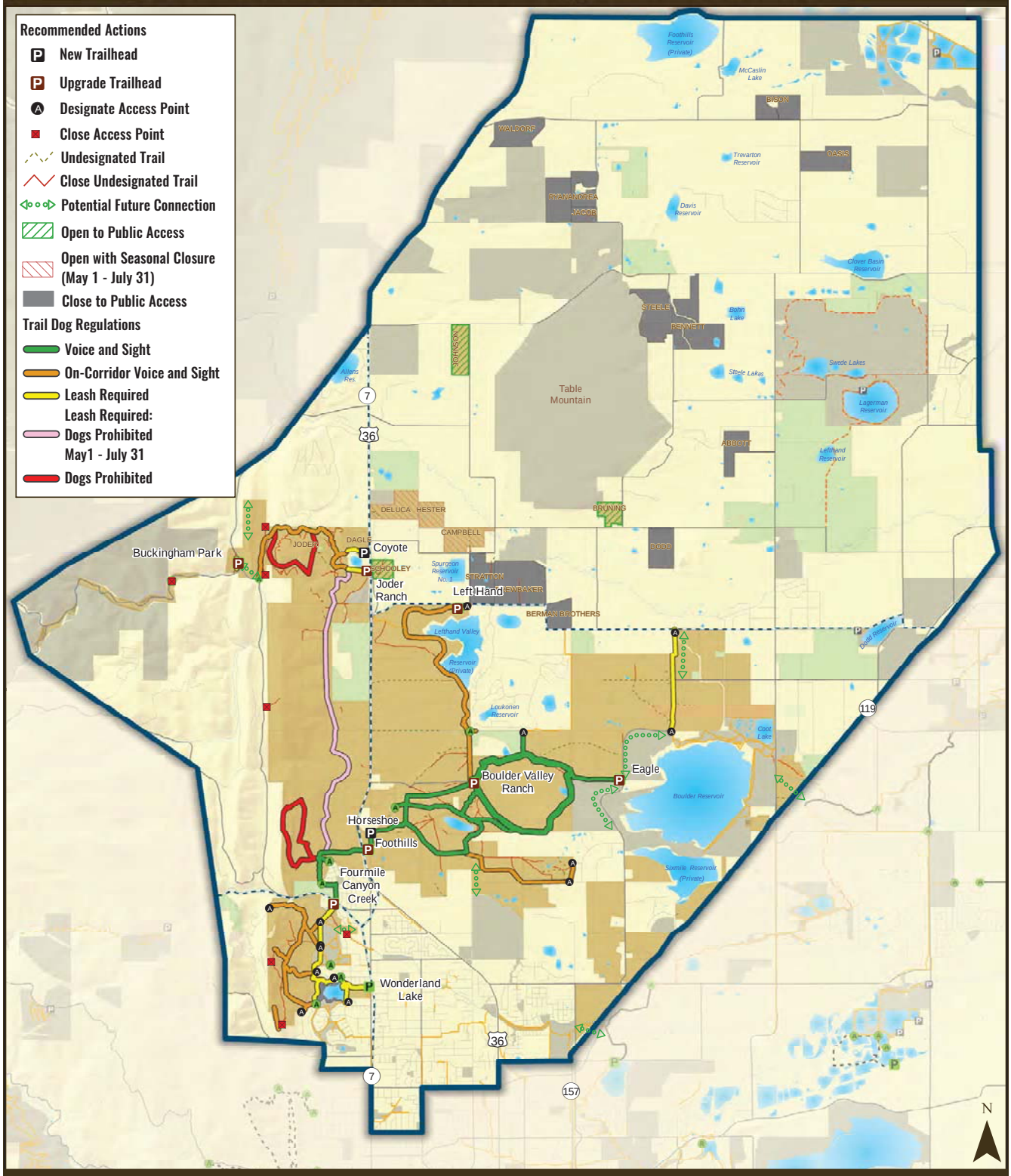
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



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

0 0.5 1 Miles

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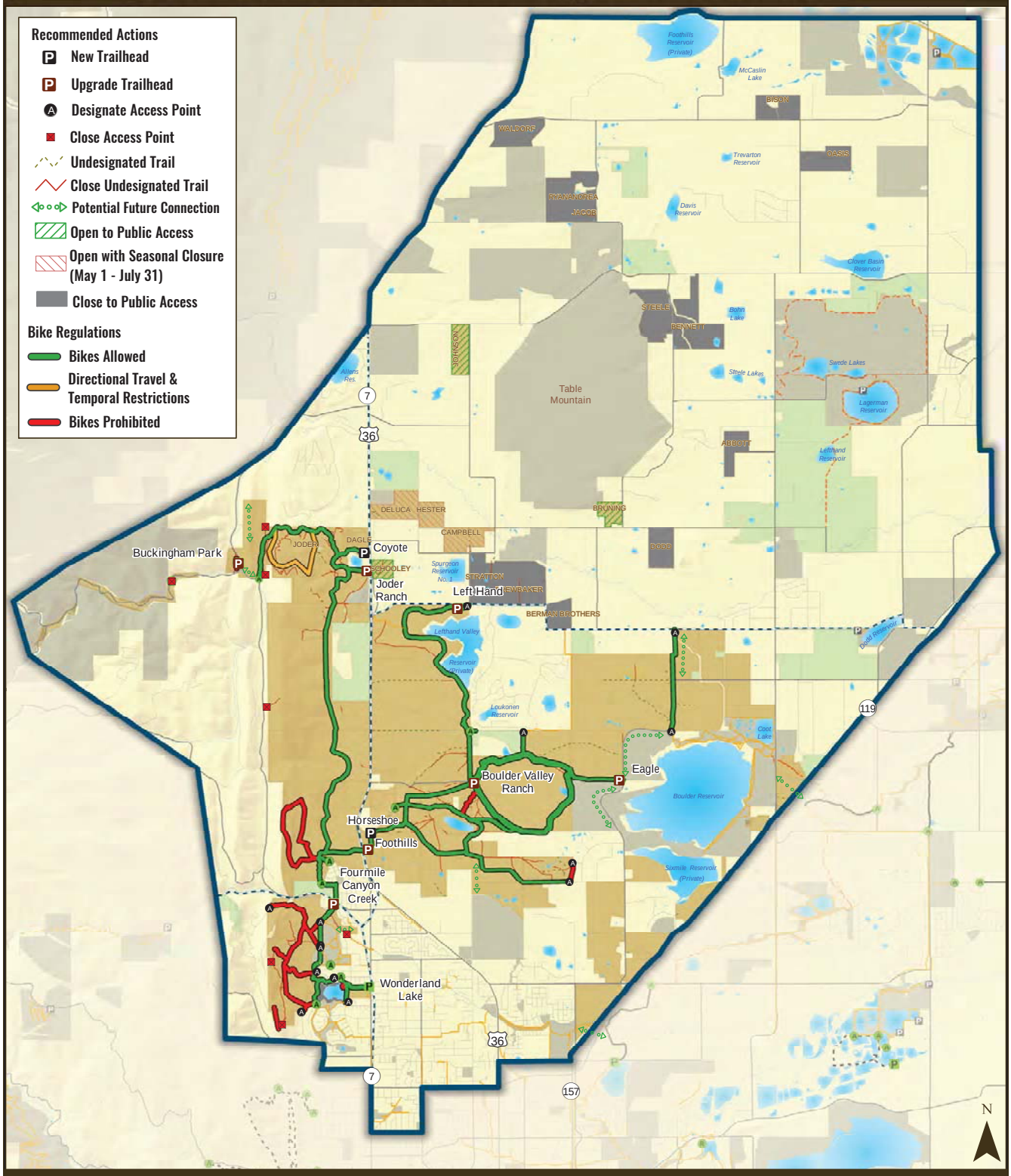
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



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

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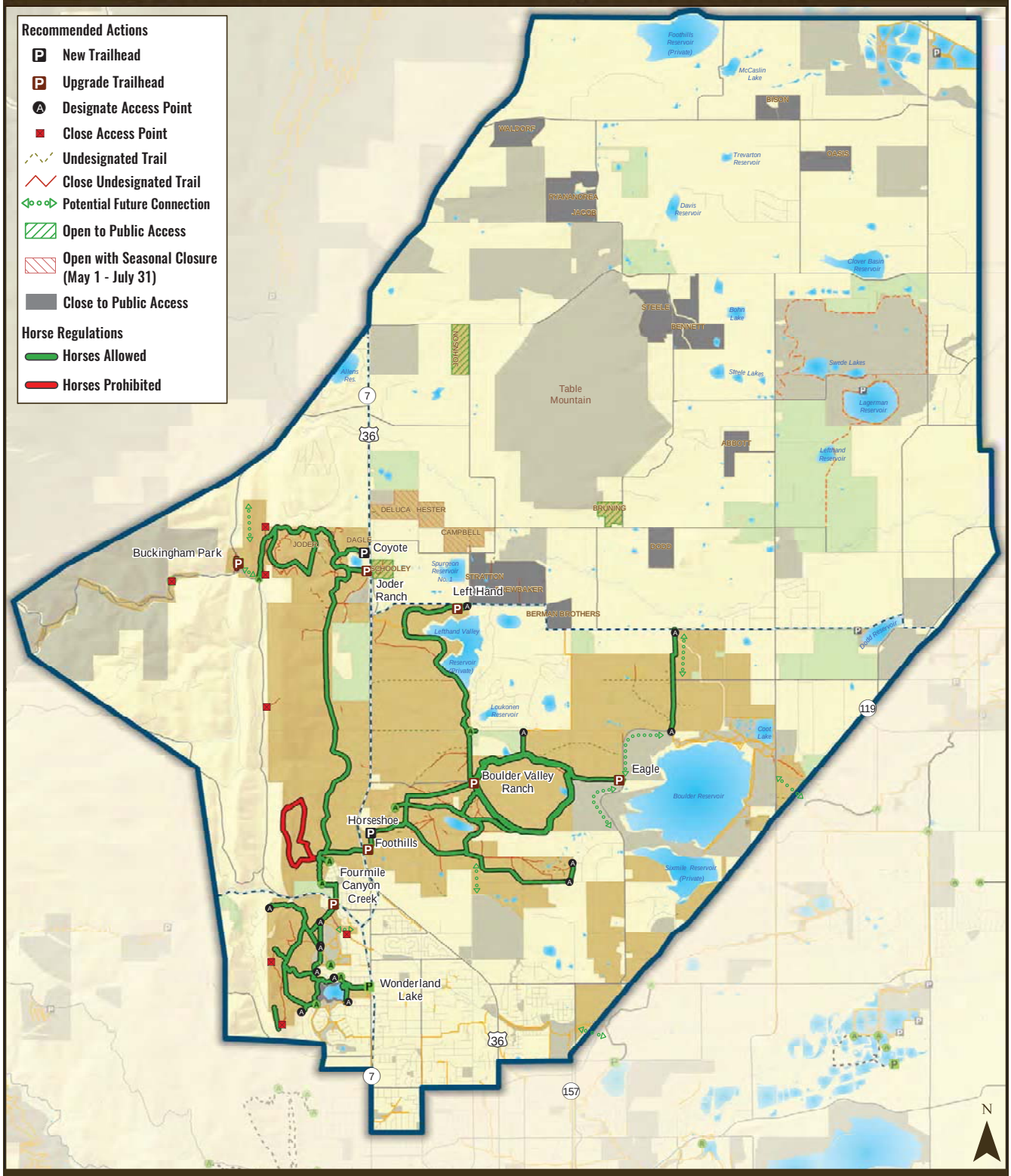
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



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

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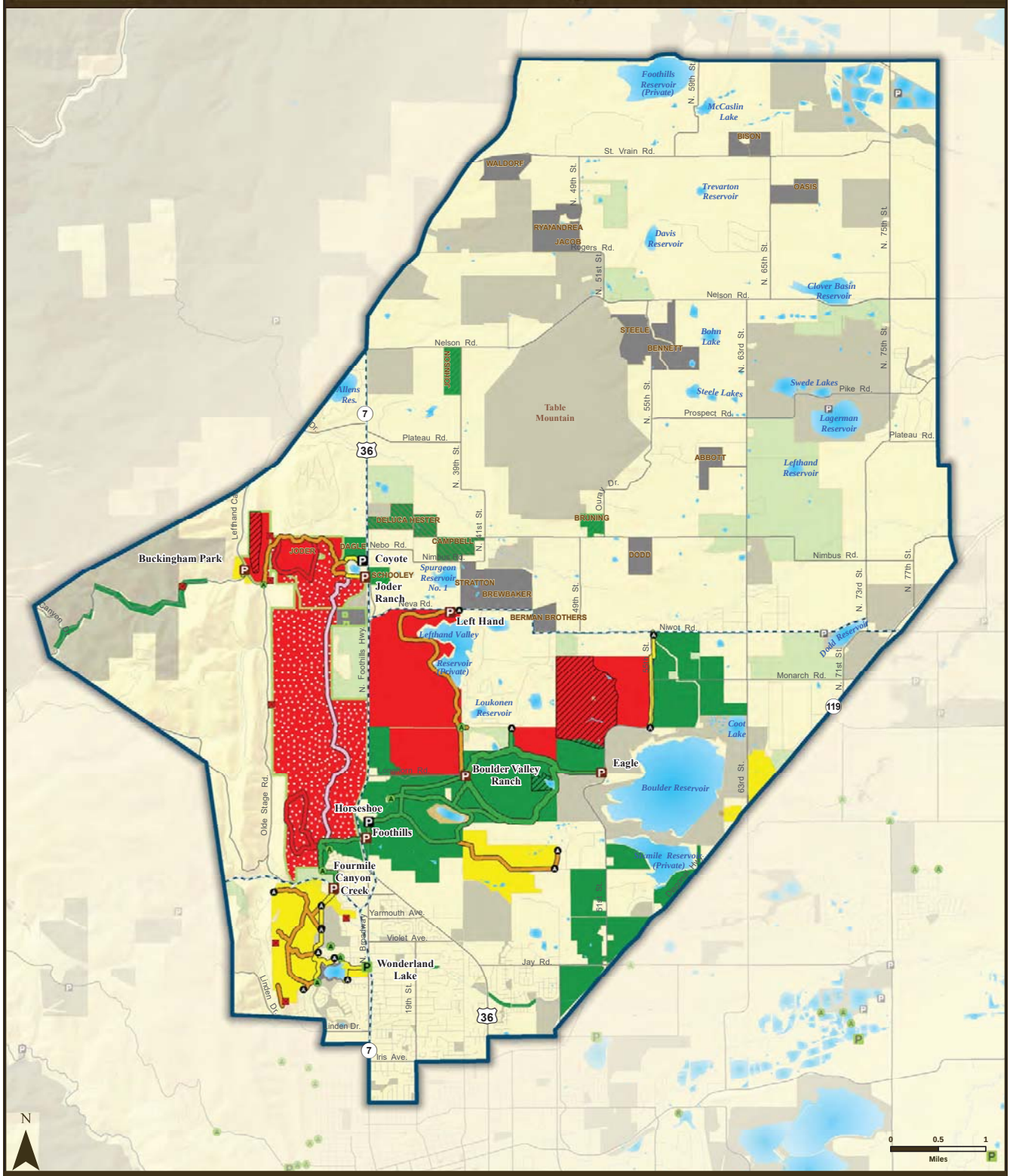
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Trail Study Area Regulatory Settings

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

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

Appendix B

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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 the 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 ≥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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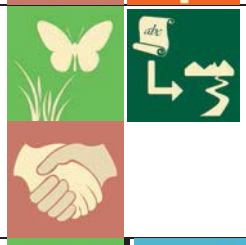
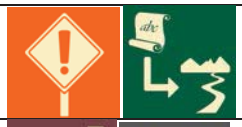
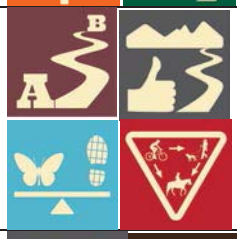
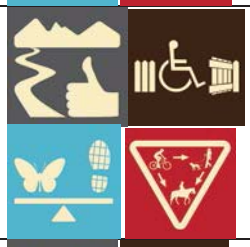
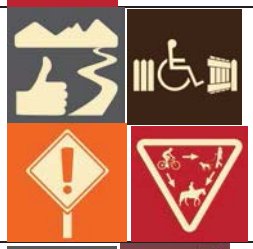
Appendix D: Recommended Actions and Interests Table

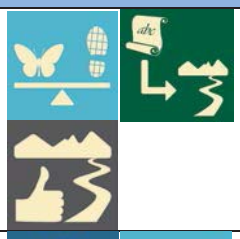
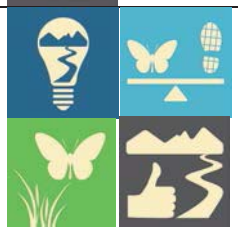
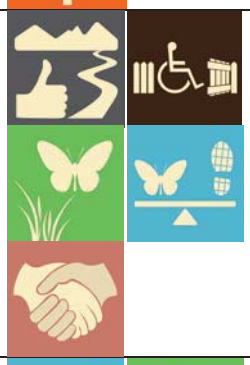
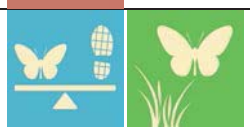
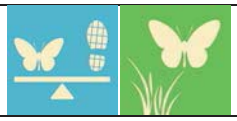
North TSA Interests			
Improved Visitor Experience		Improved Connectivity	
Conservation of Resources (Natural/Agricultural/Cultural)		Balance of Recreation and Resource Conservation	
Improved Access and Accessibility		Increased Safety	
Honoring Community Values and Commitments		Decreased Visitor Conflict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

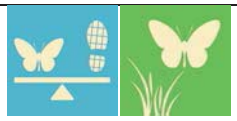
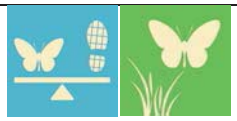
Reference Number(s) and Action Title	Action	Interests
TSA-Wide		
T1 to T9 Provide management area designations for properties without designations to guide management actions.	• Retain the Joder and Cox property designation (T1) as a Habitat Conservation Area (HCA) and implement as part of the North 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.	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 Trail underpass and trail *(construction pending).* • (T14) Fourmile Canyon Creek Trail underpass to Cottonwood Trail *(construction pending).*	

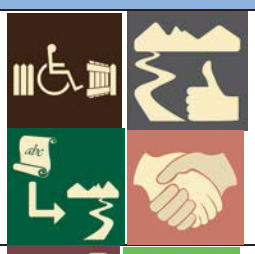
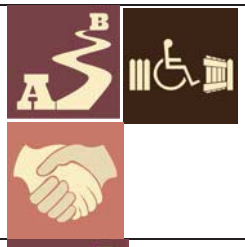
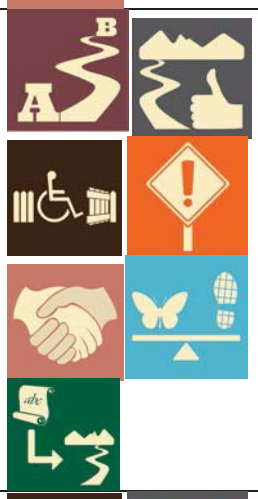
Reference Number(s) and Action Title	Action	Interests
	• (T15) Eagle Trail to the planned Boulder Reservoir Trail.	
T16 to T20 Collaborate with partner agencies to create local trail connections.	As opportunities arise, collaborate with partner agencies to create the following local trail connections 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.	
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.		

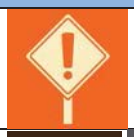
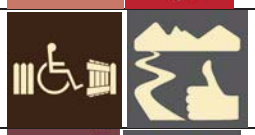
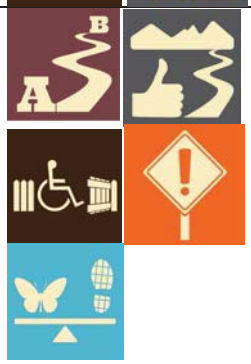
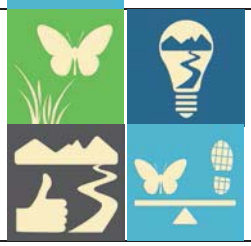
Reference Number(s) and Action Title	Action	Interests
T26 Assess and prevent the introduction and spread of priority invasive plants.	Assess and prevent the introduction and spread of priority invasive plants along new trail connections and decommissioned or undesignated trail sections under restoration.	
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	

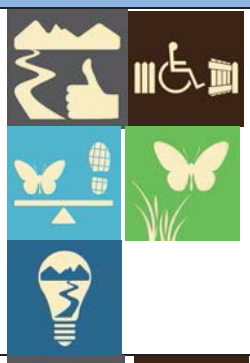
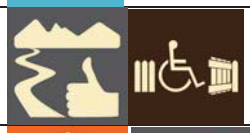
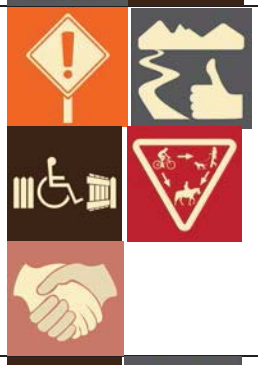
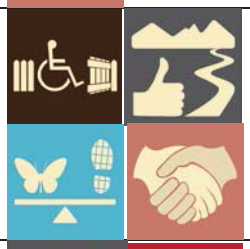
Reference Number(s) and Action Title	Action	Interests
	this area and minimize natural resource impacts.	
NF7 Close Cottonwood Recreation Area.		
NF8 Realign western section of the Interim Joder Trail near the Buckingham property. (Joder Ranch Trail)		
NF9 Construct one loop trail on the northwest section 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)	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.	

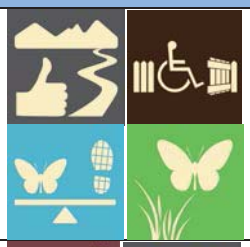
Reference Number(s) and Action Title	Action	Interests
NF14 Include the North Sky Trail in the muddy closure program.		
NF15 Post educational signs about the North Foothills HCA.	Include information about the area's important natural resources as well as safety concerns such as rattlesnakes.	
NF16 Re-route 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		

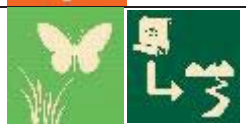
Reference Number(s) and Action Title	Action	Interests
OSBT with monitoring recommendations for the North Foothills HCA, the North Sky Trail and the Joder property.		
No Reference Number: Regulation Change: Leash required with seasonal closure from May 1 – July 31 on Joder connector trail. (North Sky 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. • (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 *(construction pending).* • (B8) Fourmile Canyon Creek Trail underpass to Cottonwood Trail *(construction pending.* • (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.		

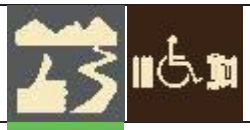
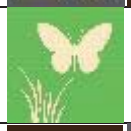
Reference Number(s) and Action Title	Action	Interests
B12 Bring Lefthand Trailhead up to standards.	Include horse trailer parking at Lefthand Trailhead.	
B13 Improve Lefthand Trail.		
B14 Designate a connector trail from Lefthand Trail to the Lake Valley Estates neighborhood.		
B15 Create a connection 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 55th Street.	
B16 Bring Eagle Trailhead up to standards.	Include horse trailer parking at Eagle Trailhead.	

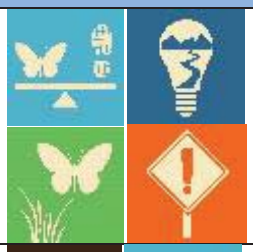
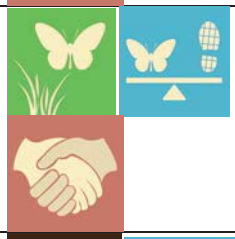
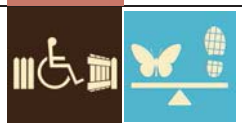
Reference Number(s) and Action Title	Action	Interests
		
B17 Bring Foothills Trailhead up to standards.		
B18 Add a new trailhead at the Degge Trail access point. (Horseshoe Trailhead)	Provide additional parking capacity and horse trailer parking.	
B19 Create a trail connection between Foothills and 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.	

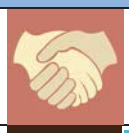
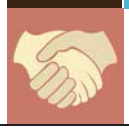
Reference Number(s) and Action Title	Action	Interests
B22 Provide nature-viewing access at Mesa Reservoir.		
B23 Replace existing trails with a new trail connection south of Mesa Reservoir.	Replace southern sections of Mesa Reservoir Trail and the Hidden Valley Trail with a new single trail connection.	
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 55th 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 55th 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, ashalt, 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.

North TSA Plan and Process Summary

Trail Study Area Plans

In 2005, the Boulder City Council approved the Open Space and Mountain Parks (OSMP) Visitor Master Plan (VMP). An integral feature of the VMP was the creation of Trail Study Areas (TSAs). TSA plans were to establish visitor access and recreation resource management priorities and projects for specific areas of OSMP lands.

The North TSA

The North TSA includes lands north of the Diagonal Highway on the east, and lands north of Linden Avenue on the west. The North TSA Plan will include management recommendations for 7,701 acres that OSMP owns and manages. The North TSA planning area includes land with some level of city open space ownership, but where OSMP does not provide or manage public access (conservation easements, lands jointly owned with and managed by Boulder County). Lands not managed by OSMP are outside the scope of the North TSA but do provide important context for plan recommendations. The goal of the North TSA Plan is to improve visitor experiences and increase the sustainability of trails and trailheads while conserving the area's natural, cultural and agricultural resources.

The Planning Process

The planning process has four phases. The first phase focused on collecting and compiling information about current conditions and management practices in the TSA. The primary deliverable for the first phase was the inventory and assessment report which was available on June 15, 2015.

The second phase identified key interests and issues that needed to be addressed in the plan. The interests and issues along with the inventory and assessment information informed and guided the development of alternative scenarios which are ways to meet interests or address issues. This phase resulted in a list of interests and potential actions to help direct the development of 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. This part of the planning process concluded with the completion of a Draft Plan.

The final (current) phase includes the review of the Draft Plan by the community, the OSBT and City Council. On March 9, 2016, the Board approved changes to the Draft Plan and with a vote of 3-2, approved the Draft Plan as amended and recommended that the Boulder City Council approve the North Trail Study Area Plan as amended. The main point of contention for the split vote was whether a north-south connector trail should be constructed through the North Foothills HCA. This phase of the process will conclude when City Council has reviewed and accepted the plan.

Community Engagement
The intent of the planning process and community engagement is to have broad community participation, inclusive dialogue and connect with the community in varied and meaningful ways. Community members have been involved through a range of different approaches including:

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

Community participation in the assessment, interest and scenario development phases of the process has represented a diversity of perspectives in the community including people visiting trails in the North TSA, neighbors, stakeholder organizations, youth and families. OSMP staff, OSBT members and members of City Council have received public feedback via email from community members on the Draft Plan and its recommendations. Currently, 649 people have signed up to receive email updates about the plan. A complete compendium of comments received is available on the North TSA Website.

Figure 1. Community Engagement Participation Levels

Engagement Approach	Assessment Phase	Interest Phase	Expert Panels	Preliminary Scenarios	Refined Scenarios
Workshop Participation	60	36	65	155	70
In-field, store front, neighborhood and Latino community engagement	167	413	NA	Outreach Only	Outreach Only
Youth engagement	16	57	NA	NA	NA
Totals	**243**	**507**	**65**	**155**	**70**
Comments on Inspire Boulder/online/email/ social media comments	**105**	**115**	**NA**	**196**	**276**

OSBT Hosting of the Process
The OSBT has been involved with the development of the North TSA Plan from the beginning as "host" of the North TSA Plan. The intent of this role is to make it clear that OSBT is the recommending body to the City Council and to raise the Board's visibility in different types of community forums. The role as host also supports community engagement throughout the process, providing an alternative to the three-minute public testimony approach of more traditional public hearings. As host, the Board's participation can clearly be seen by the community and the City Council as the Board primarily welcomes, listens to and observes the community engagement process.

North TSA Plan Interests
The North Trail Study Area Interests and Issues report is a compilation of the perspectives and feedback provided during the interests and issues phase of the North TSA planning process.

Community members were asked to share their interests in the planning area rather than positions. Positions describe what someone wants or needs, while an interest explains why they want or need it. If the community was asked to share ideas about positions, the final result would be distributive, rather than integrative, and a lot of people would not get what they want. Assessing the "why" of what community members want enables staff and the OSBT to better meet the needs of a diverse community and recognizes that individuals carry multiple interests about managing properties, allowing for more win/win opportunities.

Through the various engagement efforts to understand the community and stakeholder interests in the North TSA, ten interests emerged. These interests are consistent with the goal and objectives of the North TSA Plan and provided guidance for staff in the development of the scenarios. The desired plan outcomes or actions that were suggested in the effort to understand interests also informed how potential actions were combined into different scenarios.

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	

North TSA Plan Preliminary Scenarios

Finding ways that the North TSA can be enhanced for the identified plan interests accomplishes the goal of the North TSA Plan. The interests also provided a means to focus the range and types of actions considered in the development of preliminary scenarios. Scenarios are conceptual visions of alternative trail changes, proposals for new trail connections and trailhead improvements for the North TSA that also advance efforts to conserve the area's diverse natural, agricultural and cultural resources. Scenario maps depict concepts of a proposed set of actions that make up the scenario. Staff had three primary factors to guide the development of the scenarios:

1. Consistency with the North TSA Plan Sideboards.
2. How the group of proposed actions achieve the interests.
3. How well the scenario balances the interests.

Staff deliberately avoided the approach of developing scenarios that prioritized specific interests such as scenarios that were best for improving visitor experience or best at protecting natural resources. In determining changes and actions to include in the scenarios, staff considered suggestions made by the community as part of the public engagement effort to understand interests, information from the inventory and assessment report and ideas shared during the expert panels. The fundamental intent of each preliminary scenario is to balance all of the community interests through different combinations of proposed actions.

Balancing Interests in the Preliminary Scenarios

Each of the four preliminary scenarios sought to balance the North TSA interests in different ways. OSMP staff reviewed the inventory and assessment report and the full scope of community input from the assessment phase through the expert panels to propose ideas. The North TSA project team worked hard to listen to each other's ideas and consider different and creative proposals for addressing the interests. Staff also understood that there are a lot of ways proposed actions could be combined to balance the interests. None of the preliminary scenarios had the "right" mix and balance of ideas; however, the four preliminary scenarios provided a good base for integrating community feedback into the scenarios and building the refined scenarios.

To develop the scenarios, staff began with the four subareas and discussed a range of possible actions for each of the subareas. Staff then combined actions in alternative ways so the interests could be balanced across the subareas. The subareas were then combined in different ways to make up the four preliminary scenarios and further adjustments were made to balance interests. Proposed actions that were important to balancing interests across the four scenarios include:

- Regional connections;
- New trail connections;
- Trail re-development;
- Measures to avoid habitat fragmentation and conserve sensitive resources;
- Innovative ideas to manage a range of passive recreational activities and decrease visitor conflict;
- Trailhead and access improvements; and
- Education and stewardship opportunities.

A table summarizing some of the significant actions and the ways they varied between the scenarios, to balance interests across the scenario, is available in Attachment D of the November 16, 2015 OSBT Study Session Memo. A summary table comparing the preliminary scenarios is available online along with the preliminary scenario maps and tables describing the actions relevant to all scenarios and to each of the individual scenarios. The tables describing the scenario actions identify the intended interests that the recommended actions achieve. The regulation maps for the scenarios reflect the trail changes proposed in the scenarios.

Community Feedback on Preliminary Scenarios

Staff initially presented the preliminary scenarios to the community at a workshop on Oct. 5, 2015 and provided an opportunity for participants to provide initial thoughts about the scenarios and how they did or did not balance the interests. Feedback from break-out groups and from a participant poll is available on the project website. After the workshop, staff posted an online survey to gather additional input. Both the poll and the survey aimed to gather information on community perspectives about how well the preliminary scenarios balanced interests and on which interests the scenarios fell short. They were not designed to determine what changes to make to the scenarios or to select which scenarios should be refined further.

A second workshop on Oct. 19, 2015 sought feedback from participants about which of the scenarios they thought could be improved on how well they balanced the interests and to suggest changes to the scenarios that would improve the balance. Community members were

able to provide feedback online for a week after the workshop. Feedback from the second workshop and online comments were combined together and are available in a detailed table. Included are all comments submitted in response to the questions staff asked for feedback on:

- Which scenario was selected?
- Why was it selected?
- What changes are proposed and how do the changes improve the balance among the interests?

There was substantial community engagement and feedback during both workshops and the associated online community review and comment opportunity for the preliminary scenarios. Staff received many comments including support for the various scenarios, concerns about specific actions and suggestions on how interests could better be accomplished and balanced for particular scenarios.

Staff compiled feedback on the suggested changes to the scenarios in a separate summary table that includes proposed changes, associated rationale and if/how the proposed change(s) were incorporated into the two refined scenarios. This information is available on the North TSA Website.

OSBT Feedback on Preliminary Scenarios

Staff presented the preliminary scenarios as well as the community feedback received on the preliminary scenarios to the OSBT at a Study Session on Nov.16, 2015. Staff asked the Board:

- Does the OSBT have comments on the community input about which of the preliminary scenarios best balances the North TSA interests?
- Which of the preliminary scenarios do OSBT members suggest staff revise and advance as preferred scenarios?
- Are there specific actions or changes to the scenarios OSBT members think important for staff to consider in the development of preferred scenarios that balance the interests better?

Staff compiled the feedback received from the Board in a table that details the feedback as well as if/how it was integrated into the two refined scenarios. This information is available on the North TSA Website.

North TSA Plan Refined Scenarios

Based on community input and Board feedback, staff modified the four preliminary scenarios into two refined scenarios as detailed in the Jan.13, 2016 OSBT Study Session Memo. Feedback by the OSBT at the January study session focused upon the following topics:

- Locating, designing and managing of the Joder connector trail
- Locating, designing and managing loop trails on Joder
- Maintaining the HCA designation for the North Foothills/Joder area
- Developing and modifying access for cyclists
- Developing and modifying access for dogs
- Managing public access to the relatively isolated northern properties

There were also comments unrelated to these primary topics. Topics that generated multiple comments by the Board, but with less overall frequency from community members were mostly about:

- Locating, designing and managing specific trails
- Increasing clarity about how the plan addresses regional trail connections
- Addressing equestrian access and trailer parking at Boulder Valley Ranch

North TSA Plan Updated Scenarios
Staff revised the scenarios discussed at the January study session and requested the Board's approval of the revisions at the Feb. 10, 2016 OSBT meeting. The meeting included a public hearing on this topic. The Board approved several additional revisions to both Scenario A and Scenario B. Staff recommended that only one scenario be used as the basis for the Draft Plan and requested the Board's direction in order to provide the Draft Plan at the March 9, 2016 OSBT meeting. Three OSBT members voted for the amended Scenario B to be used as the basis for the draft North TSA Plan while two OSBT members voted against it. The main point of contention and reason for the split vote was whether a north-south connector trail should be constructed through the North Foothills HCA.

North TSA OSBT Draft Plan
Based on the OSBT's majority vote to use the amended Scenario B as the basis for the Draft Plan, staff developed the recommendations of Scenario B into a Draft Plan. At the March 9, 2016 OSBT meeting, which included a public hearing, staff requested the Board's approval of the Draft Plan. The Trustees made several motions to amend the Draft Plan and then approved these changes to the North TSA Draft Plan.

The OSBT approved the North TSA Plan as amended and recommended that the Boulder City Council approve the North TSA Plan as amended with a 3-2 split vote. Again, the main point of contention was whether a north-south connector trail should be constructed through the North Foothills HCA. The OSBT also approved the following statement with a 3-2 split vote: If City Council does not support the North Sky Trail, the OSBT recommends that City Council direct staff to revise a plan based on Scenario A as modified by the OSBT votes at the February and March Board meetings.

