

Magnolia Non-Motorized Trails Implementation Plan

**Arapaho and Roosevelt National Forests and Pawnee National
Grassland
Boulder Ranger District
2019**

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Implementation Plan

Magnolia Non-Motorized Trails Project

Introduction:

This Implementation Plan implements the Magnolia Non-Motorized Trails Environmental Analysis Decision Notice issued in December, 2016. The Magnolia Non-Motorized Trails Environmental Analysis (EA) recognizes and addresses the current uses and establishes a multi-use non-motorized trail system totaling approximately 44.8 miles in length that is compatible with the environment. The following summarizes key features of the Non-Motorized Trails EA. The full Decision Notice can be found at: www.fs.usda.gov/goto/arp/MagnoliaTrails

Implementation of the project will largely depend on partnership/volunteer group involvement. Involvement includes continued efforts towards on-the-ground project work, education, training, and securing funding. Involvement in the implementation strategy included an initial public meeting followed by meetings with partners and stakeholders as necessary. The implementation strategy will consider fundraising/grant cycle opportunities and subsequent on-the-ground project work will be phased in each year as resources become available. All implementation activities will be guided by the Forest Service. Updates to the trail system will be located on the Forest home page; www.fs.usda.gov/goto/arp/MagnoliaTrails

Trails and trail crossings will be located and designed to minimize resource impacts. Kiosks at trailheads will be used to educate users regarding trail etiquette and sensitive resource protection. The trails will be designed to avoid adverse impacts to cultural and other sensitive areas. Specifically the following will be implemented:

- All new social trails created after the decision of this analysis will be obliterated.
- Snowmobiles will be prohibited within the project area for resource protection.
- Winter grooming for Nordic and fat tire use will be allowed under a Forest Service authorization on approximately 4 miles of existing roads.
- A collaborative process will be used during trail layout, utilizing input from user groups, landowners and other agencies.
- Area seasonal closures throughout the road and trail system will be enforced when soils are excessively wet (usually in the spring after snow melts or if there are excessive rain events during the summer monsoon season). Closures will go into effect as needed, though usually from November into May.
- Mountain bike and equestrian use will be restricted to designated roads and trails year round. Cross-country travel by mountain bike or horse will not be allowed. (Incidental off-trail use from an adjacent developed trail for picnicking and other incidental uses will be allowed.) This regulation will go into effect as implementation occurs throughout the project area.

Table 1: Summary of Trail/Road Mileages for the Decision

Trails	Miles*
System Trails – Existing (no action)	14.28
New Trail Construction	8.94
Social Trails Converted to System Trail	16.75
Road Converted to System Trail	4.11
System Trails Decommissioned/Obliterated	(1.75)
Social Trails Obliterated	(28.95)
Miles of Proposed Activities	74.78
Total Miles of Final Trail System	44.08
Roads	Miles*
Existing Roads	15.76
Roads for Forest Service Administrative Use Only	2.41
Road Converted to System Trail	(4.11)
Road Decommissioned/Obliterated	(1.24)
Miles of Proposed Activities	23.52
Total Miles of Final Road System	18.17

*Mileages are on NFS lands only

Interim Measures

Develop an Implementation group made up of agency staff, partners, landowners and stakeholders, and define roles and responsibilities.

Decommission all “**new**” user developed trails as soon as reasonably possible and sign as closed. New user trails are defined as trails developed after inventoried trails shown in the EA.

Sign the approved system as soon as possible after the decision and as implementation continues.

Implement Closure Order on Over Snow Vehicles (OSV) within project area for resource protection.

Use a zone-phased approach to implement the decision’s actions, starting at the West Magnolia Trailhead and working outward. See Map 2 for the zone locations.

Use a zone-phased approach to best strategize funding opportunities and regional connectivity opportunities with adjacent agency/townships.

Trail Development

All trails will be reconstructed and constructed to meet Forest Service standards. Forest Service will work *with stakeholders to the extent possible* in trail planning and layout, as well as, to formally name the trails. Official system trail numbers will be established by the Forest Service.

Guiding philosophy: a) Existing non-approved trails will be decommissioned within a year of construction or rerouting new trails in the same vicinity – *complete new reroutes before closing existing routes the reroutes replace*; b) Involve stakeholders and Forest Service recreation and resource staff in prioritizing projects; and c) To the extent possible involve stakeholders and Forest Service recreation and resource staff in design of trails in sensitive areas.

