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Environmental Assessment for Travel Management on the Mt. Taylor Ranger District

Cibola National Forest, Cibola and McKinley Counties, New Mexico



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Chapter 1 – Purpose and Need

Introduction

This environmental assessment has been prepared in compliance with the National Environmental Policy Act (NEPA) regulations contained in 40 CFR 1500-1508 and Agency policy in Forest Service Handbook 1909.15. Additional documentation that supports this environmental assessment, including consideration of the best available science identified in 40 CFR 1502.9 (b), 1502.22, and 1502.24, may be found in the project record, located at the Mt. Taylor Ranger District (hereafter referred to as the district) office in Grants, New Mexico.

This environmental assessment describes the proposed action and alternatives for complying with the Travel Management Rule. The project will result in publication of a motor vehicle use map (MVUM). After the MVUM has been published, travel off the designated system will be prohibited unless authorized in writing.

Document Structure

The Forest Service has prepared this environmental assessment in compliance with the National Environmental Policy Act and other relevant Federal and State laws and regulations. This environmental assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized as follows:

- Chapter 1. Purpose and Need: This chapter includes information on the history of the project proposal, the purpose of and need for the project, and the Agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- Chapter 2. Alternatives: This chapter provides a more detailed description of the Agency's proposed action as well as alternative methods for achieving that purpose. These alternatives were developed based on issues raised by the public and other agencies. Chapter 2 includes mitigation measures and provides key quantitative proposed changes and differences among and between alternatives.
- Chapter 3. Affected Environment and Environmental Consequences: This chapter describes the environmental effects of implementing the proposed action or one of the alternatives.
- Chapter 4. Consultation and Coordination: This chapter provides a list of preparers and agencies consulted during development of the environmental assessment.
- Literature Cited
- Appendix. The appendix consists of several parts and provides more detailed information to support the analyses presented in the environmental assessment.

Background

On November 9, 2005, the Forest Service published the final regulations governing off-highway vehicles (OHVs) and other motor vehicle use on national forests and grasslands (Travel Management; Designated Routes and Areas for Motor Vehicle Use, Federal Register / Vol. 70, No. 216 / 36 CFR Parts 212, 251, 261, and 295, referred to as the Travel Management Rule). The

Travel Management Rule was developed in response to the substantial increase in the use of OHVs on National Forest System lands. The increasing numbers of vehicles on National Forest System lands, and advancement in their capabilities, has resulted in escalating impacts to national forests and grasslands' natural and cultural resources. The magnitude and intensity of motor vehicle use has increased to the point that the intent of Executive Orders 116544 and 11989 (precursors to the Travel Management Rule aimed at protection of natural resources and user safety) cannot be met while still allowing unrestricted motorized cross-country travel. The Travel Management Rule can be found online at: <http://www.fs.fed.us/recreation/programs/ohv/final.pdf>

The Travel Management Rule requires each national forest and grassland to designate those roads, trails, and areas open to motor vehicle use by type of vehicle and, if appropriate, time of year. Designated routes and areas will be identified on a motor vehicle use map (MVUM). Once routes have been designated and identified on a MVUM, motor vehicle use off of the designated system will be prohibited. The following vehicles and uses are exempted from these designations:

- Aircraft;
- Watercraft;
- Oversnow vehicles;
- Limited administrative use by the Forest Service;
- Use of any fire, military, emergency, or law enforcement vehicle for emergency purposes;
- Authorized use of any combat or combat support vehicle for national defense purposes;
- Law enforcement response to violations of law; and
- Motor vehicle use that is specifically authorized under a written authorization issued under Federal law or regulation (36 CFR 212.51 (a)).

In designating routes, the responsible official may include in the designation the limited use of motor vehicles within a specific distance of specific designated routes and, if appropriate, within a certain time period, solely for the purposes of dispersed camping or retrieval of a downed big game animal by an individual who has legally taken that animal (36 CFR 212.51(b)).

The Forest Service recognizes motorized use on national forests and grasslands as a legitimate and appropriate way for people to enjoy these lands, in the right places and with proper management, as described in the preamble to the Travel Management Rule on page 68264 of volume 70 of the Federal Register.

The district transportation system serves a variety of administrative and public purposes. Existing system roads and unauthorized (generally user-created) routes are used for a number of district recreational activities such as sightseeing, camping, access to hiking and mountain biking trails, and hunting. Collecting forest products such as firewood and piñon nuts utilize roads and unauthorized routes. Administrative and commercial activities such as grazing, maintaining utilities, timber harvesting, firewood gathering, mining, special uses, outfitter and guide services, and other multiple uses are dependent on roads for access.

There are 987 miles National Forest System (NFS) roads on the district open to public motorized vehicle use. Of these, 91 miles are managed for standard passenger vehicles such as family sedans. The remaining 896 miles of system roads are managed for high-clearance vehicles, such

as pickups or sport utility vehicles. An additional 77 miles are maintenance level 1 roads, which are closed to motorized use until needed for future natural resource management projects. A number of roads on the district are closed seasonally by closure order. There are no trails designed and maintained for motorized use on the district.

Motorized cross-country¹ travel is currently allowed on 445,623 acres, which represents 86 percent of the district land base (515,536 acres). The remaining area has previous decisions that closed those areas to motorized cross-country travel, and are described in the previous decision section on page 4. Cross-country travel is common during hunting seasons, when OHVs are used to scout and retrieve big game. Motorized cross-country travel also occurs where there are scenic vista opportunities not serviced by system roads. Because motorized cross-country travel has been allowed over time, there has been a proliferation of unauthorized roads and trails across the district. Motorized dispersed camping (camping in general forest areas outside of developed campgrounds) is a popular activity and commonly associated with hunting. Motorized access for dispersed camping is unrestricted in the areas open to motorized cross-country travel. Some roads decommissioned by the Forest Service continue to be used by the public for motorized travel and sometimes act as connector roads between open system roads.

The unmanaged use of motor vehicles in motorized cross-country travel increases the risk of damage to soils, water quality, wildlife habitat, and archaeological resources. A designated and managed system of routes for motor vehicle use is needed to address the above concerns as well as to meet the requirements of the Travel Management Rule.

The district will continue to provide access to the forest for non-motorized activities such as camping, hunting, hiking, mountain biking, and horseback riding and will also continue to provide a road system for motorized access, though routes available may change. The district recognizes the ties that American Indian tribes have to the district and the need to maintain their cultural and traditional uses. The legal gathering of forest products will be maintained using roads designated for motorized use or through other written authorization as allowed by the Travel Management Rule.

The district is located in northwest New Mexico. There are approximately 516,000 acres within the district. The area that will be analyzed under the Travel Management Rule is comprised of 445,623 acres (figure 1). Approximately 70,377 acres of the district are excluded from this environmental assessment as a result of previous travel management decisions described below (36 CFR 212.50(b)).

¹ Motorized cross-country travel is motorized travel off of designated roads and trails, which is allowed by the current forest plan.

Project Location

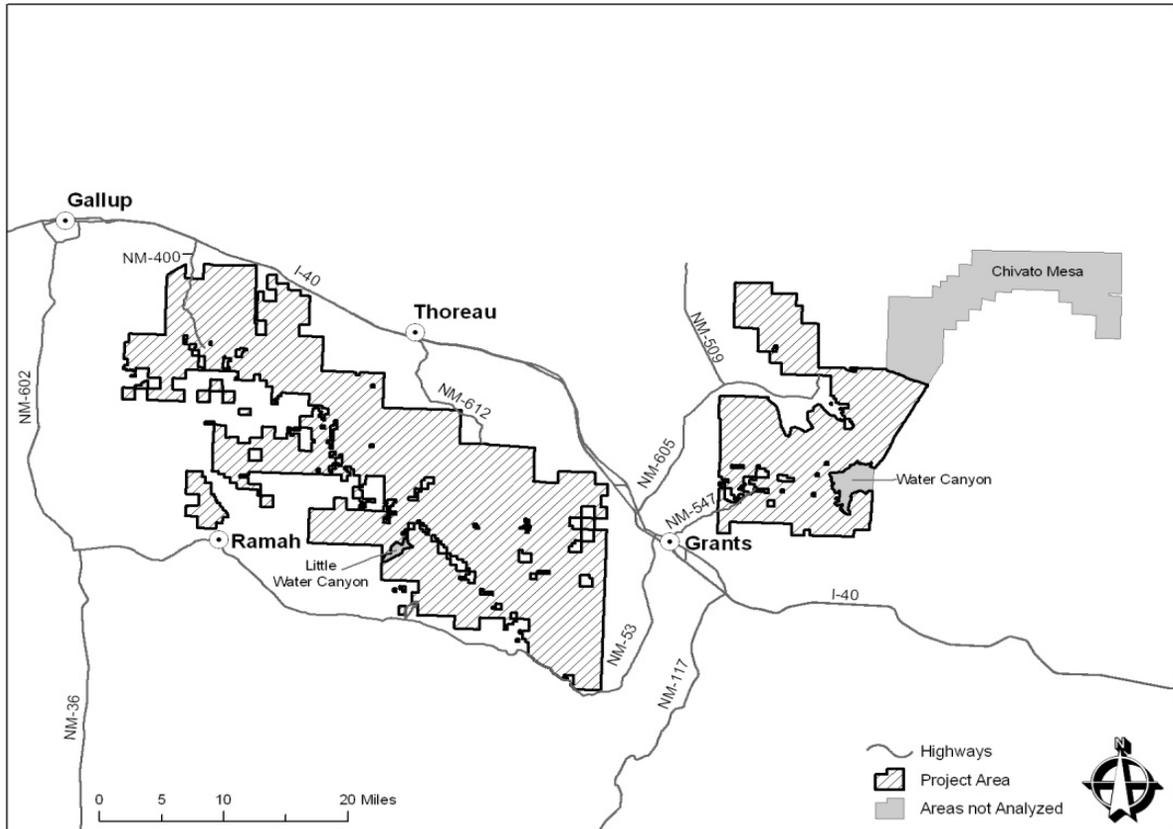


Figure 1. Analysis area location

Previous Decisions

Many roads currently available for motorized use are open to all motorized vehicles and are not proposed for any change in this document. Only the changes to the current system are subject to the National Environmental Policy Act (NEPA) analysis per CFR 212.50(b).