North TSA City Council Tours
A driving tour and virtual tour of the North TSA was provided for City Council on Monday, April 18. These tours allowed staff to point out selected key locations in the North TSA to City Council and discuss specific areas, resources and features of the North TSA. Materials from the driving and virtual tours can be found on the North TSA Driving and Virtual Tour webpage. These materials include information about the Draft Plan as well as the Alternative Scenario and comparisons between the two proposals. City Council also requested arrangements for a limited number of staff to conduct two-by-two hiking tours of the conceptual Joder trail connection routes. Five tour dates have been scheduled and tours are underway.

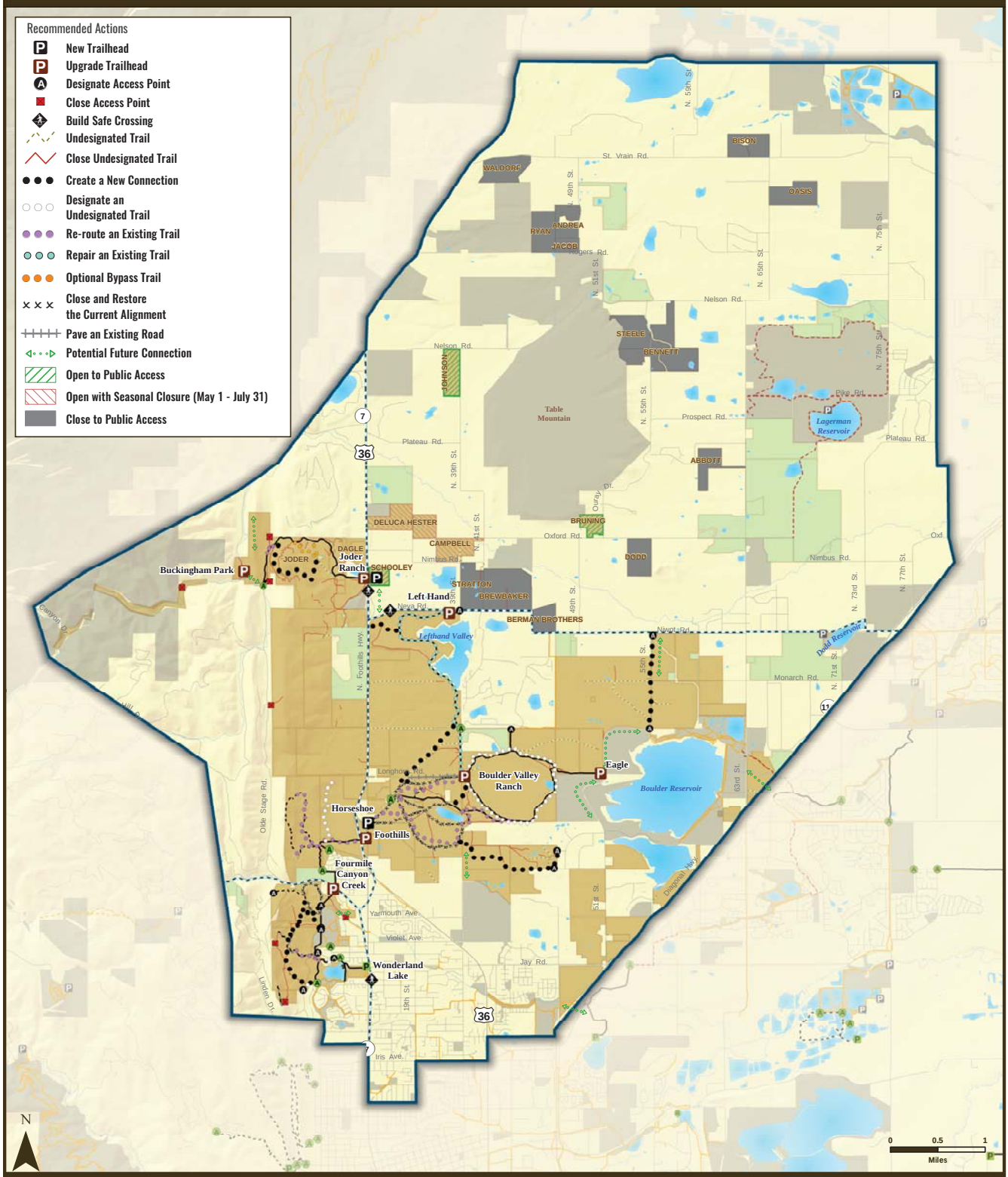
North TSA City Council Draft Plan
Staff updated the Draft Plan with the OSBT's approved changes and some minor staff edits to add clarity as documented in the City Council Draft Plan - Log of Revisions. A study session on the Draft Plan is scheduled with City Council for May 24. The plan is anticipated to be presented to City Council for consideration and acceptance on June 7.

OSBT Supported Changes to the North TSA Draft Plan (March 9, 2016)

#	Motion	Draft Plan Change
1	Continue to follow the terms of the lease regarding public access to the Boulder Valley Ranch (BVR) equestrian arena and staff will 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.	Added this as a new recommendation to the BVR subarea section of the plan.
2	Ask staff to endeavor to develop and bring back to the Board an ecological monitoring program for the North Sky Trail and the Joder property in light of the important ecological qualities of these properties.	Added this as a new recommendation to the North Foothills subarea section of the plan.
3	Continue the current access status of the Northern Tier Properties as either open or closed, except that the Deluca, Hester, and Campbell Properties be closed May 1 – July 31 for protection of ground-nesting bobolink.	Modified the recommendations in the Northern Properties subarea section of the plan for open/closed properties. Added seasonal nesting closure for Hester, Campbell and Deluca.
4	Amend the language on page 102 of the North Trail Study Area (TSA) Draft Plan to add the word “important” in front of “note” and eliminate “designated” in the first sentence.	Added “Important Note” to page 102 of the plan. “Designated” is removed from online version of the plan. This only required correction in previously printed hard copies of the plan.
5	Add the following language to the North Trail Study Area (TSA) Draft Plan on page 7: In fairness to the process, it should be acknowledged that three OSBT members voted for the scenario while two voted against. The main point of contention was whether a north-south connector trail should be constructed through the North Foothills HCA.	Added language to page 7 of the plan.
6	Modify the language on page 36 under primary goal to read: Increase connectivity among North TSA properties while minimizing natural resource impacts to every extent possible.	Modified primary goal language on page 36 of the plan.
7	Designate areas surrounding the Wrangler Trail (the trail is designated as Voice and Sight on-corridor) as leash required as similar management to Wonderland Lake.	Modified regulatory setting map for Boulder Valley subarea and TSA-wide in the plan.
8	The Open Space Board of Trustees approves the North Trail Study Area Plan as amended and recommend that the Boulder City Council approves the North Trail Study Area Plan as amended.	Adopted above changes to draft plan.
9	If City Council does not support the North Sky Trail, the OSBT recommends that City Council directs staff to revise a plan based on Scenario A as modified by OSBT votes at the Feb. and March Board meetings.	No changes required to the plan. Included statement in the North TSA memo to City Council.

City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Trail Study Area Alternative Scenario Recommendations

OSBT Changes Included

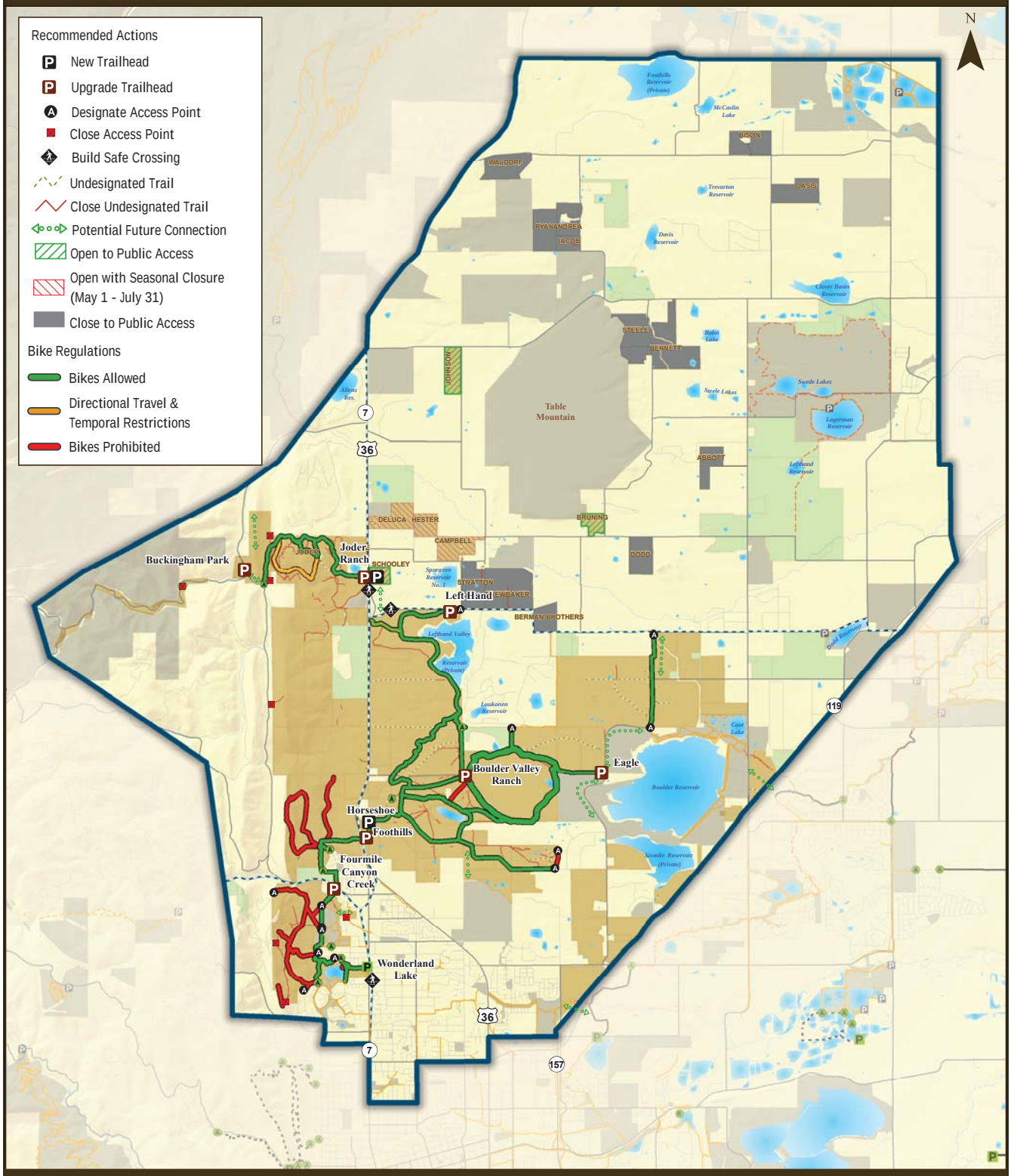
- North Trail Study Planning Area
- North Trail Study Subareas
- OSMP Trailhead
- OSMP Access Point
- OSMP Recreational Feature Access
- Boulder County Trailhead
- OSMP Hiking/Equestrian Trail
- OSMP Multi-Use Trail
- OSMP Gliding Access
- Non-OSMP Managed Hiking Trail
- Non-OSMP Managed Multi-Use Trail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

User: GardE1 Date: 5/12/2016 Path: E:\MapFiles\TSA\NorthTSA\DraftPlan\mxds\Council_Version\Alternate_Plan\NTSAWide_AltScenario.mxd

City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Trail Study Area Alternative Scenario Bike Recommendations

OSBT Changes Included

- 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

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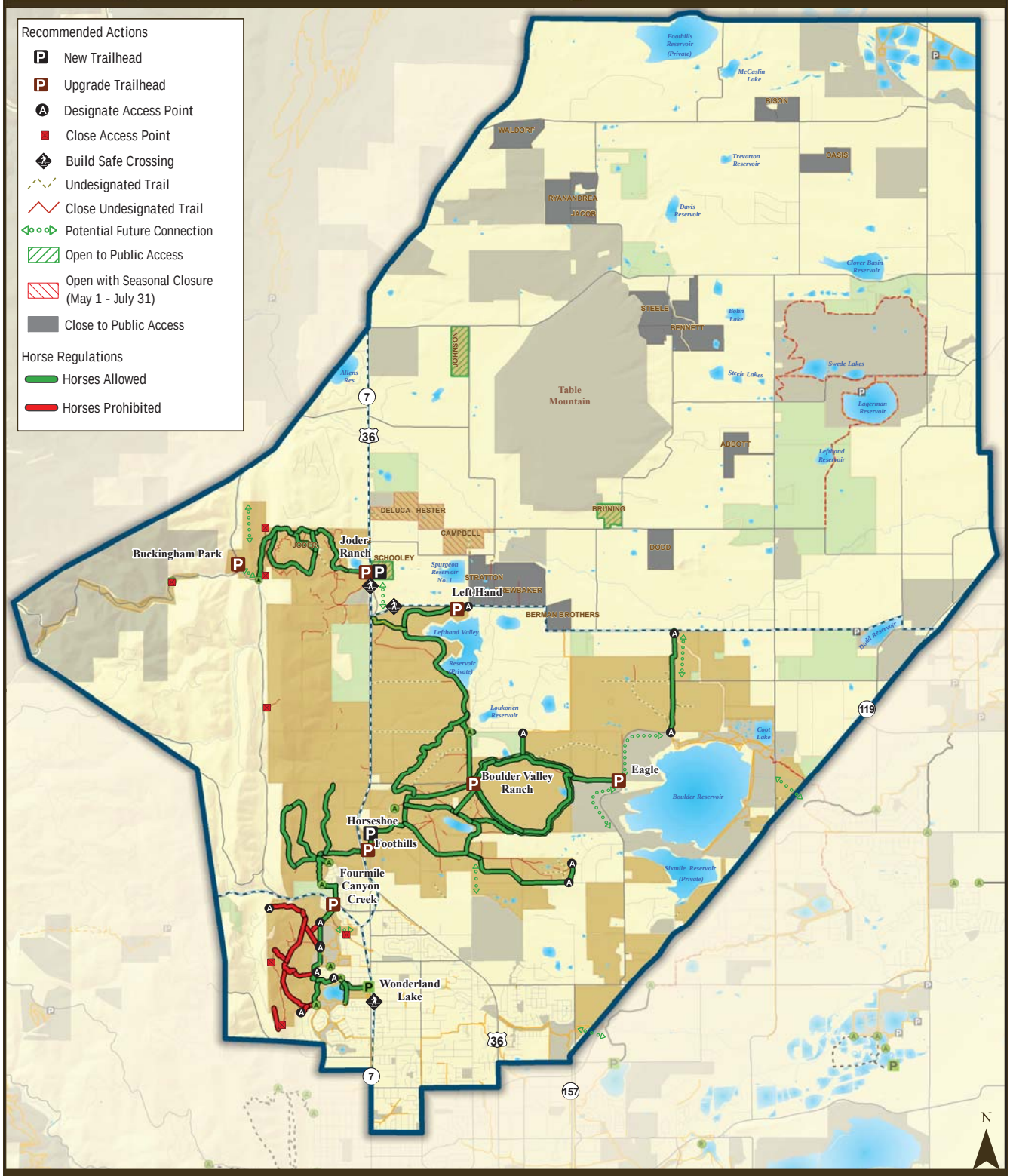
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Trail Study Area Alternative Scenario Horse Recommendations

OSBT Changes Included

- 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

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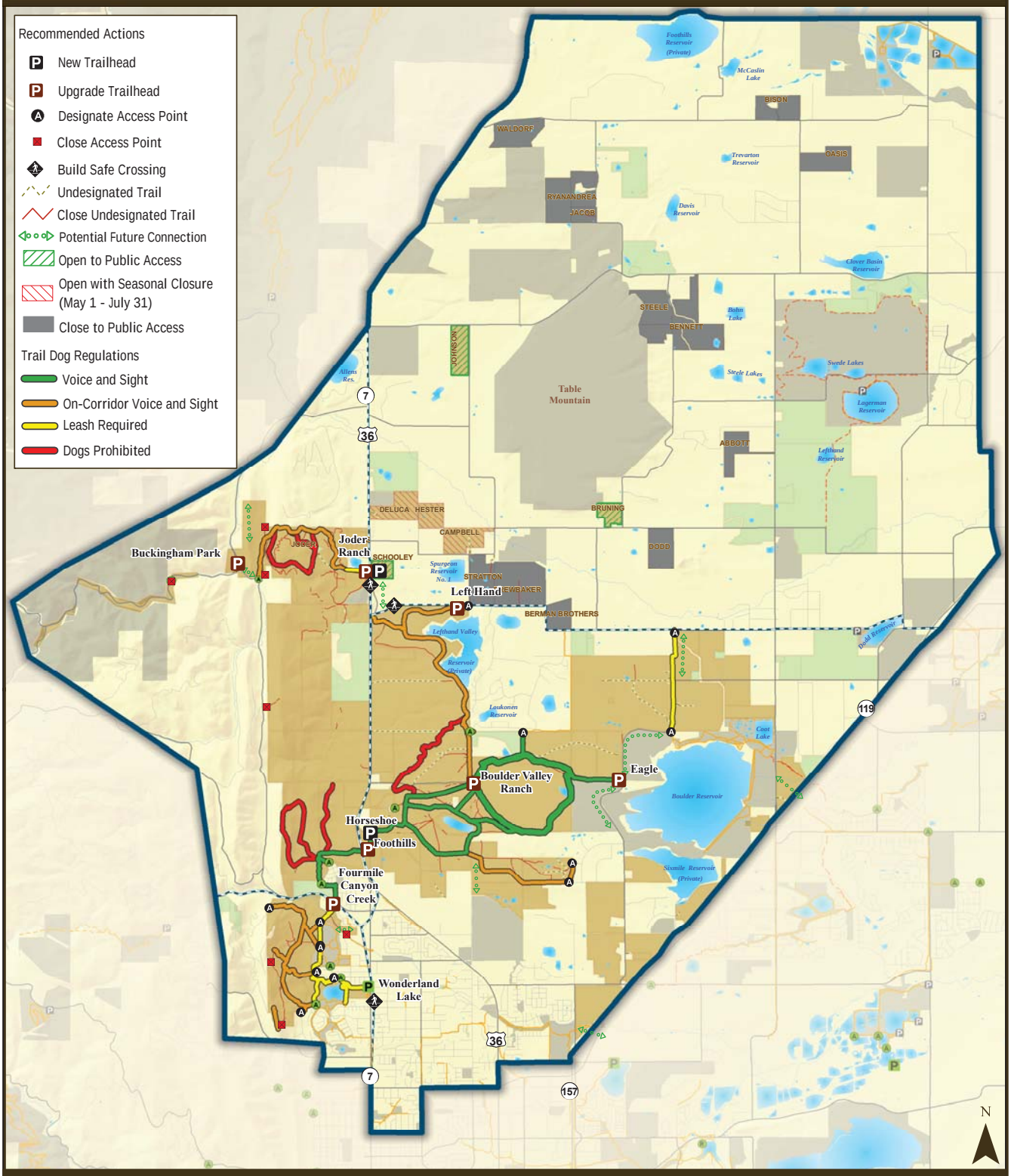
City of Boulder Open Space and Mountain Parks

North Trail Study Area Plan



North Trail Study Area Alternative Scenario Dog Recommendations

OSBT Changes Included

- 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

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North TSA Recommended Actions and Alternative Comparison

ACTION	INCLUDED IN BOTH THE DRAFT PLAN AND ALTERNATIVE SCENARIO
Joder Trails (Mahogany Loop and Joder Ranch Trail)	• One loop trail (Mahogany Loop) on western section of property with spatial separation for dogs and temporal separation and directional regulations for bikes (*Bikes not allowed on Tuesdays and one alternating weekend day*).
Joder Trailheads	• Large vehicle parking and a limited number of passenger vehicle parking spots at Interim Joder Trailhead (Joder Ranch Trailhead)
Regional Trail Connections	OSMP is interested in collaborating with partner agencies as opportunities arise to create regional connections that minimize 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 trail connection to Heil Ranch on the Buckingham property). • North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex. • Boulder-to-Lyons trail including the efforts of the Rocky Mountain Greenway Project • IBM Connector Trail underpass and trail *(construction pending)* • Fourmile Canyon Creek Trail underpass to Cottonwood Trail *(construction pending)* • Eagle Trail to the planned Boulder Reservoir Trail
Local Trail Connections	OSMP is interested in collaborating with partner agencies as opportunities arise to create local trail connections that minimize natural resource impacts. • Joder Trail to Buckingham Park via Olde Stage Road *(in progress)* • 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. • City of Boulder's Area III park site to the North TSA • Boulder Reservoir to Niwot Road • Fourmile Canyon Creek Greenway path to Foothills Community Park
Maintaining Habitat Block in Habitat Conservation Area (HCA)	• No off-trail permits for the area inside the Joder loop trail (Mahogany Loop) for two years following the trail's construction.

BVR Trail Redevelopment	• Re-route west end of Degge Trail, close internal area of Degge and create a trail from Foothills to re-routed Degge Trail. • Replace internal area of Mesa Reservoir Trail and the Hidden Valley Trail with a new trail connection. • Replace Old Mill and Cobalt trails with a new trail connection and replace western section of Eagle and steep, downhill eastern portion of Eagle Trail with new trail connections. • Replace undesignated trails through sensitive shale barrens with one new designated trail for pedestrians and equestrians north of Mesa Reservoir that minimizes impacts to important shale barrens (Shale Trail). • Improve Lefthand Trail. • Designate a neighborhood connector trail from Lefthand Trail. • Collaborate with Parks and Recreation to assess opportunities to connect the proposed Boulder Reservoir Trail to the Eagle Trail. • Provide a trail connection from the Boulder Reservoir Trail to Niwot Road (Talon Trail). Work with partner agencies to determine the most feasible alignment with a preference for an alignment along 55th Street. • Create a trail from Foothills to Degge. • Create Papini connector trail (Wrangler Trail). • Designate and slightly re-route one parallel single track around Eagle and Sage trails, parallel to the road. • Provide nature viewing access at Mesa Reservoir.
BVR Trailheads	• Bring Sage Trailhead up to standards. • Condition closure of the BVR arena/ring to finding a suitable alternative with horse trailer parking. • Bring Foothills Trailhead up to standards to meet backing requirements. • Add a new trailhead including horse trailer parking at the Degge Trail access point. • Bring Eagle Trailhead up to standards and include horse trailer parking. • Bring Lefthand Trailhead up to standards and include horse trailer parking. • Pave Longhorn Road.
Wonderland Lake Loops	• Create loop trail connection including reroutes of existing trails, paragliding access trails and undesignated trails (Antler Loop). • Reroute portion of Wonderland Lake Trail just north of where it connects into Foothills South Trail to increase sustainability while minimizing impacts to the rare New Mexico feathergrass community in the area. • Create a more sustainable trail connection near the existing glider access trail to provide a small loop trail up Wonderland Hill (Glider Access). • Restore northern section of Old Kiln.
Wonderland Lake	• Fishing and educational pier. • Hardened access on peninsula for education. • Construct shade structure near Wonderland Lake Trailhead. • Provide access to the cattail marsh just north of the peninsula.
Northern Properties	• Twelve properties with no public access. • Seven properties with public access (three with seasonal bird nesting closure).

ACTIONS THAT DIFFER BETWEEN THE DRAFT PLAN AND ALTERNATIVE SCENARIO		
ACTION	**DRAFT PLAN**	**ALTERNATIVE SCENARIO**
Joder Trail Connection	• Joder connection located west of US 36 and Foothills Business Park (North Sky Trail). Staff is exploring the possibility of routing part of the trail on the neighboring conservation easement property. • Add a trailhead for passenger vehicle parking on the Dagle property to provide access to the Joder property. (Coyote Trailhead)	• Joder connection located east of US 36 via trail connection from Cobalt Trail, across west end of Longhorn Road to Lefthand Trail. • Pursue an underpass to create a safe crossing of US 36 near Neva Road for visitors to access the Joder property from the Schooley property. • Add a trailhead for passenger vehicle parking on the Schooley property to provide access to the Joder property from east of US 36. • Collaborate with partner agencies to provide a connection from Beech Pavilion via Neva Road to the Schooley property. • Take over management of the Beech Pavilion. • Improve Lefthand Trail including efforts to make the trail more sinuous, fun and interesting for visitors.
Joder Trails and Trailheads	• Non rerouted Interim Trail (no bypass). • Connector trail from Dagle Trailhead to Interim Joder Trail. • Passenger-vehicle parking on Dagle property. (Coyote Trailhead)	• Partially rerouted (add bypass) Interim Trail that would reduce steepness and create a small loop off the existing Interim Joder Trail. • Passenger vehicle parking on Schooley property.
Maintaining Habitat Block in North Foothills Habitat Conservation Area (HCA)	• Joder connector trail in North Foothills HCA. (North Sky Trail) • No off-trail permits allowed on either side of the Joder connector trail.	• No Joder trail connection through North Foothills HCA. • Out and back trail created by designating a portion of the southern railroad grade (pedestrians and equestrians only). • Access to North Foothills HCA through off-trail permits.

REGULATIONS		
ACTION	**DRAFT PLAN AND ALTERNATIVE SCENARIO**	**EXISTING REGULATIONS**
Joder Trail Connection	Joder Trail Connection Draft Plan: west of US 36 connection (North Sky Trail) Alternative Scenario: east of US 36 connection *	
Dogs	Draft Plan: west connection (North Sky Trail) — Leash required; dogs prohibited May 1– July 31 Alternative Scenario: east connection (via Lefthand Trail) — On-Corridor Voice and Sight on Lefthand Trail; dogs prohibited on new trail connection from Longhorn Road to Lefthand Trail	West side — Dogs prohibited East side (Lefthand Trail) — Leash required
Bikes	Allowed	Allowed
Horses	Allowed	Allowed
Joder Loop (Mahogany Loop)	Joder loop trail	N/A
Dogs	Prohibited	
Bikes	Allowed, except for Tuesdays and alternating weekend days with directional restrictions that will change every two weeks	
Horses	Allowed	
Interim Joder Trail (Joder Ranch Trail)	Interim Joder Trail	
Dogs	On-Corridor Voice and Sight with Leash required for trailhead leash extent	Leash required
Bikes	Allowed	Allowed
Horses	Allowed	Allowed
BVR Trail Redevelopment	Reroute and improve trails	
Dogs[1]	• Voice and Sight on most trails • On-Corridor Voice and Sight on Lefthand Trail and	• Voice and Sight on most trails • Leash required on Lefthand Trail;

*The Alternative Scenario also includes a designated out-and-back trail section along the railroad grade on which Horses will be Allowed and Dogs and Bikes will be Prohibited.

REGULATIONS		
ACTION	**DRAFT PLAN AND ALTERNATIVE SCENARIO**	**EXISTING REGULATIONS**
	neighborhood connector into Lefthand Trail; dogs prohibited off trail • On-Corridor Voice and Sight on Papini connector (Wrangler Trail); Leash required off trail • Leash required on Niwot Road connector trail (Talon Trail)	dogs prohibited off trail.
Bikes	• Allowed on most trails • Allowed on Papini connector trail (Wrangler Trail) • Prohibited on designated trail near shale barrens north of Mesa Reservoir (Shale Trail)	• Allowed on Eagle, Sage and Lefthand trails
Horses	Allowed	Allowed
Hogback Trail	• Reroute and improve trail	
Dogs	Prohibited	Prohibited
Bikes	Prohibited	Prohibited
Horses	Draft Plan – Prohibited Alternative Scenario – Allowed	Allowed
Wonderland Hill Loops (Antler Loop) and Old Kiln Trail	• Loop trail connection including reroutes of existing trails, paragliding access trails and undesignated trails (Antler Loop)	
Dogs	On-Corridor Voice and Sight; Leash required off trail	Leash required
Bikes	Prohibited	Prohibited
Horses	Draft Plan – Allowed, but not designed for Alternative Scenario – Prohibited	Allowed
Northern Properties	• Twelve properties with no public access • Seven properties with public access (three with seasonal bird-nesting closure May 1 – July 31)	• Twelve properties with no public access • Seven properties with public access
Dogs	Voice and Sight on properties where public access is allowed	Voice and Sight on properties where public access is allowed
Bikes	Prohibited	Prohibited
Horses	Allowed on open properties	Allowed on open properties

Joder Connector Comparison

Trail Design and Visitor Experience Comparison of the North Sky Trail and Alternative Scenario east of US 36 Joder Connector

The two conceptual Joder connector trails differ in visitor experience, diversity of terrain and views, sustainability, mileage, construction cost, and maintenance requirements. The North Sky Trail would be shorter and more direct than the conceptual eastern route at approximately three miles with less overall elevation gain and loss and would require no road crossings. By comparison, the conceptual eastern connector would be slightly longer at approximately four miles with greater gain and loss in elevation and would require five road crossings, including a new underpass for US 36 which would cost approximately $2 million.

The North Sky Trail would use an existing, constructed railroad grade for approximately ¾ mile, which has long been used by the community as an out-and-back social trail. Minor improvements would need to be made to this existing undesignated trail to improve its sustainability, drainage, and width to accommodate the expected increase in visitation levels. In order to minimize impacts to Schneider Draw, the trail would in concept leave the railroad grade, lose elevation to the east, and cross Schneider Draw where there is currently a change in the riparian vegetation. To cross Schneider Draw and the 10 other drainages on the west side, several bridges would be needed which altogether could cost in the range of $500,000. Some drainages may be crossed sustainably without the use of bridges; however, to minimize impacts to natural resources, bridges may be recommended at many of the drainage crossings. The section of trail near Schneider Draw would be fall-line (downhill) if it is determined to cross the draw below the existing railroad grade social trail. This section of trail would be more susceptible to erosion and much more challenging to maintain long-term. From there the trail would regain the lost elevation at a 3%-4% grade and tie back into the existing railroad grade. The North Sky Trail would then cross the existing railroad grade and begin to climb at a 6%-8% grade to gain the elevation needed to get above the private property of Foothills Business Park. From its highest point the North Sky Trail would begin a moderate descent down to the Joder property, using existing road beds where possible to minimize impacts to resources. Due to the varied terrain and vegetation, this trail would provide a high-quality visitor experience with remote and rugged terrain, diversity of landscapes, rock outcroppings, and sweeping views of the plains.

The conceptual eastside Joder connector trail would require visitors to descend the Foothills Trail (proposed to be rerouted), travel through the existing US 36 underpass at Foothills Trailhead and cross the unpaved portion of Broadway Street at grade where visitors would then connect to the redesigned trails in the Boulder Valley Ranch (BVR) complex. The terrain and cross-slope in the BVR area facilitates construction of a trail that meets OSMP's trail construction standards and would promote on-trail use. Visitors would cross Longhorn Road and travel a new diagonal link trail that would connect into the Lefthand Trail. This conceptual diagonal link would provide a more direct connection to the Joder property than solely using the

existing Lefthand Trail, and also creates a new loop trail opportunity for visitors. The remaining route would use Lefthand Trail and connect out to Neva Road through the Beech Pavilion access.

The east side new diagonal link trail would require construction of a bridge to cross a single drainage. The Lefthand Trail crossing of this same drainage would be replaced by this new crossing. The new link connector would require the importation of aggregate for surfacing because it would be located on a northwest-facing slope with heavy clay soils. Due to the soil conditions and slope, this conceptual trail would be subject to muddy trail closures to protect surrounding resources and city infrastructure. In contrast, the North Sky Trail would be located on east-facing slopes with slightly better soil which would allow the trail to dry faster. The North Sky Trail would still be part of the muddy trail closure program to help prevent damage to the trail and minimize impact to surrounding resources from off-trail travel.

The diversity in terrain and vegetation where the east side connector would be located is limited; therefore, it would provide a visitor experience similar to the one currently available on the Lefthand and BVR trails. Expansive views of the Boulder foothills are available from the trail. Visitor experience and safety on the conceptual east connector would be impacted by the need to cross numerous roads. Coordination with Boulder County Transportation, Lefthand Water Company and Colorado Department of Transportation (CDOT) would be required to determine the best way for visitors to safely cross US 36 and access the Joder property once they have made their way from the diagonal link to the Lefthand Trail and across Neva Road to the Schooley property. Initial conversations indicate that an underpass would be preferred for this highway crossing. Property acquisition would be necessary to complete this Alternative Scenario and provide an off-road visitor experience.

Trail Design and Visitor Experience Summary Comparison Table

Draft Plan **(West Side Joder Connector)**	**Alternative Scenario** **(East Side Joder Connector)**
Experience	
Mileage to Joder – approximately three miles from Foothills Trail intersection with railroad grade; less elevation loss	Mileage to Joder – approximately four miles from Foothills Trail intersection with railroad grade; greater elevation loss and gain
No road crossings	Five road crossings, one existing at US 36 (Foothills trail), four new (North Broadway Street, Longhorn Road, Neva Road, and US 36 near the Joder property). Need to coordinate with partner agencies to construct a new crossing at US 36 (likely an underpass)

Remote, rugged, elevated with sweeping views of the plains and views down the length of the foothills	Views of the Boulder foothills. Conceptual diagonal connector has remote feel
New trail connecting from Foothills Trail to the Joder property	New loop trail opportunity using the new diagonal link trail and the trails in the BVR complex and new trail north to the Schooley property
Interesting terrain features with a diversity of plant and wildlife viewing opportunities	Limited diversity in terrain; similar to the experience available on Lefthand and BVR trails
East-facing aspect will dry faster and allow the trail to remain open more days each year	Northwest-facing aspect will dry at a slower rate and could require more frequent closures
Natural surface trail	Surfaced with imported aggregate material
Cost to Construct/Maintain	
Likely several bridges to cross drainages with wetland permit requirements.	Potential underpass under US 36; one bridge needed with wetland permit requirements.
Improved soil condition on larger cross slopes provides for better drainage and allows the use of natural surface	Clay heavy soils on shallow (less than 25%) cross slopes means poor drainage and a need to artificially surface the new diagonal link trail and the Lefthand Trail
Estimated cost of trail is $805,000, including trail design, permitting and construction costs. Costs include estimates for several bridges.	Estimated cost for the trail is $2.25 million. The cost of the new trail section including trail design, permitting and construction is $250,000. One bridge is included in estimate. The cost estimate for a box culvert underpass at US 36 is $2 million. Additional costs would be required for providing a trail connection between Niwot Road and the US 36 underpass.

Natural Resource Comparison of the North Sky Trail and Alternative Scenario east of US 36 Joder Connector

The two conceptual Joder connector trails differ in the type, quality, and quantity of habitats they cross. With respect to the quality of habitat, the North Sky Trail would cross land that has been noted by the Colorado Natural Heritage Program as a "very high biodiversity area" (B2); locally-

identified (by the Boulder County Comprehensive Plan (BCCP))[1] as "critical wildlife habitat" and an Environmental Conservation Area. The City of Boulder has designated the area as a Habitat Conservation Area (HCA). Though portions of the area are impacted by past ranching land use and invasive pasture vegetation, sections of the North Sky Trail would cross into landscape identified in the Grassland Ecosystem Management Plan (GMAP) as Best Opportunity Area for Conservation. Schneider Draw is one of two Best Opportunity Areas for Riparian Conservation in GMAP. The topography, extensive nature of these higher quality habitats, and private property boundaries make it challenging to design a trail that altogether avoids impacting resources.

The east side Joder connector trail would cross landscapes that are of somewhat lower habitat quality compared to that west of US 36. The eastern connection would similarly be located in a state-recognized "very high biodiversity area" (B2) and a county-designated Environmental Conservation Area. The conceptual route would cross the “very high biodiversity area” for its entire length though for portions on existing trails. The conceptual diagonal link would cross in and out of an extensive, globally rare needle and thread plant community. The area to the east of US 36 is identified as an OSMP Natural Area management designation (signifying a slightly lower natural resource quality) and is not recognized by the county as "critical wildlife habitat." The conceptual eastern connection would cross land identified as a Best Opportunity Area for Restoration in GMAP.