Trail projects priorities should consider the following:

1. A zone-phased approach to implementing the decision's actions (see phases below)
2. Prohibit off trail use for biker and equestrian use when implementation occurs in each zone.
3. Create an annual operations and maintenance plan.
4. Construct new trails that:
 - a) Mitigates natural resource impacts.
 - b) Provides connectivity to trailheads and communities.
 - c) Provides a positive trail experience for multiple users and abilities.
5. Decommission **new** user developed trails immediately. New user trails are defined as trails developed after inventoried trails shown in the EA.
6. Work with adjacent landowners to reroute and/or decommission trails leading to/from private property.
7. Consider rerouting and/or decommissioning trails in priority or sensitive habitats and sensitive cultural sites, as determined by Forest Service Specialists.
8. Reconstruct or reroute trails that are not meeting Forest Service standards, trail management objectives and/or are in poor condition (rutting, cupping, braiding, width etc.) and causing resource impacts.
9. Offer a variety of user experience in range and character to multiple non-motorized user groups. Work with user groups to identify features to maximize a rustic/primitive setting in areas defined as primitive or backcountry. Optimize or enhance features to the trail system in areas defined as middle country or front country. This will be implemented through the development of Trail Management Objectives (defining trail class), signage, and by the locations of the trails (backcountry vs frontcountry). See attached experience map ([appendix 1.2](#))
 - a. Front Country Zones:
 - i. Trail Class 3 ([see appendix 1.1](#))
 - ii. Provide optimized or enhanced features, with alternative routes for less experienced users.

- iii. High degree of signage (route markers, directional signage)
- b. Middle Country Zones:
 - i. Trail Class 2-3 ([see appendix 1.1](#))
 - ii. Limit alternative routes with optimized or enhanced features, provide low risk qualifier features
 - iii. Begin to limit signage to trail junctions, and limit route markers
- c. Backcountry Zones:
 - i. Trail Class 2 ([see appendix 1.1](#))
 - ii. Do not provide alternative routes for optimized or enhanced features
 - iii. Features will be constructed/improved or stabilized using natural features and materials
 - iv. Limit signage to trail junctions only, do not provide route markers.

Phases:

Phase 1 (years 1-2)

- Understand use patterns for existing and adopted trails.
- Focus on improvements and repairs within Zone 1 ([see map](#)).
- Focus on achievable projects with limited funding and low resource impacts.
- Develop of working groups for the following:
 - Designed and managed use (group looks at establishing appropriate trail class and optimizing trails for multi-use or single use (equestrians, bikes, hikers) based on historic, current, and projected use patterns)
 - Signage plan development ([see sign plan development](#))
 - Construction and maintenance coordination (group focus will be coordination of on the ground projects with multiple partners and stakeholders)
 - Monitoring/Education (group focus will be to help educate the public and trail users on a variety of topics including but not limited to trail use, wildlife, Leave No Trace, rules and regulations, etc. and to monitor effectiveness of the project guided by the [monitoring plan](#))

Phase 2 (years 2-3)

- Focus on zone approach to trail development.
- Address trails approved in the EA within the zone approach that don't meet Forest Service Standard or Management objectives and/or with severe eroding, resource damage, or have other significant issues.
- Secure funding (e.g. through grants) for future development.
- Work with adjacent landowners and land management agencies on trail connectivity and access.
- Restore routes not adopted by the EA with significant resource concerns (if an alternate route was identified to be constructed; the original route will be left open until the alternate route is constructed).

Phase 3 (years 3-5)

- Assess use and condition of implemented system to date (monitoring).
- Work with adjacent landowners and land management agencies on trail connectivity and access.
- Focus on missing links and connections to neighboring trail systems and the community of Nederland.
- Assess and conduct environmental restoration of undesignated and unsustainable routes.
- Analyze any lack of sought after opportunities within all zones.
- Continue to secure funding from grants, partners, and other sources for implementation.

Trailhead and Other Facilities

Trailheads and other support facility developments should consider the following:

1) provide for public safety, 2) resolve natural resource impacts, 3) resolve conflicts with adjacent private landowners, and 4) provide for recreation users convenience.

- Toilet facilities may be provided at the Front Range and West Magnolia Trailheads.
- Horse trailer parking may be provided at the West Magnolia Trailhead.
- Parking at both trailheads will be designed for approximately 10-25 vehicles.