Per 36 CFR 212.50(b), “the responsible official may incorporate previous administrative decisions regarding travel management made under other authorities, including designations and prohibitions of motor vehicle use, in designating National Forest System roads (system roads and NFSR when referring to an individual road), National Forest System trails (system trails), and areas on National Forest System lands (NFS lands) for motor vehicle use.”

There are previous decisions that comply with the rule that will be incorporated into the designated system and no change is proposed as part of this project.

The following decisions are not re-analyzed in this document; however, the results of these decisions will be included on the MVUM:

- “Checkerboard Transportation Management Plan,” which designated 48 miles of existing roads as motorized system roads for all classes of vehicles on Chivato Mesa (USDA

Forest Service 1998) and the “L-Bar Land Exchange Environmental Assessment/Decision” which amended the “Checkerboard Transportation Management Plan” by adjusting the designated motorized system roads to 30 miles on Chivato Mesa (USDA Forest Service 2000). The subsequent Forest Closure Order 03-0300 signed August 2009 prohibits year-round motorized cross-country travel off the designated road, and seasonally closes the designated roads for resource protection on Chivato Mesa (See “Previous Decision Map PD1–Areas Outside the Analysis Area” in appendix A).

- “Cibola National Forest Land and Resource Management Plan” (forest plan) prohibits off-road vehicle use in Water Canyon to protect sensitive soils and in Little Water Canyon as part of a potential research natural area shown as areas covered by a previous decision on alternative A map noted as “Areas Covered by a Previous Decision” (Forest Plan 1985, pg. 128, 135, 159, and 167).

The following forest closure orders would continue to be applied to the referenced system roads:

- Forest Closure Order 03-0267 signed February 2009, which is a seasonal closure (Habitat Protection Area) in the Ft. Wingate area that prohibits motorized travel off NFSRs 151, 152, 162, 164, 166, 402, 481, 496, 503, 546, and 547 between December 15 and March 31 (USDA Forest Service 1995).
- Forest Closure Order 03-0301 signed August 2009, which is a seasonal closure that prohibits motorized travel on NFSRs 569 and 192 between December 15 and April 15 in Rice Park and on San Mateo Mesa (USDA Forest Service 1999).

Purpose and Need

There is a need to comply with 36 CFR 212.51(a), which requires the forest to designate motor vehicle use on National Forest System roads, trails, and areas by vehicle class, and if appropriate, by time of year. There is also a need to comply with the Travel Management Rule, 36 CFR 261.13, which requires that forests prohibit motor vehicle use off the system of designated roads, trails, and areas, and motor vehicle use that is not in accordance with the designations.

Proposed Action Development

Public Involvement

The Mt. Taylor Ranger District initiated a collaborative process for travel management in October 2007. The process began with assessments of internal and external stakeholders by U.S. Institute for Environmental Conflict Resolution and the travel management interdisciplinary (ID) team.

The district hosted two phases of open house sessions during development of the proposed action. These sessions were held in close proximity to the analysis area in Gallup and Grants, NM. The initial open house sessions were held to provide information about the Travel Management Rule and explain the need for implementing the rule. The second phase focused on public input and solicited detailed information on how they use and enjoy national forest lands within the analysis area.

Forest Service officials asked the public to clearly define what routes and areas are important to them for providing opportunities for motorized uses. Meeting participants identified on maps the motorized routes they used to access desired areas. Authorized and known unauthorized routes

were displayed on the base maps for the exercise. The public identified additional unauthorized routes previously unknown to, or unmapped, by district personnel.

The district hosted two additional open houses at the district office and maintained an open door policy for public input for individuals and groups. This approach allowed the district to receive input from people who were unable to attend the initial sessions.

Detailed maps were posted at the district office in Grants, NM, and at the McKinley County Agricultural Service Center in Gallup, NM, for public review and comment. The district received hand-drawn maps, GIS data, verbal descriptions, emails, and letters with additional input. Information about travel management, maps, public meetings, and project contacts was available online at http://www.fs.fed.us/r3/cibola/travel-management/tm_mt_taylor/index.shtml for the public outside of the local area. Local newspapers were utilized to notify the local public.

The following concerns and requests were shared during the public involvement process. The interdisciplinary team (ID team) considered the public's concerns and requests in developing the proposed action and later alternatives:

- Provide a motorized trail riding experience where all-terrain vehicles (ATVs) are not competing with full size 4x4 trucks;
- Provide designations for motorized dispersed camping once the district is closed to motorized cross-country motorized travel;
- Provide for motorized big game retrieval that minimizes enforcement challenges and creation of unauthorized routes;
- Provide motorized opportunities that better meet the public's forest access priorities that were identified during the public involvement; and
- Reduce wildlife habitat fragmentation or resource damage from multiple routes that provide access to the same areas.

TAP Assessment and Proposed Action Development

The initial ID team analysis began with the travel analysis process (TAP) (USDA Forest Service 2007). This process reviewed the existing road system for the benefits and risks associated with roads and motor vehicle use.

This assessment, combined with public collaboration, was used to develop the proposed action. A variety of natural and cultural resource risks were identified. Increased frequency of unregulated motorized use and increases in the size, power, and versatility of off-highway vehicles, have contributed to unauthorized user-created routes. In many places on the district, motorized cross-country use has established unauthorized routes used by the public as roads or motorized trails for a variety of purposes. The locations of these routes were not established by the Forest Service, nor were the routes constructed to Forest Service standards to avoid and/or mitigate resource damage. The routes are not maintained and some of these unauthorized routes are causing damage to soils, water quality, wildlife habitat, and heritage resources. Such use and the resulting damage are present on the district; however, some of these unauthorized routes are in acceptable locations, and have potential for motorized recreation and hunting access. There is also use on some decommissioned roads that were not successfully decommissioned. In some cases, use of

these decommissioned roads is providing motorized recreation and hunting access that is valued by the users.

OHV use on the district includes ATVs, utility terrain vehicles (UTVs) and off-highway motorcycles. The Mt. Taylor Ranger District estimates that use of ATVs is low to moderate compared to other forests. Most use occurs on existing National Forest System roads. ATV and UTV use increases substantially during big game hunting seasons, especially in the fall. District Forest Service personnel have noticed an increased use of UTVs such as: the *Rhino™*, *Mule™*, or *Ranger™*, with tread width greater than 50 inches. Motorcycle use has historically been very low. There are no authorized single track trails on the district.

The ID team weighed public input and natural resource management needs and concerns determined by a travel analysis process (TAP) (USDA Forest Service 2007). In situations where public input was consistent with the recommendation of the TAP, that area or travel route was brought forward to the proposed action. Roads for consideration included unauthorized, closed, and previously decommissioned roads that are not legally available for public use. In some situations, public input did not align with the TAP recommendations. Feasible mitigation measures were identified to address resource damage concerns, thereby allowing certain use areas or travel routes to be carried forward into the proposed action without compromising resource protection objectives. If a publicly identified use area or travel route posed a threat to natural resources and the ID team could not identify mitigation for that threat, the use area or travel route was excluded from the proposed action.

Scoping

In addition to the extensive public involvement in developing the proposed action, a scoping letter and report were sent to 493 people. The scoping letter, report, and maps were posted on the Cibola National Forests' travel management Web page. Press releases were sent to local area media outlets to announce the release of the scoping letter and report. The district also hosted two open houses after release of the proposed action, one each in Gallup and Grants, NM. Approximately 67 written comments were received. A list of interested individuals, tribes, and local, State, and Federal agencies involved in the scoping process is on file in the project record located at the district office. The project has been on the forest's schedule of proposed actions since 2008.

Tribal Consultation

The district consulted with eight tribes that use the district for traditional cultural or spiritual activities. The following tribes were consulted: Pueblo of Acoma; Pueblo of Zuni; Pueblo of Laguna; Pueblo of Sandia; Pueblo of Jemez; Jicarilla Apache; Hopi Nation; and the Navajo Nation.

These tribes were initially informed about travel management in August 2008 when the process was highlighted in the forest's annual tribal consultation letter. Subsequently, followup consultation meetings were held with these tribes in the fall and winter of 2008. A followup workshop was conducted in Acoma, NM, on November 03, 2008. The Navajo Medicine Men Association was consulted in January 2009 for clarification on traditional uses. The eight tribes listed above were also included in the NEPA scoping process.

Information gathered from tribal consultation was considered and incorporated into development of the proposed action and alternatives. Further information on tribal involvement efforts is contained in the project record located at the district office.