The differences in potential impacts from trail construction and use between the North Sky Trail and east side connectors are, to some extent, a reflection of the habitats present. The area where the North Sky Trail would be located borders larger blocks of xeric tallgrass prairie, a globally-rare ecosystem which provides habitat for three state-imperiled and globally vulnerable butterfly species; shale barrens, an uncommon habitat on OSMP which hosts populations of Bell's twinpod, a plant found only in Boulder and Larimer counties; New Mexico feathergrass community, a rare plant community at the northern end of its range is restricted to small patches in the OSMP-managed land system; and crosses several interesting riparian communities.

The North Sky Trail would be located in a concentration area for plains black-headed snakes, high-quality deer habitat; and proximate to prairie dog colonies which are habitat for rattlesnakes and foraging locations for raptors. The North Sky Trail would go through high-quality riparian and upland shrublands, which are important habitat for shrub-nesting birds such as the lazuli bunting. The trail would have to be designed to avoid several seep wetlands, which are uncommon on OSMP-managed lands. The area where the conceptual east side connector would be located does not support a similar overall diversity or quality of habitat types.

The new trail portion of the east side route would cross through a high-quality, globally rare, needle-and-thread grass community which is uncommon on OSMP-managed land; a small shale barren, an uncommon habitat on OSMP which hosts populations of Bell's twinpod, a plant found only in Boulder and Larimer counties; and would parallel a riparian and wetland drainage. The east side connector would be located near known concentrations of prairie rattlesnakes and

[1] The BCCP is not among the North TSA Sideboards. It is not a city-approved plan.

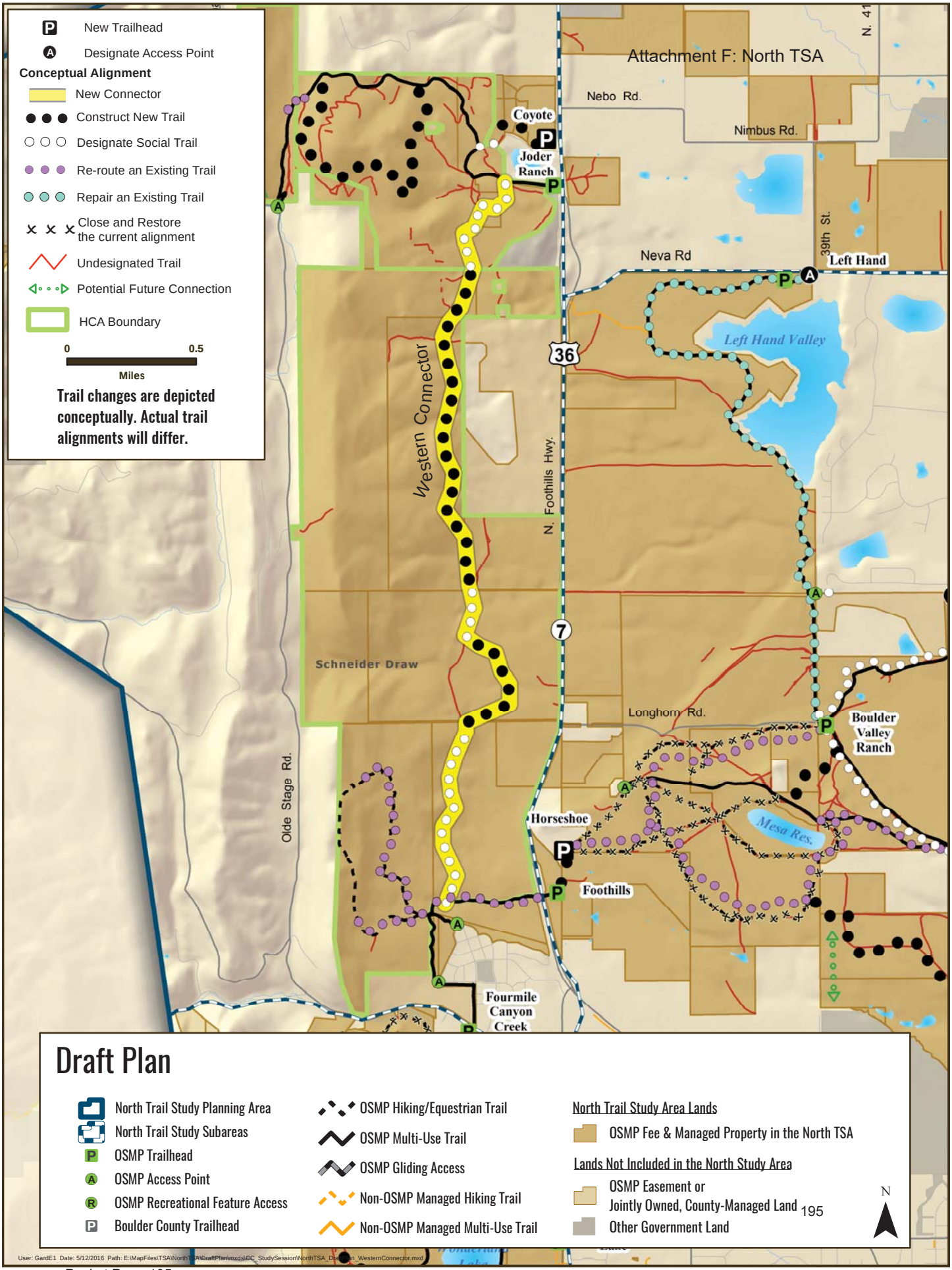
proximate to prairie dog colonies which are habitat for rattlesnakes and foraging locations for raptors.

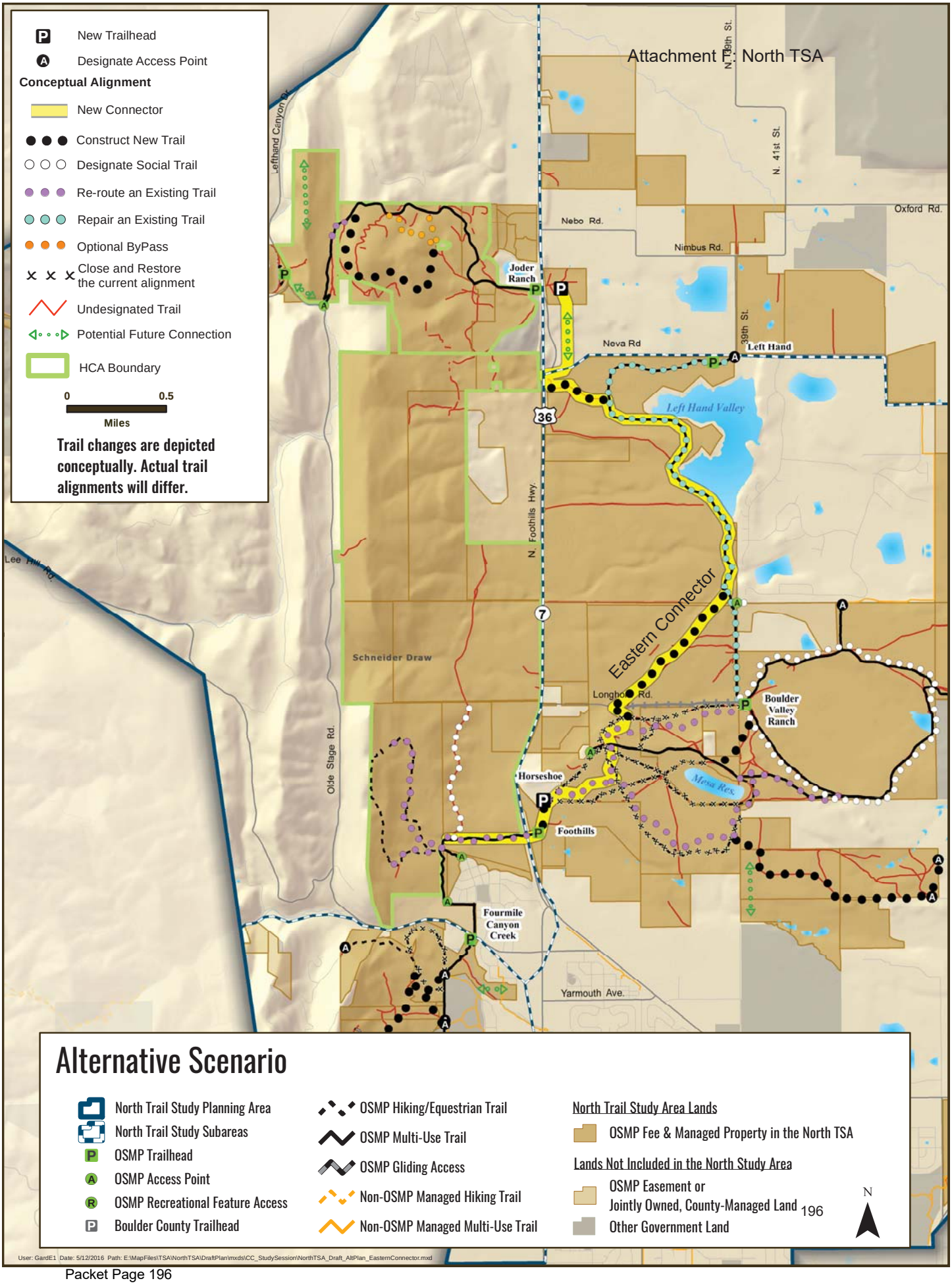
The proposed connections differ in how they affect continuity and connectivity of ecosystems and wildlife habitat. Although the railroad grade social trail already exists and partially intersects the area, a more sustainably designed trail and rise in usage would create new resource impacts in this habitat block. The North Sky Trail would cross 11 drainages while the east side connector would cross only six drainages (one new). The introduction of a multiple use trail crossing these riparian corridors could reduce the habitat continuity and connectivity for some species. The relative steepness of several of the drainages might require bridges or the need to contour into the riparian habitat on each side of the drainage to cross the drainage. The proposed eastern connection would require a single new drainage crossing replacing an existing crossing made by Lefthand Trail. Although the new diagonal link parallels a riparian corridor for its length, the single drainage crossing along the proposed eastern connection would require less trail length actually within riparian corridors and would require one bridge structure compared to several crossings and potential bridge structures required to cross drainages for the North Sky Trail.

Natural Resource Summary Comparison Table

Draft Plan (West Side Joder Connector)	Alternative Scenario (East Side Joder Connector)
Overall Impacts	
Crosses an area designated as an OSMP Habitat Conservation Area (HCA)	Crosses an area designated as an OSMP Natural Area (NA)
Crosses state-recognized "very high biodiversity area" and a county-designated Environmental Conservation Area (ECA)	Crosses state-recognized "very high biodiversity area;" and a county-designated Environmental Conservation Area (ECA) near other trails
Crosses "critical wildlife habitat" identified in the Boulder County Comprehensive Plan	Not located in an area identified in the Boulder County Comprehensive Plan as “critical wildlife habitat”
Eleven drainages would be crossed by the trail	Six mapped drainages would be crossed by the route (one new)
Crosses Schneider Draw, one of the two foothills riparian areas identified for Conservation in the Grassland Management Plan.	Borders a riparian area that was identified for Conservation in the Grassland Management Plan; with new trail section crossing a riparian area that was not identified for conservation or restoration in the Grassland Management Plan
Lies within a grassland complex designated as a Best Opportunity Area for Conservation in the Grassland Management Plan	Lies within a grassland complex designated as a Best Opportunity Area for Restoration in the Grassland Management Plan
Plant and Wildlife Impacts	
Intersects smaller stands of globally rare needle-and-thread grassland community	Is primarily situated in globally rare needle-and-thread grassland community

Proximate to intact blocks of xeric tallgrass, a globally-rare ecosystem, which provides habitat for three state-imperiled butterfly species	Lefthand trail is proximate to wetland habitat for a state-imperiled butterfly species
Proximate to two stands of rare New Mexico feathergrass community.	Not near any New Mexico feathergrass stands.
Proximate to several prairie dog colonies, which are highly suitable habitat for rattlesnakes and provide raptor foraging habitat	Proximate to several prairie dog colonies, which are highly suitable habitat for rattlesnakes and provide raptor foraging habitat
Proximate to shale barrens - an uncommon habitat on OSMP which supports Bell's twinpod, a plant found globally in only two Colorado counties	Proximate to small shale barrens - an uncommon habitat on OSMP which supports Bell's twinpod, a plant found globally in only two Colorado counties
Crosses into shrub communities in and adjacent to drainages	New trail section parallels riparian woodland communities and crosses drainage in area dominated by herbaceous plant species minimizing the length of trail in shrublands.
Wetland and Riparian Impacts	
Trail will need to cross riparian woodland communities	Trail parallels riparian woodland communities, with the new drainage crossing in an area dominated by herbaceous plant species that minimizes trail in or near riparian woodland communities.
Adjacent to seep wetlands which are uncommon on OSMP-managed land	Is not near seep wetlands
Several drainage crossings with steep slopes may require bridge structures with supporting foundations possibly impacting riparian vegetation	One new bridge structure with supporting foundations possibly impacting riparian vegetation. An existing bridge on Lefthand Trail will be removed.
Other Considerations	
Prairie dog colonies in area have a known high concentration of rattlesnakes	Prairie dog colonies in area have a known high concentration of rattlesnakes
Trail construction will require a wetland permit; permit application requires an evaluation of alternatives to minimize impacts to wetlands. Demonstration of minimization may be more challenging.	Trail construction will require a wetland permit; permit application requires an evaluation of alternatives to minimize impacts to wetlands. Demonstration of minimization may be less challenging.


Attachment F: North TSA
New Trailhead
Designate Access Point
Conceptual Alignment
New Connector
Construct New Trail
Designate Social Trail
Re-route an Existing Trail
Repair an Existing Trail
Close and Restore the current alignment
Undesignated Trail
Potential Future Connection
HCA Boundary
0
0.5
Miles
Trail changes are depicted conceptually. Actual trail alignments will differ.
Nebo Rd.
Nimbus Rd.
Neva Rd
39th St.
Left Hand
Left Hand Valley
Coyote
Joder Ranch
Western Connector
N. Foothills Hwy.
36
7
Schneider Draw
Longhorn Rd.
Boulder Valley Ranch
Olde Stage Rd.
Horseshoe
Mesa Res.
Foothills
Fourmile Canyon Creek
Draft Plan
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 in the North TSA
Lands Not Included in the North Study Area
OSMP Easement or Jointly Owned, County-Managed Land
Other Government Land
N


New Trailhead
Designate Access Point
Conceptual Alignment
New Connector
Construct New Trail
Designate Social Trail
Re-route an Existing Trail
Repair an Existing Trail
Optional ByPass
Close and Restore the current alignment
Undesignated Trail
Potential Future Connection
HCA Boundary
0
0.5
Miles
Trail changes are depicted conceptually. Actual trail alignments will differ.
Eastern Connector
Joder Ranch
Left Hand
Left Hand Valley
Boulder Valley Ranch
Horseshoe
Foothills
Mesa Res.
Fourmile Canyon Creek
Schneider Draw
Nebo Rd.
Nimbus Rd.
Neva Rd
Oxford Rd.
Longhorn Rd.
Yarmouth Ave.
N. Foothills Hwy.
Olde Stage Rd.
Lefthand Canyon Dr.
Lee Hill Rd.
N. 39th St.
N. 41st St.
39th St.
36
7
Alternative Scenario
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 in the North TSA
Lands Not Included in the North Study Area
OSMP Easement or Jointly Owned, County-Managed Land
Other Government Land
N
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Implementation Timing, Costs, and Benefit Ranks of North TSA Draft Plan Recommendations

Action #	Plan Ref #	Action	Project Timing	Timing Notes	Estimated Cost	Capital Project	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.	To be determined	Timing to implement the North Foothills HCA to be determined after approval of plan.	$10,000		Medium
2	T2	Management Area Designation: Designate Dagle II as a Natural Area.	2016		Core Service		Low
3	T3	Management Area Designation: Designate Dakota Ridge Village property as a Passive Recreation Area.	2016		Core Service		Low
4	T4	Management Area Designation: Designate Berman Brothers property as an Agricultural Area.	2016		Core Service		Low
5	T5	Management Area Designation: Designate Stratton as a Natural Area.	2016		Core Service		Low
6	T6	Management Area Designation: Designate Lappin as a Natural Area.	2016	Open property when pond closure and fencing are in place	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.	2016		Core Service		Low
8	T8	Management Area Designation: Designate Hart-Jones Exchange as a Natural Area.	2016		Core Service		Low
9	T9	Management Area Designation: Designate Palo Park as a Natural Area.	2016		Core Service		Low
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.		External collaboration required	External collaboration required		Medium
11	T11	Regional Connections: North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex.		External collaboration required	External collaboration required		Medium
12	T12	Regional Connections: A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project		External collaboration required	External collaboration required		Medium
13	T13	Regional Connections: IBM Connector Trail underpass and trail (construction pending)		External collaboration required	Underway		Low
14	T14	Regional Connections: Fourmile Canyon Creek Trail underpass to Cottonwood Trail (construction pending)		External collaboration required	Underway		Low
15	T15	Regional Connections: Eagle Trail to the planned Boulder Reservoir Trail			External collaboration required	Y	Medium
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)	2016, 2017		$ 8,500	Y	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.			External collaboration required	Y	Low
18	T18	Local Connections: City of Boulder's Area III park site to the North TSA			External collaboration required		Low
19	T20	Local Connections: Fourmile Canyon Creek Greenway path to Foothills Community Park			External collaboration required		Low
20	T21	Designate undesignated access points that connect with new or existing designated trails.	As opportunity allows		$12,600	Y	Medium
21	T22	Bring all trails up to standards. (South Foothills)	2017		$100,000	Y	Medium
22	T23	Bring all trailheads and access points up to standards.	After 2022		$128,000	Y	Medium
23	T24	Remove unnecessary fencing and use wildlife friendly fencing.	As opportunity allows		$17,800		Medium
24	T25	Allow natural revegetation or restore all undesignated trails not integrated into designated trail connections.	As opportunity allows		$ 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.	As opportunity allows		$91,000		High
26	T27	Create interpretive information and messages about unique, rare and sensitive resources.	As opportunity allows		$31,000		Medium
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.	As opportunity allows		Core Service		Low
28	W3	Construct a shade structure near Wonderland Lake Trailhead.	2017	Time with Improve ADA access (W11)	$25,000	Y	Low

Action #	Plan Ref #	Action	Project Timing	Timing Notes	Estimated Cost	Capital Project	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
29	W4	Improve safety at Broadway pedestrian crossing between Sumac Avenue, RTD bus stop and the Foothills Nature Center.	As opportunity allows	Requires collaboration with Transportation Department and other partners	Core Service		Medium
30	W5	Revegetate the flood damaged northern loop section of Old Kiln Trail.	2016, 2017		$3,640		Medium
31	W6	Rename Four Mile Creek Trailhead as Fourmile Canyon Creek Trailhead.	After 2022	Time with Fourmile Canyon Creek Trailhead upgrades	$10,100		Low
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.	2021-2023	Design Wonderland Trail switchback (W9)	$131,000	Y	High
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.	Build after 2022	Design with Antler Loop	$10,000	Y	Medium
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.	As opportunity allows		$95,000	Y	High
35	W11	Improve Americans with Disabilities (ADA) access on Wonderland Lake Trail.	2017		$9,000	Y	Medium
36	W12	Prohibit boats and belly boats on Wonderland Lake.	2018		$500		Low
37	W13	Prohibit ice skating on Wonderland Lake.	2018		$500		Low
38	W14	Allow sledding on Wonderland Lake dam.	2018		$500		Low
39	W15	Do not provide access to Wonderland Lake's south, west and north shores.	2018		$3,500		Low
40	W16	Provide access to the cattail marsh on north side of peninsula.	2018 Design and build		$8,000	Y	Medium
41	W17	Establish two 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.	2018 Design and build		$14,000	Y	Medium
42	W18	Allow Wonderland Lake wading access from designated areas on the peninsula.	2018		$700		Low
43	W19	Create Wonderland Lake fishing pier.	2018 Design and build		$45,000	Y	Low
44	REG	Wonderland Loop (Antler Loop): Voice and Sight On Corridor	2023	Time with completion of trail	$2,000		Low
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.	Lappin pond in 2016, 2017 so property can open in 2017		$9,000		Medium
46	B11	Designate access point for where Lefthand Trail connects to Neva Road.	After 2022	Time with Lefthand Trailhead improvements	$300		Low
47	B12	Bring Lefthand Trailhead up to standards.	2021 Design and Permits; 2022 Build		$56,500	Y	Medium
48	B13	Improve Lefthand Trail.	After 2022		$145,000	Y	High
49	B14	Designate a connector trail from Lefthand Trail to the Lake Valley Estates neighborhood.	After 2022		$300	Y	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.	After 2022; also requires completion of trail on west side of Boulder Reservoir		$200,000	Y	Medium
51	B16	Bring Eagle Trailhead up to standards.	2020 Design and Permit; 2021 Build		$57,000	Y	High
52	B17	Bring Foothills Trailhead up to standards.	2017		$12,500	Y	Medium
53	B18	Add a new trailhead at the Degge Trail access point (Horseshoe Trailhead). Provide additional parking capacity and horse trailer parking.	2019 Design and Permit; 2020 Build		$97,500	Y	Medium
54	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.	2019 Design; 2020 Build	Time with Horseshoe Trailhead completion	$35,000	Y	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.	2019-2020 Design; 2020-2021 Build	Complete design plan for adjacent BVR trail improvements and time construction together	$156,000	Y	High
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.	2016 Design; 2017 Build	Completed before other BVR improvements to increase natural resource protection	$140,000	Y	High
57	B22	Provide nature-viewing access at Mesa Reservoir.	2019-2020 Design; 2020-2021 Build	Complete design plan for adjacent BVR trail improvements and time construction together	$2,500	Y	Low
58	B23	Replace southern sections of Mesa Reservoir Trail and the Hidden Valley Trail with a new single trail	2019-2020 Design; 2020-	Complete design plan for adjacent	$176,000	Y	High

Action #	Plan Ref #	Action	Project Timing	Timing Notes	Estimated Cost	Capital Project	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
		connection.	2021 Build	BVR trail improvements and time construction together			
59	B24	Pave Longhorn Road.	2022		$ 700,000	Y	Medium
60	B25	Bring Sage (BVR) Trailhead up to standards. Improve restroom facilities.	2018 Trailhead upgrades, 2019 design/build outhouse		$71,500	Y	High
61	B26	Improve Americans with Disabilities Act (ADA) access on Eagle and Sage trails.	2017		$130,000	Y	Medium
62	B27	Designate and slightly re-route in some locations one parallel single track tread adjacent to the Eagle and Sage loop at BVR.	2019-2020 Design; 2020-2021 Build	Complete design plan for adjacent BVR trail improvements and time construction together	$35,000	Y	Medium
63	B28	Allow fishing access on eastern shore of BVR pond.	As opportunity allows				Low
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.	After 2022 and completion of BVR trails	Time dog regulation changes with completion of trail	$75,000	Y	High
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.	As opportunity allows	Scheduling public access is underway as is assessment of parking opportunities	$20,000	Y	Low
66	REG	Lefthand Trail: Dogs Voice and Sight On Corridor	As opportunity allows		$500		Low
67	NF7	Close Cottonwood Recreation Area.	2017	Complete after Lefthand road flood improvements	$800		Low
68	NF8	Realign western section of the Interim Joder Trail near the Buckingham Property. (Joder Ranch Trail)	2018 Design, 2019 Build	Time with construction of Mahogany Loop (NF9)	$14,000	Y	Low
69	NF9	Construct one loop trail on the northwest section of the Joder property. (Mahogany Loop)	2017 Design, 2018-19 Build		$131,000	Y	Medium
70	NF10	Construct a new trailhead for passenger vehicle parking on the Dagle/Wright properties. (Coyote Trailhead)	2017-2018 Design, 2019 Build	Time with construction of Mahogany Loop (NF9)	$137,000	Y	Medium
71	NF11	Construct a connector trail from the new trailhead (Coyote Trailhead) on the Dagle property to the Joder Ranch Trail.	2019	Time with completion of Coyote Trailhead	Included in Coyote Trailhead costs		Low
72	NF12	Retain Interim Joder Trailhead. (Joder Ranch Trailhead)	2017-2018 Design, 2019 Build	Time with other Joder property improvements	$7,000	Y	Low
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.	2017 Site assessment / design, 2018 permitting, 2019-2021 Build		$805,000	Y	Medium
74	NF14	Include the North Sky Trail in the muddy closure program.	2021	Time with completion of North Sky Trail (NF13)	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.	2021	Time with completion of North Sky Trail (NF13)	$20,500	Y	Low
76	NF16	Re-route Hogback Trail.	2017 design; 2021 permits, 2022 Build	Time construction with Foothills Trail Reroute (NF17)	$146,000	Y	High
77	NF17	Re-route Foothills Trail where it connects to Hogback Trail and eastward to US 36.	2018 design; 2021 permits, 2022 Build		$113,000	Y	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)	2019	Time with completion of Mahogany Loop (NF9)	$3,000		Low
79	NF19	Do not allow off-trail permits within the North Foothills HCA.	To be determined	Timing to implement the North Foothills HCA to be determined after approval of plan.	Costs combined with HCA designation and implementation		Medium
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.	2016	OSBT commitment after approval of North TSA Plan	Core Service		Low
81	REG	North Sky Trail: Dogs Leash Required (August 1 – April 30) and Seasonal Prohibited (May 1 – July 31)	2021	Time with completion of North Sky Trail (NF13)	$1,000		Low
82	REG	Joder HCA designation and implementation	To be determined	Timing to implement the North Foothills HCA to be determined after	Combined with North Foothills HCA implementation costs		Low

Action #	Plan Ref #	Action	Project Timing	Timing Notes	Estimated Cost	Capital Project	Benefit Rank 0-1 = Low 2-3 = Medium 4-6 = High
				approval of plan.			
83	REG	Mahogany Loop: Dogs Prohibited	2019	Time with completion of Mahogany Loop (NF9)	$1,000		Low
84	NP4	Prohibit public access on Waldorf, Ryan, Andrea, Jacob, Bison, Oasis, Steele, Bennett, Stratton, Brewbaker, Berman Brothers, Dodd and Abbott properties.	2016		$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.	2017	Time implementing seasonal closure with 2017 bird-nesting season	$1,000		Medium
86	NP6	Allow public access on Johnson, Bruning, and Schooley properties.	2016		$1,000		Low
				Total	$3,984,340		

Ongoing Projects and Actions to Implement North TSA Plan

Action #	Plan Ref #	Action	Estimated Cost
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
20	T21	Designate undesignated access points that connect with new or existing designated trails.	$12,600
23	T24	Remove unnecessary fencing and use wildlife friendly fencing.	$17,800
24	T25	Allow natural revegetation or restore all undesignated trails not integrated into designated trail connections.	$25,500
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
26	T27	Create interpretive information and messages about unique, rare and sensitive resources.	$31,000
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
79	NF19	Do not allow off-trail permits within the North Foothills HCA.	Costs combined with HCA designation and implementation
82	REG	Joder HCA designation and off trail permit implementation	Costs combined with HCA designation and implementation
		Total	$207,900

Projects that can be added as opportunity, staffing and funding allows to 2016-2022 timeline

Action #	Plan Ref #	Action	Estimated Cost
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
66	REG	Lefthand Trail: Dogs Voice and Sight On Corridor	$500
		Total	$95,500

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

Action #	Plan Ref #	Action	Estimated Cost
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
11	T11	Regional Connections: North TSA to Boulder County Parks and Open Space's Lagerman/Imel/AHI Open Space Complex.	Unknown
12	T12	Regional Connections: A Boulder-to-Lyons trail connection including the efforts of the Rocky Mountain Greenway Project	Unknown
13	T13	Regional Connections: IBM Connector Trail underpass and trail (construction pending)	Boulder County Project
14	T14	Regional Connections: Fourmile Canyon Creek Trail underpass to Cottonwood Trail (construction pending)	Boulder County Project
15	T15	Regional Connections: Eagle Trail to the planned Boulder Reservoir Trail	Unknown
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
18	T18	Local Connections: City of Boulder's Area III park site to the North TSA	Unknown
19	T20	Local Connections: Fourmile Canyon Creek Greenway path to Foothills Community Park	City of Boulder Greenways Project
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
29	W4	Improve safety at Broadway crossing between Sumac Avenue, RTD bus stop and the Foothills Nature Center.	Core Service

North TSA Draft Plan Project Phasing

Action #	Plan Ref #	Action	2016	2017	2018	2019	2020	2021	2022	2023 and Later
2	T2	Management Area Designation: Designate Dagle II as a Natural Area.	Core Service							
3	T3	Management Area Designation: Designate Dakota Ridge Village property as a Passive Recreation Area.	Core Service							
4	T4	Management Area Designation: Designate Berman Brothers property as an Agricultural Area.	Core Service							
5	T5	Management Area Designation: Designate Stratton as a Natural Area.	Core Service							
6	T6	Management Area Designation: Designate Lappin as a Natural Area.	Core Service							
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							
8	T8	Management Area Designation: Designate Hart-Jones Exchange as a Natural Area.	Core Service							
9	T9	Management Area Designation: Designate Palo Park as a Natural Area.	Core Service							
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							
30	W5	Revegetate the flood damaged northern loop section of Old Kiln Trail.	$3,640 Underway							
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						
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							
84	NP4	Prohibit public access on Waldorf, Ryan, Andrea, Jacob, Bison, Oasis, Steele, Bennett, Stratton, Brewbaker, Berman Brothers, Dodd and Abbott properties.	$3,000							
85	NP5	Allow public access on Deluca, Hester and Campbell properties with seasonal closure (May 1-July 31) for ground-nesting bobolinks.	$1,000							
86	NP6	Allow public access on Johnson, Bruning, and Schooley properties.	$1,000							
21	T22	Bring all trails up to standards. (South Foothills Trail)		$100,000						
28	W3	Construct a shade structure near Wonderland Lake Trailhead.		$25,000						
35	W11	Improve Americans with Disabilities (ADA) access on Wonderland Lake Trail.		$9,000						
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						
52	B17	Bring Foothills Trailhead up to standards.		$12,500						
61	B26	Improve Americans with Disabilities Act (ADA) access on Eagle and Sage trails.		$130,000						
67	NF7	Close Cottonwood Recreation Area.		$800						
69	NF9	Construct one loop trail on the northwest section of the Joder property. (Mahogany Loop)		$131,000 Design	Build	Build				
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				
72	NF12	Retain Interim Joder Trailhead. (Joder Ranch Trailhead)		$7,000 Initial Design	Final Design	Build				
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		$805,000 Initial Design	Final Design and permitting	Build	Build	Build		

Action #	Plan Ref #	Action	2016	2017	2018	2019	2020	2021	2022	2023 and Later
		conservation easement.								
76	NF16	Re-route Hogback Trail.		Initial Design				$ 146,000 Final Design, Permits	Build	
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	
85	NP5	Allow public access on Deluca, Hester and Campbell properties with seasonal closure (May 1-July 31) for ground-nesting bobolinks.		$1,000						
36	W12	Prohibit boats and belly boats on Wonderland Lake.			$500					
37	W13	Prohibit ice skating on Wonderland Lake.			$500					
38	W14	Allow sledding on Wonderland Lake dam.			$500					
39	W15	Do not provide access to Wonderland Lake's south, west and north shores.			$3,500					
40	W16	Provide access to the cattail marsh on north side of peninsula.			$8,000					
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					
42	W18	Allow Wonderland Lake wading access from designated areas on the peninsula.			$700					
43	W19	Create Wonderland Lake fishing pier.			$45,000					
60	B25	Bring Sage (BVR) Trailhead up to standards. Improve restroom facilities.			$71,500 Amenity Updates	Design and build outhouse				
68	NF8	Realign western section of the Interim Joder Trail near the Buckingham Property. (Joder Ranch Trail)			$14,000 Design	Build				
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			
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			
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	
57	B22	Provide nature-viewing access at Mesa Reservoir.				$2,500 Initial Design	Final Design and Permits	Build	Build	
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	
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	
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				
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				
83	REG	Mahogany Loop: Dogs Prohibited				$1,000				
51	B16	Bring Eagle Trailhead up to standards.					$57,000 Design	Build		
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						Initial Design	Final Design and Permits	$131,000 Build

Action #	Plan Ref #	Action	2016	2017	2018	2019	2020	2021	2022	2023 and Later
		seeking a trail experience on the Wonderland hogback.								
47	B12	Bring Lefthand Trailhead up to standards.						$56,500 Design	Build	
74	NF14	Include the North Sky Trail in the muddy closure program.						Core Service		
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		
81	REG	N/A North Sky Trail: Dogs Leash Required (August 1 – April 30) and Seasonal Prohibited (May 1 – July 31)						$1,000		
46	B11	Designate access point for where Lefthand Trail connects to Neva Road.							$300	
59	B24	Pave Longhorn Road.							$ 700,000	
22	T23	Bring all trailheads and access points up to standards.								$128,000
31	W6	Rename Four Mile Creek Trailhead as Fourmile Canyon Creek Trailhead.								$10,100
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
44	REG	Wonderland Loop (Antler Loop): Voice and Sight On Corridor								$2,000
48	B13	Improve Lefthand Trail.								$145,000
49	B14	Designate a connector trail from Lefthand Trail to the Lake Valley Estates neighborhood.								$300
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
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
		TOTALS	$157,140	$1,367,300	$158,200	$506,000	$57,000	$337,000	$700,300	$701,400

Study Session
MEMORANDUM

To: Members of City Council

From: Jane S. Brautigam, City Manager
David Driskell, Executive Director of Planning, Housing & Sustainability (PH&S)
Susan Richstone, Deputy Director of PH&S
Lesli Ellis, Comprehensive Planning Manager, PH&S
Jean Gatza, Senior Planner, PH&S
Jeff Hirt, Planner II, PH&S
Caitlin Zacharias, Planner I, PH&S
Nicole Wobus, Land Use Manager, Boulder County Land Use
Pete Fogg, Senior Planner, Boulder County Land Use
Steven Giang, Planner I, Boulder County Land Use

Date: May 24, 2016

Subject: Update on Boulder Valley Comprehensive Plan - Phase 3 Shaping Choices

STUDY SESSION PURPOSE

The purpose of the study session is to provide an update to City Council on the Boulder Valley Comprehensive Plan (BVCP) Major Update – Phase 3 (i.e., key choices, scenarios, analysis, policy integration, and updates to land use) and to receive feedback on these subjects and topics for focus for the major plan update. Council's feedback will be used to further shape and refine the development of scenarios, land use and other policies of the plan, and core values.

QUESTIONS FOR CITY COUNCIL

Does City Council have questions or feedback on the following topics:

1. Refined draft for core values (see **Attachment B**)
2. Draft choices for scenarios and potential tradeoffs? (see **Attachment B**)
    a. Related to design, housing, jobs/housing balance and evaluation measures
    b. Related to climate, energy, and resilience policies
3. On the draft plan organization and policy integration as presented in the annotated outline? (see **Attachment C**)

Staff can also address questions on the schedule, public land use request process, community engagement, and next steps.

BACKGROUND

The BVCP is the community's plan for the future. Its policies are intended to guide decisions about growth management, development, preservation, environmental protection, economic development, affordable housing, culture and the arts, urban design, neighborhood character and transportation. The Land Use and Area I, II, III Maps define the desired land-use pattern and location, type, and intensity of development. Despite its 15 year horizon, the BVCP is updated every five years to respond to changed circumstances or evolving community needs and priorities.

With the community, the city and county are two-thirds of the way through a major five year update of the 2010 plan. As changes to the plan are proposed, it is important to ensure it remains useful and relevant while addressing issues of community concern.