Sign Plan DevelopmentDirectional Signs

Forest Service will work with stakeholders to:

- 1) Identify names for each trail.
- 2) Identify key locations for signs such as trailheads, other access points and trail/road intersections. Signs will identify trail name, mileage of trail and miles to significant intersections and/or trails as appropriate per designation (Front Country vs Backcountry).
- 3) Consider re-alignment of trail intersections to reduce signage needs.
- 4) Prioritize signing needs. Prioritization should take into consideration use level, reducing confusion, promoting safety, and discouraging use of old routes leading to private land.
- 5) Purchase and install signs.

Informational Signs

Develop signs that will communicate respect for private property and trail etiquette. Use standard “Yield To” signs wherever possible.

Develop a trail map that can be posted at trailheads and access points. Trail map could also be produced as a hand-out.

Work with stakeholders to identify key locations for signs such as trailheads, other access points and trail/road intersections.

Post and remove seasonal closures/prohibitions signs as appropriate.

Trail Obliteration and Restoration

Re contour and de compact for natural appearance and improved watershed function.

Control erosion through creating micro-topography and re-establishing ground cover through mulching with US Forest Service approved imported materials and/or forest litter/duff, slash or downed logs.

Revegetate according to plans and/or design criteria approved by USFS personnel.

Consult U.S. Forest Service Watershed and Botany personnel to provide input for restoration plans and activities.

Trail and Facility Maintenance

Trail maintenance frequency will be based on [Trail Management Objectives and Forest Service Standards](#).

Facility maintenance will meet Forest Standards. Frequency of maintenance will be based on level of use.

An Annual Maintenance Plan will be developed in conjunction with key partners. Roles, responsibilities, and expectations will be identified.

Law Enforcement Plan

Draft Forest Orders (using the Code of Federal Regulations) for:

- Over Snow Vehicle (OSV) closure in project area.
- Mountain bike and equestrian use limited to designated trails/roads.
- Seasonal road and trail closures when soils are excessively wet.

Post signs after Forest Orders are executed.

During the first year after Forest Orders are issued, education will be the strategy employed to develop awareness of closures and changes to the trail system. Public will be informed through the combination of a news release, website updates, signs and personal contacts.

Forest Service personnel may conduct several “saturation” patrols if necessary, to provide information to the public during the high and shoulder use season.

Long term the Forest Service will work with stakeholders to help track enforcement issues. Stakeholders will not be involved with enforcement of Forest Service regulations. Any violations should be reported to the Forest Service. If it is safe to do so, stakeholders who observe a violation are encouraged to gather as much information as possible.

Forest Service may routinely patrol and use “saturation” patrols when necessary to monitor the area with emphasis on closures and Forest Orders during the first few years. Notice of violations and written warnings will be issued at the officer’s discretion after the education period (*up to a year*) has ended.

Information

Public messages should include the following information: seasonal closure/other prohibitions and the reason for them, changes to the trail system, map of the area, trail etiquette, staying on approved trails (for safety and protection of sensitive resources), respect private property and leave no trace ethics.

- News Release: media outlets and user groups
- Website: Forest Service project page and interactive story maps, partner pages/websites and other appropriate external websites
- Signs: See sign section
- Personal contacts
- Consider using technology to provide information such as “bar codes” to be used with smartphones that direct to website
- Consider developing a handout or brochure
- Develop contact and reporting protocols
- Develop Interactive Website for trails system

Partnership

The Forest Service is committed to working with partners, stakeholders and private landowners in the development and maintenance of the Magnolia Trail System and associated support facilities. Forest Service will work with these identified groups/individuals to develop a formal working agreement that will outline roles and responsibilities of each party and meeting times. The following should be considered when developing the agreement:

- Joint development of an annual trail improvement, operation and maintenance plan that describe tasks, roles and responsibilities.
- Reporting protocol for observed trail work, damage to facilities and trail, unsafe conditions, violation of regulations etc.
- Key contacts.
- Opportunities for fundraising.
- Volunteer training.

Monitoring

Five years after project implementation the interdisciplinary team, consisting of Forest Service Specialists, will conduct a review of the project. The team will also prepare a monitoring report, and make recommendations to the Boulder District Ranger concerning the continued management of resources in the area.

Forest Service recreation crews and Forest Service partners, including Monitoring and Education Working Groups, either during routine maintenance or recreational use of the trails will inspect the condition of the trail system for safety and resource concerns, as well as user type and use patterns. Inspections will be recorded on Forest Service provided inspection sheets and turned into the Forest Service for any necessary action.