Proposed Action

Some changes have been made to the proposed action since scoping in October 2008. These changes are the result of calculation errors found in GIS processing, additional field reviews, issues and concerns discovered during the analysis, and further review of the Travel Management Rule. These changes reflect only data error corrections and did not change the proposed route designations. In addition, there were 0.3 mile of new motorized trails construction proposed in the scoping document. This route currently exists as an unauthorized route, therefore, 0.3 mile has been added to the unauthorized trails proposed for designation and deleted from construction.

The district proposes the following actions to implement the National Travel Management Rule (see alternative B maps (B1, B2, B3) in appendix A):

- Restrict 328 miles of system roads that are currently open to public motorized use to administrative use only (these roads would not appear on the MVUM).
- Change 15 miles of closed roads to open system roads for all motorized vehicles.
- Add 68 miles of unauthorized routes to open system roads for all motorized vehicles.
- Add 14 miles of unauthorized routes to motorized trails for vehicles 50 inches or less in width.
- Convert 41 miles of open system roads to motorized trails for vehicles 50 inches or less in width.
- Convert 15 miles of closed roads to motorized trails for vehicles 50 inches or less in width.
- Change 76 miles of open system roads to closed roads with a coincident designation as a motorized trail for 50 inches or less in width.
- Change 10 miles of closed roads to receive a coincident designation as a motorized trail for vehicles 50 inches or less in width.
- Add 15 miles of unauthorized routes to motorized single-track trail for motorcycles only.
- Convert 2 miles of open system roads to motorized single-track trail for motorcycles only.
- Change 3 miles of open system roads to closed roads with a coincident designation as a motorized single-track trail for motorcycles only.
- Designate 100-foot corridors for motorized dispersed camping along either side of 80 miles of roads².

² This number was originally 127 miles in the scoping document. A GIS layer calculation error was discovered during the alternative development process where some roads were duplicated. The map remains unchanged.

- Reroute three segments along National Forest System Road (NFSR) 447 totaling approximately 1 mile. The NFSR 447 reroute construction would be surfaced with aggregate, and boulders would be used to close the abandoned sections.
- Seasonally restrict motorized vehicle travel on 10 miles of designated motorized trails from December 1 to March 1 annually to minimize conflict between livestock and motorized use.
- Amend the forest plan to remove the variable road density guidance for each management area and its associated analysis area. Change the road density to a maximum of 1.9 miles of roads per square mile average for all management areas on the district (see appendix B for specific changes to the forest plan).

Decision Framework

The responsible official will make the following decisions after review of the environmental assessment:

- Which roads, trails, and areas to include in the designated system;
- Which class of motor vehicles would be allowed on specific roads, trails and areas, if appropriate, by time of year;
- Where motorized dispersed camping corridors may be designated within specified distance of certain designated routes;
- Where the limited use of motorized vehicles within a specified distance of certain designated routes, will be allowed solely for the purposes of retrieval of a legally downed big game animal;
- What mitigation and/or monitoring measures to implement as part of the selected alternative; and
- Whether to amend the forest plan to delete management area road density guidelines.

Issues

This section lists the issues identified as a result of the analysis of comments received during the scoping period. Issues are defined as those directly or indirectly caused by implementing the proposed action. The analyses of major issues and project objectives provide the basis for formulating alternatives that meet the purpose and need of the proposed actions and for making a decision on the project (Forest Service Handbook (FSH) 1909.15, Section 12.32-33).

Motorized Big Game Retrieval for Big Game Species³

The proposed action does not allow motorized big game retrieval off of designated system roads. During public involvement, comments were received that shared the concern that this would impede a hunter's ability to retrieve legally tagged big game.

Motorized Dispersed Camping

There were two opposing issues raised with the proposed action. The first concern was that a 100-foot motorized dispersed camping corridor on either side of certain designated roads was not a sufficient distance to provide for a safe, quality camping experience. Scoping comments were received that indicated the 100-foot corridor does not provide enough separation between camping sites and roads. Scoping comments from campers stated concerns that concentrating campers next to roads would result in an unsafe and unsecure campsite. Dust and noise created by motor vehicles would adversely affect the overall motorized dispersed camping experience. There were additional comments that the proposed action did not provide enough motorized dispersed camping corridors across the district.

In the second issue, other comments indicated that respondents felt there is too much motorized dispersed camping. The motorized dispersed camping corridors in the proposed action would result in too much land designated for motorized dispersed camping, which would increase more motorized cross-country travel in these areas and, therefore, have greater impact to resources in these corridors.

Off-Highway Vehicle Use

There were a variety of concerns related to OHV use and the desire for a variety of motorized recreation opportunities:

- Some of the proposed designated OHV trails did not form a loop, so that it would be necessary to travel the same route out and back. OHV users responded that this type of OHV trail access and designation was undesirable and that users would like to see more loops to allow for a more varied experience.
- The proposed action designates trails for vehicles less than 50 inches in width, users of utility terrain vehicles (UTVs)—also known as side by sides—would not be allowed to use these trails because many of the UTVs exceed 50 inches in width. Scoping comments from UTV owners requested that designated trails should also accommodate UTVs.
- The proposed action did not designate an area for motorized cross-country travel for OHV use. There were a number of comments identifying an area north of County Road 50 on McKenzie Ridge as desirable for a designated area, including jeep groups that participate in rock crawling in that area.

³ Mule deer, elk, black bear, cougar, pronghorn antelope, Barbary sheep, bighorn sheep, javelina, Oryx, and ibex are the species defined by the New Mexico Department of Game and Fish as big game species. For this document, motorized big game retrieval would *only apply to elk, mule deer, and black bear*, because they are the most commonly hunted species in the analysis area.

Habitat/Species Impacts

There was concern that the number of designated roads in the proposed action fragments wildlife habitat, and motor vehicle use on these roads disrupts wildlife. Comments received during scoping identified that motor vehicle use on designated routes would result in wildlife harassment and dispersal.

Hunting

The proposed action designated some roads in quality hunting areas. Comments received requested consideration of motorized seasonal closure(s) on designated roads in quality hunting areas only during the elk and deer seasons to enhance a more primitive hunting experience.

Designation of Unauthorized (User-created), Closed, Decommissioned, or New Roads

There is a concern that designating unauthorized, closed, decommissioned, or new roads would have excessive negative effects to natural or heritage resources.

Chapter 2 - Alternatives

This section describes the alternatives to be analyzed in the EA. The alternatives were developed to respond to the issues described above. While many potential options for road and trail designation exist, it is neither practical nor feasible to consider every possible combination. Therefore, the alternatives described here represent a range of management options that address the issues raised and meet the purpose of and need for the project.

Common to All Alternatives

To meet the Agency timelines associated with implementing the rule, some of the heritage inventory and clearance for Mt. Taylor travel management will be completed after the NEPA decision occurs. The heritage inventory and clearance work will continue in a phased manner as per the “Heritage Protocol for Travel Management for Region 3” (USDA Forest Service 2007). Routes and areas that are approved in the travel management decision will not be open to the public and shown on the MVUM until heritage clearances have been completed. The district plans to complete the surveys and clearance requirements within 3 years of the final decision.

The forest plan amendment adopted with the Sandia Ranger District Travel Management Project would apply to the Mt. Taylor Ranger District when the travel management decision is signed for this project.

Common to All Action Alternatives

The forest plan would be amended to remove the variable road density guidance for each management area and its associated analysis areas. Change the road density to a maximum of 1.9 miles of roads per square mile average for all management areas on the district. See page 18 for the proposed amendment.

Alternative A – No Action

Forest Service NEPA regulations require EAs to contrast the effects of action alternatives with that of taking no action (36 CFR 220.7(b) (2) (ii)). Alternative A, in its entirety, is not compliant with the Travel Management Rule, which requires prohibiting driving off the designated system. Alternative A serves as a baseline for comparing the effects of other alternatives. Providing for unrestricted, cross-country travel off the designated system cannot be selected and provide for the purpose and need to comply with the rule. However, no action would provide for the continued motorized use of open National Forest System roads on the district. This part of the alternative could be selected by the responsible official.

Motorized cross-country travel is allowed on 445,623 acres, which represents 86 percent of the district land base (515,536 acres). These acres would remain open to motorized cross-country travel for dispersed camping, hunting, and other activities under this alternative. Since motorized cross-country travel is allowed, unauthorized routes continue to be created across the district. All of these routes would continue to be used by motor vehicles, unless prohibited by a separate closure order or legislative action.

Motorized dispersed camping would be unrestricted in the areas open to motorized cross-country travel. There are 987 miles of National Forest System roads on the Mt. Taylor Ranger District that

are open to general motorized use. Of these, 91 miles are maintained and managed for passenger vehicles. There are 896 miles of system roads that are managed for high-clearance vehicles, such as pickups or sport utility vehicles. These would be considered for designation in this alternative.

There is no motorized trail system for OHV use on the district and none would be added under this alternative.

There would not be an amendment proposed for this alternative revising the maximum road density to apply to the entire district. The forest plan was amended with the Sandia Ranger District Travel Management Project decision in 2008. This amendment would take effect for Mt. Taylor once a decision is signed for this project. This amendment adopts the provisions of the Travel Management Rule and closes the district to cross-country travel off of the designated system as shown on a motor vehicle use map (MVUM).

See alternative A maps (A1, A2, and A3) in appendix A.

Alternative B – Proposed Action

Alternative B would prohibit motorized cross-country motor vehicle travel and restrict motor vehicle travel to designated roads and trails. Motorized big game retrieval would not be allowed, and there would be no designated OHV area in this alternative. Corridors would be designated for motorized dispersed camping along specified roads. See alternative B maps (B1, B2, and B3) in appendix A.