Project Timeline

The BVCP update has four phases, each with extensive community dialogue and engagement. The webpage for the project is: **www.bouldervalleycompplan.net**, which also includes a link to the 2010 plan and maps. **Attachment A** includes the project timeline.

Phase 1—Foundations and Community Engagement Plan (completed)
Phase 2—Issues Scoping with Community (completed)
➔**Phase 3—Analyze and Update Plan Policies and Maps** (summer-fall 2016)
Phase 4—Prepare Draft Plan for Adoption, Extend IGA (fall 2016/early 2017)

Currently, Phase 3—Plan Analysis and Updated Policies and Maps is in progress. As with the first two phases, Phase 3 entails multiple opportunities for community engagement, described more below. To update the plan, the planning team and consultants will:

- address policy refinements and additions to better align the plan with other master plans and adopted city and county policies,
- develop choices and analysis, advancing the 3D modeling and visualization tools to help convey options and tradeoffs,
- do further research and analysis to support a community conversation,
- Identify metrics to measure plan outcomes, refine metrics and measurements, and
- update the Land Use Plan and Area maps, reflecting input and analysis from the public request process as well as the scenario analysis.

For public engagement, the May 11 event will be a chance for the community to get more information and help shape choices. Later a series of Board and Commission discussions will occur, as well as additional localized (subcommunity) public events, pop up meetings, and a possible second survey in fall.

Next is Phase 4—Draft Plan and IGA (Fall 2016). Phase 4 will synthesize all the previous phase deliverables into a draft plan for consideration/adoption, again with opportunities for public review and engagement. Additionally, the "Comprehensive Development Plan Intergovernmental Agreement" (IGA) between the city and county (valid through Dec. 31, 2017) will need to be updated.

COUNCIL AND BOARD FEEDBACK

Previous City Council Input on BVCP

- **On Mar. 29, 2016,** City Council provided feedback on the housing-related scenario choices as part of the Middle Income Housing Strategy. Links are here: The Mar. 29, 2016 memo; Feb. 23 memo on housing, and Mar. 29 Study session summary (approved May 3, 2016).
- **On Feb. 29, 2016,** City Council reviewed and decided on initial screening of public requests, after the joint public hearing with the Planning Board held on Feb. 2, 2016. Links are here: Feb. 2, 2016 memo; the Feb. 29 memo.
- **On Dec. 15, 2015,** City Council reviewed the first round of public land use requests and had an update on the BVCP survey results (link here), and public engagement from Phases 1 and 2 of the project (link here). A link is here: Dec. 15, 2015 memo.
- Prior to these meetings, council reviewed updated information and provided feedback on the foundations work; the draft BVCP survey; the public change request process; CU South process; and community engagement in fall 2015.

Planning Board (May 12)

Staff met with Planning Board on May 12 to share a verbal update on the key choices and materials that will be in the council packet and inform the board about the materials and opportunities to review and provide feedback through early June.

COMMUNITY ENGAGEMENT

Working with the BVCP Process Subcommittee, staff prepared a Community Engagement Plan for Phases 1 and 2 and recently updated it for Phase 3. Community engagement in the first phases aimed at informing people about the plan and its legacy, sharing foundations information, and inviting people to identify issues and topics for the update. Engagement during this third phase leverages previous input and will help narrow and refine scenarios/key choices (e.g., jobs/housing balance, resilience) and add and refine policies toward completion of the plan update.

Phases 1 and 2 Outreach Efforts included:

- **50,000 postcards sent to all households in the Boulder Valley**
- **Kick off Events on line and at Chautauqua**
- **Meetings with multiple city Boards and Commissions**
- **Six listening sessions**
- **13 Pop-Up events**
- **Culturally Sensitive Engagement / Partnering with Intercambio**
- **Outreach with Civic, Business, and Community Groups**
- **The BVCP Survey (937 random sample responses) and 459 responses to an open link survey (link here)**
- **5,000+ weekly email newsletter recipients (Planning, Housing and Sustainability's email)**
- **Youth Engagement**
- **BVCP Videos**

Phase 3: May 11 Event

Approximately 60-70 people attended the **May 11, 2016 "What if" Choices** event at the Boulder Library, and provided feedback about a range of topics and the BVCP update and other city projects. The meeting was televised on Channel 8 (live steam), and members of the public were able to record pitches

with their "what if…" ideas for the future. ***Missed the Meeting? Check it out online.*** *An online questionnaire and virtual meeting set of materials are available for the public until June 5, 2016 at www.**bouldervalleycompplan.net*** . On May 24, the planning team will provide a verbal update to council and show the materials and feedback from the community.

FOUNDATIONS WORK

Completed background and technical work in support of the current phase and scenario key choice development includes:

- **Trends Report**. *Link here for the Trends Report*.
- **2040 Projections**. *Link here for current projections and methodology*.
- **Subcommunity and Regional Fact Sheets** - The 10 fact sheets include inserts featuring the future land use map and category descriptions from the adopted (2010) BVCP and history. *Link here for current Fact Sheets*.
- **Interactive Mapping and 3D Modeling**. *Link here for story board maps*.

BVCP PHASE 3 – APPROACH AND TRACKS

Phase 3 includes the following tracks:

Track 1: Areas of Focus
Track 2: Plan Policy Integration and Reorganization
Track 3: Public Map, Policy, and Text Request Analysis

Track 1: Areas of Focus

The areas of focus related to design, housing, and jobs and housing balance may lead to land use or policy changes in the plan, as well as policies related to climate and resilience. They are further described below in **Attachment B** and below.

Draft Renewal of Core Values

In the BVCP Survey, most people supported the core values (sixty-six percent of respondents did not identify any need of clarification or modification). However, some respondents suggested updating the core values in the plan to reflect current community ideas, such as safety, resilience, climate, and diversity. **Attachment B** notes these ideas and contains the initial draft

updating the values that reorganizes them to reflect the sustainability principles, with the idea being that the plan may be organized to reflect the seven categories and address cross-cutting policies.

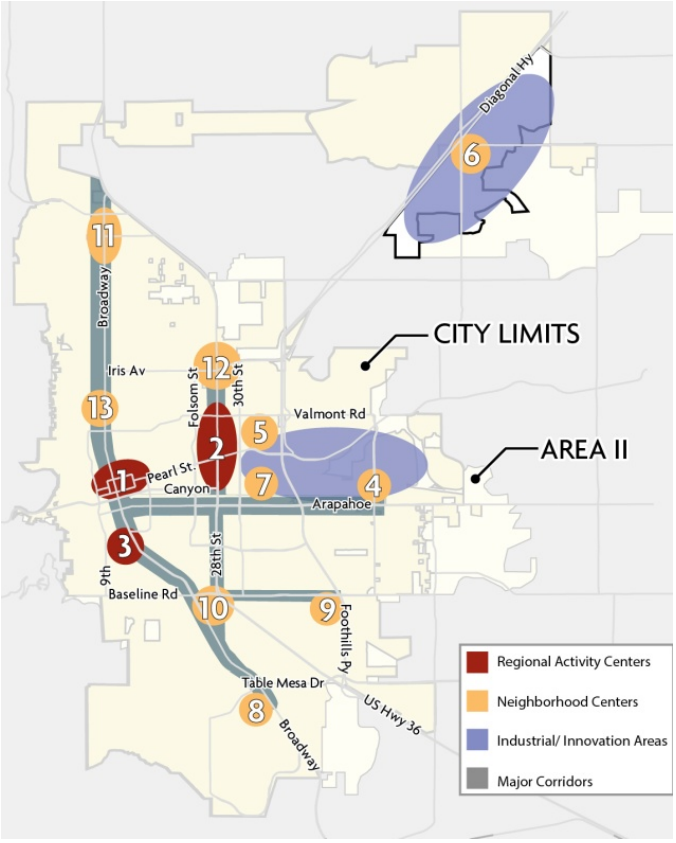
Choices related to Design, Housing, and Jobs/Housing Balance

Attachment B contains a white paper on initial choices and tradeoffs related to design and the built environment, jobs/housing balance, and affordability and diversity of housing and indicators to measure choices. Council has discussed many of these ideas previously; the range should reflective previous feedback. The next step will be to develop scenarios and key choices using three-dimensional modeling tools from CityEngine and story maps to show development potential and constraints (e.g., high hazard floodplains, height limits, and floor area ratio (FAR) maximums). Then, staff and consultants will evaluate the choices using a set of measures that assess the degree of alignment with the city's sustainability framework and values and recommend updates to policies.

Choices to refine Built Environment section and mixed use policies.
The survey results generally showed support for the mixed use concepts and locations in the plan. The white paper and poster shows them as "opportunity areas" and requests further feedback about what is appropriate (or not) in different locations. It also presents ideas to update the "Built Environment" chapter of the plan to reflect input from the community survey, boards and commissions, and other sources.

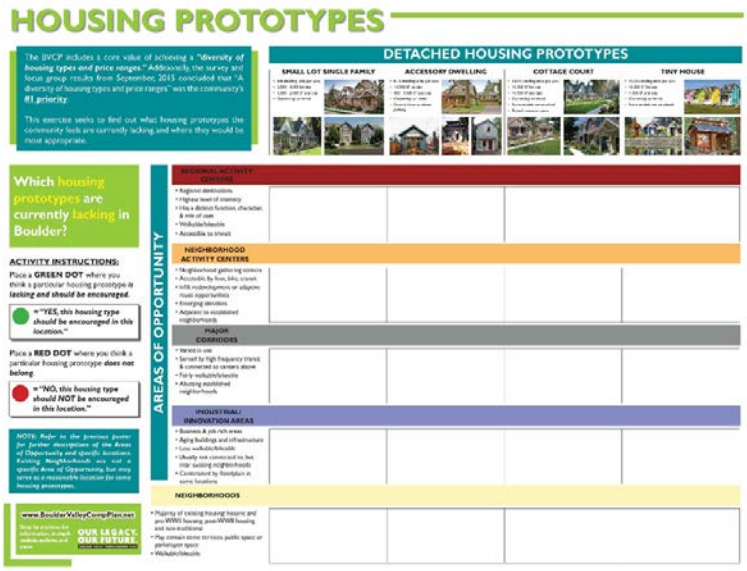
Choices to address future jobs:housing balance.
Choices to improve the future balance of housing and jobs and considerations and tradeoffs are identified I the white paper, including whether the city should:

A. convert some existing employment areas from industrial to housing designation;
B. find opportunities for new, walkable (15-minute) neighborhoods in locations near transit and where people work; and/or
C. moderate the pace or change of overall potential future commercial and industrial uses?



Choices to address diversity and affordability of housing.
Survey responses showed that greater diversity of housing types and price range is the highest priority issue. Based on the *Housing Boulder Action Plan for 2015/2016* and community input, and *The Middle Income Housing Study*, the white paper presents a range of choices and discussion of considerations and tradeoffs.

Questions include:



A. Should the land use plan and policies be adjusted to allow diverse housing within existing industrial and mixed areas in the city?
B. Should plans and policies expand the range of possible housing types?
C. In exchange for community benefits, should the city allow more intensity than what is currently allowed in certain locations?
D. Should the city establish new residential transitional requirements for different contexts?
E. Should the city encourage "gentle infill" in neighborhoods?

At the May 11 public event, the planning team also asked for feedback on different housing prototypes and whether they are appropriate or not in different types of locations.

Add Climate, Energy, and Resilience

The plan will be updated to reflect the community's work to achieve deep reductions in local greenhouse gas emissions, transform its energy system, and increase community resilience and response to emergencies such as floods The white paper in **Attachment B** outlines potential policy changes to add Climate Commitment goals discussed by council at the May 10 study session and principles of resilience identified through the HR&A Report, "Recommendations for Resilience Integration" (Draft May 9, 2016). **Attachment D** contains a draft Resilience Assessment Report by HR&A consultants.

Add Subcommunity Sections

Staff proposes to include subcommunity plan sections and policies in the plan update to address local issues and character, using feedback from listening sessions and the survey to help define unique characteristics and needs. Subcommunity sections of the plan can address land use and other topics such as neighborhood character (e.g., areas of stability), unique assets, land use compatibility, and other needs.

Alpine-Balsam and CU South

In addition to the above areas of focus, the planning team is coordinating two site specific planning processes toward possible land use changes and policy updates. Each will have distinct community engagement, technical work, and analysis.

Alpine-Balsam: A Community Project (Boulder Community Hospital) Planning Process.
Planning for redevelopment of the site is being coordinated with the BVCP update. Pieces relevant to the BVCP will include developing an Urban Design Framework that puts the area in context with its Central Boulder surroundings; preparing guiding principles to help guide programming and further

planning; and preparing policy suggestions for the area in support for the future area planning.

A consultant will assist city staff with this work. Public engagement may be coordinated with BVCP events, especially Central Area meetings. However, separate and focused collaboration and partnering with specific groups in the area will be necessary for the community project. See project webpage: **https://bouldercolorado.gov/planning/alpinebalsam**.

CU South Land Use Designation Analysis Process.
The update will include analysis of possible changes to the BVCP land use designations for the CU South site. This work would be in advance of annexation or zoning. It is being done parallel with South Boulder Creek flood mitigation berm engineering. The first step is a site suitability study that will address developable and undevelopable parts of the site. Consultants (Biohabitats and Fox Tuttle) are assisting the city. Initial findings will be ready for public for review in summer 2016. The second part of the study will address land uses, utilities, and urban services. It is also likely that prior to annexation, the city and CU would need to develop an agreement describing conditions for annexation. See project webpage: **https://bouldercolorado.gov/bvcp/cu-south**.

Tracks 2 and 3: Plan Policy Integration and Plan Organization

The plan would benefit from some reorganization and formatting improvements (e.g., contents, headings/footings, headers, graphics, maps, etc.) to improve navigability and make it more compelling. Ultimately, the plan can be interactive and digital, but it should start with a well organized traditional document that is easy to use and meshes well with master plans, Capital Improvements Program, budgeting, and other city/county plans. Therefore, a proposed outline is presented in **Attachment C**. Staff would appreciate feedback from City Council and the other decision bodies on the proposed reorganization of the plan.

Secondly, the interdepartmental city/county planning team has been working across city and county departments to ensure the updated BVCP policies in Sections 2 through 9 align better with plans, and to identify emerging areas of work. An annotated outline of initial proposed policy updates is included in **Attachment C**. The outline notes changes that will bring recently adopted master plans or other policies, such as the Community Cultural Plan, Transportation Master Plan, and Parks and Recreation Master Plan, into the BVCP in a more comprehensive and integrated way. The outline is a work-in-progress. Further input from city and county staff, leadership, and public, and other suggestions from the Resilience Assessment (HR&A consultants) will help staff finalize a full outline of proposed changes to the BVCP plan.

Later in the summer, the planning team will carry forward the updated land Use Map Descriptions with formatting, images, introductory explanatory text, and other enhancements and will provide suggestions to reorganize and clarify the amendment procedures and Urban Services Criteria and Standards chapters.

Track 4: Public Land Use and Map Change Requests

In late 2015 through March 2016, the four applicable bodies decided to advance ten of the original 38 requests for further study, plus three policies. Of the ten land use and map requests, two have withdrawn leaving the following eight :

Two Body Review

- **#1 Naropa - 2130 Arapahoe Ave.:** High Density Residential (HR) to Public (PUB); 6287 Arapahoe Ave.:

Community Industrial (CI) to Community Business (CB)

- **#3 – 385 Broadway:** Transitional Business (TB) to Low Density Residential (LR)
- **#12 - 0, 693, 695 Broadway (Table Mesa Shopping Center):** Medium Density Residential (MR) to Community Business (CB)
- **#13 - 3485 Stanford Court**: Low Density Residential (LR) to Medium Density Residential (MR)

Four Body Review

- **#25 - 3261 3rd Street:** Area III to Area II to enable future annexation request
- **#29 -2801 Jay**: Public (PUB) to Medium Density Residential (MR) or Mixed Density Residential (MXR)
- **#35 and 36 - 6655 and 6500 Twin Lakes, 0 Kalua Road**: 35 - Low Density Residential (LR) and Public (PUB) to Mixed Density Residential (MXR), and 36 - Low Density Residential (LR) and Public (PUB) to Open Space (OS) with Natural Ecosystems or Environmental Preservation designation

Staff is currently analyzing the requests. Community engagement will happen during the summer months with hearings about the requests likely to be in September and October. The facilitated process for the Twin Lakes requests (#35 and 36) is ongoing. Additionally, the three policy requests which advanced through initial screening will be addressed as part of the policy updates (noted above and in Attachment C).

NEXT STEPS

Attachment B contains a bit more information about what happens next with the scenarios/key choices. Much of the summer engagement will be focused around that work, as well as some meeting(s) and events about CU South and specific public land use and map requests.

Dates include:

June 15 County Planning Commission check in regarding scenarios/key choices and policies

June (TBD) Board of County Commissioners check in regarding scenarios/key choices and policies

Jun – Aug. **Summer community engagement**

- ✓ Meeting(s)/open houses for the public land use and map change requests
- ✓ Local events to review and provide feedback on proposed scenarios within subcommunities
- ✓ CU South meetings and updates regarding suitability analysis
- ✓ Pop ups and meetings with organizations – by request
- ✓ Survey #2 possible

Aug./Sept. Board and commission check ins

Oct. 11 (tent.) Council Study Session to discuss scenarios/choices and analysis and preferred directions, land uses, and policy direction

Oct. (TBD) Council action on public requests

ATTACHMENT(S)

A. Updated Work Plan for 2016

B. Key choices as presented at May 11, 2016 public meeting (white papers and posters)

1. Renewed Core values
2. Choices for design, land use, housing, and jobs/housing balance and posters
3. Climate, energy and resilience

C. Draft BVCP outline and policies

1. Plan outline
2. Policy Integration - Annotated Outline

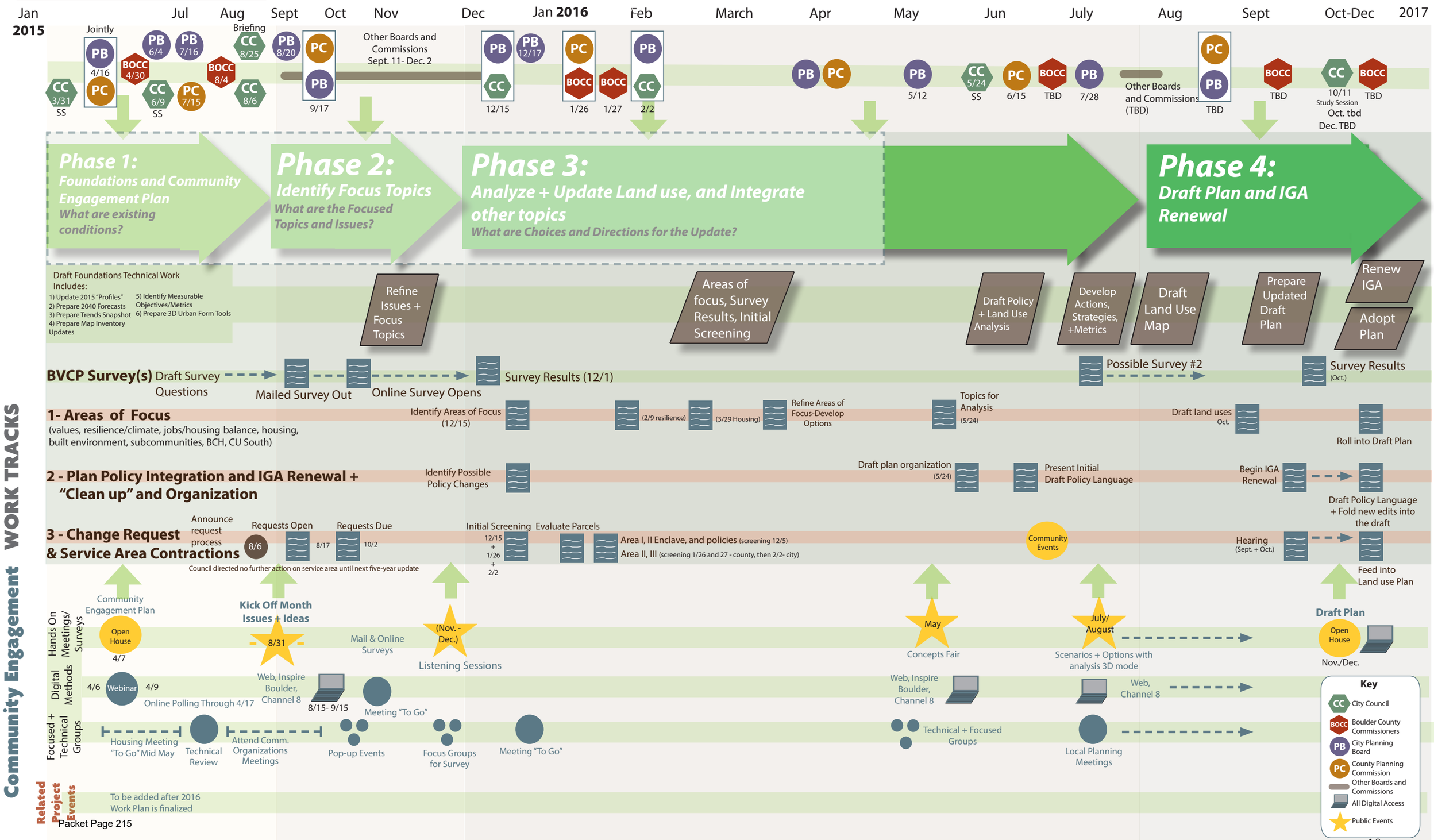
D. HR&A Resilience Assessment Report draft

Updated 5/12/2016

OUR LEGACY. OUR FUTURE.

BOULDER VALLEY COMPREHENSIVE PLAN

Work Plan for 2016



VISION AND CORE VALUES

The comprehensive plan has a solid foundation that has been widely supported by the community since the 1970s. Its core values cover long-standing community values and are updated periodically to introduce newer values. In addition, this plan update is an opportunity to present the plan's vision in more compelling (graphic, storytelling) ways to convey Boulder Valley's planning history and future community aspirations.

The values articulate the community's commitment to sustainability and meeting its environmental, economic, and social goals as noted below.

- Sustainability as a unifying framework to meet environmental, economic, and social goals
- A welcoming and inclusive community
- Culture of creativity and innovation
- Strong city and county cooperation
- A unique community identity and sense of place
- Compact, contiguous development and infill that supports evolution to a more sustainable urban form
- Open space preservation
- Great neighborhoods and public spaces
- Environmental stewardship and climate action
- A vibrant economy based on Boulder's quality of life and economic strengths
- A diversity of housing types and price ranges
- An all-mode transportation system to make getting around without a car easy and accessible to everyone
- Physical health and well-being

What have people suggested to update the core values?

The BVCP survey conducted in the fall of 2015 (further information available at: www.bouldercolorado.gov/bvcp/bvcp-survey) asked several questions about the core values of the plan. Respondents generally agreed that the plan's values are consistent with community values. One commenter wrote, **"If we can accomplish (them all)... that would be truly amazing. Let's try."**

People also suggested adding or clarifying the following values:

- Diverse and inclusive community (age, incomes, ethnicities, etc.)
- Representative and responsive government - "good governance" concept
- Resilient, prepared community
- Safety, as basic community value
- Well-maintained infrastructure (and assets)
- University community, progressively leading
- Managed and/or limited growth

- Arts and culture
- Cohabitation of people and wildlife
- Strong partnerships (e.g., city and county with University of Colorado, Naropa, Boulder Valley School District, RTD, Boulder Community Health, business community, neighborhoods)

Most frequently mentioned values in need of clarification include:

- A diversity of housing types and price ranges,
- "Compact" community (i.e., is there a better description?)
- "All mode transportation system"
- Climate action (i.e., add goals from Climate Commitment and clarify city's role).

Initial Draft of Core Values Update

Better Alignment with the Sustainability Framework

The community's core values are based on long-standing policies and concepts of the comprehensive plan. They reflect strengths and challenges of the Boulder Valley.

Proposed revisions to the values reflect input heard from the community, create greater alignment with the city's Sustainability Framework, and add resilience principles. The sustainability framework consists of seven categories that address environment, economy, and social equity goals together across the city organization in decision-making.

The revised values are intended to enhance the current values and are a guiding philosophy for planning, development, and budget decisions moving forward. They are the precursor for policies later in the plan.

Other Recommendations to update the Vision and Introductory Chapter

A creative more compelling approach to the Boulder Valley Vision might include elements of the past, present, and desired future in a series of "big idea" statements, including graphics and illustrations to fully convey the desired future vision. Additional suggestions include:

- Add more historic references – more of a story with pictures, not just a list of milestones
- Add graphics, photos, and quotes
- Highlight the long-standing unique aspects of the community's character, shape, and environmental, social, and economic goals.

The Boulder Valley community honors its history and legacy of planning while striving together to achieve a truly great, sustainable, resilient community – better and more beautiful for future generations.

BVCP Refined Core Values

The core values are reorganized below to reflect the sustainability principles, with the idea being that the plan may be reorganized to reflect the seven categories and address cross-cutting policies and goals.

(Note: Bullets in black are current core values, red are suggested additions.)

The Boulder Valley values…

A Safe Community

- Continued safety (a basic community value) and a climate of safety and social inclusiveness
- Resilience and preparedness

A Healthy and Socially Thriving Community

- A welcoming, diverse, and inclusive community that leads by example
- Health and well-being, and
- A thriving arts and culture

A Livable Community

- Its unique identity and sense of place
- Managed growth through compact contiguous development, and infill that supports evolution to a more sustainable urban form
- Great neighborhoods and public spaces
- A diversity of housing types and price ranges
- Well-maintained infrastructure, facilities, and assets

An Accessible and Connected Community

- An all-mode transportation system to make getting around without a car easy and accessible to everyone
- Maintain a connected infrastructure network

An Environmentally Sustainable Community

- Environmental stewardship and open space preservation
- Climate action, adaptation, and resilience

An Economically Vital Community

- A healthy, resilient economy with high levels of services and amenities
- A culture of creativity and innovation

Good Governance

- Strong city and county cooperation
- A tradition of representative and responsive government
- Engaging the community in all civic matters
- Strong partnerships between public, private entities, and the community

Question: How would you refine and prioritize ideas related to climate and resilience for the plan update?

Choices for DESIGN, HOUSING, AND JOBS

Why are key choices being presented?

The packet that follows includes choices for land use and policy changes that could be made during the BVCP update to address design, jobs:housing balance, and affordable and diverse housing. The planning team is seeking feedback from the community to refine the choices that will become scenarios to be further evaluated. Changes should be made in keeping with the plan's overall intent and values.

The Boulder Valley's sense of place, beauty, and permanent surrounding open space has not happened by accident. It has taken creative public policies and pragmatic planning decisions over many years to produce and preserve its unique character and physical beauty. Boulder is defined by its natural setting, the mountain backdrop, and surrounding greenbelt.

Within the valley and the city, distinctive characteristics and qualities of individual areas draw on unique history, development pattern, land uses, amenities and other factors. The community has distinct places with more concentrated activity: Regional Activity Centers, Neighborhood Centers, and Industrial/Innovation Areas. These places tend to be connected by Major Corridors with access to high frequency transit. Neighborhoods are the building blocks of the city and cover most of the city.

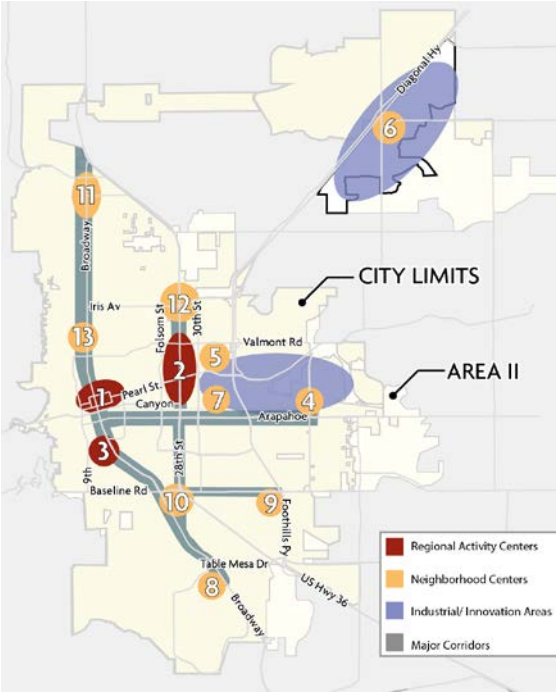


Figure: Opportunity Areas

Note: The map above is a blend of the "activity center" map in the plan combined with areas with potential for new jobs and housing and the transit corridor map.

Key

Regional Centers:

1 – Downtown
2 – 29th Street
3 – University Hill commercial area

Neighborhood Centers:

4 – 55th and Arapahoe
5 – Boulder Junction (30th and Pearl)
6 – Gunbarrel Town Center
7 – North of Arapahoe (30th-38th St.)
8 – Table Mesa Center
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Boulder's Neighborhoods are varied, ranging from historic and pre-World War II housing organized around a street grid pattern in and near downtown; Post World War II neighborhoods with a curvilinear street and cul de sac pattern; and Neo-traditional, New Urbanist neighborhoods that contain a mix of housing types and more compact street design.

What is proposed for the urban design and land use sections of the plan?

The planning team will work with the community to identify how to update the "Built Environment/Livability" chapter of the plan to reflect input from the community survey, boards and commissions, and other sources regarding design of the city to accomplish the following:

1. Better convey concepts in the plan through 3D maps, diagrams, and definitions the elements that define Boulder's city structure and character (e.g., "centers" and "neighborhoods"),
2. Add transit corridors from the Transportation Master Plan,
3. Clarify guidance on neighborhoods, such as transitions to protect the character and mix of complementary land uses,
4. Better describe and illustrate principles of quality mixed use and higher density development,
5. Convey other principles of design quality (such as sensitive infill and redevelopment), and
6. Add priorities from the Community Cultural Plan regarding the expression of culture and creativity in the public realm and amplification of the vibrancy of Boulder's cultural destinations.

Additionally, the *land use descriptions* in the plan may be updated to add new categories or refine definitions to accomplish community goals. Changes will be discussed at upcoming events and meetings in the summer.

Question: What suggestions do you have to improve and clarify urban design policies and principles of the plan?

What happens next with the key choices currently being presented?

1. Develop Options for Opportunity Areas. Based on initial community feedback, develop a series of options for each of the Opportunity Areas that incorporates missing housing types and identifies key choices and trade-offs for each of the following considerations:

    - Adjustments to mix of uses
    - Allow increased density/intensity tied to certain community benefits
    - Requirements for a broader mix of housing types/price points
    - Transitions in use or intensity where Opportunity Areas abut single-family neighborhoods, open space, or other lower intensity uses.
    - Enhancing vitality (creating "new" neighborhoods)

2. Evaluate Choices. Work with the community to evaluate key choices for each type of Opportunity Area based on their alignment with the city's sustainability framework and comprehensive plan, and to identify the types of community benefits that would be most meaningful to residents in different contexts.

3. Recommend updates to Policies. Recommend updates to housing and neighborhood policies to support preferred outcomes for each type of Opportunity Areas. Determine how the city may partner with other organizations or the private sector to accomplish goals.

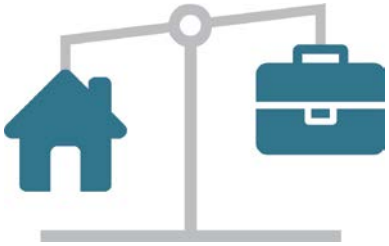
4. Consider at Subcommunity Level. Further identify considerations and issues at the subcommunity planning level or for area planning as appropriate.

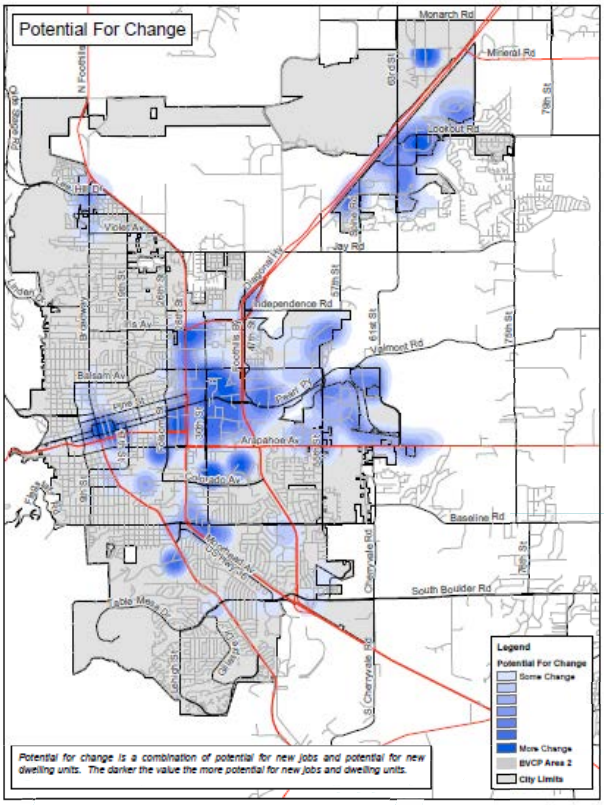
Choices for BOULDER'S JOBS: HOUSING BALANCE

Is it time to adjust the land use plan to encourage new housing near where people work, encourage transit-oriented development in appropriate locations, preserve service commercial uses, and convert non-residential uses to residential in appropriate locations?

What is the Issue? What does the current plan policy say?

Boulder is a regional employment center with more jobs than housing for people who work here. Periodically, the city seeks opportunities to improve the balance of jobs and housing while maintaining a healthy economy. This is accomplished by encouraging new housing and mixed use neighborhoods in areas close to jobs, encouraging transit-oriented development in appropriate locations, converting industrial development in appropriate locations, improving regional transportation alternatives, and mitigating traffic. Recent survey results suggest that this issue needs to be addressed as part of this BVCP major update.





management policies also address tools to manage the pace e of growth. The city currently uses a number of tools to the scale, location, type, intensity and timing of new ment and ensure that development provides benefits and s community goals. Such tools include development ds and the Land Use Code and development fees (including nmercial linkages fees). The Residential Growth Management aims to manage the average annual rate of housing growth, n the City of Boulder (from year-end 2009 to 2014) was nately 0.8 percent per year. The city does not regulate the growth on non residential units.

are the 2040 Projections?

5, Boulder had 45,700 housing units, 104,800 nts, and 98,500 jobs (a balance of 0.46 ng to jobs).

40, Boulder may expect to see 6,300 new ng units, 18,200 new residents and 18,500 bs (0.44 balance). *(in Area I, city limits)*

See Projections report available on boulder valleycompplan.net.

What do people have to say about jobs: housing mix/balance?

- Survey responses indicate general alignment with current policies and approaches to maintain or improve the balance of jobs and housing.
- Respondents thought Boulder should maintain (57 percent) or increase (25 percent) the current potential for additional jobs. 11 percent would like to reduce potential for commercial.
- Respondents thought Boulder should increase (43 percent) or maintain (39 percent) the current potential for additional housing. 12 percent would like to reduce the potential for additional housing.
- Open-ended comments showed nuanced thinking about the future mix of housing and jobs. Quality, design, family-friendly design, and public spaces and views are important factors in how the community thinks about the issue.
- Respondents conveyed that the city should continue to manage an average rate of growth for housing and not add a new growth management rate tool for jobs.

What are some land use and policy choices to explore?

The following choices will be explored as part of the BVCP update:

A. Should the city convert some existing employment areas from an industrial to a housing designation on the BVCP Land Use Map and encourage addition of affordable and diverse housing types? Options include:
   1. Incentivize the affordable housing integrated into existing industrial areas while keeping employment uses intact (e.g., infilling underutilized lands or existing surface lots to housing in appropriate locations).
   2. Encourage redevelopment of existing single use industrial/office buildings in exchange for new, vertically mixed development that includes a mix of employment, housing, and other complementary uses.