Forest Service Specialists/Program Managers: Monitor during and after implementation for design criteria implementation and effectiveness and determine if triggers indicate adaptive management actions need to be taken.

Monitoring Trip for Forest Service Specialists/Program Managers: Annually for the first several years and then as needed to assess the sustainability of the portion of the decision that has been implemented prior to the field review.

Monitoring elk movement by Forest Service wildlife biologist in conjunction with monitoring by Colorado Parks and Wildlife and others to determine if adaptive management is needed to protect the elk migration corridor and/or winter range.

List of potential monitoring questions were developed using an adaptive management approach regarding this project.

- Were trails re-routed and/or decommissioned as per plan?
- Were erosion problems fixed?
- Were mitigation measures followed?
- Were management actions taken as per plan?
- What is the most effective monitoring cycle?
- Are miles of non-system trails per square mile of land increasing or decreasing over time and where are these changes occurring?
- Are user and/or private land conflicts increasing or decreasing over time?
- Where is the location and what is the mileage of new user-created trails each monitoring cycle?
- Are cultural resource sites specifically called out in the cultural resource report being impacted? If so, how?
- Are impacts to wildlife occurring?

Monitoring Plan

Questions	Method	Who	When
Were trails and roads re-routed and decommissioned as per plan?	Trail Inventory Field Review	Recreation Specialist. IDT	1 Year 5 Year
Were erosion and other trail problems fixed?	Trail Inventory Field Review	Recreation Specialist. IDT	1 Year 5 Year
Were management actions taken as per the Implementation Plan?	Compare requirements w/implemented and/or designed project Field Verification	Planner IDT	1 Year 5 Year
What is the most effective monitoring cycle?		Planner IDT	5 Year
Are miles of non-system trails per square mile land increasing or decreasing over time?	Review Closure Orders Implemented. Review number of Notice Of Violations, Warning Notices, Incident Reports completed	LE&I/FPO, Soils Scientist, Wildlife Biologist	1 Year 5 Year
Are user and/or private land conflicts increasing or decreasing over time?	Track complaints (phone calls, emails,	Rec. Program Manager,	Ongoing

	letters, personal contact) Contact Stakeholders	Recreation Specialist	
Where is the location and what is the mileage of new user-created trails each monitoring cycle?	Trail Inventory Field Review	Recreation Specialist IDT	1 Year 5 Year
Effectiveness of groomed snow trails	Walking the trail to determine	Recreation Specialist	Annual

Trail density shall be systematically monitored such as during annual trail maintenance and from feedback from stakeholders. Non-system trail development shall be remediated in a timely manner through cooperation with users. If trail densities continue to exceed design levels after monitoring and remediation is applied, the following management options shall be considered through the adaptive management approach:

- Prohibition on all off-trail use
- Total area closures
- User permits
- Enforcement actions

Natural and Cultural Resources

Wildlife

- Prior to building new trails, rerouting or obliterating existing trails, consult with a Forest Service wildlife biologist for a determination of surveys needed. Results of surveys and/or observations during implementation, such as breeding activity of amphibians or other wildlife or active bird nests of any species, may result in timing adjustments for trail work, seasonal closures, or adjusting trail locations.
- Prior to building new trails, rerouting or obliterating existing trails, consult with a Forest Service wildlife biologist regarding any construction timing restrictions needed to avoid or minimize impacts to wildlife during critical periods/activity, for example spring or fall elk migration.
- During trail reroutes and new trail construction, where possible allow retention of existing snags that do not pose a safety hazard to trail users, especially snags 10" in diameter or greater and snags with cavities.
- In consultation with a Forest Service wildlife biologist, where possible, route trails near the edges of patch cuts and clear cuts, and away from large bordering forested stands, to reduce disturbance to wildlife.