The following are specific actions proposed to implement the National Travel Management Rule:

- Restrict 328 miles of system roads that are currently open to public motorized use to administrative use only (these roads would not appear on the MVUM).
- Change 15 miles of closed roads to open system roads for all motorized vehicles.
- Add 68 miles of unauthorized routes to open system roads for all motorized vehicles.
- Add 14 miles of unauthorized routes to motorized trails for vehicles 50 inches or less in width.
- Convert 41 miles of open system roads to motorized trails for vehicles 50 inches or less in width.
- Convert 15 miles of closed roads to motorized trails for vehicles 50 inches or less in width.
- Change 76 miles of open system roads to closed roads with a coincident designation as a motorized trail for 50 inches or less in width.
- Change 10 miles of closed roads to receive a coincident designation as a motorized trail for vehicles 50 inches or less in width.
- Add 15 miles of unauthorized routes to motorized single-track trail for motorcycles only.
- Convert 2 miles of open system roads to motorized single-track trail for motorcycles only.
- Change 3 miles of open system roads to closed roads with a coincident designation as a motorized single-track trail for motorcycles only.

- Designate 100-foot corridors for motorized dispersed camping along either side of 80 miles of roads⁴
- Reroute three segments of NFSR 447 totaling approximately 1 mile. The NFSR 447 reroute construction would be surfaced with aggregate, and boulders would be used to close the abandoned sections.
- Seasonally restrict motorized vehicle travel on 10 miles of designated motorized trails from December 1 to March 1 annually to minimize conflict between livestock and motorize use.

Alternative C – More Motorized Routes Without Motorized Big Game Retrieval

Alternative C was developed to address the issue of providing additional motorized recreation opportunities and access compared to the proposed action. Alternative C would add more routes to create loops that improve the quality of motorized recreation opportunities, add more motorized dispersed camping corridors, and increase the width of the motorized dispersed camping corridors from 100 feet to 300 feet on either side of specified roads. Alternative C would add a designated OHV area. See alternative C maps (C1, C2, and C3) in appendix A.

Alternative C proposes the following specific changes:

- Restrict 314 miles of system roads that are currently open to public motorized use to administrative use only (these roads would not appear on the MVUM).
- Change 15 miles of closed roads to open system roads for all motorized vehicles.
- Add 82 miles of unauthorized routes to open system roads for all motorized vehicles.
- Add 41 miles of unauthorized routes to motorized trails for vehicles 50 inches or less in width.
- Convert 40 miles of open system roads to motorized trails for vehicles 50 inches or less in width.
- Convert 17 miles of closed roads to motorized trails for vehicles 50 inches or less in width.
- Change 79 miles of open system roads to closed roads with a coincident designation as a motorized trail for 50 inches or less in width.
- Change 8 miles of closed roads to receive a coincident designation as a motorized trail for vehicles 50 inches or less in width.
- Add 18 miles of unauthorized routes to motorized single-track trail for motorcycles only.
- Convert 2 miles open system roads to motorized single-track trail for motorcycles only.
- Change 5 miles of open system roads to closed roads with a coincident designation as a motorized single-track trail for motorcycles only.

⁴ This number was originally 127 miles in the scoping document. A GIS layer calculation error was discovered during the alternative development process where some roads were duplicated. The map remains unchanged.

- Designate 300-foot corridors for motorized dispersed camping along either side of 99 miles of specified roads.
- Reroute three segments of NFSR 447 totaling approximately 1 mile. The NFSR 447 reroute construction would be surfaced with aggregate, and boulders would be used to close the abandoned sections.
- Reroute 0.2 of a mile of motorized trail to bypass private property and to link two segments of Road 169 GX.
- Seasonally restrict motorized vehicle travel on 29 miles of designated motorized trails from December 1 to March 1 annually to minimize conflict between livestock and motorized use.
- Seasonally restrict vehicle use on 14 miles of designated motorized trails from December 16 to August 31 annually. These motorized trails will be open from September 1 through December 15 annually (during the fall big game hunting seasons) for additional hunter access.
- Designate a 344-acre OHV area. This area is bounded by a fence, designated roads, drainages, and the edge of McKenzie Ridge. The boundary would be signed to clearly define the OHV area boundary. The parking and loading/unloading area would be designated within the designated OHV area.
- Alternative D - Additional motorized routes with motorized big game retrieval.
- Alternative D addresses the same issues as alternative C along with two additional issues: providing for motorized cross-country travel for retrieving downed big game by an individual who has legally taken the animal and accommodating UTVs. This alternative would allow hunters to drive up to one-half mile off specific designated roads to retrieve a legally tagged elk, mule deer, or black bear during the big game hunting season. Under this alternative, UTVs would be allowed on motorized trails that are designated for vehicles 65 inches in width or less (UTVs, ATVs and motorcycles). See alternative D maps (D1, D2, and D3) in appendix A.

Alternative D – More Motorized Routes With Motorized Big Game Retrieval

- Restrict 314 miles of system roads that are currently open to public motorized use to administrative use only (these roads would not appear on the MVUM).
- Change 15 miles of closed roads to open system roads for all motorized vehicles.
- Add 82 miles of unauthorized routes to open system roads for all motorized vehicles.
- Add 41 miles of unauthorized routes to motorized trails for vehicles 65 inches or less in width.
- Convert 40 miles of open system roads to motorized trails for vehicles 65 inches or less in width.
- Convert 17 miles of closed roads to motorized trails for vehicles 65 inches or less in width.

- Change 79 miles of open system roads to closed roads with a coincident designation as a motorized trail for 65 inches or less in width.
- Change 8 miles of closed roads to receive a coincident designation as a motorized trail for vehicles 65 inches or less in width.
- Add 18 miles of unauthorized routes to motorized single-track trail for motorcycles only.
- Convert 2 miles open system roads to motorized single-track trail for motorcycles only.
- Change 5 miles of open system roads to closed roads with a coincident designation as a motorized single-track trail for motorcycles only.
- Designate 300-foot corridors for motorized dispersed camping along either side of 99 miles of specified roads.
- Reroute three segments of NFSR 447 totaling approximately 1 mile. The NFSR 447 reroute construction would be surfaced with aggregate, and boulders would be used to close the abandoned sections.
- Reroute 0.2 mile of motorized trail to bypass private property and to link two segments of Road 169 GX.
- Seasonally restrict motorized vehicle travel on 29 miles of designated motorized trails from December 1 to March 1 annually to minimize conflict between livestock and motorized use.
- Seasonally restrict vehicle use on 14 miles of designated motorized trails from December 16 to August 31 annually. These designated motorized trails will only be open during the fall big game hunting seasons for additional hunter access.
- Designate a 344-acre OHV area. This area is bounded by a fence, designated roads, drainages, and the edge of McKenzie Ridge. The boundary would be signed to clearly define the OHV area boundary. The parking and loading/unloading area would be designated within the designated OHV area.
- Designate 0.5-mile corridors (78,790 acres) on either side of 287 miles of designated roads strictly for retrieving a legally tagged big game animal.

Alternative E – Fewer Roads

Alternative E addresses the issue to reduce wildlife harassment and reduce wildlife habitat fragmentation through designation of fewer roads and motorized trails than alternatives B, C, and D. In addition, alternative E responds to concerns regarding designating unauthorized, closed, and decommissioned roads. Alternative E does not designate corridors for motorized dispersed camping, does not allow motorized cross-country travel for motorized big game retrieval, and does not designate an OHV area. This alternative does not allow the use of UTVs on designated motorized trails. See alternative E maps (E1, E2, and E3) in appendix A.

Alternative E proposes the following specific changes:

- Restrict 567 miles of system roads that are currently open to public motorized use to administrative use only (these roads would not appear on the MVUM).
- Change 1 mile of closed roads to open system roads for all motorized vehicles.

- Convert 6 miles of open system roads to motorized trails for vehicles 50 inches or less in width.
- Convert 2 miles of closed roads to motorized trails for vehicles 50 inches or less in width.
- Change 11 miles of open system roads to closed roads with a coincident designation as a motorized trail for 50 inches or less in width.
- Change 4 miles of closed roads to receive a coincident designation as a motorized trail for vehicles 50 inches or less in width.
- Reroute three segments of NFSR 447 totaling approximately 1 mile. The NFSR 447 reroute construction would be surfaced with aggregate, and boulders would be used to close the abandoned sections.
- Seasonally restrict motorized vehicle travel on 9 miles of designated motorized trails from December 1 to March 1 annually to minimize conflict between livestock and motorized use.

Proposed Cibola National Forest Land and Resource Management Plan (Forest Plan) Amendment

The forest plan was amended in 2008 with the Sandia Ranger District Travel Management decision, prohibiting cross-country travel except as designated on the MVUM. This amendment takes effect on the Mt. Taylor Ranger District once a decision has been signed for this project and a MVUM has been released.

The interdisciplinary team compared the proposed action to the guidance in the forest plan to determine if the actions are consistent with the forest plan. The forest plan addresses road density in two places, forestwide guidance and in the transportation/travel guidance for analysis areas within the six management areas that apply to the district. The forestwide guidance (page 61-1 of the forest plan) provides for a maximum road density of 1.9 miles per square mile of forest land. The proposed action and all alternatives are consistent with the forestwide guidance in the forest plan for road density.