   Considerations and Tradeoffs:
   The change could…
   - Create additional housing for people who work in Boulder, reducing in-commuters.
   - Help create additional amenities (including housing), uses, and services in existing industrial/innovation areas, especially those home primarily to primary employers (such as in East Boulder and Gunbarrel).

   However it could…
   - May reduce potential for additional jobs, which is contrary to most community member's preference in BVCP survey.
   - Be limited without exploring what types of jobs may occur in different areas (and how transforming older employment areas to meet the future needs of our employers).
   - Displace or price out existing service commercial uses/employment uses or limit potential for certain industrial uses within the city.

B. Should the city better balance local jobs and housing by finding opportunities for new, walkable (15-minute) neighborhoods in locations near transit and where people work?

Considerations and Tradeoffs:
The change could…

- Be consistent with the Transportation Master Plan goal to improve walkability throughout Boulder's neighborhoods and also increase the mix of nearby services and facilities.
- Increase intensity and mix of uses and also amenities, uses, and local services for employers and nearby neighborhoods.

However it could…

- May reduce potential for additional jobs.
- If not carefully planned, create undesired mix of uses near some existing neighborhoods.

C. Should the city moderate the pace of change or overall potential future commercial and industrial uses?

Considerations and Tradeoffs:
The change could…

- Improve balance of jobs and housing by lowering job potential.
- Reduce overall emissions in community.
- Require a change to policies in the plan, as it currently is not consistent with the plan's policy of being a major employment center and maintaining a healthy economy.
- Reduce overall potential growth which may lessen traffic and some other impacts.

However it could…

- Be inconsistent with the plan's policy of being a major employment center and maintaining a healthy economy, and be inconsistent with survey results and the concern about impacting economic vitality.
- Displace emissions to other communities with lower building standards.
- Potentially lead to reduced sales tax and revenues.

Question: How would you suggest refining or adding to these key choices to address jobs:housing balance?

WHERE ARE POSSIBLE OPPORTUNITIES FOR FUTURE JOBS AND HOUSING?

Future opportunities are largely focused in four types of places: Major Corridors, Regional Activity Centers, Neighborhood Activity Centers, and Industrial/Innovation Centers. Some limited new housing will continue to occur in neighborhoods. The generalized location and distinct characteristics of each of these types of places are defined below.

Major Corridors

- Varied in use. May be transitioning to mixed-use
- Served by high frequency transit and connecting the centers
- Fairly walkable/bikeable in most locations
- Abutting established neighborhoods
- Examples: 28th Street, Broadway, Arapahoe

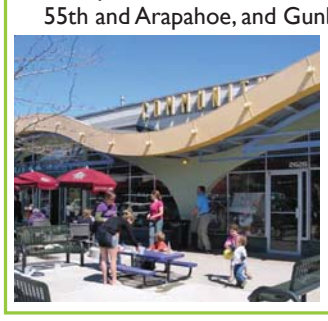
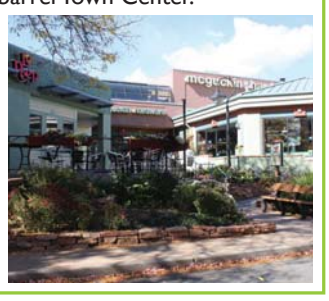
Activity Centers

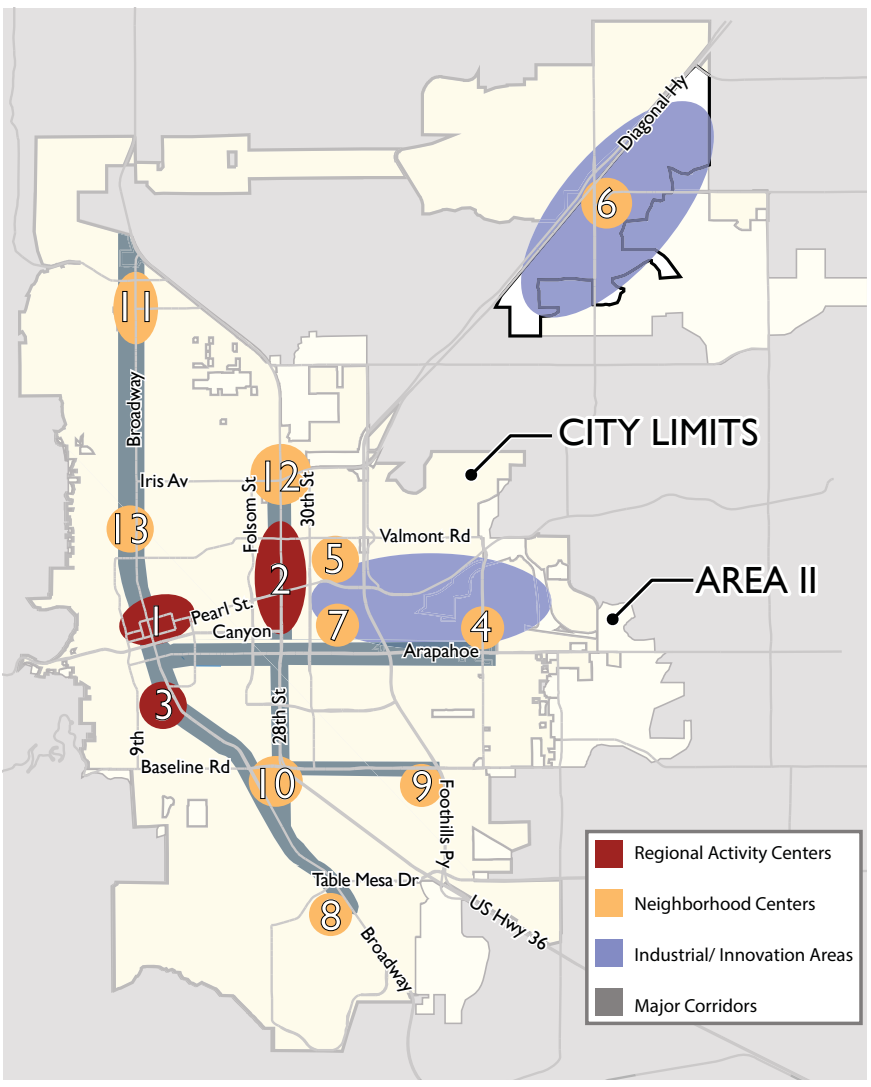
Regional Activity Centers

- Regional destinations
- Highest level of intensity
- Each has a distinct function, character, and mix of uses
- Walkable/bikeable
- Very accessible to local and regional transit connections
- Examples: Downtown, Boulder Valley Regional Center, University of Colorado/University Hill business district

Neighborhoood Activity Centers

- Places that serve as neighborhood gathering spaces and provide goods and services to meet the day-to-day needs of nearby residents, workers, and students
- Easily accessible from surrounding areas by foot, bike, and transit
- Infill, redevelopment, and/or adaptive reuse opportunities exist in many locations
- Emerging identities
- Adjacent to established neighborhoods
- Smaller scale uses (1-2 story) typical today
- Examples: Table Mesa Center, North Boulder/North Broadway, 55th and Arapahoe, and Gunbarrel Town Center.



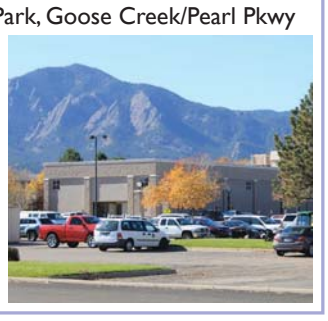
Map Key

1. Downtown
2. 29th Street
3. University Hill commercial area
4. 55th and Arapahoe
5. Boulder Junction (30th and Pearl)
6. Gunbarrel Town Center
7. North of Arapahoe (30th-38th St.)
8. Table Mesa Center
9. Meadows Community Center
10. Basemar (near Baseline and Broadway)
11. North Boulder/North Broadway
12. Diagonal Plaza
13. Alpine/Balsam (hospital)

Which opportunity areas are appropriate (or not) for changes to land use?

Industrial/Innovation Areas

- Business and job rich areas (service commercial, light industrial, etc.)
- Aging buildings and infrastructure in some locations, transitioning to updated buildings and infrastructure in some areas
- Less walkable/bikeable than other locations within the city due to disconnected street grid; however, most locations are accessible by bicycle via greenway connections
- Usually not connected to or adjacent to, but near existing neighborhoods
- Constrained by floodplain in some locations
- Examples: Flatiron Business Park, Goose Creek/Pearl Pkwy



Neighborhoods

- Places where people live and with most of the community's housing
- May contain some services, public spaces, parks, other community facilities
- Heart of the community- varied and distinctive, ranging from:
- Historic and pre-World War II housing organized around a street grid pattern in and near downtown,
- Post World War II neighborhoods with a curvilinear street and cul de sac pattern, and
- Neo-traditional, New Urbanist neighborhoods that contain a mix of housing types and more compact street design.

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What outreach is happening next?

More opportunities to weigh in on local topics will be coming to your neighborhood this summer. Stay tuned on www.BoulderValleyCompPlan.net for updates!

HOW SHOULD THE CITY AND COUNTY EVALUATE CHOICES FOR THE FUTURE?

As the BVCP update process continues, the community will be asked to weigh in on a series of key choices related to potential locations for future jobs and housing. Each of these choices will come with tradeoffs. Your input will be used to help shape key choices for further consideration later this summer. This initial set of indicators or metrics relates to the sustainability framework and are based on feedback heard so far regarding important aspects to evaluate when considering land use changes.

Goals/Indicators	Which of these is MOST important to you? (Select your top three)
HEALTHY & SOCIALLY THRIVING COMMUNITY	
Increase Access to Nature Increase access to publicly accessible open space.	
Provide Access to Health Care Facilities Ensure access to and opportunity for medical and health facilities	
LIVABLE	
Better Balance Jobs and Housing Better link the area's housing options with what people working in the area can afford.	
Improve Housing Choices Provide a mix of housing unit types and prices that supports the city's missing middle goals (e.g., micro units, walk-ups/flats, townhomes, accessory units, triplexes, townhomes).	
Provide Housing in 15-Minute Neighborhoods Increase the share of residents in walkable 15 minute neighborhoods - toward the TMP goal of 80%.	
ACCESSIBLE & CONNECTED	
Increase Street Connectivity Improve the connectivity of local streets for more travel options.	
Enhance Travel Options Increase the proportion of non single occupancy vehicle commuters.	
Manage Traffic Congestion Reduce vehicle miles traveled consistent with Transportation Master Plan goals.	
Transportation Demand Management and Managed Parking Achieve the optimal supply and demand balance of parking relative to costs.	
ENVIRONMENTALLY SUSTAINABLE	
Reduce Greenhouse Gas Emissions Reduce building and transportation related greenhouse gas emissions consistent with the city's Climate Commitment goals.	
Reduce Building Energy Use Reduce per capita building energy use.	
Expand Renewable Energy Generation Provide opportunities for on-site or district-based energy generation.	
Protect Ecologic Diversity and Open Space Protect and enhance natural ecosystems and open space.	
Avoid Floodplain and Wetland Areas Avoid physical improvements in floodplain hazardous areas and wetlands.	
ECONOMICALLY VITAL	
Maintain Employment Diversity Preserve land designated for employment uses to maintain current jobs to housing ratio.	
Minimize Fiscal Impacts Achieve an optimal city return on investment between revenues and infrastructure and service costs.	
Maintain Commercial and Industrial Affordability Keep commercial and industrial rents and purchase prices at or below current trends.	
SAFE	
Maintain Emergency Response Times Maintain urban fire protection, emergency medical care, and urban police response times consistent with city goals.	
Reduce Bicycle and Pedestrian Conflict Points Establish progress towards "Vision Zero" serious and fatal bicycle and pedestrian accidents.	

Are there other goals/indicators that should be considered when evalulating key choices?
(Use the sticky notes provided to note your suggestions below)

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Choices for AFFORDABLE AND DIVERSE HOUSING

How should the plan's policies and/or land use plan be adjusted to better achieve housing goals and encourage diverse housing types appropriate to different parts of Boulder?

What do the current plan and programs support?

- A "diversity of housing types and price ranges" is a core value of the plan (p. 9).
- The Built Environment section includes policies about character areas, neighborhood preservation, compatibility, and mix of complementary uses (p. 28).
- The Housing section (p. 49) includes goals and policies supporting affordable (low and moderate) housing, partnerships, choices, diversity, growth and community housing goals.
- the Housing program has a goal to create 450 permanently affordable middle-income housing units (107 are currently built) and to create 10% of all housing units to serve low and moderate income households (currently 7.3%).
- The Land Use designation map identifies desired locations, densities and types of housing planned for Boulder.

Inclusionary Housing Requirements

- The Land Use Code requires at least 20 percent of the units in any development containing five or more dwelling units be required as permanently affordable for very low to moderate incomes.
- The primary objective is to achieve on site affordable housing when development occurs.
- Rental developments do not have a minimum onsite requirement, and many projects in recent years have provided affordable housing off site. There is alternative compliance.
- Annexations require roughly half of all residential units to be affordable to low, moderate and middle income households.

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What can the current plan accommodate?

The city's 2040 housing projections suggest that the current land use and capacity trends combined with continuing increase in housing prices will lead to continued loss of affordable middle income housing options in Boulder. Remaining available capacity for housing is generally located along corridors, downtown, and in mixed use areas. Most new housing will not be built in neighborhoods. In addition, attached products have trended toward rental apartments, and not for-sale units; the amenities and style of many recent multi-unit buildings have been oriented toward single or younger professional rather than families (e.g., do not have playgrounds or have limited green space). Modifying the land use descriptions or land use mix can help encourage new housing types that can meet the housing goals of the community.

What have we learned from the Housing Boulder Project, Trends Report and Forecasts?

The Housing Boulder project has been exploring a variety of programmatic and funding tools and has led to completion of items or significant milestones. Since adoption of Boulder's 1999 Housing Strategy, the community has made significant progress toward achieving the city's adopted housing goals, resulting in thousands of permanently affordable housing units for low and moderate income households and placing Boulder in the forefront of housing policy and action nationwide. However, Boulder's housing market continues to be strong, and housing affordability challenges have continued to grow, particularly during the recent economic recovery.

The Housing Boulder project has been exploring a variety of tools to achieve affordable housing. To date, discussion has generally held that Boulder will need a variety of strategies to address housing affordability, including land use changes to address the limited "supply" along with other interventions and approaches to provide additional affordable housing choices. The *Housing Boulder Action Plan for 2015/16* (approved by City Council in September 2015) identified a few questions and tools to explore through the BVCP, including any potential land use or policy changes that might help support the housing goals. BBC Research and Consulting has also prepared a *Middle Income Housing Study* that provides research on Boulder's challenges related to providing housing for middle income households.

What did the Middle Income Housing Study find?

Below are the key findings of the study (available at www.HousingBoulder.net):

1) The share of Boulder's middle income households has declined 6% since 1989, offset by an increase in high income households.
2) Middle income households can afford 99% of city's rentals, but only 67% of attached homes and 17% of detached homes for sale in 2015
3) Attached homes maintain affordability over time better than detached homes.
4) Attached units maintain a lower price even in high demand areas in Boulder.
5) Rentals remain affordable to middle income households and provide the best opportunity for middle income households to live in Boulder.
6) Purchasing an attached unit is less expensive that renting at market rates.

Housing Market Analysis and Housing Choice Survey (BBC)

In 2013, BBC Research and Consulting completed a market analysis and in 2014 surveyed over 3,000 Boulder Valley residents. Below are some key findings. Where possible, numbers have been updated to 2015.

1) Boulder rental market is very tight, with record low vacancy rates (9.7% in 2003, 1.6% in 2013, and 4.4% in 2015).
2) Housing prices in Boulder continue to outpace the county and region – median detached home sales price exceeded $750,000 in 2015. Housing prices have risen 31% in the past two years alone.
3) The city's inventory of permanently affordable rental units has helped preserve some lower income diversity.
4) Recent trends in some of the housing products being created in Boulder are consistent with shifting market demand towards smaller units, mixed-use, and walkable neighborhoods with high transit access.
5) Demand for housing in Boulder is likely to continue — an expanded toolkit of policies and programs is needed if the city wishes to maintain a mix of households and incomes in Boulder.

What are people saying about affordable housing and housing types and design?

The BVCP survey and focus group results conveyed interest in affordable housing, and contained multiple comments about the increasing challenge for middle income people to be able to afford Boulder – whether they are existing residents, or potential buyers and renters feeling squeezed because of rising prices, property taxes, or changing neighborhood character. Results showed:

1. Of the top three community values in greatest need of attention, "A diversity of housing types and price ranges" ranked as first priority (63 percent of people selected it as a first choice).
2. On housing growth rates, most selected the current system of limiting housing growth rate (43 percent) vs. 26 percent who would rather not limit the rate of growth or 15 percent who would rather reduce the rate of potential housing growth.
3. For new development, permanently affordable housing was identified as the most important community benefit requirement (47 percent selected as a top three priority).

Open-ended questions and focus group summaries provided more nuanced responses.

- Affordability and inclusivity were recurring themes.
- New housing should be affordable and fit neighborhood character (not big and bulky).
- Perceptions of neighborhoods changing (for the worse) included new "big" houses changing the physical character and social mix of the neighborhood.
- New housing should be more family- and age-friendly and have lasting value. The four story rental housing being built seems to appeal to younger or single people (e.g., fire pits instead of playgrounds or gardens).
- Design and quality of units, especially larger units, is important.
- Continue to limit housing growth rates (certain types especially, such as high end), while providing more affordable options.
- Reduce costs and incentivize homes with smaller footprints (e.g., less than 1,200 square feet).
- Housing and neighborhoods also need parks, services, and transit.

What are some land use housing choices to explore (and possible tradeoffs)?

The following choices will be explored as part of the BVCP project:

A. Should the land use plan and policies be adjusted to allow diverse affordable housing within existing industrial and mixed areas in the city, including:
   - Convert some underutilized industrial areas to residential designations on the Land Use Map (e.g., east part of Boulder along Arapahoe Ave.).
   - Incentivize the integration of housing as part of existing industrial areas while keeping industrial and business areas intact (e.g., infilling existing surface lots with housing).
   - Encourage redevelopment of existing single use industrial/office buildings in exchange for new, vertically mixed development that includes employment, housing, and other complementary uses.

   Considerations and Tradeoffs:
   The change could...
   - Increase opportunities for the development of diverse housing outside established neighborhoods.
   - Create opportunities for new housing development close to existing employment areas and/or transportation corridors, potentially reducing the travel distance between residents and employment places.
   - Allow specialized new types of housing (such as senior housing) near existing services (e.g., Boulder Community Health).

   However, it could...
   - Displace or price out existing service commercial uses/employment.
   - Reduce potential for additional jobs (contrary to survey preference to maintain or increase job potential).

B. Should plans and policies expand the range of housing types (e.g., micro units, townhomes, accessory units, triplexes) that are either allowed or incentivized in certain locations (e.g., Regional Activity Centers, Neighborhood Centers, Corridors, and Industrial/Innovation Areas) to address affordable housing needs. *(Note: See the posters with housing prototypes.)*

   Considerations and Tradeoffs:
   The change could...
   - Allow the city to be more targeted in the types of housing it encourages, focusing specifically on those that are affordable - or maintain affordability - for middle-income households.

   However, it could...
   - Introduce additional housing types, potentially altering the character of the city overall, or in certain areas.
   - Not necessarily match people's preferences (i.e., people currently living in Boulder or working and looking for housing) with new housing units built in Opportunity Areas or types of tenure (i.e., for rent or sale).
   - Not necessarily ensure affordable housing without other housing tools to fund and subsidize it.

C. Tied to community benefits, should the city allow more intensity than what is currently allowed in certain locations (e.g., Regional Activity Centers, Neighborhood Centers, Corridors, and Industrial/Innovation Areas – not neighborhoods)?
   Potential benefits could include:

1. Provision of permanently affordable housing for low, moderate, and middle households in excess of the 20% already required.
2. Protection of views and provision of open space, and recreation spaces.
3. Higher quality building design
4. Provision of new infrastructure such as intersection improvements and bike paths.
5. New energy efficiency and renewable resources (i.e., exceed energy building standards).
6. Accessible and useable public spaces, plazas, courtyards, seating, and art.
7. Other benefits.

Considerations and Tradeoffs:

The change could...

- Allow the community/city to receive benefits or amenities that they might not otherwise receive (including affordable housing).
- Help mitigate impacts of greater intensity above and beyond what the city would typically allow.

However, it could...

- Make some in community feel character would be compromised by intensity or other impacts.

D. Should the city establish new residential transition requirements for different contexts within the city (e.g., where Opportunity Areas abut single-family neighborhoods, open space, other lower intensity uses) to protect the character of established neighborhoods and adjacent open spaces? *(Note: urban design chapter will include recommendations for new urban design illustrations and principles.)*

Considerations and Tradeoffs:

The change could...

- Manage the way new development is organized on a site and mitigate impacts to nearby neighbors.
- Allow for new housing (if development in transition areas is non-residential or mixed-use) along corridors.
- Create potential for better 15-minute neighborhoods.

However, it could...

- Limit development/redevelopment flexibility on certain sites.
- Not necessarily prevent new development from occurring near established neighborhoods or open spaces.

E. Should the city encourage “gentle infill” in neighborhoods? "Gentle infill" is an approach to allow new housing types such as tiny homes, accessory units, subdivided larger homes, and smaller homes tucked around existing houses.

Considerations and Tradeoffs:

The change could...

- Allow greater diversity of housing within neighborhoods suited to handle these types of changes.
- Possibly increase access to new types of housing and affordable units for community members.

However, it could...

- Create some unintended impacts within neighborhoods.
- Not necessarily ensure the units would be affordable.

Questions:

1. **How would you suggest refining or adding to these key choices?**
2. **Which housing types are currently lacking in the Boulder and should be allowed/encouraged in appropriate locations (as noted on the poster or in the online questionnaire?**
3. **Where do you think a particular housing type does not belong?**

HOUSING PROTOTYPES

The BVCP includes a core value of achieving a ***"diversity of housing types and price ranges."*** Additionally, the survey and focus group results from September, 2015 concluded that "A diversity of housing types and price ranges" was the community's **#1 priority**.

This exercise seeks to find out what housing prototypes the community feels are currently lacking, and where they would be most appropriate.

DETACHED HOUSING PROTOTYPES

SMALL LOT SINGLE FAMILY

- 6-8 dwelling units per acre
- 3,000 - 4,000 lot size
- 1,500 - 2,000 SF unit size
- Ownership or rental

ACCESSORY DWELLING

- 8-10 dwelling units per acre
- <1,500 SF lot size
- 450 - 1,000 SF unit size
- Ownership or rental
- Ground floor or above parking

COTTAGE COURT

- 10-14 dwelling units per acre
- <1,000 SF lot size
- <1,500 SF unit size
- Ownership or rental
- Some models are attached
- Shared common space

TINY HOUSE

- 15-20 dwelling units per acre
- <1,000 SF lot size
- < 500 SF unit size
- Ownership or rental
- Some models are on wheels

Which housing prototypes are currently lacking in Boulder?

ACTIVITY INSTRUCTIONS:

Place a **GREEN DOT** where you think a particular housing prototype ***is lacking and should be encouraged***.

● = ***"YES, this housing type should be encouraged in this location."***

Place a **RED DOT** where you think a particular housing prototype ***does not belong***.

● = ***"NO, this housing type should NOT be encouraged in this location."***

NOTE: Refer to the previous poster for further descriptions of the Areas of Opportunity and specific locations. Existing Neighborhoods are not a specific Area of Opportunity, but may serve as a reasonable location for some housing prototypes.

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OUR LEGACY. OUR FUTURE.
BOULDER VALLEY COMPREHENSIVE PLAN

AREAS OF OPPORTUNITY

REGIONAL ACTIVITY CENTERS

- Regional destinations
- Highest level of intensity
- Has a distinct function, character, & mix of uses
- Walkable/bikeable
- Accessible to transit

NEIGHBORHOOD ACTIVITY CENTERS

- Neighborhood gathering centers
- Accessible by foot, bike, transit
- Infill, redevelopment or adaptive reuse opportunities
- Emerging identities
- Adjacent to established neighborhoods

MAJOR CORRIDORS

- Varied in use
- Served by high frequency transit & connected to centers above
- Fairly walkable/bikeable
- Abutting established neighborhoods

INDUSTRIAL/ INNOVATION AREAS

- Business & job rich areas
- Aging buildings and infrastructure
- Less walkable/bikeable
- Usually not connected to, but near existing neighborhoods
- Constrained by floodplain in some locations

NEIGHBORHOODS

- Majority of existing housing: historic and pre-WWII housing; post-WWII housing and neo-traditional
- May contain some services, public space or parks/open space
- Walkable/bikeable

HOUSING PROTOTYPES

ATTACHED HOUSING PROTOTYPES

ROWHOUSE/TOWNHOUSE

- 15-20 dwelling units per acre
- 1,500 - 2,000 SF lot size
- 1,500 - 2,000 SF unit size
- Ownership (condo) or rental
- Could include lower level rental unit

MULTI-PLEX

- 15-20 dwelling units per acre
- 6,000 - 12,000 SF lot size
- 1,500 - 2,000 SF unit size
- Ownership (condo) or rental
- 2-4 units per lot

APARTMENTS / CONDOMINIUMS

- 20-30 dwelling units per acre
- 15,000+ SF lot size
- 750 - 2,000 SF unit size
- Ownership (condo) or rental
- Walk-up or interior corridor

MIXED-USE RESIDENTIAL

- 20-30 dwelling units per acre
- 15,000+ SF lot size
- 750 - 2,000 SF unit size
- Ownership (condo) or rental
- Commercial on ground floor; residential on upper floor(s)

MICRO-UNIT HOUSING

- up to 60 dwelling units per acre
- 15,000+ SF lot size
- 350 - 750 SF unit size
- Ownership (condo) or rental
- Could include single-room occupancy (SRO) units with shared common spaces

What's missing?

Are there ***any other housing prototypes*** that you feel are missing in Boulder ***that would be appropriate*** for the "Areas of Opportunity" and should be considered?

CLIMATE, ENERGY AND RESILIENCE

The community has shown consistent support for goals and actions to reduce climate impacts and overall greenhouse gas emissions as reflected in multiple surveys and support for the climate action tax. With emerging new goals related to climate commitment, energy system transformation, and resilience, the BVCP will need to be updated to support them. More recently it's become clear that the scale of the climate challenge is greater than originally understood, and the community now recognizes the need to address adaptation and resilience – how to bounce back after a disruption such as the 2013 flood.

What does the current plan say?

Climate Commitment

Boulder has long understood the importance of climate action and mitigation and has worked to reduce its climate impacts since the early 2000s. However, the Boulder's Climate Commitment (Oct. 2015 draft) establishes a significantly higher bar for action: "Boulder will reduce its energy-related emissions 80 percent or more below 2005 levels by 2050" ("80 by 50"). It calls for a fundamental transformation of Boulder's energy system, including a target of 100 percent clean, renewable electricity – building on improved energy efficiency in buildings and greater energy conservation. While the 2010 BVCP includes a goal to reducing greenhouse gas emissions, these more recent, broader, and more sweeping climate and energy goals are not yet reflected.
To learn more about Boulder's Climate Commitment, please visit www.bouldercolorado.gov/climate.

Resilience

Although the 2010 BVCP also does not use the term "resilience," much of the planning and actions over the past few decades (e.g., floodways and greenways planning, managing open space in the foothills, planting diverse tree species, establishing a budget reserve) has made the community more resilient and ready to bounce back in times of emergency or disruption. More recently, the 2013 flood elevated awareness about the need to be adaptable and resilient at the local level. In addition, the 100 Resilient Cities grant has brought new resources to assist in evaluating the plan and recommending how to improve it in support of more resilience and co-benefits.

What are people saying about climate, energy, and resilience? (BVCP – SECTION 1 & 5)

The Boulder community has consistently supported city-led action to reduce greenhouse gas emissions, expressed recently by overwhelming support to extend the city's climate action plan tax in 2012 as well as in the responses to the BVCP survey from the fall of 2015 about climate action. While no specific questions in the survey asked about resilience, a few respondents noted that the plan should address resilience. Additionally, a climate and resilience survey from about one year ago suggested that most people in the community do not understand the concept of resilience, and therefore additional awareness and information would be helpful. Participants in the BVCP listening sessions from the fall of 2015 have also expressed interest in resilience.

Recent workshops and input as part of the Resilience Strategy have helped Boulder to increase its understanding about potential risks such as drought, flooding, pandemic flu, and wildfires. The community has also recognized vulnerable populations (e.g., mobile home residents, older people, and homeless and transient populations) and vulnerable systems (e.g., small business community, and some infrastructure) on which these potential risks could have a greater impact.

Recommended: Add climate and resilience to the plan

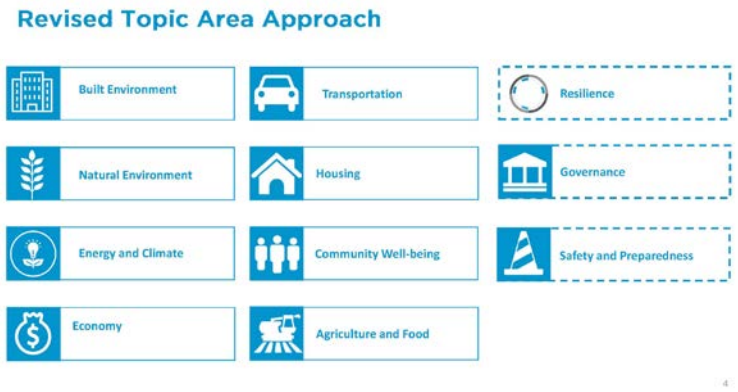
Climate: The Energy and Climate chapter will be updated to add language that reflects the Climate Commitment goal cited above ("80 by 50") and its described benefits to the community of transitioning to a clean energy economy and lifestyle. The chapter will be reorganized to reflect the organizing topics of the community's climate action plan: (1) Energy – Transforming the whole energy system, (2) Resources – Using Resources Wisely, and (3) Ecosystems – Restoring Ecosystems. Other proposed policy updates include addressing carbon sequestration in soil and developing an urban ecosystems management strategy or plan to enhance biodiversity, environmental health, and resilience of the entire natural environment of the Boulder Valley.

Resilience: Boulder's partnership in the 100 Resilient Cities organization has allowed the city to leverage consulting resources, HR&A Advisors, Inc., which prepared a report and recommendations about how to better address resilience in the BVCP. Summary recommendations are:

1. Frame resilience as a guiding principle of the BVCP (along with sustainability) and convey a clear statement about community resilience. It should be a cross-cutting principle for the plan.
2. Encourage community and stakeholder engagement by adding new policies and directions that support risk education and preparedness.
3. Continue integrated planning across government departments and jurisdictions, institutional organizations, and the private sector.
4. Establish measurable goals and integrated implementation strategies that build resilience value in the long term.

Key Elements of a Healthy, Stable and Adaptive Community:

- ✓ Strong social networks
- ✓ Public spaces
- ✓ Resilient infrastructure
- ✓ Economic diversity
- ✓ Regional connectivity
- ✓ Good governance

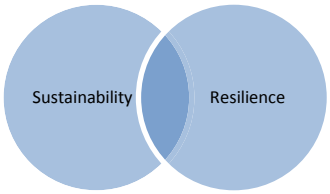


Some Resilience Themes

1. Identify Boulder's risks (e.g., drought, flooding, fire, flue, storms, infrastructure failure)
2. Strengthen linkages between protections of ecologically functioning areas.
3. Reduce risk and harm to vulnerable residents (e.g., low income people, elderly, homeless and transient populations) and some businesses.
4. Assist neighborhoods in becoming more self-sufficient and resilient.
5. Ensure that different parts of the city have access to medical facilities, food and supplies, information and communication centers, and emergency assistance during times of emergency.
6. Engage diverse stakeholders and entities to identify residents, businesses, and households most likely to be disproportionately affected by a disruption to city services.
7. Include specific action-oriented items in each chapter to address risks and vulnerable populations, for instance:
    - New Safety and Preparedness chapter (e.g., Build community cohesion by identifying and engaging local stakeholders through regular and ongoing contact, such as programs that enable communities to organize during an emergency in a central place)
    - Community Well-Being (e.g., Support community-level education and preparedness, community-driven communications and information dissemination, and supply provision during emergencies.)
    - Economy (e.g., Identify policies that support small businesses in light of rising real estate costs, changing consumer behavior, and increasingly unpredictable natural risks.)

Address Sustainability Framework + Resilience

HR&A recommends framing resilience as a guiding principle of the BVCP along with sustainability. The following points highlight the distinct but complementary nature of these concepts:



- Resilience is the idea of the city and community being prepared for any disruption and able to bounce back stronger. It ensures responsiveness and adaptability to disruption. It builds on and complements the sustainability framework.
- Sustainability (building on multiple themes) ensures stability and continuity.
- Both concepts embody holistic points of view about the interactions of systems in a city; they are complementary. Together, they reinforce the notion that systems must be stable yet adaptable to disruption.

The "Recommendations for Resilience Integration" draft report from HR&A will be available on bouldervalleycompplan.net in late May.

Question: How would you refine and prioritize ideas related to climate and resilience for the plan update?

PROPOSED Boulder Valley Comprehensive Plan (BVCP) Reorganized Contents

Draft - 05/12/16

1—Vision and Values

(Formerly part of Sec. 1, Core Values…)

Will include:

- Boulder Valley Core Values
- Sustainability Framework and Resilience
- Boulder's Planning History
- About this Major Update (i.e., Areas of Focus)
- How Plan is Organized (cross cutting topics)

2—How the Plan is Implemented and Relates to Other Plans

(Formerly Introduction)

Will include:

- How to Use this Plan
- Relationship to Other Plans and Programs
- Action Plan
- Plan Time Frame and Updates
- Intergovernmental Cooperation
- Growth management
- Framework for Annexation and Service Provision

3—Policies

Safe and Prepared Community

(New section.)

Will include safety and preparedness and resilience policies, police and fire that were formerly in Community Well-Being Chapter, etc.

Healthy and Socially Thriving Community

(Formerly Sec. 8, Community Well-Being)

Will include:

- Human Services
- Social Equity
- Community Health
- Community Infrastructure and Facilities (Schools, community facilities, parks and recreation)
- Arts and Culture
- Agriculture and Food (policies as relevant to health, socially thriving)

Livable Community and High Quality Built Environment

(Formerly Sec. 2, Built Environment. Headings and sections will be refined as the built environment area of focus and scenarios are prepared and analyzed)

Will include:

- City Structure, including: Projected Growth, Sustainable Urban Form Definition, Community Identity/Land Use Pattern, Rural Lands Preservation, Neighborhoods, Mixed Use and Higher Density Development, and Activity Centers
- Urban Design linkages
- Community Conservation (Historic Preservation)
- Design Quality

Housing the Community

(Formerly Sec. 7, Housing. Combine with Livability or keep as stand alone)

Pull forward the relevant existing sections and any new policies that emerge, including:

- Local Support for Community Housing Needs
- Housing Choices
- Diversity
- Growth and Community Housing Goals

Environmentally Sustainable Community

(Formerly Sec. 6, Natural Environment)

Will include:

- Natural Environment policies (i.e., Biodiversity and Native Ecosystems, Urban Environmental Quality, Geologic Resources and Natural Hazards, and Water and Air Quality)
- Former Sec. 3, Energy and Climate, including reorganized headings to reflect Climate Commitment and Energy section and waste and recycling, sustainable purchasing
- Former Sec. 6, Agriculture and Local Food policies that related to land and environment

Economically Vital Community

(Formerly Sec. 5, Economy)

Refine headings to reflect outline. Will include existing policies, as refined, including:

- Strategic redevelopment opportunities,
- Diverse economic base,
- Quality of life,
- Sustainable business practices,
- Job opportunities,
- Education, and training.