Botany

- Prior to implementation, the project botanist and/or botany technicians will survey for Region 2 sensitive plant species identified as having possible habitat. If Region 2 sensitive plant species are observed within the area to be impacted by the project; the project botanist or botany representative will work with the recreation staff to avoid all observed occurrences.
- Trail restoration activities will be coordinated with the project botanist.
- To minimize risk of noxious weed introduction and spread, require all equipment to be used for ground-disturbing activities for this project (not including service trucks or other vehicles that remain on roadways) to be clean, i.e., free of mud, dirt, plant parts, and seeds, or other debris that could contain or hold seeds, prior to entering the project area.
- Trail building equipment will be considered free of soil and other debris when a visual inspection does not disclose such material.
- For known weed occurrences and for any new noxious weed infestations found in or near impact areas prior to implementation, implementation personnel will coordinate with the District Invasive Plants Coordinator to implement appropriate prevention measures, such as avoidance, treatment of weeds prior to implementation, and/or additional equipment cleaning requirements, such as between infested and uninfested areas.
- Coordinate with District Invasive Plants Coordinator to locate staging areas, and other areas of severe soil disturbance to best reduce risk of spread of invasive plants.
- As soon as possible after trail building or obliteration are complete, reclaim disturbances by a combination of covering them with slash and raking in dirt and duff from adjacent areas and revegetation where needed.
- Consult with a Forest Service botanist regarding government furnished seed if revegetation will occur.
- Use only seed free material such as native slash and “Wood Straw” for mulching

Cultural Resources

- When project implementation occurs (ground disturbances during trail construction; Forest System and social trail obliteration; trail reroutes; and conversion of some roads to official trails) the designs are flagged on the ground, a Class III Cultural Resource Inventory will be completed in consultation with the Colorado State Historic Preservation Office (SHPO) prior to project implementation. Implementation will not begin until the SHPO has concurred with a determination of *no historic properties affected* or *no historic properties adversely affected*.
- National Historic Preservation Act (NHPA) Section 106 consultation will be negotiated with the appropriate agencies (the Colorado State Historic Preservation Office (SHPO); the Tribal Historic Preservation Officer(s) (THPO); the Advisory Council on Historic Preservation (ACHP); and/or other interested consulting parties) prior to implementation (in accordance with 40 C.F.R. 1500-1508).

- If ground disturbing activities are required for any project activity, then all NRHP eligible or unevaluated sites within project area (including the known historic property 5GL2048.1) will be buffered by 50 feet and flagged on the ground for avoidance during implementation. No ground disturbing activities will occur within these flagged areas, unless determined to be appropriate by the Project Archaeologist in consultation with State Historic Preservation Office (SHPO).
- All trail and road improvement, construction, deconstruction, decommissioning, or rerouting, will be surveyed for cultural resources prior to implementation and receive concurrence with the SHPO on a determination of No Adverse Effects or No Historic Properties Adversely Affected.
- Previously undiscovered sites encountered during the course of project activities will be avoided until they can be evaluated by an archaeologist. If affected properties are discovered after project activities are completed, the Forest will document any damage and consult with SHPO and Council pursuant to 800.13(b).
- **Inadvertent Discovery:** The Boulder District Ranger has been informed of the recommendations above. If additional prehistoric or historic materials are found during the course of this project, work in that area will cease until the District Ranger has been notified. Work in the area of the cultural resource may not resume until a professional archaeologist has evaluated the cultural materials and potential effects. The discovery must be protected until notified in writing to proceed by the authorized officer (36 Code of Federal Regulations(CFR) 800.110 & 112, 43 CFR 10.4).
- If so requested by the SHPO or an Indian Tribe, the Forest will conduct additional consultation for the identification of properties of traditional cultural and religious significance to Indian Tribes or other interested parties. Additional mitigations may be required if areas or sites are determined to be of importance to an Indian Tribe.
- **Pre-Implementation Survey:** If any new actions are planned that were not specifically identified in this report, an archaeological assessment is required since additional cultural resource surveys may be needed.

Soil and Water Resources: Trail Alignment and Design

- Design stream crossings to minimize sedimentation and/or direct impacts. Minimize “fall line” alignments.
- As a general guideline, maximum trail grade should be 15 percent (except for natural or built rock structures). Average trail grade should stay under 10 percent (with grade reversals).
- Follow the half-rule to the extent possible. A trail's grade shouldn't exceed half the grade of the side-slope.
- Minimize alignments through completely flat areas where few drainage options exist on the hillside.
- Apply cross drainage as frequently as needed to minimize erosion of the trail tread. Techniques include out-sloping where possible, dips and water-bars.

- Armor trail tread if/where needed. For highly technical trails where grade will sometimes exceed 15 percent, use natural rock, rock armoring or other rock features to add challenge and improve sustainability.
- Specify and maintain recommended trail widths.
- Minimize trail alignments within or directly adjacent to inner gorges, riparian vegetation zones, wetlands or stream channels.
- Consult US Forest Service specialists for review of trails with potential to impact soils and water resources.
- Trail/stream crossing will be constructed to limit erosion and avoided if at all possible.

Appendix 1.1: Design Parameters and Trail Class Matrix