The management area guidance on road density varies by analysis areas, which are subdivisions of management areas that are described but not mapped in the forest plan. The analysis areas have a variety of maximum road densities identified in the forest plan. The analysis area road density guidelines range from 0.1 to 1.6 miles per square mile.

Table 1 below summarizes the road density guidance in the forest plan and compares that guidance to the open road density of the existing transportation system, the minimum road system, and the proposed action.

Table 1. Summary of forest plan road density guidance and comparison to the existing condition, the minimum road system, and the proposed action

Forest Plan Area	Existing Forest Plan Direction for Road Density (miles/square mile)		Existing District Transportation System Open Road Density (miles/sq. mile)	Minimum Road System Road Density (miles/sq. mile)	Proposed Action Open Road Density (miles/sq. mile)
Forestwide	1.90		1.48	1.32	0.85
MA-8	Analysis Areas - 7, 8	1.3			
	Analysis Area - 9	0.9			
MA-9	Analysis Area - 11	1.6			
	Analysis Area - 12	0.3			
MA-10	Analysis Area - 13	0.5			
MA-13	Analysis Area - 18	0.14			
MA-14	Analysis Areas - 19, 20	0.5			
	Analysis Area - 21	1.3			
	Analysis Area - 22	0.3			
MA-18	Analysis Area - 10	0.8			

The forest plan contains a map of the management areas but only describes analysis areas and does not map them. Many of the analysis areas were defined according to the seral stage⁵ of the vegetation type or range condition. Analysis areas based on vegetation structure change over time and shift across the landscape; shifts are caused by management activities and natural disturbances. Road locations generally do not change over time. Because the exact location of the analysis area boundaries is unclear and the conditions used to define them have changed, it is no longer meaningful to define road densities by analysis area. Because analysis areas cannot be mapped consistently over time, there is no way to determine if the proposed action road network exceeds the forest plan guidance. There is, therefore, a need to amend the road density guidance in the forest plan. We propose to eliminate road density guidance for each management area and use amended forestwide guidance as described in Table 2.

To provide for consistency between the forest plan and Travel Management Rule, we propose deleting or changing standards/guidelines listed below, which refer to off-highway vehicle (OHV) area closures and restrictions, signing of closed areas (no longer appropriate), or specific acreages of OHV closed areas (no longer necessary as all areas outside the designated system would be closed). This amendment would be specific to the district.

⁵ Seral stage is a temporal and intermediate state in the process of succession. Succession is the gradual replacement of one community of plants by another in a given area over time.

Table 2. Proposed changes to the forest plan

Management Area and/or Page	Current Forest Plan Direction	Change to Forest Plan Direction
Pg. 61-1	I Water, (1) Quality, (a) Maximum road density of 1.9 miles of road per square mile.	Text added. Open system road densities will increase temporarily to 2 to 3 miles per square mile in active vegetation management areas.
Pg. 76	Update the transportation information system annually.	Text added. Motor vehicle use off the designated system of roads, trails, and areas is prohibited, except as identified on the motor vehicle use map.
Pg. 120	<p>Restrict ORV use on 565 acres of the Zuni Mountains where State Habitat Protection Act and ORV restriction is in effect from December 15 through March 31 (Order 03-32, Fort Wingate Road and Off-Road Motor Vehicle Restriction dated January 13, 1983). Maintain 1,198 acres closed to ORV use: 316 acres closed to protect sensitive soils, 882 acres potential RNA (Little Water Canyon).</p> <p>Expand the off-road vehicle closure along Bluewater Creek to include an additional 110 acres between the bridge on NFSR 178 and Andrews Cabin.</p>	Text deleted. OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 128	Maintain 1,684 acres closed to ORV use to protect sensitive soils.	Text deleted. OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 135	Maintain 757 acres closed to ORV use to protect sensitive soils.	Text deleted. OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 159	Maintain 5,495 acres on the district closed to ORV use to protect sensitive soils.	Text deleted. OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 167	Evaluate and, if warranted, maintain 11,976 acres closed to ORV use. Restrict ORV use in that portion of Zuni Mountains where State Habitation Protection Act and ORV restriction is in effect from December 15 through March 31 (Order 03- 32, Fort Wingate Road and Off-Road Motor Vehicle Restriction dated January 13, 1983. Manage 28 acres closed to ORV as part of potential RNA (Little Water Canyon).	Text deleted. OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.

Management Area and/or Page	Current Forest Plan Direction	Change to Forest Plan Direction
Pg. 196	Maintain 100 acres closed to ORV use as part of potential RNA (Bluewater Creek).	Text deleted. OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
8 (Pg. 125)	Manage the following average road densities: 1.3 miles of road average road density (Applicable Analysis Area 7 and 8) 0.9 mile of road average road density (Applicable Analysis Area 9) Road densities will increase temporarily to 2 to 3 miles per square mile in active timber harvest areas.	Text deleted. Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
9 (pg. 132)	Manage the average road densities indicated below: 1.6 miles of road per square mile (Applicable Analysis Area 11) 0.3 mile of road per square mile (Applicable Analysis Area 12) Road density will increase temporarily to 2 to 3 miles per square mile in active timber harvest areas.	Text deleted. Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
10 (pg. 139)	Manage an average road density of 0.50 mile of road per square mile. Road density in active timber harvest areas will be temporarily increased to 2 to 3 miles per square mile (Applicable Analysis Area 13).	Text deleted. Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
13 (pg. 161)	Manage an average road density of 0.14 mile of road per square mile. (Applicable Analysis Area 18)	Text deleted. Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
14 (pg. 173)	Manage the road system for an average road densities indicated below: 0.5 mile of road per square mile (Applicable Analysis Area 19 and 20) 1.3 miles of road per square mile (Applicable Analysis Area 21) 0.3 mile of road per square mile (Applicable Analysis Area 22)	Text deleted. Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
18 (pg. 198)	Manage an average road density of 0.8 mile of road per square mile. (Applicable Analysis Area 10)	Text deleted. Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.

Alternatives Considered and Eliminated from Detailed Study

During the scoping process comments were received suggesting additional alternatives to be analyzed as part of the travel management process on the district. The following paragraphs describe the alternatives that were considered but eliminated from detailed study.

Motorized Big Game Retrieval

A variety of alternatives were suggested for motorized big game retrieval that was eliminated from detailed study:

- Hunters suggested allowing motorized big game retrieval only during rifle hunting season, excluding bow hunting seasons. Reason eliminated: This alternative favors one group of hunters over another. Excluding bow hunters from having the opportunity for motorized big game retrieval can be considered to be unreasonably preferential to one hunting group over another.
- Other hunters suggested allowing motorized big game retrieval having a variation in the fixed distances based on terrain and hunting opportunities. Reason eliminated: The complexity of the alternative made it infeasible to map, for hunter interpretation and Agency management and enforcement.
- Unrestricted cross-country motorized big game retrieval is provided for district wide. Reason eliminated: This is analyzed as part of alternative A—no action—and fails to meet the purpose and need because this alternative does not meet the intent of “limited” motorized big game retrieval as stated in 36 CFR 212.51(8b).

Motorized Dispersed Camping

Several alternatives were suggested for motorized dispersed camping that were eliminated from detailed study:

- It was suggested that motorized dispersed camping be provided for in a variety of ways within the same alternative, including varying motorized camping corridor widths based on terrain and use, and specifying specific spur roads exclusively for motorized dispersed camping. Reason eliminated: The complexity of the alternative made it infeasible to map, for public interpretation and Agency management and enforcement.
- Unrestricted motorized dispersed camping is provided for district wide. Reason eliminated: This is analyzed as part of alternative A—no action—and fails to meet the purpose and need because this alternative does not meet the intent of “limited” motorized dispersed camping as stated in 36 CFR 212.51(8b).

La Jara Mesa Roads as Designated Area

Scoping comments suggested that the Forest Service consider using the exploration roads below the rim of La Jara Mesa close to the abandoned San Mateo mine as a designated OHV use area. Reasons eliminated: Abandoned mining facilities are present in the area and public interaction within a half-mile radius of previously mined locations would pose a risk to public health and

safety. In addition, a uranium mine is proposed in the area which poses a public safety risk from industrial vehicle traffic associated with the uranium mine, if the project is approved.

Minimum Road System

An alternative was considered to designate the minimum road system identified in the travel analysis process as roads open to public use to all vehicles year round. Reasons eliminated: The minimum road system identifies a number of roads that are only used infrequently for administrative access, and are maintained at a reduced level appropriate for infrequent use. Designating these roads for public motorized use would increase the level of traffic beyond what these roads could support without a substantial investment in maintenance and improvement. The minimum road system also includes maintenance level 1 roads, which are closed but are available for future natural resource management needs.

Mitigation and Monitoring

Forest plan standards and guidelines apply to all alternatives. Best management practices (BMPs) outlined in Forest Service Handbook 2509.22 and the Water Conservation Practices Handbook (41.14, 41.15, 41.18, 41.24, and 25.18) addressing soil, water, and noxious weeds would be applied to the reroute of NFSR 447 in all action alternatives. Designating unauthorized routes, OHV areas, motorized dispersed camping corridors, and reroutes have the potential to affect heritage resources. Any potential effects to heritage sites associated with this project will be mitigated as outlined in the “Travel Management Heritage Protocol” (USDA Forest Service, 2007).