Accessible and Connected Community

(Formerly Sec. 6, Transportation)

Note: Refine headings to reflect TMP focus areas, including:

- Complete Streets
- Regional Travel
- Transportation Demand Management
- Funding
- Integrate with Sustainability Initiatives
- Airport
- Communications (new)

4—Land Use Map Descriptions

(Formerly Ch. III, Land Use Map Descriptions)

Will include new table approach and definitions for land use types and open space and parks.

5—Subcommunities and Area Planning

(Formerly part of Ch. IV, Subcommunity and Area Planning.)

Will carry forward the section related to Subcommunity and Area Planning and will include 1-2 page descriptions for the subcommunities and priorities for focused, localized planning

6—Implementation and Master Plans

(Formerly Ch. IV)

Will include Master Plans and Trails Plan

7—Amendment Procedures

(Formerly Ch. II)

Reorganized to be easier to follow.

8-Urban Service Criteria and Standards and Referral Process

(Formerly Ch. VI)

Later discussions about its role and purpose.

Maps

(Suggest putting with relevant sections above)

- Land Use
  Area I, II, III
- Trails
- Natural Ecosystems

Plan Policy Integration Outline – WORK IN PROGRESS (05/12/16)

Multiple city and county departments have contributed to this outline to ensure policies in the Boulder Valley Comprehensive Plan (sections 2 through 9) align better with adopted master plans and to identify emerging areas of work. This annotated outline includes initial proposed policy updates. Further input from city and county staff, leadership, and public, and other suggestions from the Resilience Assessment (HR&A consultants) will help staff finalize a full outline of proposed changes to the BVCP plan. Additionally, the chapters may get reorganized based on the proposed Plan Outline.

2) BUILT ENVIRONMENT

The changes to this chapter reflect work since the 2010 plan including:

- Community Cultural Plan (2015),
- Parks and Recreation Master Plan (2013),
- Input from city Water Resources regarding the importance of ditches to agricultural lands rather than in the public realm as currently addressed in the plan,
- Further analysis will be done to determine what may be relevant from Form Based Code and Design Excellence initiatives.

Proposed Changes to Introductory sections, graphics, and policies

The current chapter includes elements that define city structure (natural setting, individual character areas, activity centers map, mobility grid, and the public realm). It also includes projected growth, sustainable urban form definition, and policies that address:

- Community identity/Land Use pattern
- Rural Lands Preservation
- Neighborhoods
- Mixed Use and Higher Density Development
- Activity Centers
- Community Conservation (and Historic Preservation)
- And Design Quality

Specific edits to policies for these sections will still need to be addressed. Additionally, policies in this chapter may get revised following input on the Areas of Focus and scenarios relating to jobs/housing balance, affordable and diverse housing, and input on design issues.

Note: *The white papers and scenarios will address some topics for further improvement in the Built Environment chapter. For instance: better maps, relationship of transit corridors from Transportation Master Plan, illustrated principles of quality mixed use and higher density development, and other principles of design quality (such as sensitive infill and redevelopment).*

Additional proposed new policies and changes include:

- Natural Settings (p. 18, 19): Add the clarification "manmade irrigation" before the word "ditches" in the sentence that starts with "Creeks and irrigation ditches…" Following that same sentence, add a new sentence that reads, "Irrigation ditches are a unique and important link between natural features and Boulder's rural and agricultural areas."
- Public Realm – remove "ditches" from types of areas in public realm.
- **New policy: Experience Culture and Art in the Public Realm -** focus on the expression of culture and creativity in the public realm through public art, the urban landscape, culture in the neighborhoods, and serendipitous arts encounters. Amplify the vibrancy of Boulder's cultural destinations. (Community Cultural Plan)

- **New policy: Vibrant Public Spaces.** Include thoughtfully designed public spaces, a mix of events and destinations, and art. (Community Cultural Plan)
- **New policy: Reinvent Our Public Art Program** – Encourage individuals, businesses, organizations, and developers to invest in improvements to public spaces through the addition of meaningful, innovative, and quality works of art. Model investment in public art at city.
- **New policy: Create and Enhance Venues** *(Note: this is addressed in Economy section, so may not be needed here).*
- **Policy 2.20: Boulder Creek, Tributaries and Ditches as Important Urban Design Features:** And a sentence: "The city and county will support agriculture by recognizing and accommodating irrigation ditch maintenance practices and operations."
- **Policy 2.37: Enhanced Design for Private Sector projects** – Remove the word "ditches" from the list of "Public Realm" types. And note: "Project sponsors should collaborate with irrigation ditch companies on design and construction. Where possible, projects elements should educate and inform about the connection between irrigation ditches and agricultural lands."

DRAFT

3) NATURAL ENVIRONMENT

The changes to this chapter reflect work since the 2010 Plan including:

- The city currently is working on updates to its Integrated Pest Management policy, an Urban Forest Strategic Plan, the Resilience Strategy, and draft Climate Commitment.
- The city adopted the Bee Safe Resolution (2015) banning the use of neonicitinoids on city property and a Bear Protection Ordinance to secure waste from bears (2014). The county adopted a resolution to reduce and eliminate pesticide use to protect both people and pollinators (2015).
- Boulder County adopted the Environmental Resources Element of the Boulder County Comprehensive Plan (2015) and is currently working on policy related to Genetically Modified Organisms in the county.
- The city will be developing an Open Space Master Plan (2017).
- Boulder County is analyzing on how to address local oil and gas regulations, and looking at potential policy updates to better align the Fourmile Canyon Creek Watershed Master Plan (2015), Boulder Creek Watershed Master Plan (Urban Drainage and Flood Control District, 2015), and Consortium of Cities Water Stewardship Task Force Final Report (2013).

Proposed Changes to Introductory Paragraph

Update to reflect language about "ecosystems services" and resilience related to future stressors.

Proposed Policy Updates

- **Policy 3.03: Natural Ecosystems** – add language that also addresses "county critical wildlife habitats/migration corridors, environmental conservation areas, high biodiversity areas, rare plant areas, and significant natural communities" to provide clarity. (OSMP suggested addition)
- **Update Policy 3.04: Ecosystems Connection and Buffers** – address role of urban areas as "crucial for supporting biodiversity and maintaining wildlife habitat. Every effort should be made to optimize the quality and quantity of habitat on public lands and provide connections and corridors within the urban built environment to natural lands to support the movement of native organisms." Note also the importance of buffers to mitigate impacts of urban and intensive land uses and human activity on natural areas. (Urban Wildlife Management Plan, IPM, and OSMP staff)
- **Update Policy 3.07: Invasive Species Management** – address management of both non-native and non-local native species using a cost-benefit ratio that includes documented threats to species of concern specific to each site, acknowledging that some non-native species may have become naturalized. Management should also take into account changing species composition due to climate change and other human impacts, as well as the potential benefit and ecosystem services that are provided by each organism, based on the best available science. (IPM program, OSMP)
- **New policy: "Climate Change Preparation and Adaptation"** - address Ecosystems and Biodiversity that will address future warming climate, aridification, and changes to the Boulder Valley ecosystems and vegetation and wildlife changes. The city and county will need to allow or facilitate ecosystems transition to new states in some sites and increase the stability and resiliency of the natural environment elsewhere as well as address the visitor experience in open space. (OSMP, Climate Commitment)
- **Update Policy 3.10: Urban Environmental Quality** – clarify language regarding when it is practicable to improve urban environmental quality
- **Update Policy 3.11: Urban Forests -** note that that the pending Urban Forest Strategic Plan will guide urban forest management. (Note: City is currently preparing the Urban Forest Strategic Plan.)
- **Update Policy 3.13: Integrated Pest Management** – reflect recent directions in integrated pest management toward thriving ecosystems and using more natural management processes to lower pest pressures. (City's IPM program, county working in this direction)
- **New policy: Soil Sequestration –** note that agricultural and other land management practices may be used to sequester carbon out of the atmosphere as a possible strategy to stabilize the climate, and this should be addressed through more research within other master plans. (Boulder County also studying this topic, is in support of it and trying to find specific ways to implement it.)
- **Slight update to Policy 3.14: Unique Geological Features** – add "public land management" as one of the means noted.

- **Modify Policy 3.15: Mineral Deposits** – add language regarding how to evaluate mineral resources and extraction needs along with other community values such as community and environmental health, and carbon emission reduction. (Climate Commitment, and OSMP plans)
- **Policies 3.17 through 3.23 (Hillside Protection, Wildfire Protection and Management, Preservation of Floodplains, Flood Management, Non-Structure Approach, Protection of High Hazard Areas, and Larger Flooding Events) –** Consider separating these policies under a new "Geologic Features and Flood Hazards" subsection. Office of Emergency Management and Utilities staff will review.
- **Policies 3.24 through 3.29**, under Water and Air Quality, are consistent with the Water Utilities Master Plan and do not need revisions.
- **Policy 3.30: Protection of Air Quality -** should be checked by Transportation staff and the county.

Emerging Issues Related to Natural Resources and Environment

The combined impacts of continued development and climate change will have significant impacts on the natural environment. Effectively managing these impacts will require enhanced capabilities to monitor the health and function of ecological systems as well as a coordinated strategy for managing these impacts. A few emerging issues have been identified for additional work over the next five years. These include:

- **Establish Baseline Monitoring** - for soil health and other ecosystem dynamics that are likely to be impacted by climate change and development.
- **Coordinate Research** - coordination of research on strategies to support ecosystem adaptation to climate change and other impacts that could degrade environmental health and biodiversity. Address "natural disturbance regimes" as goal for maintaining and restoring.
- **Urban Ecosystems Management Strategy** - prepare urban ecosystems management strategy or plan that would provide a systematic foundation for coordinating "green infrastructure" plans and urban ecosystem management with the surrounding rural, agricultural and wildlands ecosystems in ways that enhance the environmental health, biodiversity, resilience of the entire natural environment of the Boulder Valley. Having such a strategy in place may better enable the city/county to qualify for reconstruction funding to reconstruct green infrastructure or restore ecosystems after a disruptive event.
- **Soil sequestration** – address this and other climate strategies relating to ecosystems (as noted above.)
- **Refresh Boulder Valley Natural Ecosystems Map** – This map hasn't been updated for over 15 years and should locate high priority ecological features and connectivity corridors. Also, the Natural Ecosystems overlay (Environmental Resources Element of the plan that used to be on the website but is no longer available) needs to be refreshed.
- **Update language in Hillside protection -** Add language that explains "risk of earth movement and/or mud slides under adverse weather conditions, and need to pay special attention to soil types and underlying geological strata during planning, design and construction of any development on or at the base of hillsides.
- **Groundwater –** In recent years, the community has recognized issues related to groundwater such as excess water during flood events, dewatering, and potential for contamination.
- **Citizen Science Data Collection**

DRAFT

4) ENERGY AND CLIMATE

Reorganize the chapter to reflect Boulder's Climate Commitment (draft Oct. 2015), and reflect ongoing work being done related to Boulder's Energy Future, building codes, and Zero Waste Strategic Plan (2015). Boulder County suggests additional alignment with several plans and policies including:

- Zero Waste Action Plan (2010),
- Environmental Sustainability Plan (2012),
- Solid Waste Element of the Comprehensive Plan (is in the process of being updated in 2016)

The following plans may also be relevant in a resilience section:

- OEM's All-Hazards Recovery Plan (2013),
- Boulder Recovery Plan Support Annex A – Damage Assessment (2013),
- OEM's Emergency Operations Plan (2014),
- Disaster Debris Management Plan (2016), and

Proposed Changes to Introductory Paragraph

Add language that reflects the Climate Commitment goals and co-benefits to the community of transitioning to a clean energy economy and lifestyle, such as:

- Boulder will reduce its energy-related emissions 80 percent or more below 2005 levels by 2050.
- Boulder's transition to clean energy through innovative strategies, products and services are aimed to dramatically reduce greenhouse gas emissions, enhance community resilience, enhance local environmental health and diversity, and support a vital and equitable economy.
- Boulder's vision is to become a leader in the development, implementation and export of renewable energy and emissions reductions programs that create local economic opportunities, enhance community well-being and resilience, and inspire and enable other communities to participate in reducing carbon emissions and stabilizing the climate.

Topics to organize the chapter include:

Energy – Transforming the whole energy system

- High Performance Buildings (i.e., Building codes and ordinances, Energy Smart/PACE)
- Clean Mobility (Transportation Master Plan, implementation)
- Clean Energy Sources (Utility strategy – municipalization, capital and pilot projects)

Resources – Using resources wisely

- Waste (Zero Waste Plan)
- Water Use (Water Utilities Master Plan) *(Note: this topic is currently in the Natural Environment chapter.)*
- Food (Local food strategy) *(Note: this topic is currently addressed in its own chapter.)*

Ecosystems – Restoring Ecosystems

(Note: the following topics are addressed in the Natural Environment chapter.)

- Urban Ecosystems
- Wildland Ecosystems (Parks and Recreation Master Plan (2013), Urban Wildlife Master Plan; and ongoing or upcoming: Open Space and Mountain Parks Master Plan, Urban Canopy Plan)
- Agricultural Ecosystems

Proposed Policy Updates

Align the policies with Boulder's Climate Commitment which includes emissions reduction targets and is organized around three themes: (1) Energy, (2) Resources, and (3) Ecosystems. Replace the headings "Climate Action and

Greenhouse Gas Emissions," "Energy Conservation and Renewable Energy," and "Land Use and Building Design" with those topics.

- **Policy 4.01: Greenhouse Gas Emissions** – replace with "reduce energy-related emissions" and goal "to rise to the climate challenge, and power a vibrant future**…"** "Boulder will reduce its energy-related emissions 80 percent or more below 2005 levels by 2050."
- **Policy 4.02: Climate Adaptation Planning** – move this policy to the end of the chapter and replace with resilience policies as suggested through the HR&A Assessment.
- **Policy 4.05: Energy-Efficient Building Design** – put under new "Energy, Building" subsection and update language to reflect Net Zero Energy building goals and standards being developed.
- **Waste and Recycling Policies (4.06 and 4.07) -** update under a new "Resources" section and reflect the Zero Waste Strategic Plan (Nov. 2015) which encourages the prevention of waste and the recycling/composting of materials to ensure the efficient use of resources and reduce pollution; recognizes that the city does not have control of waste hauling; and relies on a strong network of nonprofit, for-profit, governmental and community partnerships to invest resources toward zero waste systems. Reflect the goal of 85% waste diversion in each sector by 2025 (residential single-family, residential multi-family, and commercial).

Emerging Issues

Other emerging topics to consider including in this chapter are:

- Transition to 100% clean electricity,
- Energy systems transition and utility strategy, and
- Building energy standards and timing and approach to Net Zero is in progress.
- On waste topic: There is need for market development of otherwise landfill-bound material;
- for processing activities to be allowed (i.e. compost sites, C&D processing facility, aggregate recycling/processing, etc.); for a temporary and/or permanent debris management site(s); and the transfer station concept in general needs to be accounted for (conservation easements and other zoning issues are restricting this type of work, i.e., LaFarge Plant, Rainbow Nursery) (Boulder County)

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5) ECONOMY

Since 2010, City Council has approved:

- The Economic Sustainability Strategy,
- The Community Cultural Plan,
- In addition, the city will be developing a citywide retail strategy, framework for redevelopment and revitalization through public/private partnerships, and plans to enhance economic resilience, sustainable tourism, innovation/entrepreneurship, and multimodal access to support economic activity, as noted under emerging issues.

Proposed Changes to Introductory Paragraph

Update to reflect language from *Economic Sustainability Strategy*, including the following: *(adopted by City Council on Oct. 29, 2013)*

- Add a description of economic vitality in Boulder – "a public-private collaboration to promote a healthy economy that supports the outstanding quality of life enjoyed by its residents";
- Note efforts to follow a sustainable path to economic development (e.g., maintain a positive business climate and enhance community character);
- Note challenges on the horizon (e.g., cost and lack of office space that meets contemporary standards); and
- Describe benefits of economic growth and collaboration with the business community (e.g., increased diversity and local job opportunities, development and infrastructure improvements).

Update to reflect community priorities from the *Community Cultural Plan,* including the following: *(adopted by City Council on November 17, 2015)*

- Add a description stating that all aspects of the Economy section will support the following community priorities regarding how culture and the creative economic sector are addressed:
  a) support the resiliency and sustainability of cultural organizations to enhance their ability to benefit the community, and b) create a supportive environment for artists and creative professionals, while fostering innovative thinking and leadership among them. *(Community Cultural Plan, Strategies: "Cultural Organizations," p.19; Community Cultural Plan, Strategies: "Creative Economy," p.28)*
- Reflect the vision element from the Community Cultural Plan calling for Boulder to achieve strong "cultural vitality" through achieving "a highly diverse and innovative mix of cultural, economic and social activity that improves the life of every resident, worker, student, and visitor to Boulder." *(Community Cultural Plan, "Vision" E.1- Cultural Vitality, p. 16)*

Proposed Policy Updates

- **Policy *5.01: Revitalizing Commercial and Industrial Areas* -** Edit to include supporting the vitality of Boulder's main employment centers and other employment areas through a place-based approach *(Economic Sustainability Strategy (ESS), "Place" Strategy 1, p. 12)*
- **Policy 5.05: *Support for Local Business and Business Retention*** - Edit to include expanding opportunities for workers to live within the city, including moderately priced market rate housing *(ESS, "People" Strategy 1, p. 8);* expanding regional transit alternatives with local partners so that commuters have more transportation options other than single occupant vehicles *(ESS, "People" Strategy 2, p. 8)*
- **Policy *5.06: Industry Clusters*** - Update language describing Boulder's primary industries (e.g. aerospace, bioscience, clean tech, and data storage, among others) *(ESS, "Boulder's Economy," p. 5)*
- **Policy 5.13: *Responsive to Changes in the Marketplace* -** Edit to include make doing business with the city easier, through improved application and permitting processes *(ESS, "Process" Strategy 3, p. 16)*
- **Add *new policy:*** Work with employers, educators and partners to develop and support programs designed to help attract workers with highly specialized skills and experience, and provide workforce training opportunities. *(ESS, "People" Strategy 3, p. 8)*

- **Add *new policy:*** Create and enhance venues to improve the resiliency of visual and performing arts organizations, and the experience of their audiences. *(Community Cultural Plan, Strategies: "Venues," p.25)*
- **Add *new policy:*** Support the vitality of the creative economy by enhancing Boulder's leading position as a home to creative professionals and businesses. *(Community Cultural Plan, Strategies: "Creative Economy," p.28)*
- **Consider adding these additional *new policies from Cultural Plan*:**
    - Support cultural organizations (i.e., have a substantial and positive effect on the ability of Boulder's many cultural organizations to advance their operational capacity, promote organizational resiliency, and encourage innovation for the benefit of the community). *(Community Cultural Plan, Strategies: "Cultural Organizations," p.19)*
    - Attract and support artists and creative professionals through supporting their ability to thrive in the creative sector *(Community Cultural Plan, Strategies: "Creative Professionals," p.34)*

Other Emerging Ideas

Emerging themes refer to ideas on the horizon that may become a topic of importance in the next two to five years. They may be related to current work, however it may be too soon as add as new policies into the BVCP, because analysis, community outreach, and other steps have not taken place yet. Other topics related to the economy that are being discussed include:

- Citywide retail strategy that reflects emerging regional and national trends
- Economic resilience plan
- Sustainability tourism plan
- Strategy for supporting innovation, entrepreneurship and startup activity
- Framework for redevelopment/revitalization and role of public/private partnerships
- Multimodal access and parking management strategy that supports economic activity of visitors, customers, employees, etc.

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6) TRANSPORTATION

The changes to this chapter reflect work since the 2010 plan including:

- Boulder County Transportation Master Plan (2012) and Multimodal Transportation Standards (2013) *(Note: County staff is reviewing the outline for this chapter and may suggest additional updates to improve alignment with the plan and standards)*;
- City Transportation Master Plan (2014) which included county and other partner input;
- City draft Climate Commitment strategy (2015);
- City Transportation Report on Progress (2016);
- County Mobility4All Needs Assessment (2016);
- The city has also been working on an Access Management and Parking Strategy (AMPS) and adopted new standards related to Transportation Demand Management (TDM).

Proposed Changes to Introductory Paragraph

Update to reflect focus areas from Transportation Master Plan (TMP) including:

- **Complete Streets**
- **Regional Travel**
- **Transportation Demand Management**
- **Funding**
- **Integrate with Sustainability Initiatives**

Proposed Policy Updates

Modify to reflect the focus areas from the TMP and county plan.

Complete Streets

- **Policy 6.01: All-Mode Transportation System (Change title to: "A Transportation System for People Using all Modes")** – modify to reflect the "complete streets" principles and all note all modes. (TMP)
- **Combine Policy 6.02 (Reduction of Single Occupancy Auto Trips) and 6.03 (Congestion) into new policy: "Transportation Mode Shift"** - to reflect the TMP Vehicle Miles Traveled (VMT) reduction goal, mode shift objective, and congestion policies (TMP).
- **Policy 6.03: Congestion** – delete as standalone policy and combine with 6.02 above.
- **New policy, Renewed Vision for Transit** - note that transit investments and improvements will occur in an integrated manner in the areas of service, capital, policies, and programs to expand the Community Transit Network (CTN) and support regional transit initiatives (TMP).
- **Policy 6.05: Accessibility, combined with "6.06, mobility services" –** new language to address accessibility for all users including mobility for older adults and people with disabilities. Accessibility should be commensurate with job growth (TMP).
- **New policy: Safety –** add policy reflecting policy "Toward Vision Zero" to reduce serious injury and fatal collisions (TMP).

(New Heading) Regional Travel

- **Policy 6.04: Regional Cooperation** - modify title to "Regional Travel" and include corridors identified in the Renewed Vision for Transit, regional arterial bus rapid transit, and commuter bikeways. Acknowledge that city decisions have regional transportation impacts (County TMP).
- **New policy: Regional Transit Facilities** – add to reflect three regional transit anchors (i.e., Downtown Boulder, University of Colorado, Boulder Valley Regional Center, Boulder Junction), first and last mile connections to facilities, employment centers, and neighborhoods noted in the BVCP community structure and built environment chapter (TMP).
- **Policy 6.06: Mobility Services** – delete/combine with policy 6.05 above.

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(New Heading) Transportation Demand Management (TDM)

- **New policy: Integrated TDM Programs** – Add new language regarding city and county cooperation and collaboration on TDM programs for residents, visitors, and employees.

(New Heading) Funding

- **Policy 6.07: Investment Priorities** – modify to address all TMP investment priority points, including but not limited to road capacity being managed and priced to provide reliable and rapid travel times for transit, and others (TMP).

(Modify Heading) Land Use Integration to "Integrate with Sustainability Initiatives"

- **New policy: Access Management and Parking Strategy** – add to address integrated multimodal access and parking management strategies in service of community's sustainability goals (including community vitality and neighborhood livability) to provide accessible transportation options for people using all modes of travel (TMP). Reference Guiding Principles from AMPS, including providing for all transportation modes, supporting a diversity of people, customizing tools by area, seeking solutions with co-benefits, and planning for the present and future AMPS project (AMPS).
- **Policy 6.09: Integrate with Land Use** – modify to address land use around the three intermodal centers (Downtown, Regional Center/Boulder Junction and CU/University Hill), mobility hubs, and add consideration towards allowing density and reduced parking to support transit use and integrate with corridor and district planning (TMP).
- **New policy: Creating 15-Minute Neighborhoods** - address improving transportation facilities and the mix of neighborhood supporting commercial activities to create neighborhoods where residents can fulfill more daily needs through safe and convenient walking (TMP). *(Note: Also addressed in scenarios.)*
- **New policy: Mobility Hubs –** add to address mobility hubs that will provide seamless integration for people of all physical abilities between transit and other multimodal facilities, integrated with mix of land uses (TMP).
- **Policy 6.13: Improving Air Quality** – modify to change title to "Improve Air Quality and Achieve Climate Goals" to include transportation GHG emission reduction target. (TMP, Climate Commitment).
- **Airport policy** (Note: will confirm whether this policy needs any updates.)

Graphics and Maps to Add to Transportation Chapter

- Add new Renewed Vision for Transit
- 15 minute analysis map
- Transportation GHG reduction graph – 40% of reduction needed in the Clean Energy and Innovations area
- Images of Mobility Hubs
- Photos of people walking, bicycling, and transit
- Photos of recently completed capital construction projects (e.g. Boulder Junction and Broadway Euclid)

Emerging Transportation Issues

Additional topics that may need further study or mention in the BVCP may include:

1. Refining or removing policies related to congestion and level of service. The current policy serves to expand vehicle capacity at intersections and may work against investment in non-automotive investment (Boulder County). Furthermore, measure transportation from a person trip level.
2. Communitywide Eco Pass Program – address city and county partnership as it is implemented.
3. Railroad horn noise through Quiet Zones to support TOD development near transit hubs.
4. Impact Fee analysis *(Note: may affect changes to Policy 6.08, Transportation Impact)*
5. Technology and sharing economy may change travel behavior for Boulderites and people in the region.
6. Electric vehicles and low emission transportation vehicles may accomplish certain climate goals but may affect how city and county need to plan for roadway capacity.
7. Local and regional partnerships strengthened to deliver Boulder's Renewed Vision for Transit.
8. Resilience recommendations added for transportation (under separate cover).
9. Expanding or adding parking districts in difference parts of the community.

7) HOUSING

Note: *The proposed policies in this chapter will be updated following work on the scenarios and key choices, which address housing.*

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8) COMMUNITY WELL-BEING

(This section may be reorganized to reflect the proposed new organization of the plan that is more in line with the sustainability framework. Most of the content and policies in the current "Community Well-Being" section will carry over to a revised "Healthy and Socially Thriving Community" section; however, the policies relating to safety will move to a new "Safe and Resilient Community" section.)

Since 2010, City Council has approved the Parks and Recreation Master Plan (2013), Fire-Rescue Master Plan (2011), Police Master Plan (2013), and Homelessness Strategy (2010) that affect this chapter's policies. In addition, the city is working on a Human Services Strategy, Library Master Plan, and initiatives related to community engagement. Several policies related to an aging population, aging in place, healthy child and youth development and youth opportunities have emerged since 2010.

Proposed Introductory Paragraph

In keeping with the reorganization noted above, revisions are proposed to the introduction to:

- Refresh information about emerging demographic and social trends relating to well-being such as aging population, some widening social disparities, the relative health of Boulderites compared to the statewide context, among others;
- Include narrative on the role of culture contributing to many aspects of well-being including community attachment (desire to build one's life here), robust social offerings, welcoming environment, and mental/emotional fulfillment. (Community Cultural Plan)
- Prioritize the civic dialogue about the ability of culture to positively contribute to the economy, social offerings, the environment, and the authentic expression of diversity (Community Cultural Plan)
- Add language about achieving strong "cultural vitality" in accordance with the vision statement in the Community Cultural Plan ("Vision" E.1- Cultural Vitality, p. 16)

Proposed Policy Updates

From *Human Services planning and prioritization* (City Council Study Session 10-27-2015):

- Add policy language emphasizing guiding principles for Human Services delivery (e.g., data-driven outcomes; investing in prevention to forestall crisis and improve self-sufficiency; supporting best-practice and evidence-based programs (evaluate how clients and the community are better off as a result); and coordinating and integrating city-provided services with partners and the county and in the community. (Potential new policies and revisions to policies *8.01- Providing for a Broad Spectrum of Human Needs*, *8.02- Regional Approach to Human Services, 8.03 – Equitable Distribution of Resources, 8.04 – Addressing Community Deficiencies*)

From *Arts and Culture Plan* and *Parks and Recreation Master Plan*:

- *Policy 8.07-Physical Health:* expand definition of physical health to include total physical, mental and social well-being. Add values related to fostering mental and social well-being through the cultivation a wide-range of recreational, cultural, educational and social opportunities. (Sustainability Framework, Human Services Strategy Planning, Parks and Recreation Master Plan)
- Add *new policies:*
    - To emphasize importance and fostering of social capital in neighborhoods. *(Note: confirm source. Parks and Recreation Master Plan, Theme 4: Building Community and Relationships, "Overview", p. 64.)*
    - To advance civic dialogue, awareness, and participation i.e., increased understanding of positive contributions of culture, access to information about culture, and participation). (Community Cultural Plan, Strategies: "Civic Dialogue," p.37)
- Add *new policies* to the Culture subsection:
    - Regarding strengthening culture in neighborhoods and communities, i.e. all residents including underserved groups are able to creatively contribute to neighborhoods and the social community

and have access to cultural experiences near home. (Community Cultural Plan, Strategies: "Neighborhoods," p. 31)
  - Regarding youth engagement, i.e., growing young people into cultural leaders (Community Cultural Plan, Strategies: "Youth," p.40)

Safety *(As noted above, this content may all be moved and integrated within the "Safe and Resilient Community" section)*

Add safety policies reflecting both the Fire-Rescue Master Plan and the Police Master Plan to:

- Adjust service delivery to efficiently respond to changing community needs including demographic changes as well as redeveloping and urbanizing areas to support safe and livable neighborhoods and vibrant business districts. This may include commitment to assessing / addressing facility and capital needs.
- Emphasize prevention and community education efforts including preparation and prevention goals for risk including: year-round wildfire, efforts to minimize disruption during emergency events, increased inspections, pre-planning toward effective deployment of resources, early intervention and prevention to meet critical human service needs, and working efficiently with partners.

Other Emerging Ideas

Other topics related to community well-being that are being studied or discussed include:

- In the context of the Library Master Plan Update, explore ways to use the library as a platform for civic dialogue.

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9) AGRICULTURE AND FOOD

(This section may be moved and integrated within the "Healthy and Socially Thriving" section to reflect the proposed new organization of the plan that is more in line with the sustainability framework. The introduction of the section provides important context and definition and will need to be revised and included as the sections/chapters evolve.)

Since 2010, work on the Agriculture Resources Management Plan (in progress) in addition to ordinances and policy changes to promote local food sales suggest some new language in this chapter. Boulder County's Cropland Policy (2011) and Environmental Resources Element (2014) may necessitate further policy refinements in this chapter to align policies. The initial proposed edits also include suggestions from Water Resources staff regarding irrigation ditches and their importance to agriculture.

Proposed Changes to Introductory Section

The introductory section will need to be revised to:

- Clarify the description and value and goals of maintaining a strong and resilient food system and the important relationship between these goals and efforts to promote local foods.
- Incorporate new thinking identified by OSMP Agriculture Planning and the Parks and Recreation Master Plan
- Incorporate lessons learned from the city's last two years of integrated, cross-departmental focus on local foods

Proposed Policy Updates

From *OSMP Agricultural Resources Management Plan* and *Parks and Recreation Master Plan,* emerging issue areas and recent initiatives:

- **Policy 9.01: Support for Agriculture -** revise to provide a detailed approach for supporting food production (*OSMP Agricultural Resources Management Plan).* Add a statement about ditches to after, "These areas are important for preserving the rural character of Area III" that reads, "The success of agriculture on these lands is vitally dependent on their water supplies." (Water Resources Dept.)
- **Policy 9.02: Urban Gardening and Food Production -** revise to include goals identified in the Parks and Recreation Master Plan around urban gardening and edible landscaping. (P&R Master Plan)
- **Policy 9.03: Sustainable Food Production Practices -** revise to clarify goals around sustainable production and include ecological conservation objectives, provision of pollinator and beneficial insect habitat, whole farm planning and support for farming communities. (*OSMP Agricultural Resources Management Plan).* Add "The city and county will also promote sustainable agriculture by recognizing the importance of irrigation ditch water to agricultural lands." (Water Resources Dept.)
- **Policy 9.04: Regional Efforts to Enhance the Food System -** expand to reflect lessons learned and goals identified through the city's significant regional collaborations with the "The Shed" (aka, "Making Local Foods Work") group.
- **Policy 9.06: Change title to "Access to Healthy Food" from "Locally-Produced Food" -** expand to include support for programs (e.g. Harvest Bucks program) and goal of creating a market hall in the civic area.

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2016 Boulder Valley Comprehensive Plan Update

Recommendations for Resilience Integration

REVISED DRAFT - May 13, 2016

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Downtown Boulder, 2015

2016 Boulder Valley Comprehensive Plan

Recommendations for Resilience Integration

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I. Introduction

The Boulder Valley Comprehensive Plan (BVCP) is a joint plan between the city and county to inform shared responsibility for long-range planning and development and preservation of the Boulder Valley. Sustainability is a unifying framework for policies that address the community's social, economic, and physical well-being.

Through the 100 Resilient Cities (100RC) program and as a part of the Resilient Boulder Strategy process, HR&A Advisors (HR&A) supported Boulder's Chief Resilience Officer (CRO), the Department of Planning, Housing and Sustainability (PH&S) staff, and a dedicated Working Group to assess the Boulder Valley Comprehensive Plan through the lens of resilience, affirm what resilience means to Boulder in this context, and integrate resilience principles and policies into the BVCP. One of the priorities of the Resilient Boulder Strategy is to integrate the city's processes and systems, as well as institutionalize resilience into the daily planning and operations of the city. Thus, it is important that the Plan highlight the interdisciplinary coordination that has occurred throughout the BVCP update.

Over the course of a four-month engagement beginning in January 2016, PH&S, the CRO, members of the BVCP Working Group, and HR&A partnered to achieve the following outcomes:

- **Conducted best practices research to identify comprehensive planning efforts that integrate resilience in other cities of comparable size and character**
- **Assessed how resilience is currently addressed within the BVCP and identified Boulder's existing and proposed resilient actions and policies through a review of existing plans and documents, as well as interviews with Working Group members**
- **Developed a methodology for incorporating resilience into the BVCP that accounts for Boulder's risks, recognizes vulnerable populations and infrastructure, and considers a systems-based approach**
- **Proposed draft policies and strategies to be considered for incorporation in the BVCP update**

What follows is a summary of the key recommendations that emerged out of this engagement and a synthesis of the process that led to their generation.

II. Guiding Principles for the Plan

The following recommendations underscore the connectivity between Boulder's systems and vulnerabilities, and illustrate ways that the BVCP can address Boulder's resilience, not only in times of disruption and crisis, but also on a day-to-day basis. The following organizing principles, policies, and actions were identified based on HR&A's analysis of key gaps across the Plan as well as targeted outreach to members of the Working Group:

Frame resilience as a guiding principle of the BVCP and convey a clear vision for resilience and the Plan. Resilience should be framed as a cross-cutting principle for the Plan and should build off of a well-articulated vision statement. The resilience statement should be included in the core values section of the Plan to establish the framework and provide context to the goals and policies set forth in the BVCP update. Identifying the city's risks, vulnerable communities, and neighborhoods is a critical step in defining resilience for the Plan. Defining resilience should also build off of the Resilient Boulder Strategy, indicate that policies and directions in the plan are intended to address Boulder's specific risks and vulnerabilities, and explain interrelated issues (e.g. transportation and economy; housing and community well-being). In some instances, the 2010 Plan already demonstrated the approach, such as Policy *2.19 Urban Open Lands,* which identified the important role that open space planning plays in both providing a recreational and community amenity, and in planning for environmental protection, flood management, and multi-modal transit. Articulating this type of cross-cutting strategy across the Plan reflects the interrelated nature of Boulder's risks and priorities and presents a systemic approach to solutions.

Encourage community and stakeholder engagement with policies and directions that support risk education and preparedness. Engaged communities and residents are better prepared to support themselves in the event of a disruption and help the city make informed decisions about how best to assist and work with communities. Ongoing, robust outreach to communities and vulnerable residents to educate and prepare for disruption will improve the relationship and communication between residents and government. The Plan should also highlight the engagement process leading up to the BVCP update, including a synthesis of community engagement feedback and outcomes, which helped shape the Plan's goals and policies.

Improve transparency and integrated planning by better coordinating and conveying the integrated activities across government departments and jurisdictions, institutional organizations, and the private sector. An interdisciplinary approach that allows cross-departmental, regional, and cross-sector dialogue will strengthen a culture of collaboration to identify problems and develop solutions. Collaboration across departments and sectors promotes more efficient use of resources and opens opportunity to innovate. Like the concept of resilience, effective and transparent planning should be applied across the city's systems and policies, and woven throughout the Plan's topic areas. A city's risks, vulnerabilities, priorities, and availability of resources are never static. Boulder should also leverage Plan updates as opportunities to re-evaluate key risks, and implement a cross-departmental approach to revising policies in light of changing conditions.

Establish measureable goals and integrated implementation strategies that build resilience value in the long term. To connect broad policies and implementation, the Plan should identify the desired outcomes of its policy directions and establish measurable goals that can be used to track the achievement of these outcomes where possible. In some instances, the Plan already identifies a clear and measurable goal such

as Policy *3.06 Wetland and Riparian Protection* which states that "the City will strive for no net loss and creation of wetlands." Boulder could also consider refining the goals set in the Plan's strategies in order to demonstrate the desired outcomes of interventions and establish a way to measure their success, such as the creation of metrics that track the outcomes of initiatives. For example, if investments in green infrastructure are encouraged in the Plan, the multiple benefits of the investment should be identified: reduction of flood risk and the impact of flood and storm events; increased resilience of Boulder's businesses; improvement of access for emergency responders; enhancement of public space amenities; and protection and maintenance of the city's transportation system. Specific outcomes related to these benefits could include the reduction of response time of emergency responders in the next flood event; the increased number of residents within a five-minute walking distance of open space; and annual reductions in infrastructure repair cost.

III. Recommendations by BVCP Topic Area

Process Summary and Initial Findings

The BVCP resilience integration process commenced by defining and recognizing the City's resilience goals, understanding the city's current shocks and stresses, and identifying Boulder's vulnerable residents and infrastructure. Once these critical issues were identified and confirmed, the 2010 Plan's sections or topic areas were examined in light of the city's key risks and vulnerabilities. Lastly, a comparative assessment of Boulder's Sustainability Framework – the unifying framework that guides the city and the Plan's policies – to the definition of resilience was conducted to confirm consistency across the two concepts.

Identify Initial Priorities

To identify top resilience priorities from city residents' point of view, the results of the Resilient Boulder and BVCP resident surveys were analyzed and mapped across common themes and divergent issues. The following set of priorities emerged and provided a starting point to inform resilience integration:

- Maintain high quality of life and public assets;
- Address affordable housing issue;
- Increase transparent community engagement;
- Address transportation options;
- Respond to climate change risks; and
- Articulate resilience in the context of the Sustainability Framework.

Articulate Shocks and Stresses

Under the 100RC framework, resilience is the capacity of individuals, institutions, businesses, and systems within a city to thrive despite the shocks and stresses they experience. Boulder's Chief Resilience Officer developed a list of Boulder's key shocks and stresses, then categorized shocks by high and moderate risk as shown below.

High risks	Moderate risks
Drought	Dam failure
Flooding	Extreme temperatures
Pandemic flu	Infrastructure/building failure
Wildfires	Hazardous materials incident
Winter storms	

Identification of the city's top risks is a critical aspect of incorporating resilience into the BVCP. Resilient policies are intended to address or respond to these risks, and reflect the connectivity between the systems impacted by disruptions in Boulder. It should be noted that risks are not static, and as future updates to the Plan are made, the above list of shocks and stresses should be revisited.

Identify Vulnerable People and Infrastructure

The BVCP Working Group then gained consensus on vulnerable residents and infrastructure most likely to be impacted by a disruption. Vulnerable populations were considered residents who presented the greatest exposure to the city's hazards (e.g., mountain residents) and/or lacked the social or financial capital to effectively respond to or bounce back from a disruption (e.g., homeless populations). Similarly,_vulnerable

systems were defined as business, institutions, roadways, and other critical infrastructure that were most likely to be impacted by a disruption. Resilient policies in the Plan should focus foremost on protecting these vulnerable people and systems.

Vulnerable Populations	Vulnerable Systems
Low income people	Business community (e.g. small businesses, start-ups, in home businesses)
Mobile home residents	Infrastructure (e.g. roadways, water, sewer, power)
Elderly	
Homeless and transient populations	
Mountain residents	
Students	

Compare the Sustainability Framework and Definition of Resilience

Mapping the concepts of resilience to Boulder's Sustainability Framework was a core discussion and output of the BVCP Working Group. Overall, the Working Group gained consensus that the two concepts are complementary. While resilience uses a lens of adaptability in light of disruption or risk, the Sustainability Framework aims to ensure stability and day-to-day continuity. Both concepts promote systems that are stable and adaptable to disruption and embody holistic points of view about the interaction of city systems. These conversations also led to agreement on the elements of a healthy, stable, and adaptive community that are needed to sustain Boulder during times of stability as well as during crisis.

Key Elements of a Healthy, Stable, and Adaptive Community
Strong social networks
Public spaces
Infrastructure
Economic diversity
Regional connectivity
Good governance

Review Existing and Consider Potential New Topic Areas

The 2010 BVCP's Sections or Topic Areas were then examined in light of Boulder's risk and vulnerabilities. To perform a systems analysis of the BVCP, the 2010 Plan's topic areas were mapped across the city's priority risks against the "drivers" of resilience to identify specific measures or actions most necessary to support Boulder in the event of a disruption. This process also revealed new content areas for the Plan to explore including Resilience, Governance, and Safety and Preparedness. Policies related to Resilience and Governance should serve as guiding principles for the Plan and be integrated throughout sections and policies given their overlap and consistency with many existing topic areas in the Plan. However, policies related to Safety and Preparedness may be more appropriately described in a new BVCP section due to the unique framework and content matter.

Identify Key Resilience Themes

Building off the systems analysis, the outcomes of the working session, the results of the community survey, and the Boulder PRA, seven key resilience themes were identified as priorities for the BVCP to address. These themes serve as the framework for evaluating and conceptualizing new or ongoing BVCP policies that ultimately cut across the Plan's topic areas and departments to address risk.

Recommendations Overview

Based on meetings and interviews with the BVCP Working Group, a systems analysis of the Plan's existing policies, consideration of key resilience themes, and review of comparable comprehensive plans, HR&A identified policy gaps in the 2010 Plan and proposed existing or ongoing activities or collaborations that integrate resilience. These recommendations are organized in two ways: "Guiding Principles," or recommendations for overall framing of the plan, and "Recommendations by Topic Area," which explore specific policies and or actions.

Recommended policies and actions outlined by Topic Area aim to clearly articulate vulnerable people, infrastructure, and systems as well as demonstrate the range of benefits that results from interdisciplinary actions. For example, a new recommended action would develop activities that encourage residents to be actively engaged in flood management interventions, such as tree plantings and green infrastructure

installation to promote community cohesion. This type of activity mitigates risk to infrastructure from flood hazards, builds community collaboration, and promotes greater access to green spaces.

The proposals outlined below expand on the key recommendations described in the previous section, inform ways to strengthen each topic area's goals or upfront framing, demonstrate the relationships between systems and topic areas, and provide specific recommendations for policy development and collaboration.

Proposed New Topic Area: Safety and Preparedness

Chapter Goals and Framing

- Reflect policies and strategies related to disaster response, community safety, and risk preparedness
- Identify isolated communities such as mountain residents and mobile homes that require a targeted approach to emergency response

Potential Policies and Directions

- Build community cohesion and promote education and preparedness for disruption by identifying and engaging local stakeholders through regular and ongoing contact, such as the development of community centers and programs that enable communities to organize during an emergency in a central place. Representative activities may include:
  - Inform community members about individual and neighborhood risks and ways to prepare, especially during times when government services are compromised
  - Encourage existing property owners to make building improvements that mitigate against flood, fire, and stormwater impacts

Topic Area: Energy

Chapter Goals and Framing

- Identify energy risk and need for islandable core service delivery centers to support communities, public facilities, and key land uses during and after a disruptive event

Potential Policies and Directions

- Assess and design a communitywide network energy resilience centers that ensure that basic services are available across the community in case of grid disruption.
- Develop energy policies that support continued "green" and renewable energy job opportunities supporting local community centers or schools to access financing for energy retrofits and access to generators
- Identify energy policies that create or support resilient energy infrastructure at the neighborhood/subcommunity level that can serve as both the foundation elements of a distributed renewable energy grid and provide essential energy services in the case of grid disruption

Topic Area: Built Environment

Chapter Goals and Framing

- Identify building typologies, land uses, and geographies most at risk to hazards and disruption
- Emphasize open space preservation as a strategy to promote community wellness and economic vitality

Potential Policies and Directions

- Encourage green infrastructure and appropriate landscaping as a means to mitigate natural hazards such as flood, fire, and extreme temperatures
- Propose design standards and incentives that encourage mitigation against natural risks such as flood, fire, and stormwater impacts
- Consider designing community buildings that could also serve as emergency shelters or as an operations center

Topic Area: Community Well-being

Chapter Goals and Framing

- Emphasize the importance of engaged communities and social networks to support the city during a disruption
- Specify vulnerable populations who are traditionally difficult to reach and engage
- Ensure efficient and equitable distribution of resources during a disruption

Potential Policies and Directions

- Develop policies that support community-level education and preparedness, community-driven communications and information dissemination, and supply provision during emergencies
- Develop data analysis tools and information sharing on community vulnerabilities such as community asset and risk mapping
- Propose ongoing and robust engagement strategies that build trust with government and communities, with targeted approaches to engaging residents who are typically difficult to reach
- Continue to convene public (e.g., federal, state, county, and city partners) and non-profit stakeholders responsible for service provision during disruptions and on a daily basis to improve information sharing and efficient service and resource distribution

Topic Area: Economy

Chapter Goals and Framing

- Clarify how land use and housing policy affects the cost of doing business in Boulder
- Articulate the risk of global and national economic downturns and the related vulnerability of industry clusters (e.g. tech, federal resourced research institutions), as well as various industries throughout the city
- Recognize Boulder's open space assets as an important contributor to the economic health of the city
- Present Boulder's risk of losing businesses to adjacent communities (e.g., Longmont, Broomfield, Denver) that offer lower leasing rates, more and larger available commercial spaces, newer building stock, etc.

Potential Policies and Directions

- Create policies that generate "green" jobs and advance sustainable energy goals (according to the Bureau of Labor Statistics, "green" jobs are jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources)
- Develop policies that support economic resilience such as transportation redundancy, business continuity planning, and plans for large-scale residential displacement
- Identify policies that support businesses in light of rising real estate costs, changing consumer behavior, and increasingly unpredictable natural risks

Topic Area: Transportation

Chapter Goals and Framing

- Highlight transportation vulnerabilities as having physical, economic, and social implications
- Discuss transportation as a means for access, evacuation, and movement of goods during and after an event
- Describe vulnerabilities in transportation infrastructure during a disruption as being connected to other issues such as housing affordability
- Identify the impact of potential transportation failures on displaced residents after a disruption
- Encourage infrastructure investments that provide multiple benefits, including improvements that mitigate risk

Potential Policies and Directions

- Identify impact on vulnerable communities and emergency response access (i.e., first responders primarily living outside the city and facing difficulty entering Boulder after a disaster)
- Assess and develop solutions with key stakeholders on the city and county level that are needed to coordinate transportation policies and response in the event of a disruption
- Integrate priorities of the 2014 Transportation Master Plan and Greenways Master Plan particularly as it relates to green infrastructure and multi-modal access provision
- Encourage green infrastructure as part of all infrastructure improvements
- Develop policies to accommodate emergency vehicles, buses, trucks, and construction vehicles during and after an event

Topic Area: Housing

Chapter Goals and Framing

- Identify shifting economic trends that impact housing affordability and supply
- Specify vulnerable populations most in need of affordable housing options during times of disruption and on a day-to-day basis

Potential Policies and Directions

- Address the needs of residents who use their homes to conduct business and space needs of small businesses and startups
- Add language into existing policies to support or expand workforce housing that can, along with working families, accommodate emergency responders and skilled workers
- Encourage mixed used development, multi-modal transit, and provision of critical services near residential areas, particularly where there are concentrations of vulnerable people
- Explore ways to expand public-private partnerships as a model to finance affordable and workforce housing
- Expand policies and programs that support low income Boulderites who face displacement, home repair costs, additional transportation costs, and lost wages after a disruptive event

Topic Area: Agriculture and Food	
Chapter Goals and Framing • Identify risks to the food system such as water availability, drought, wildfire, and flood • Explain how green infrastructure interventions can support the food system and build community networks	**Potential Policies and Directions** • Create policies that support local food and agriculture as a part of a broader economic development strategy that encourages tourism, food destination, and "green jobs" • Encourage community-driven food practices such as community gardens and local food co-ops to build community networks and build cultural assets • Convene stakeholders at the city and county level such as transportation specialists, the agricultural sector, and the business community to identify redundant food networks, supply methods, and distribution • Analyze Boulder's potential capacity to grow its own food through activities such as edible landscapes, promotion of community and residential gardening, and use of city-owned open spaces for agriculture • Work to keep agricultural water available to farmers and ranchers

The below matrix synthesizes all of the activities recommended by Topic Area. Recognizing that the implementation of each recommendation varies in complexity, this matrix also proposes timing and prioritization of activities and whether there are already ongoing activities in Boulder to support implementation.

Currently being prepared. Will be added later.

IV. Recommendations for the BVCP Land Use Designations and Map

Resilient land use and zoning policies should respond to risk, consider a systems-based approach, and reflect vulnerable people and places. The 2010 BVCP addresses resilient land use policies primarily in the Natural Environment section; however, resilience can be incorporated in discussions of land use and zoning among other Topic Areas. There are additional opportunities to highlight and expand on resilient land use policies in the 2016 update by providing a section on resilient land use strategies organized by the following key themes:

1. Development guidelines for vulnerable areas
2. Reduction of risk and harm to vulnerable residents
3. Self-sufficient and resilient neighborhoods
4. Adaptive and resilient environment

Through the land use plan, the BVCP can promote development that enhances the ability of people, buildings, and natural places to withstand and recover from a natural disaster or other major disturbance. Land use planning and zoning policies can be framed to respond to a changing environment, economy, and social conditions by being adaptive and flexible. Policies should continue to respond to a variety of physical scales -- from neighborhoods to the city as a whole -- as well as consider the regional implications of land use decisions (e.g., housing policy to shape regional transportation and commuting patterns).

Development Guidelines for Vulnerable Areas

The 2010 Plan provides guidelines around development and preservation of places in hazardous areas, primarily in the Natural Environment section. Identify geographies most at risk to disruptions and policies and actions that encourage and incentivize building modifications and design standards to mitigate against flood, fire, and stormwater risk. In addition, regular and ongoing review of existing infrastructure to assess structural integrity and adequacy to withstand future disruptions is key, especially as part of routine maintenance inspections that consider changing risks and hazards. Developments of lesser intensity would be recommended in vulnerable or hazardous locations. For example, development in the flood plain would be subject to careful control or prohibition.

Seattle's draft comprehensive plan, Seattle 2035, suggests a number of actions to address this issue:

- **Protect the ecological functions and value of environmentally critical areas**, including wetlands and fish and wildlife conservation areas; prevent erosion caused by development on steep slopes; and protect public health, safety and welfare in hazard-prone areas, including areas subject to landslides, liquefaction or floods, while permitting development that is reasonable in light of these constraints.
- **Review rezones in areas located in or adjacent to a critical area or a hazard prone area** by considering the effect of the rezone and recognize that lower-intensity zones are generally more appropriate than higher-intensity zones in these areas.
- **Identify landslide-prone areas by examining the geologic, hydrologic and topographic factors that contribute to landslides and regulate development to protect against future damage** due to instability that might be created or exacerbated by development, including potential damage to public facilities. Consider the relative risk to life or property when reviewing development proposals for landslide-prone areas.

Reduction of Risk and Harm to Vulnerable Residents

Vulnerable populations can be defined as those individuals and households who lack the social, physical, and/or economic means to effectively respond to and bounce back from an event. In Boulder, these residents may include seniors, chronically ill or disabled people, low income residents, and students. As the definition of social vulnerability varies across communities and across households within communities, it is important that this list be reassessed or redefined in each neighborhood or community based on the risks these places face.

Within Boulder, vulnerable residents may reside in manufactured housing developments, senior housing, affordable housing units, and assisted living facilities. The siting of these types of uses, in particular, should be carefully considered for their exposure to natural hazards. If these uses are already located in a known hazard area, mitigation efforts to minimize risk through building improvements or redundant or self-sufficient power generation should be encouraged.

Self-sufficient and Resilient Neighborhoods

Resilient communities and neighborhoods have well-connected social networks, as well as a mix of key land uses that can provide self-sufficiency when access or communications are cut off during or after an event. The 2010 BVCP described policies supporting Neighborhood Activity Centers that serve as a focal point for commercial activity in a sub-community or collection of neighborhoods. Additionally, the Plan indicates that within certain residential areas, there is the potential for "limited small neighborhood shopping facilities, offices or services through special review." These policies can be adapted or framed in a way that encourages the development of supportive local activity nodes that support self-sufficient neighborhoods during times of crisis and could be a consideration when planning subcommunity districts. For example, when neighborhood access is cut off after an event, a community that has an appropriate mix of uses in the CBA, such as a grocery store, hardware store, clinic, pharmacy, and/or community center or public space to serve as a venue for disseminating information and providing charging stations will be better prepared to respond to an event. Resilient neighborhoods also support multiple forms of transportation access during times of crisis, including access for emergency vehicles, buses, construction vehicles, as well as bikes and pedestrians.

Specific recommendations to support this theme could include:

- **Support policies that encourage mixed-use neighborhood development** to ensure that each neighborhood has access to medical facilities, food and supplies, information and communication centers, and emergency assistance. These policies would support and advocate for a smaller, more neighborhood-serving mix of uses as recommended in Portland, Oregon's comprehensive plan which encourages small, neighborhood-based retail food opportunities. Efforts to promote mixed-use self-sustaining neighborhoods could also support community resilience centers proposed in the Resilient Boulder Strategy. Community resilience centers could be sited in individual neighborhoods and provide small scale or compartmentalized infrastructure systems that can operate independent of the larger utility system to sustain a sheltering facility during wide scale disruption. A neighborhood venue for assembly and education could also serve as a local engagement point during times as well as crisis.
- **Identify and prioritize neighborhoods** that present the greatest service and/or access needs.
- **Integrate the Transportation Master Plan and BVCP Land Use Plan** to identify key access routes that are needed to accommodate emergency vehicles and ensure that emergency transportation access is coordinated across the plans.

- **Engage diverse stakeholders and entities to identify the residents, businesses, and households most likely to be disproportionately affected by a potential disruption to city services.** As an example, water utility and infrastructure entities and water conservation stakeholders can work together to articulate and prioritize strategies around who and what is impacted by a potential disruption to water availability and drought. Based on this information, zoning measures can be considered to reduce water usage in existing or new buildings.

Comparable comprehensive plans have addressed these issues through the following policies and actions:

Portland 2035

- **Encourage small, neighborhood-based retail food opportunities,** such as corner markets, food co-ops, food buying clubs, and community-supported agriculture pickup/drop sites, to fill in services gaps in food access across the city.

Seattle 2035

- **Prioritize the preservation, improvement, and expansion of existing commercial/mixed use areas** over the creation of new business district in order to strengthen those existing areas.
- **Use a development pattern, mix of uses, and intensity of activity generally oriented to pedestrian and transit use** in pedestrian-oriented commercial/mixed use zones

Adaptive and Resilient Environment

Environmental and natural resource preservation policies that leverage and expand on the city's existing open space and natural resources can serve to mitigate against the impacts of natural events and chronic stresses. Many of these policies are currently described in the 2010 Plan's Natural Resources chapter; however, highlighting these recommendations in the Land Use discussion may be appropriate as many of these interventions impact the city's urban form and design.

The following efforts are in line with Boulder's Sustainability Framework and can contribute to community engagement activities:

- **Highlight the benefits of committing resources to the natural environment** as risk reducing and promoting economic stability. The continued preservation of the city's open space, urban forest, and green infrastructure measures can be tied to natural hazard mitigation, improvement of air quality, added recreational activities, and stormwater mitigation. For example, green and grey infrastructure can provide multiple benefits, such as reducing the impact of flood and extreme temperature risks while limiting water and energy use.
- **Identify opportunities for residents to be actively involved in physical mitigation efforts.** Even common place activities, such as tree plantings, can serve as educational tools to promote community engagement and highlight protection of critical assets.

Again, Portland and Seattle have demonstrated leadership in addressing these issues in their respective comprehensive plans:

Portland 2035

- **Promote seismic and energy efficiency retrofits** of historic buildings and other existing structures to reduce carbon emissions and improve public safety

- **Encourage the integration of nature** into the built environment
- **Reduce carbon emissions and promote energy and resource efficient** neighborhoods and buildings
- **Integrate natural and green infrastructure,** such as street trees, green spaces, ecoroofs, gardens, and vegetated stormwater management systems, into centers and corridors
- **Encourage building and site design that promotes human and environmental health** and safety and respond to the local context

Seattle 2035

- **Use landscaping requirements and other tools to minimize impact** on the natural environment, including increasing storm water infiltration where appropriate

V. Resilience Integration Process

As in many traditional comprehensive plans, the 2010 BVCP was organized around discrete Topic Areas, such as land use, transportation, housing, and economy; and policy recommendations emerged from these Topic Areas. This process presented an opportunity for BVCP policies and recommendations to be better integrated across the Topic Areas, reflective of the risks that Boulder faces, comprehensive in their approach to engaging stakeholders and building partnerships, and more responsive to the vulnerable populations that they aim to serve.

Integrating resilience into the BVCP requires a thorough assessment of the Plan against Boulder's risk, identifying resilience priorities for the Plan to address, and proposing recommendations for resilient policies and programs as illustrated in Figure 1:

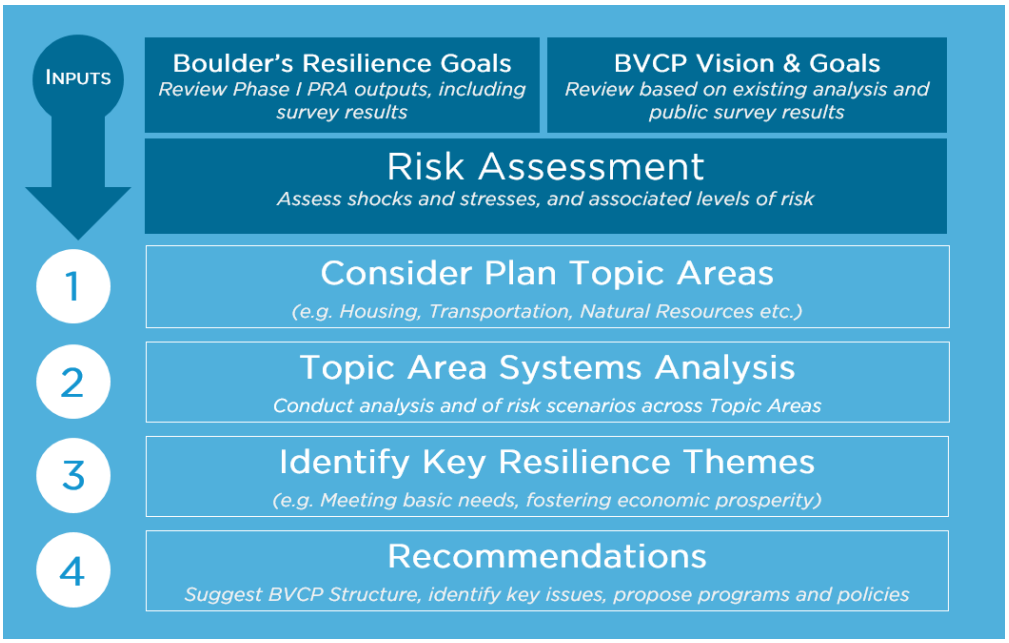


Figure 1. BVCP Resilience Integration Process Overview

Key Input: Goals and Visions of Boulder and the BVCP

As shown in Figure 1, the initial assessment of the BVCP began by defining and recognizing the City's resilience goals, understanding Boulder's current state (i.e., shocks and stresses), and identifying how these goals relate to the Plan's vision and goals. Boulder's Preliminary Resilience Assessment (PRA) provides a summary of the City's risk overview, resilience perceptions, and City/County actions. The PRA is informed by feedback from stakeholder meetings and working group discussions, as well as a citywide survey.

Another key input to the BVCP integration process was a consideration of the work done to-date on the Plan. These activities include data collection and analysis performed by PH&S, including the release of the 2015 BVCP Trends Report, a comprehensive citywide survey, and the outputs of a series of six focus groups.

Comparing the results of the Resilient Boulder and BVCP surveys, including common themes and divergent issues, was an important first step in understanding City residents' point of view on the BVCP update. A

preliminary set of priorities emerged and provided a starting point for the Working Group to consider and identify priorities for integrating resilience into the BVCP:

- Maintain high quality of life and public assets;
- Address affordable housing issue;
- Increase transparent community engagement;
- Address transportation options;
- Respond to climate change risks; and
- Articulate resilience in the context of the Sustainability Framework.

Key Input: Risk Assessment

Under the 100RC framework, resilience is the capacity of individuals, institutions, businesses, and systems within a city to thrive despite the shocks and stresses they experience. Acute shocks include single event disasters such as floods, wildfires, and winter storms; stresses are defined as factors that weaken the fabric of a city on a day-to-day or chronic basis, such as economic hardship or social inequality.

Based on a review of City documents, such as the City of Boulder's Multi-Hazard Mitigation Plan and other relevant materials, as well as feedback from a March 2015 workshop with professionals and researchers in the field of emergency management, climate science, and resilience, Boulder's CRO developed a list of Boulder's key shocks and stresses, then categorized shocks by high and moderate risk as shown below in Table 1:

High risks	Moderate risks
Drought	Dam failure
Flooding	Extreme temperatures
Pandemic flu	Infrastructure/building failure
Wildfires	Hazardous materials incident
Winter storms	

Table 1. Boulder's Priority Risks

This risk prioritization exercise informed the City-specific risks that the Comprehensive Plan could address and remains an important illustration of the connectivity between the systems impacted by disruptions in Boulder.

Resilience Integration Process Summary

As shown in Figure 2, the resilience integration process spanned a four-month period from January to April 2016. Each step is illustrated in further detail below.

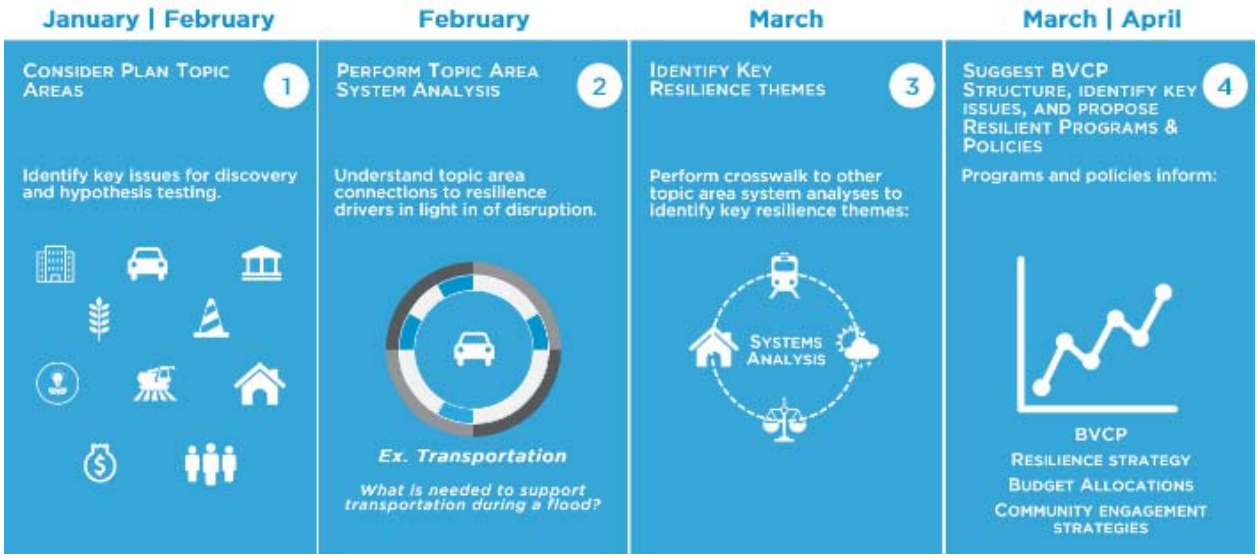


Figure 2. BVCP Resilience Integration Process Schedule

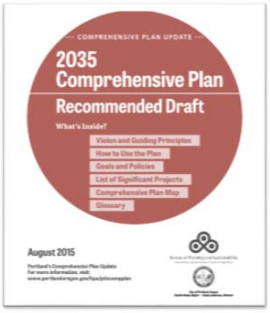
Step 1. Consider Plan Topic Areas

Case Study Research

As a first step, HR&A Advisors identified small to mid-size American cities that integrated resilience into their comprehensive plans. As many comprehensive plans are organized around a similar set of topic areas (or chapters) to the BVCP, this exercise identified how different comprehensive plans defined resilience, prioritized resilience goals, and organized or integrated resilience policies. The following cities -- Portland, Oregon; Seattle, Washington; Norfolk, Virginia; and Grand Haven, Michigan -- emerged as exciting examples of how other municipalities are thinking about integrating resilience into their comprehensive plans. For example, Portland's Vision 2035 Comprehensive Plan has a well-articulated resilience approach defined by adaptability to natural and human-made disasters, climate change, and economic shifts as well as a clear set of prioritized risks including floods, landslides, extreme heat, and economic and energy shocks. In this plan, resilience was used as a guiding principle and cut across the plan's policies and strategies, a concept that was ultimately applied to the current BVCP resilience integration process and recommended for the Plan's update.

City of Portland, OR
Vision 2035 Comprehensive Plan

Population: 619,400



Resilience Approach
- Define as adaptability to natural, human-made disasters, climate change, and economic shifts
- Prioritize risks as floods and landslides, earthquake, climate change, extreme heat, and economic and energy shocks

Integrating Resilience in the Plan
- Resilience is one of five "Guiding Principles" of the Plan (Economic Prosperity, Human Health, Environmental Health, Equity, Resilience)
- Resilience used to frame and prioritize at-risk geographies
- Frames investments and policies as risk reducing and community building

Resilience Goals
- Support compact centers and corridors
- Develop City Greenways and Urban Habitat Corridors
- Expand living-wage employment opportunities
- Invest in infrastructure in under-represented and under-served communities

Figure 3. Case Study: City of Portland, Oregon, Vision 2035 Comprehensive Plan

Working Group Meetings

The results of the BVCP survey and focus groups, and excerpts from the Boulder PRA were presented at the BVCP Working Group kick off in January 2016 (Appendix C). Working Group members represent a wide range of disciplines as well as City and County departments and provided technical knowledge and thought leadership throughout the process.

At a follow up work session in February 2016 (Appendix D), the Working Group reconvened to brainstorm key Plan topic areas and their relationship to Boulder's risks. This interactive meeting generated ideas around the interconnectivity of topic areas, key issues that emerge during a shock, and the vulnerable populations and infrastructure that would most be impacted by a disruptive event or chronic stress. Working Group members brainstormed- the impacts of a hypothetical shock (e.g. an earthquake) across a selection of the City's systems and the Plan's topic areas, discussed the vulnerable people and places most at risk (e.g. mountain residents and infrastructure), and generated a list of opportunities to improve the City's ability to respond to the disruption (e.g. improve availability and access of emergency responders.) During the working session, Working Group members also reached consensus on the alignment of resilience and the City's Sustainability Framework (Figure 4).

Major outcomes of the working session included alignment on the intersection between resilience and sustainability (Figure 4); a robust list of vulnerable populations and systems (Table 2); and agreement on the key elements of a healthy, stable, and adaptive community (Table 3). Brainstorming a potential shock resulted in a robust conversation and alignment that populations such as low-income residents, mobile home residents, mountain residents, students, homeless, and transient populations face unique and disproportionate challenges not only in the event of a disruption, but also during the recovery phase. Issues such as inhibited communication and information sharing, strength of community and social networks, and capacity to access aid and resources emerged as key issues for vulnerable populations and directly inform ways that the BVCP can become more responsive to the needs of the most vulnerable. It became clear that strong social networks, public spaces, robust infrastructure networks, economic diversity, regional connectivity and coordination, and transparent and streamlined governance were some of the key elements needed to support Boulder and its

most vulnerable residents and systems. These themes brought into focus some of the resilience priorities for the BVCP and the need for Boulder's systems to be agile and adaptable not only in times of emergency, but also during daily activities.

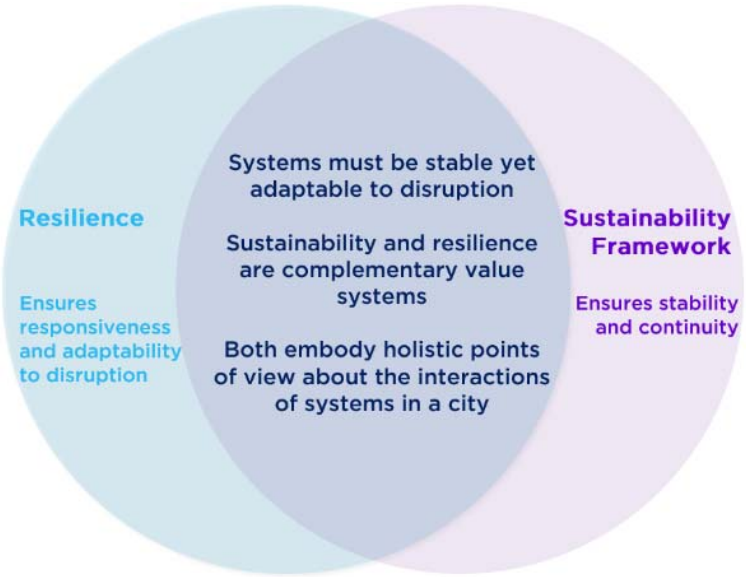


Figure 4. BVCP Working Group Session Output – Resilience and the Sustainability Framework

Vulnerable Populations	Vulnerable Systems
Low income people	Business community (e.g. small businesses, start-ups, in home businesses)
Mobile home residents	Infrastructure (e.g. roadways, water, sewer, power)
Elderly	
Homeless and transient populations	
Mountain residents	
Students	

Table 2. BVCP Working Group Session Output – Vulnerable Populations and Places

Key Elements of a Healthy, Stable, and Adaptive Community
Strong social networks
Public spaces
Infrastructure
Economic diversity
Regional connectivity
Good governance

Table 3. BVCP Working Group Session Output – "Key Elements of a Healthy, Stable, and Adaptive Community"

Ultimately, the BVCP Working Group and PH&S agreed that an overhaul of the existing topic area structure was not immediately necessary to the resilience integration process. However, resilience, governance and engagement, as well as safety and preparedness emerged as three new additions to the "Topic Area Approach" of the BVCP. Recognizing that there may still be opportunity to modify the topic areas, and the need for resilience and governance to cross-cut all of the topic areas, the following represents the topic area approach that was referenced and refined throughout the BVCP Resilience Integration Process:

- Built Environment
- Natural Environment
- Energy and Climate
- Economy
- Transportation
- Housing
- Community Well-being
- Agriculture and Food
- Resilience *(new)*
- Governance and Engagement *(new)*
- Safety and Preparedness *(new)*

Step 2. Topic Area Systems Analysis

The Comprehensive Plan is one document in a series of tools, including other policies and plans, which the City can leverage to advance its resilience goals. Integrating resilience into the BVCP starts with examining the relationships between topic areas and considering a systems-based approach to planning, analysis, and policy development. As an example, a systems-based approach to transportation and flooding may need to consider access of emergency responders living outside of Boulder, redundant infrastructure, and business continuity planning.