The Travel Management Rule requires that the Forest Service “shall monitor the effects of motor vehicle use on designated roads and trails and in designated areas” (36 CFR 212.57). Monitoring on the Mt. Taylor Ranger District will include road condition surveys of unauthorized roads added to the system, annual road condition surveys, and annual accomplishment reporting of all construction, reconstruction, and maintenance of roads on the district. The 1985 forest plan states that the forest will “conduct trail condition surveys to assess trail use and maintenance requirements and monitor water and soil conditions through best management practice effectiveness monitoring” (Forest Plan 1985).

Comparison of Alternatives

Key quantitative proposed changes and differences between alternatives are compared in Table 3 and Table 4. For detailed analysis, refer to chapter 3.

Table 3. Proposed road system changes and designations by alternative

		Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Proposed Changes to the Road System (all classes of vehicles)						
Roads	Miles of open system roads that will not be designated	0	388	314	314	567
	Miles of open system roads unchanged	987	537	547	547	403
	Miles of closed roads changed to open system roads	0	15	15	15	1
	Miles of decommissioned roads added to open system roads	0	32	41	41	0
	Miles of unauthorized routes added to open system roads	0	36	41	41	0
	Total	987	620	644	644	404
Proposed Changes to the Road System (designated as motorized trails)						
Miles of roads that will become motorized trails (includes motorized trails with coincident designation)	Decommissioned roads	*	7	8	8	0
	Unauthorized routes	*	7	33	33	0
	Closed roads	*	25	25	25	6
	Open system roads	*	117	119	119	17
	Total	*	156 *	1,855	185**	235
Miles of roads that will become motorized Single track trails	Open system roads	*	5	7	7	0
	Unauthorized routes	*	15	18	18	0
	Total	*	20	25	25	0
Resulting System (designated roads and trails)						
Total miles of open system roads and motorized trails that will be open to the public		987	796	854	854	427

* Motorized trails designated for vehicles 50 inches in width or less. ** Motorized trails designated for vehicles 65 inches in width or less. There are no trails currently managed for motor vehicle use on the district.

Table 4. Proposed designations by alternative

Designation Type	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Miles of motorized dispersed camping corridors	*	80	99	99	0
Area open to motorized big game retrieval (acres)	445,623	0	0	78,790***	0
Acres designated for OHV area	**	0	344	344	0

* Motorized dispersed camping is currently allowed on 445,623 acres of the district.

** Motorized OHV use is currently unrestricted on the district, unless specified in a closure order.

*** Corridor width is .5-mile on either side along 287 miles of designated roads.

Chapter 3 – Affected Environment and Environmental Consequences

This chapter summarizes the physical, social, and economic environments of the analysis area and the effects of implementing each alternative on that environment. It also provides the basis for the comparison of alternatives presented in chapter 2. Details of the analyses in this section are in the specialists' reports and on file in the project record.

Transportation System

Affected Environment

The analysis area consists of the portion of the Mt. Taylor Ranger District outside the areas that were covered by previous travel management decisions. Refer to chapter 1 for further discussion of these decisions.

The Mt. Taylor Ranger District of the Cibola National Forest is comprised of two mountain ranges, the San Mateo Mountains to the east of the district office in Grants, NM, and the Zuni Mountains to the west. The portion of the district in and adjacent to the San Mateo Mountains is generally referred to as the Mt. Taylor area, while the portion in and adjacent to the Zuni Mountains is referred to as the Zuni area. U.S. Interstate 40 (I-40) bisects these two areas, with the Mt. Taylor area to the north and Zuni area to the south. Primary access to the Mt. Taylor area is provided by State Highways 547 and 605 from the Grants area. State Highway 53 provides access to the Zuni area from the south and east, while State Highway 400 provides access from the north.

There are approximately 987 miles of National Forest System (NFS) road (system road) in the analysis area. The forest road system does not include private roads or roads under the jurisdiction of a State, county or local public road authority. The majority of the system roads in the analysis area were constructed for commercial activities such as timber harvesting and mining. Today, these roads are used primarily for recreational purposes such as camping, hiking, hunting, and off-highway vehicle use.

Public travel in the analysis area, both on and off system roads, is largely unmanaged. Approximately 93 percent of the total system road miles in the analysis area are open to motorized travel by the public, and there are no restrictions on cross-country travel. As a result, many miles of unauthorized road exist throughout the analysis area. Unauthorized roads are typically roads that were either created without the approval and knowledge of the Forest Service or are low-standard roads that were constructed by the Forest Service as temporary roads and were not decommissioned after they were no longer needed. Since many of these roads were not officially planned and designed considering potential environmental impacts, it is likely that at least some of them are adversely affecting the surrounding environment through disturbance to wildlife habitat, archaeological sites and vegetation, degradation of soil productivity, or alteration of watershed hydrologic function. In addition, the potential for the spread of noxious weeds is increased as a result of the unmanaged travel.

Road Maintenance Needs and Resources to Satisfy Needs

A term used by the Forest Service to describe the service provided by, and maintenance required for, a specific road is the maintenance level (ML). A road is assigned a maintenance level based on the design vehicle and intended use of the road. The maintenance level also provides an

indication of the level of comfort the user would expect to experience while operating a vehicle on the road. The Forest Service uses five maintenance levels, ML1 through ML5, with ML1 indicating the least amount of maintenance effort and ML5, the greatest. Refer to appendix C for complete descriptions of the maintenance levels. A summary of the road miles, with associated maintenance costs, in the analysis area by maintenance level is provided in table 5. Maintenance level 2, 3 and 4 roads are open to all motorized vehicles.

Table 5. Road miles by maintenance level

Maintenance Level*	Miles	Maintenance Cost per Mile	Total Maintenance Cost
1	77	\$107	\$8,240
2	896	\$420	\$376,320
3	91	\$6,760	\$615,160
4	0	\$9,850	\$0
Total	1,064	-----	\$999,720

*There are no ML5 roads in the analysis area. There are 0.2 mile of ML4 road in the analysis area. These miles are not reflected in this table as a result of number rounding.

The estimated maintenance costs per mile of road by maintenance level were determined for the Mt. Taylor TAP. Also determined for the TAP, the current annual budget allotment for the Mt. Taylor Ranger District to maintain these roads is approximately \$280,000, which is only 28 percent of the funding necessary to maintain them in a manner consistent with their assigned maintenance level. This substantial shortfall in road maintenance funding has resulted in a large backlog of deferred road maintenance needs. Deferred maintenance can be generally defined as annual or routine maintenance that was not completed when scheduled.

Public Safety

The primary concern regarding public safety as it relates to road system use is the potential for accidents involving single vehicles and conflicts between vehicles. The later could involve any combination of large commercial vehicles, full size passenger vehicles, or smaller trail vehicles. The Cibola National Forest is not aware of any serious accidents, whether involving single or multiple vehicles, reported within the last 4 years in the analysis area.

Higher speed forest roads (ML3 through 5) are subject to the Highway Safety Act of 1966 (P.L. 89-564, 80 Stat. 731). As such, safety features are incorporated into the design and management of the road beyond those typically incorporated into the design and management of lower standard roads. These features include: generally wider roadway widths with more frequent turnouts; signing to warn users of potential hazards along the roadway; guardrails, where appropriate; and more frequent maintenance to provide a relatively smooth road surface free from potentially hazardous irregularities.

Maintenance level 2 roads are not subject to the Highway Safety Act. These are typically lower standard roads managed for use by high-clearance vehicles. They generally have narrower road widths with fewer turnouts, and surface smoothness is not a consideration in the design or

maintenance of the road. Roadway geometry and surface condition typically result in lower travel speed, which reduces the likelihood of accidents.

The potential for accidents involving commercial and non-commercial vehicles is mitigated by the appropriate use of signing and control of public access in the vicinity of project activities. If necessary, roads can be temporarily closed by forest order to limit interactions between commercial and non-commercial vehicles.

Access Needs

Access to National Forest System lands is needed or desired for several reasons. These reasons include: administrative use; access for private property owners to their property; access to forest resources, for both commercial and non-commercial purposes; recreation use; and access for Indian tribes to traditional areas of cultural or spiritual significance.

As motorized travel in the analysis area—both on and off system roads—is largely unmanaged, access to National Forest System lands is currently hampered only where the Forest Service lacks a right-of-way or an easement across private property. There are several documented locations where the Forest Service does not have right-of-way across private property, either within or adjacent to the analysis area (Mt. Taylor TAP).

Environmental Effects

Summary of Road System Effects

A summary of the effects on the road system is provided in Table 6, Table 7 and Table 8. Alternative A is the no action alternative and represents the existing condition of the road system and alternative B is the proposed action.

The mileage shown for alternative A in Table 6 represents the miles of road currently open for public use. The columns labeled “All Motorized ≤ 50” Wide” and “All Motorized ≤ 65” Wide” in this table represent the miles of road that would be managed as coincident road and motorized trail. These miles would remain a part of the road system and would be added to the trail system. They would be assigned a maintenance level of 1 while they are managed as a motorized trail, and no other motorized use would be allowed during this time.

Table 6. Road miles open to motorized public use by alternative

Alt.	All Motorized Vehicles	All Motorized ≤ 50” Wide	All Motorized ≤ 65” Wide	Motorcycles Only	Total Miles
A	987	-----	-----	-----	987
B	620	86	-----	3	709
C	646	87	-----	5	738
D	646	-----	87	5	738
E	404	15	-----	0	419

Table 7. Change in road system miles by alternative

Alt.	Previously Decommissioned Road Miles Added for Public Use	Unauthorized Road Miles Added for Public Use	System Road Miles Removed from Public Use	Net Change in Road System Miles
A	0	0	0	0
B	32	36	59	+9
C	41	41	60	+22
D	41	41	60	+22
E	0	0	7	-7

Table 8. Road miles and associated maintenance costs by alternative

Alt.	Maintenance Level*				Total Miles	Total Maintenance Cost
	1	2	3	4		
A	77	896	91	0	1,064	\$999,720
B	453	529	91	0	1,073	\$885,811
C	443	553	91	0	1,087	\$894,821
D	443	553	91	0	1,087	\$894,821
E	652	313	91	0	1,056	\$816,384

* There are no ML5 roads in the analysis area. There are 0.2 mile of ML4 road in the analysis area. These miles are not reflected in this table as a result of number rounding.

The reason that a road designated as coincident road and motorized trail would remain a part of the road system is that it could potentially be needed in the future as a road. If this need were to arise, the designation would change and the road would not be managed as a motorized trail during the time it is used as a road.

In addition to the road miles proposed as coincident road and motorized trail, several miles of system road would be converted to motorized trail in each of the action alternatives. In alternative B, 59 road miles would be converted to trail, while 60 miles would be converted in alternatives C and D, and 7 miles in alternative E. These miles would be removed from the road system and added to the trail system.

Table 7 displays the road miles added to and removed from the road system. The decommissioned road miles were previously part of the road system; however, a decision was made at some point that they were no longer needed. New road construction is proposed with each of the action alternatives to bypass three segments of FR 447. There would be no net change in system road miles, as the lengths of the segments of new construction would be essentially the same as the lengths of the segments they replace.

Table 8 displays the road maintenance costs by alternative. For the purpose of comparing maintenance costs between alternatives, the assumption was made that the road miles not designated in an alternative would be closed, with a corresponding decrease in maintenance level to 1. In reality, these road miles would not be closed with this project; rather, they would remain open for limited administrative use. This assumption was made because the actual cost to maintain these road miles would be closer to that of a maintenance level 1 road than a maintenance level 2 road, considering that the traffic would presumably be much lighter than if they were designated for public use. Many of the road miles that are not designated for public use and are not needed for administrative purposes would likely be closed or decommissioned with future projects.

Public Safety

All Action Alternatives

It is difficult to predict the effects on public safety for the action alternatives. Because fewer roads would be designated for public use in each of the action alternatives than are currently open for use, some of the roads designated may experience more concentrated use than currently exists. As a result, the potential for incidents involving single or multiple vehicles using these roads may increase. If an increase in the frequency of these incidents were to occur, changes in the management of the affected roads may be warranted and would be made as necessary.

Road Maintenance Needs and Resources to Satisfy Needs

Alternative A (No Action)

The road maintenance needs would continue to far outweigh the funding available to satisfy these needs. With the likelihood that funding will continue to decrease or at best, remain the same from one year to the next, deferred maintenance needs would continue to increase.

In addition to the many miles of unauthorized road that already exist throughout the analysis area, continued unmanaged motorized vehicle use would likely result in the creation of more unauthorized roads. A portion of these roads would likely cause resource damage and would need to be treated in some way to mitigate the damage. The cost of this treatment would reduce the already limited funding available for maintaining system roads.

Alternatives B, C, D and E

Table 8 indicates a decrease in maintenance costs for alternatives B, C, D and E compared with alternative A (no action alternative) of 11.4 percent, 10.5 percent, 10.5 percent and 18.4 percent, respectively. These reduced maintenance costs, however, would remain substantially higher than the forecasted budget allotment for maintaining the roads in the analysis area (\$280,000 or less) consistent with their assigned maintenance levels.

Access Needs

Alternative A (No Action)

Access to National Forest System lands in the analysis area would be unchanged and would continue to be hampered only by the lack of rights-of-way across private property.

Effects Common to All Action Alternatives

For access on roads that would not be designated for public use, permits could be issued for purposes such as commercial activities and allowing access to private property for property owners, and areas of traditional use for members of Indian tribes.

Although fewer road miles would be designated for public use in each of the action alternatives than are currently open, all maintenance level 3 and 4 road miles would remain open for motorized use. These are typically higher standard, higher volume roads. The remaining road miles that are currently open are maintenance level 2 and are managed for high-clearance vehicles.

Alternative B

Compared with alternative A, approximately 37 percent fewer road miles would be designated for public use with all motorized vehicles than are presently open to the public (Table 6). Currently, there are no roads managed for trail vehicles only. In this alternative, approximately 86 miles of road would be designated for trail vehicles only, providing recreational opportunities without the concern for conflict with full size vehicles. In addition, 3 miles of road would be designated for motorcycles only. These miles do not include the road miles that would be converted to trail, as they would be removed from the road system.

Alternatives C and D

Alternatives C and D would designate a total of 26 more miles, approximately 1 percent more, of road for all motorized vehicles compared with alternative B (Table 6). An additional 1 mile of road would be designated for trail vehicles and 2 miles for motorcycles only. Road miles that would be converted to trail are not included, as they would be removed from the road system. The difference between alternatives C and D is that the miles designated for trail vehicles in alternative D would be open to larger vehicles, such as utility terrain vehicles (UTVs).

Roads 169GB, 50RB, 50RD and 50T and portions of roads 169GBA, 50R and 50T would be designated for seasonal use with trail vehicles in these alternatives. These roads segments, totaling 14 miles in length, would be open for use from September 1 through December 15.

One reroute to bypass private property is proposed in these alternatives. An unauthorized road, approximately 0.2 mile in length, would be added to the road system and used to link two segments of Road 169GX (located in the Zuni Division) together, replacing the segment currently passing through private property. Road 169GX would be designated as motorized trail.

Alternative E

Compared with alternative B, 216 fewer miles, approximately 35 percent less, would be designated for all motorized vehicles, and 71 fewer miles would be designated for trail vehicles

50 inches in width and less. There would be no designation for motorcycles only or UTVs (Table 6).

Cumulative Effects

Alternative A (No Action)

There would be no cumulative effects associated with this alternative.

Alternatives B, C, D and E

There are 22 reasonably foreseeable projects proposed on the Mt. Taylor Ranger District (appendix D). All of these projects are in the planning phase, with implementation expected to occur over the next several years.

The activities proposed with these projects consist of commercial timber harvest, prescribed burning, and reforestation. Potential effects on the road system would result from a temporary increase in the amount of traffic and road use by larger vehicles, primarily logging trucks.

Much of the cost of any additional road maintenance needed as a result of commercial activities proposed with these future projects would be borne by the purchaser of the commercial product, and any temporary road needed to access the product would be constructed and then decommissioned when no longer needed by the purchaser. The effects of the activities proposed with these projects, when added to the effects of the activities proposed with this project, would result in positive cumulative effect related to road maintenance, as some of the current maintenance needs would be satisfied.

An effect on public safety related to activities proposed with the future foreseeable projects would be an increase in the potential for conflict between commercial and non-commercial road users. As mentioned in the “Environmental Effects” section, a potential negative effect related to the activities proposed with this project would be an increase in the concentration of traffic on some roads designated for public use. The addition of the effects associated with this project and the future projects could result in an even greater potential for conflict between vehicles. This potential for conflict would be mitigated by the appropriate use of signing and traffic control during implementation of activities.

There would be no cumulative effects on forest access associated with a combination of effects from this project and future foreseeable projects.

Recreation

Affected Environment

The district receives a variety of recreation uses on the forest, due to its proximity to Interstate 40 (I-40). The district manages lands north of I-40 in the San Mateo Mountains (Mt. Taylor Unit) and lands south of I-40 in the Zuni Mountains (Zuni Mountain Unit). Both mountain ranges have been managed for multiple resources, including developed and dispersed recreation. The elevation ranges from 6,500 to 11,300 feet, providing diversity in vegetation and terrain.

Trails and Roads

Roads

Roads are important for providing both access to recreation opportunities such as sightseeing, hunting, and general motorized exploration. Most of the NFS roads on the district are currently open to all vehicles. Numerous unauthorized roads (user developed and decommissioned) and a number of closed roads are used for recreation access. Cross-country travel is allowed on most of the district, so use is well established on some of these routes. Often there is no obvious difference between system roads, closed roads, and unauthorized routes. The system roads are not always marked with route markers or other signs that would indicate that they are system roads. Unauthorized routes are often well defined, receive a moderate amount of use, and are not easily discernable from system roads. This is also true for some closed roads or decommissioned roads that were not successfully taken out of service and are still being used. OHV use is most prevalent during the elk hunt and a substantial increase in use occurs between September and December, especially full size 4x4s, ATVs and UTVs. OHV use is also common during the spring turkey season.

Some primitive routes offer a challenge and provide access to remote rock outcrops for rock crawling. Full size 4x4 vehicles use these routes on the west end of the Zuni Mountains for this type of motorized experience. Some of these were roads previously closed or decommissioned, but use has continued.

Driving for pleasure is a frequent recreation activity identified by respondents in the Cibola National Forest visitor use monitoring surveys. In 2001, 10 percent indicated that driving for pleasure on roads was one of the activities they participated in while visiting the Cibola National Forest and Grasslands. In 2006, when the mountain districts of the Cibola National Forest were analyzed separately from the grasslands, 19.9 percent participated in driving for pleasure on the mountain districts. Similarly, a telephone survey of attitudes, values and beliefs concerning National Forest System lands conducted throughout the Southwest in 2009 indicated that of the respondents in Cibola and McKinley Counties who had visited the Cibola National Forest in the previous year, 64 percent participated in “driving for pleasure on roads,” (McCollum, Dan, Berrens, Robert P., Thacher, Jennifer, et al. 2008).