Building off of the Working Group session, HR&A developed a methodology to assess the BVCP's responsiveness to Boulder's risks. The City Resilience Framework (CRF), developed by Arup with support from the Rockefeller Foundation, provides a lens to understand the complexity of cities and the drivers that contribute to their resilience, and a common language that enables cities to share knowledge and experiences (Appendix B). As such, it is a useful tool to evaluate the current comprehensive plan. The CRF is built on four essential dimensions of urban resilience: Health and Wellbeing; Economy and Society; Infrastructure and Environment; and Leadership and Strategy. Each dimension contains three "drivers," which reflect the actions cities can take to improve their resilience. This analysis mapped the 2010 BVCP chapters/topics, and the City's priority risks against the "drivers" of resilience to identify specific measures or actions most necessary to support Boulder in the event of a disruption (e.g. redundant and diverse infrastructure is needed to support transportation in the event of a flood). A set of "sub-drivers" emerged as most needed to support Boulder in light of its risks, which provided an additional consideration to help identify resilience priorities in the context of the BVCP (Appendix E).

Step 3. Identify Key Resilience Themes

Building off the systems analysis, the outcomes of the working session, the results of the community survey, and the Boulder PRA, seven key resilience themes were identified as priorities for the BVCP to address (see Figure 5, Appendix F). These themes serve as the framework for evaluating and conceptualizing new or ongoing BVCP policies that ultimately cut across the Plan's topic areas and departments to address risk (e.g. transportation policies may address issues such as emergency response, regional economic connectivity, and risk mitigation.)

Figure 5. Key Resilience Themes for the BVCP

One way of articulating these themes is through an effective vision statement and framing of resilience as a guiding principle in the plan. Again, the Portland Vision 2035 Plan provides a comparable example of how to incorporate resilience as a guiding principle of a plan.

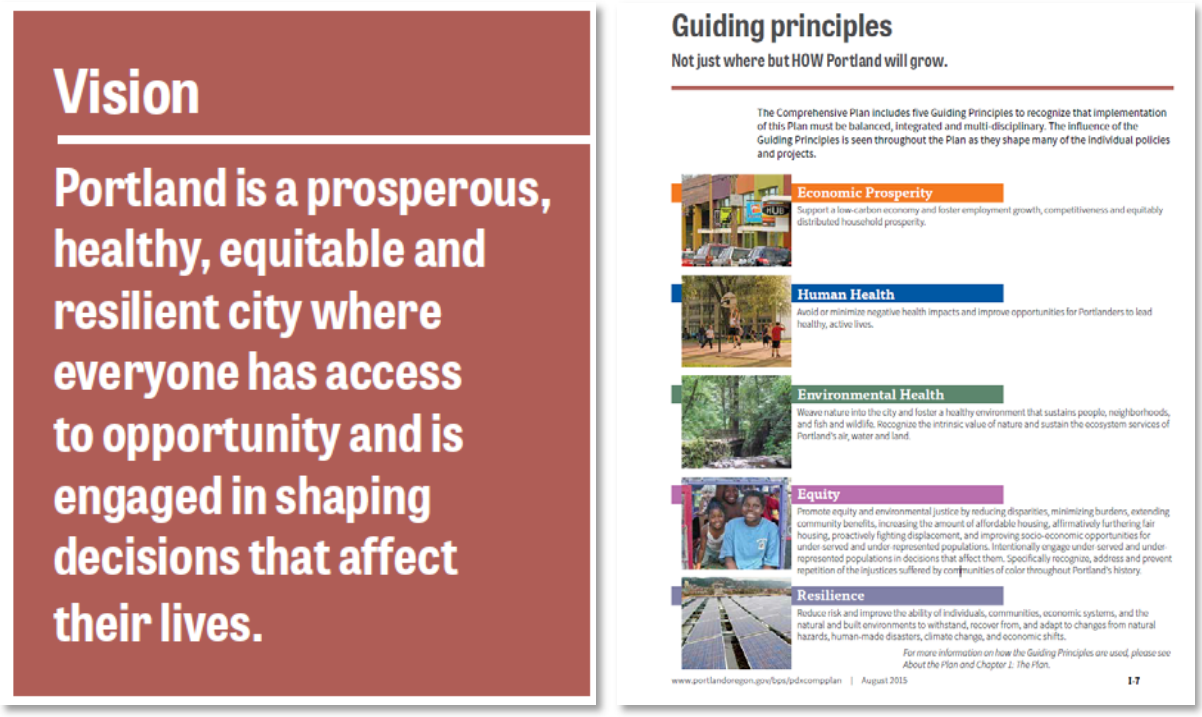


Figure 6. Excerpts from "Vision for 2035: Portland"

Step 4. Develop Recommendations

Resilient programs, policies, and initiatives address risk in a holistic way, target vulnerable populations and infrastructure, and result in coordinated actions. To that end, the proposed recommendations that emerge from this process are intended to cut across departments, issues, and stakeholders. To help identify specific future recommendations, HR&A conducted a thorough review of the existing policies and strategies outlined in the 2010 BVCP, and identified policies by chapter/topic area that exhibited resilient qualities as well as those that lacked a resilient approach. Resilient policies were also identified through a case study research of other comprehensive plans to demonstrate a specific, model approach. HR&A also conducted one-on-one interviews with a selection of Working Group members to identify existing resilient plans that should be considered and to assess potential resilient policies that could be reflected in the BVCP update. These interviews surfaced existing and planned policies and strategies of City departments, identified specific opportunities for agency collaboration, and developed potential new policies that the BVCP could highlight or advance.

VI. Next Steps: Creating a More Resilient BVCP

In order to continue resilience integration and institute a holistic approach to the BVCP update, PH&S and the City should continue to build on and refine these recommendations with the input and feedback of partners from City of Boulder departments, County of Boulder representatives, and public and private stakeholders. The following next steps can help PH&S and the City advance the resilience integration process and content development:

1. **Frame resilience as a guiding principle of the BVCP and convey a clear vision for resilience within the Plan as part of other high level themes related to the city's vision.** A well-articulated vision statement can drive the direction of the Plan, demonstrate consensus among stakeholders engaged in the BVCP update, and establish resilience as a priority for the Plan. The Plan should define resilience as a responsiveness to risk and potential disruption, a systems-based approach to policy, and a collaborative approach to community engagement and planning.

2. **Identify the potential policies and directions outlined in this report that are most resonant.** A long list of possible themes and actions have been identified in this document based on feedback from PH&S, Working Group members, and the CRO, as well as review of comparable comprehensive plans. As a next step, this list should be refined and edited to be considered for inclusion in the Plan update. The priority areas and potential actions should be tied to key stakeholders and decision makers in the city, county, private, public, and/or institutional sectors who can help refine these strategies.

3. **Prioritize short term and ongoing actions and policies.** Based on the priority areas identified, actions should be prioritized based on their complexity and implementable time frame. Many short term activities are already being considered or are being undertaken by city departments. In some cases, some recommended actions have also been proposed in the Resilient Boulder Strategy document. Actions that already have city buy-in and ownership that also address Boulder's top risks, such as flooding and wildfires, may be worth advancing in the short term.

4. **Meet with relevant stakeholders with the aim of strengthening existing or creating new policies.** To better articulate and develop strategies around a specific set of topics and issues, relevant stakeholders should be identified and meetings and discussions should be held. An example of a multi-stakeholder, topic-based convening could include community leaders, the Boulder Human Services Department, transportation specialists, and emergency responders to better articulate policies around communications, engagement, and risk preparedness.

5. **Establish measurable targets, goals, and well-articulated implementation strategies for the Plan's policies.** The most effective policies in the existing Plan are those that establish measureable goals, such as "the City will strive for no net loss of wetlands." The Plan should articulate the intended outcomes of its policies, present methods to measure these outcomes, and establish a reporting system that tracks policy success through implementation.

Integrating resilience into the Boulder Valley Comprehensive Plan will not only shape the policies and direction of the City, but set the ground work for more robust partnerships, a greater awareness and responsiveness to Boulder's risks and vulnerabilities, and provide a model for other cities looking to build a more resilient future.

VII. Appendix

a. Case Study and Best Practices Research
b. The City Resilience Framework
c. Working Group Kick Off
d. Working Session Presentation
e. BVCP Topic Area Risk and Systems Analysis
f. Working Group Outputs and Systems Analysis
g. Policy Gaps and Preliminary Recommendations

Case Studies and Best Practices

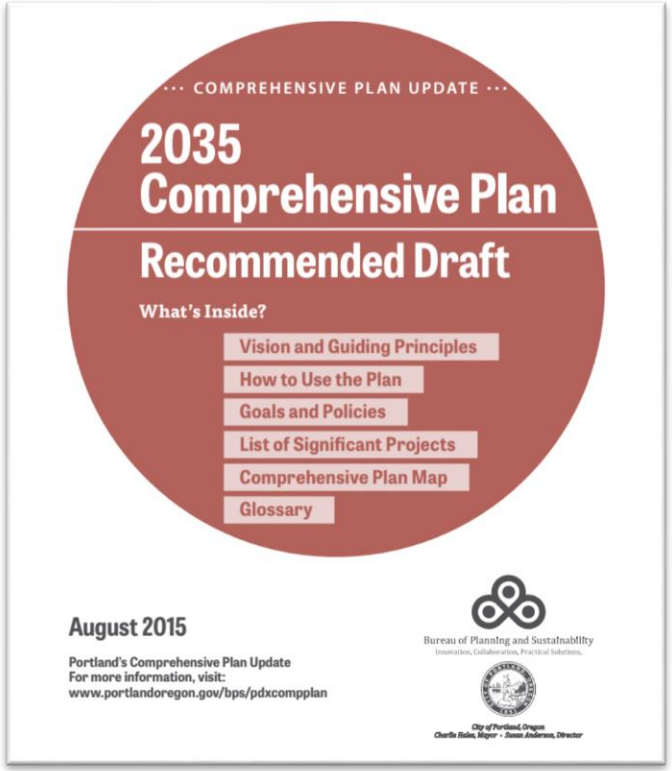
Comp Plan	Vision and Goals	Focus Areas	Engagement Process	Agency Coordination	Resilience Definition	Implementation/Budget	Tracking	Project Examples
ImagineBoston Boston, MA 2015-Ongoing Pop. 655,900	• First citywide plan in 50 years will guide neighborhood-based approach to: preserve wisely, enhance equitably, and grow intelligently. • Goals: 1. Foster broad public engagement; 2. Guide positive physical change; 3. Support effective governance.	Nine themes: - Housing - Mobility - Environment & Adaptation - Parks & Open Space - Land Use, Design & Placemaking - Prosperity & Equity - Health & Safety - Arts, Culture & Creativity	• Two-year process with six milestones incorporating engagement. • Innovation engagement tools include: Textizen text messaging tool, TED-style forums, "City Hall To Go" van, "visioning session" kits.	• Process will integrate all current planning initiatives and respective agencies: Go Boston 2030 (transit), Boston Creates (culture), Open Space Plan 2015-2021, Greenovate Boston (climate action), Housing a Changing City, Aging in Boston. • As part of effective city governance goal, will create framework to increase effective inter-agency collaboration as well as among neighborhoods and with neighboring cities.	• Within "Environment & Adaptation": using natural resources wisely while preparing for climate change. • Concurrent Climate Ready Boston and 100 Resilient Cities Boston strategic planning for resiliency likely to inform results.	• Major milestones include strategic vision draft summer 2016, final citywide plan summer/fall 2017. • Budgeting in progress.	• Goal to establish performance indicators for tracking city's achievement of major planning and policy goals.	• In progress.
Long Beach Listens Comprehensive Plan Update Long Beach, NY 2015-Ongoing Pop. 33,700	• Update to 2007 plan that incorporates resilience planning from post-Superstorm Sandy recovery and accelerates transition from recovery to resilience. • "Develop a vibrant, resilient, sustainable and green community that protects and enhances safety, health, environment, diversity, culture and economy of current and future residents and guests of Long Beach." • Focus on developing planning concepts based on feasibility, resiliency benefits, and economic development potential.	• Guiding principles based on resilience and with individual vision statements: - Livable built environment - Harmony with nature - Resilient economy - Interwoven equity - Healthy community •	• Public open houses and community charrettes.	• Waterfront plan effort will require review and approval by NYS Department of State (DOS), NYS Department of Environmental Conservation, along with federal agencies such as the Army Corps of Engineers. • Participation from Sustainable Long Island, New York State Energy Research and Development Authority, DOS, Long Beach economic development and planning departments, City Manager, City Council.	• "Ability of the City and its residents to withstand and recover quickly from natural and economic instability with less impact," including integration of social, economic, and environmental actions into policy and projects. • "Resilient economy" describes community preparedness for both positive and negative changes in economic health and building reliance on local assets.	• In progress.	• In progress.	• In progress.

Comp Plan	Vision and Goals	Focus Areas	Engagement Process	Agency Coordination	Resilience Definition	Implementation/Budget	Tracking	Project Examples
OneNYC New York City, NY 2015 Pop. 8.5 million	• OneNYC envisions New York City in its 5th century and sets goals to ensure that all New Yorkers can thrive in a city that is dynamic, livable, and safe.	• Long-term plan focusing on four Visions: Growing Thriving City; Just Equitable City; Sustainable City; Resilient City. • Strategies address: income inequality, growing and aging population, evolving economy, workforce development, aging infrastructure and updating transportation networks, effects of climate change and environmental conditions, regional coordination, and civic engagement.	• Meetings with issue-based groups, civic/neighborhood organizations, elected officials; • Advisory Committee consultation; • Online survey (8,000 responses collected) and phone poll; • Survey comments cross-walked with proposed goals and initiatives; select comments included in the Plan.	• Agency reps assembled in multi-disciplinary working groups around "domains." Included regional partners and leaders. • Initiatives designate specific interagency collaborations to carry out implementation. • Infrastructure investment and systems updates specifically will require leveraging interagency / intergovernmental collaboration.	• One of four visions covers "resiliency," or response to physical risks associated with climate change. Shocks and stresses were considered throughout and addressed within the integrated approach. In addition to physical risk reduction, addresses local capacity-building for social and economic resiliency.	• Goals within each vision correspond to initiatives/sub-initiatives. • Indicators have target timeframes and designate lead agency and funding status and source. Capital projects designate lead agency. • 10-Year Capital Strategy for capital spending to align with funding. • Plan advocates for additional state and federal funding.	• Annual Progress Reports will track targets and indicators. • Provides status/milestones for sustainability and resiliency goals established prior to OneNYC.	• Support small business and local commercial corridors in flood-prone neighborhoods to protect against flood risk, enhance connectivity, and improve local infrastructure that provides basic services to businesses. • Ensure workforce development is part of all resiliency investments.
Pattern for Progress: City of Kenner Comp Plan Kenner, LA 2015 Pop. 67,000	• Enhance 2008 land use plan using holistic approach that integrates community resilience planning and adaptability. • Vision for livable regional center reversing decline in population and employment through coordinated strategic investments in economic development, neighborhood / housing revitalization, public infrastructure.	• Chapters include Planning Framework, Land Use, and Resilience. • Four focus areas: - Housing - Economic Development - Community and Public Facilities - Implementation Strategies • "Spotlight on Resilience" call outs included throughout plan.	• In addition to community workshops, administered "community image survey" that presented 40 slides of land use/urban design for participants to rate preferences.	• Louisiana State Comprehensive Resiliency Pilot Program funding to integrate resilience and comprehensive planning into recent land use planning effort.	• "Community resilience" defined as: - Awareness of and preparedness for potential hazards by ensuring adequate infrastructure pre- and post-disaster; - Willingness and ability to recover from disaster by identifying and reducing vulnerability to disasters over long-term; - Being proactive for disaster preparedness and recovery. • Plan refers to global economy, pandemic diseases, terrorism, industrial accidents, and natural disasters.	• No implementation guidance or budget figures included.	• Annual monitoring report by Planning Department to ensure land use development remains consistent with plan vision, goals, and objectives, including three to five year large scale review in relation to major demographic and economic shifts.	• Four resilience-specific recommendations with corresponding policies/actions: - Hazard Mitigation Plan 2008 integration - New resilience initiatives (e.g., critical infrastructure hardening, emergency preparedness education and capacity-building; electrical power infrastructure analysis) - Resilience-supportive development patterns (code and flood regulation review) - Stormwater management upgrades.
PlaNorfolk2030 Norfolk, VA 2013/2014 Pop. 245,400	• Updated vision for Norfolk's development over the next 20 years as part of major update to 1992 General Plan of Norfolk. • New focus on community involvement and engagement in decision making; technology and communications advancements for citizen involvement; environmental challenges such as flooding and sea level rise; transportation network access; and government efficiency and transparency with respect to city funds and economic challenges.	• Land use strategies and discussion of 10 vision components: - Neighborhoods - Transportation - Economy - Environment - Housing - Lifelong learning - Quality community services - Cultural and recreational offerings - Heritage preservation - Regional cooperation	• Six open house meetings producing 425 comments; online forum for discussion; draft plan distribution at all libraries. • Engagement as major planning goal outcome for neighborhoods focus category: seeks to identify core group of engaged residents and build capacity for neighborhood-based engagement. • Open house meetings, online public discussion forum. Civic outreach to involve traditionally underserved residents, such as youth.	• Norfolk City Planning Commission, City Council, and City staff collaboration. • Technical advisory team for each plan element involving City staff to draft goals/outcomes tied to actions and metrics.	• Environmental challenges and natural hazard events whose potential risks require awareness and preparedness.	• Implementation-specific chapter for plan use and amendments including metrics for implementation status and reviews.	• Each implementation outcome has very specific metrics, annual updates, and regular review timeline; two-year reviews of implementation progress and metrics resulting in plan revisions; five-year reviews of full plan.	• Evaluate impact of potential sea level rise and revise development requirements. • Identify areas particularly susceptible to inundation and develop communication strategy to notify residents before and during flood events.

Comp Plan	Vision and Goals	Focus Areas	Engagement Process	Agency Coordination	Resilience Definition	Implementation/Budget	Tracking	Project Examples
Resilient Michigan: Planning for Resilient Communities 2015-Ongoing Pop. 9.9 million MI; 11,000 Grand Haven	• Eight individual city master plan updates for statewide land use planning and design project, promoting coastal community planning and adoption of major master plan revisions incorporating resilience.	• Community-specific drafts address comprehensive planning. • Focus areas also include youth perspective on future, planning for coastal and climate trends, and defining vulnerability in the community.	• Public meetings, community / leadership summits, youth charrette. Events sponsored by APA-Michigan chapter, University of Michigan College of Architecture and Urban Planning, Kresge Foundation.	• Funding from state agencies (Coastal Zone Management Program, Office of the Great Lakes). • Town / city associations (Michigan Townships Association, Michigan Municipal League). • Grand Haven City and Township (first-ever collaboration).	• Community resilience: measure of community capacity to recover or bounce back from or adjust to adversity / change; climate variance; extreme weather events, global economic challenges; social cohesion. • Resilience as adaptive capacity; resiliency planning as vulnerability assessment and hazard sensitivity / exposure reduction.	• Goals and objectives chapter estimates timeframes for implementation of each recommended project. • Chapter dedicated to implementation strategies for near- and midterm zoning amendments and six sub area plans including resources required including labor; no budgeting specified.	• In progress.	• Six sub-area plans completed or in process.
Vision for 2035 Comp Plan Portland, OR 2014/2015 Pop. 619,400	• Long-range land use development and public infrastructure investment plan (first comprehensive plan update in 35 years). • To guide land use decisions, envisions Portland as prosperous, healthy, equitable, resilient, with universal access to opportunity and engagement in decision making. • Emphasizes growth-related infrastructure and compact development. • Aims to meet needs of 120,000 new households and 140,000 new jobs.	• Seven key directions guide plan: - Complete neighborhoods; - Job growth; - Low carbon community; - Enhanced natural areas and open spaces; - Reliable infrastructure for citywide equity; - Resiliency; - "One size does not fit all" planning and design.	• Encourages involvement of and consideration for underserved and underrepresented communities. • Investment in education and training for community capacity-building, land use literacy, and agency capacity-building. • Online "MapApp" illustrates land use, citywide systems, transportation system, zoning, street design.	• Consistency with two regional plans (Regional Transportation Plan and Urban Growth Management Functional Plan) and Metro transportation system. • Service coordination agreements: seeks to maintain coordination agreements with local adjoining jurisdictional governments for mutual recognition of urban service boundaries; special service districts; public school districts.	• Improved ability of individuals, community, economic systems, natural and built environments to withstand, recover from, and adapt to changes from natural and man-made disasters, climate change, and economic shifts. • Reducing vulnerability of neighborhoods, businesses, and built and natural infrastructure to withstand environmental, economic, and social challenges resulting from major hazardous events. • Response to climate change and natural disaster impacts through strong local economy and equitable economic opportunities; need for robust resilient regional economy. • Resilience encompasses other guiding principles: prosperity, human and environmental health, equity all essential components. • Focus on vulnerable populations: focus growth in lower-risk areas; build housing near transit and services; manage open space and stormwater for flood reduction; develop strong and resilient infrastructure and public buildings.	• Early Implementation project phase with 2015-2016 implementation schedule.	• "Portland Plan" (strategic plan) measures of success will be used for Comp Plan tracking (e.g., includes measure of success for household property as "self-sufficiency index" based on required income for meeting household needs). • Establish multimodal performance measures to evaluate and monitor transportation service progress and system performance. • Community Involvement Program manual and oversight body will guide and monitor community participation in decision-making.	• Grow compact centers and corridors. • Invest in infrastructure gaps in under-represented and -served communities. • Respond to neighborhood differences. • Promote schools as multi-use facilities and assets for whole community.

City of Portland, OR
Vision 2035 Comprehensive Plan

Population: 619,400



Resilience Approach

- Define as adaptability to natural, human-made disasters, climate change, and economic shifts
- Prioritize risks as floods and landslides, earthquake, climate change, extreme heat, and economic and energy shocks

Integrating Resilience in the Plan

- Resilience is one of five "Guiding Principles" of the Plan (Economic Prosperity, Human Health, Environmental Health, Equity, Resilience)
- Resilience used to frame and prioritize at-risk geographies
- Frames investments and policies as risk reducing and community building

Resilience Goals

- Support compact centers and corridors
- Develop City Greenways and Urban Habitat Corridors
- Expand living-wage employment opportunities
- Invest in infrastructure in under-represented and under-served communities

Incorporating Resilience Solutions

Portland 2035 Comp Plan: Topic Approach

- Create a coordinated, efficient, and more affordable multimodal transportation system.
- Make cost effective investments and system management decisions that encourage people to choose healthy, active, and low-carbon transportation modes and systems, and enhance the economic competitiveness of the region.
- Reduce service disparities and achieve equitable access to all types of facilities and transportation modes.
- Ensure safety for users of all transportation modes, with attention to the most vulnerable road users.
- Guide the location and design of new street infrastructure.
- Direct how and when transportation infrastructure is managed and maintained.
- Provide policy guidance for developing and implementing the Transportation System Plan

Incorporating Resilience Solutions

Portland 2035 Comp Plan: Goal Setting Framework

Goals are long-term outcomes the City hopes to achieve by implementing the Comprehensive Plan. They are aspirational, expressing Portland residents' collective desires and values.

- Safety
- Multiple goals
- Great places
- Environmentally sustainable
- Equitable transportation
- Positive health outcomes
- Opportunities for prosperity
- Cost effectiveness
- Airport Futures

Incorporating Resilience Solutions

Portland 2035 Comp Plan: Approach to Solutions

Policies set preferred direction and describe what must be done to achieve these broad goals. They are specific enough to help determine whether a proposed project or program would advance the values expressed in the goals.

- Designing and planning
- Land use, development, and placemaking
- Streets as public spaces
- Modal policies
- System management
- Parking management
- Finance, programs, and coordination

Incorporating Resilience Solutions

Portland 2035 Comp Plan: Sample Solutions

Streets as Public Spaces

Streets, including sidewalks and planting strips, provide critical transportation and utility function. In Portland, streets are the most abundant type of public space, occupying nearly 20 percent of land area in the city. The following policies support community desire to expand the use of streets beyond their transportation functions.

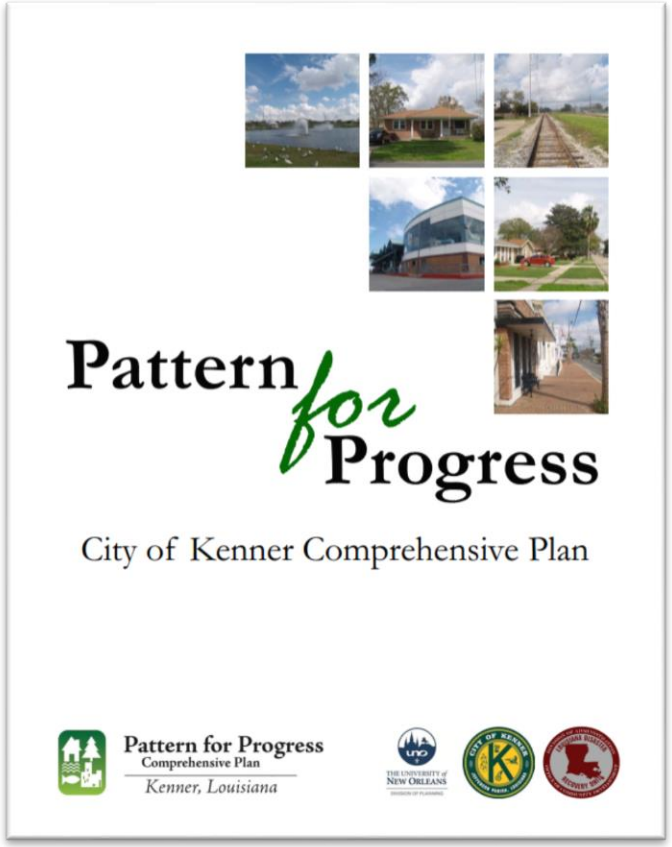
Policy 9.14 Streets for Transportation and Public Spaces
Integrate both the place making and transportation functions when designing and managing streets by encouraging design, development, and operation of streets to enhance opportunities for them to serve as places for community interaction, environmental function, open space, recreation, and other community purposes.

Policy 9.15 Repurposing Street Space
Encourage repurposing street segments that are not critical for transportation connectivity to other community purposes.

Policy 9.16 Design with Nature
Promote street alignments and designs that respond to topography and natural features, when feasible, and protect streams, habitat and native trees.

City of Kenner, Louisiana
Pattern for Progress Comprehensive Plan

Population: 67,000



Resilience Approach

- Build awareness and preparedness of hazards, disasters and recovery
- Address ability to recover from disasters by identifying an reducing vulnerability
- Defined by a vision for quality of life, economic development, and cultural preservation

Integrating Resilience in the Plan

- Resilience is one of five "Elements" (chapters) of the Plan (e.g. Land use, Housing etc.)
- "Spotlight on Resilience" call out boxes highlight chapter concepts throughout plan
- Land Use Goals are organized by Resilience, Urban Design and Transportation
- Specific set of Resilience Goals and Policy Objectives

Resilience Goals

- Reduce and eliminate impacts of hazards
- Identify and pursue prevention of hazards
- Harden infrastructure
- Enhance awareness
- Identify recovery funds and resources for future aid

Grand Haven, Michigan
Resilient Michigan Master Plan

Population: 10,412

Resilience Approach

- Integrate hazard mitigation, climate adaptation, community capacity and equity
- Builds off extensive community outreach process

Integrating Resilience in the Plan

- Cross-cut the Plan and frame with specific recommendations
- Upfront framing of Resiliency as a "Guiding Principle" of the Plan
- "Building a Resilient Future" an incorporates Placemaking, Coastal Resilience, Vulnerability, and Youth
- Plan organizes 21 Goals by Housing and Neighborhoods, Transportation and Connectivity, Employment and Economy, Natural Features and the Environment, Infrastructure and Governance, and Resiliency

Resilience Goals

- Education and resilience awareness
- Disaster preparedness
- Food availability
- Active and healthy living
- Environmental protection and preservation

New Orleans, Louisiana
Plan for the 21st Century: New Orleans 2030

Population: 348,000

Resilience Approach

- Comprehensive approach to identifying hazards
- Integrate hazard mitigation with community resilience and adaptability
- Focuses on storm and flood hazards
- Highlights opportunities for regional and inter-agency collaboration

Integrating Resilience in the Plan

- Plan organized by three guiding pillars: Livability, Opportunity, and Sustainability
- "A Resilient City" is defined as "Living with Water and Natural Hazards" as it's own chapter with a unique set of goals and policies
- Identifies resources to support each resilience goals and assigns ownerships and timelines for each

Resilience Goals

- Raise standards of resilience from flooding, to coastal restoration, to storm water management regulations
- Decrease likelihood of evacuations to address new development hazard resistance, secure additional funding to mitigation, and updates to the HMP

2010 BVCP Resilience Assessment

Economy | Case Examples

Norfolk 2030 Comprehensive Plan

- Improving public infrastructure and promoting available grant funding for aesthetic improvements of commercial properties;
- Providing technical assistance to businesses by guiding them through city processes, hosting education and training workshops on how to start or expand a business, and coordinating financial options;
- Evaluating the impact of city processes on doing business, including zoning, and modifying where appropriate to support business investment;
- Coordinating long range planning with universities and medical institutions to attract spinoff investment in research and development and provide opportunities for training.

Portland Vision 2035 Comprehensive Plan

- Promoting a high citywide jobs-to-households ratio that supports tax revenue growth at pace with residential demand for municipal services;
- Aligning plans and investments with efforts to improve energy efficiency and reduce lifecycle carbon emissions from business operations;
- Promoting employment opportunities associated with energy efficiency projects, waste reduction, production of more durable foods, and recycling;
- Conserving and enhancing Portland's cultural, historic, recreational, educational, food-related, and ecosystems assets and services for their contribution to the local economy and their importance for retention and attraction of skilled workers and businesses;

Resilient Grand Haven Master Plan

- Developing a "new business relocation guide" to assist new businesses with the permitting process to legally occupy and operate in the City;
- Evaluating and implementing a streamlined permitting and approval process for job generating economic development projects;

2010 BVCP Resilience Assessment

Transportation| Case Examples

Portland Vision 2035 Comprehensive Plan

- Adopting geographically-specific policies in the Transportation System Plan, to ensure that transportation infrastructure reflects the topography, historic character, natural features, economic needs, demographics, and land uses of each area;
- Improving service to areas with high concentrations of poverty and historically under-served communities;
- Coordinating land use and transportation plans and programs with other public and private stakeholders to encourage vehicle technology innovation, shifts towards elective and other cleaner more energy efficient vehicles and fuels;
- Maintaining a network of accessible emergency response streets to facilitate safe and expedient emergency response and evacuation.

Resilient Grand Haven Master Plan

- Developing an implementing trails and pathway designs that minimize runoff through use of porous surfaces;
- Establishing a regional bicycle and pedestrian plan and coordinating with adjacent communities to create seamless non-motorized connections across municipal boundaries to serve residential, commercial and institutional land uses.

2010 BVCP Resilience Assessment

Housing| Case Examples

Portland Vision 2035 Comprehensive Plan

- Limit involuntary displacement of under-served and under-represented people. Use public investments and coordinate with nonprofit housing organizations to mitigate impacts of involuntary displacement;
- Improve equitable access to transportation, jobs, open spaces, high-quality schools, and supportive services and amenities in areas with high concentrations of under-served and under-represented populations;
- Evaluate plans and investments for their impact on household cost, and consider ways to reduce the combined cost of housing, utilities, and/or transportation. Encourage energy-efficiency investments to reduce overall housing cost;
- Evaluate plans and investments for potential redevelopment pressure on existing mobile home parks and impacts on park residents and protect this low-moderate housing option;
- Encourage site designs and relationships to adjacent developments that reduce social isolation for groups such as older adults, the disabled, communities of colors, and immigrants.

Resilient Grand Haven Master Plan

- Evaluate the formation of a community development corporation to offer homeowner assistance and strengthen neighborhoods;
- Weatherize existing housing stock;
- Evaluate the construction/building permitting process to improve, streamline, and clarify. Seek input from building and neighboring communities for standardization.

2010 BVCP Resilience Assessment

Community Well-being | Case Examples

Norfolk 2030 Comprehensive Plan

- Develop a list of improvements to public spaces, including streets, which can enhance visual character and improve pedestrian environment;
- Encourage the use of pattern books and design guidelines, to achieve a higher level of architectural quality.

Norfolk Resilience Strategy

- Crowd-sourcing resident asset mapping to support Vision 2100 with the city's offices of Planning, Neighborhood Development, and Emergency Preparedness;
- Implementing "Bank On Norfolk" to connect unbanked and underbanked residents to emergency fund accounts through coordination of volunteers and recruitment of education specialists

Seattle 2035 Comprehensive Plan

- Supporting access to preventative interventions at agencies that serve the homeless, mentally ill, and chemically dependent populations;
- Promoting volunteerism and community service among people of all ages and cultures by providing information about opportunities to contribute their time, energy or resources;
- Collaborate with Public Health- Seattle & King County, private hospitals and community health clinics to maximize opportunities under health care coverage for preventative care, behavioral health, and long-term care;
- Support youth-based training opportunities that provide classes, coaching, and the development of skills leading to jobs with livable wages .

2010 BVCP Resilience Assessment

Food and Agriculture | Case Examples

Resilient Grand Haven Master Plan

- Supporting and promoting convenient access to local food sources such as roadside stands, edible landscaping, and front yard gardens;
- Expanding the market for local food sources in schools and area businesses;
- Partnering with local restaurants and grocers to expand and advertise the use of fresh and health foods;
- Researching the viability of "Urban/Residential/Backyard Farming" and amending ordinances;
- Establishing regulations to support development of community gardens.

Seattle 2035 Comprehensive Plan and other Plans

- Encouraging public and private efforts that support culturally appropriate food opportunities that meet needs of infants, children, elders, and other vulnerable populations;
- Considering using City land, including parks and surplus property, to expand the capacity to grow, process, distribute, and access local foods
- Passed "Food System Sustainability and Security Resolution";
- Seattle Parks and Recreation implementing "Good Food" program in improve heath, support local food system, build community, and increase stewardship.

2010 BVCP Resilience Assessment

Governance and Engagement | Case Examples

Portland Vision 2035 Comprehensive Plan

- Working with district coalitions, neighborhood associations, and business districts to help them reflect of diversity of people and institutions they serve
- Increasing City staff capacity, tools, and skills to design and implement processes that engage a broad diversity of affected and interested communities;
- Providing meaningful opportunities for individuals and communities to be involved in inventories, mapping, data analysis, and development of alternatives;
- Establishing clear roles, rights, and responsibilities for participants and decision makers in planning and investment processes;
- Evaluating and documenting participant demographics through planning and investment processes to assess whether participant reflects the demographics of affected communities.

Resilient Grand Haven Master Plan

- Coordinating capital projects such as street projects with neighborhoods development (i.e. resurfacing street after water/sewer installation);
- Reviewing Zoning Ordinance for opportunities to include language to address coastal flooding in cooperation with University of Michigan;
- Coordinating with other area communities in the evaluation and implementation of joint approaches to service delivery.

Seattle 2035 Comprehensive Plan

- Partnering with other governments, school, institutions, and CBOs to involve people of all backgrounds to meaningfully participate in planning and decision-making;
- Providing opportunities for, and actively recruiting, diverse representation on City of Seattle boards, commissions, and advisory committees that contribute to City decision-making;
- Encouraging use of existing facilities and co-location of services, including joint use of schools and City and community facilities, to make services available in underserved areas.