Trails

There are no trails designed and managed for motorized use on the district; however, OHV use does occur on existing system roads and unauthorized routes. There are 85 miles of NFS non-motorized trails currently in the database for the district. These trails are managed for hiking and are primarily used for hiking, horseback riding, and mountain biking. There is evidence that there is occasional OHV use on these trails. No conflicts between non-motorized and motorized uses have been formally reported and documented (Vallo 2008). Also, there have not been any accidents involving ATVs or motorcycles reported on system roads or trails in the last 3 years during the summer months between May and September (Lucero 2009). Most of the hiking use occurs on the Mt. Taylor Unit, with Gooseberry Trail and the Continental Divide National Scenic Trail being the most popular trails.

The current forest trail budget is used to manage the non-motorized trail system. The trail budget is based on a forestwide allocation and distribution to the districts is determined on an annual basis dependent on needs and forest priorities. The appropriated forest trail budget available for

operation, maintenance, and trails projects has been declining from about \$178,000 in fiscal year (FY) 2006 to about \$168,000 in fiscal year 2009. The estimated budget for the current fiscal year (2010) is about \$120,000 for trails operation and maintenance forestwide.

The district trail system represents 14 percent of the forest trail system, with 85 miles of the forest's 618 miles. An estimated \$46,151 per year is needed to meet the operations and routine annual maintenance costs for these trails. This is more than the initial FY 2010 district trails budget. According to the trail inventory database, there is an estimated \$20,877 in deferred maintenance needs for the district. An estimated \$5,100 is also needed to sign trails with route identifiers at junctions with other trails and as confidence markers along the routes to aid in navigation.

Dispersed Recreation

Motorized dispersed camping off of roads is allowed and is a common activity. Motorized dispersed camping demand increases from September to December, corresponding to the elk hunting season. It is estimated that there are approximately 506 known locations commonly used for motorized dispersed camping. The motorized dispersed camping spots are generally located in flat, open areas near roads throughout the district. Most spots have user-constructed fire rings and other evidence of regular use. For this analysis, the focus is on RVs and camping trailers used for motorized dispersed camping because they are limited by topography and rough roads.

Cross-country travel with motorized vehicles is allowed throughout the district except in areas restricting motorized use under a forest closure order as shown in alternative A map (appendix A). Motorized cross-country travel is commonly observed by district personnel. Gallup does have an active jeep group that utilizes the west end of the Zuni Mountains along McKenzie Ridge for rock crawling. Their interest is in technical challenge driving (rock crawling) similar to what Moab, Utah, offers. They seek rock outcrops to test the limits of their vehicles.

Residential development is common near the district boundary including the communities of Grants, Milan, San Mateo, San Rafael, Jamestown, Ft. Wingate, Bluewater, and Ramah. Smaller subdivisions include Timber Lake, Cantina Acres, Paxton Springs, Tampico Springs, Sky Mountain Ranch, and Lobo Camp. There are a few unauthorized ATV trails that access the district associated with Cantina Acres, Lobo Camp and Timber Lake Subdivisions. These are not accessible by the general public because they originate from these subdivisions.

There are two Federal agencies (National Park Service and Bureau of Land Management) with lands adjacent to NFS lands. Motorized use on other Federal lands adjacent to NFS lands is restricted to designated routes and none of these designated routes provide direct access to NFS lands. There is only one locale along State Highway 53 in the east Zuni Mountains where other Federal lands are contiguous and adjacent to NFS lands but the Federal lands are separated by State Highway 53 which is a paved road with a right-of-way fence.

Developed Recreation

There are five campgrounds, five trailheads, and two parking areas (USDA 2009). The campgrounds are open from May 15 to September 15. McGaffey Campground offers the most diverse opportunities including three group sites, full hookups, tent camp sites, and picnic sites. The trailheads are located on NFSRs 193 and 453, County Road 50, and State Highways 400 and

547. The parking areas are located on NFSRs 178 and 50. The trailheads and parking areas are designed for access to non-motorized recreation. On the Mt. Taylor Unit, district personnel have observed periodic use of the Mt. Taylor (Run/Ski) trailhead for loading and unloading OHVs. Other trailheads are seldom used by motorized recreationists on the Mt. Taylor and Zuni Mountain Units. Most loading and unloading OHVs are associated with motorized dispersed camping and occur at undeveloped areas dispersed throughout the district.

Hunting

Hunting permits are available on a draw or over-the-counter basis for mule deer, elk, Barbary sheep, black bear, cougar, and turkey. Elk hunting from September through December is the most popular hunt along with fall and spring turkey hunts. Mule deer, black bear, and cougar hunting are also common in the analysis area. For this analysis, only elk, mule deer, and black bear will be considered as big game species.

OHV use is highest both on NFS and unauthorized roads during the various hunting seasons. Motorized cross-country travel utilizing motorized vehicles to retrieve legally tagged big game is often observed on the district. During scoping, many hunters indicated that they value this option for big game retrieval. Many hunters in the analysis area plan their hunts utilizing OHVs for either scouting or big game retrieval.

According to the New Mexico Department of Game and Fish elk harvest report for the 2008 elk season, there were a total of 1,815 hunters on Federal lands in New Mexico Game Management Units (GMU) 9 and 10. The Mt. Taylor Unit is approximately 9 percent of GMU 9 with 1,123 hunters. The Zuni Mountain Unit is approximately 23 percent of GMU 10 with 692 hunters. Based on conversations with NMDGF conservation officers, the majority of hunters hunt on NFS lands and Bureau of Land Management (BLM) lands because the remaining areas are either private or tribal lands. NMDGF data shows an average elk hunter's success rate is 31 percent in GMU 9 and 17 percent in GMU 10 on Federal lands only. Of those successful hunters, NMDGF conservation officers estimated more than 90 percent utilize a motorized vehicle to retrieve downed big game animals (personal conversation with Bundren/Sanchez 2009). Therefore, approximately 500 elk hunters on the Mt. Taylor Unit and approximately 100 elk hunters on the Zuni Mountain Unit would be expected to engage in motorized cross-country travel to retrieve big game.

The New Mexico deer harvest survey report for the 2007-2008 season shows a total of 666 deer hunters, 60 in GMU 9 and 606 in GMU 10. This report shows the overall hunter's success rate is 24 percent in GMU 9 and 35 percent in GMU 10. The report indicates that 68 percent who drew a public tag permit reported they hunted. Therefore, it is estimated that approximately 10 deer hunters on the Mt. Taylor Unit and approximately 144 deer hunters on the Zuni Mountain Unit would be expected to engage in motorized cross-country travel to retrieve big game.

Cumulative Effects Area

The cumulative effects area for recreation includes other public lands where motorized recreation is available within approximately a 3-hour drive from Grants and Gallup, New Mexico. These areas are generally other NFS lands, BLM lands, and towns or cities. Such areas include the: Santa Fe, Gila, Lincoln, Carson, and Apache-Sitgreaves National Forests; Gordy's Hill Special Recreation Management Area near Socorro; Rio Puerco area west of Rio Rancho; and the Dunes

and Glade Run areas near Farmington. The Cibola National Forest is also completing assessments and MVUMs for the Mountainair and Magdalena Ranger Districts within this area and is implementing a decision for travel management on the Sandia Ranger District.

Environmental Consequences

Effects Common to All Action Alternatives

NFSR 447 is an important arterial road that provides access for recreation to the southeast area of the Zuni Mountain Unit. The NFSR 447 reroutes would continue to allow motorized access in the Bonita Canyon and Gallo Peak areas.

The existing non-motorized trail system would continue to be managed for non-motorized use. Costs for operation and maintenance for non-motorized trails would be about \$46,151 per year.

No potential motorized use conflict is anticipated between other neighboring Federal lands and NFS land in the east Zuni Mountains. The physical barriers of State Highway 53 and the right-of-way fences on either side of the paved road would restrict motorized use across agency boundaries.

Trails and Roads

Table 9 shows the overall change to motorized recreation access from the existing condition. The miles shown include both roads and trails designated by alternatives.

Table 9. Change to motorized recreation access

Alternative	Miles of Roads for Use by all Vehicles	Miles of Trails for Motor Vehicles ≤50" in Width	Miles of Trails for Motor Vehicles ≤65" in Width	Miles of Trails for Motorcycles Only	Total Miles of System Roads and Trails Available for Public Use	Percent Change from Existing System
A	987	0	0	0	987	N/A
B	620	156	0	20	796	-19%
C	644	185	0	25	854	-13%
D	644	0	185	25	854	-13%
E	404	23	0	0	427	-57%

Alternative A

Motorized access for recreation would not change from the existing condition in this alternative. It is anticipated that more motorized users from the Albuquerque area would begin using the district for motorized recreation as a result of the Sandia and Mountainair districts implementing travel management. In addition, with the rising population projections in New Mexico (UNM-BBER) and as more people come to recreate on the district, there is an increased potential for conflicts between non-motorized recreationists and motorized recreationists. For instance, hikers, mountain bikers, and equestrians seeking seclusion and solace from noise would instead

encounter motorized vehicles. Consequently, the quality of the recreation experience may decrease for non-motorized recreationists. Currently, the district is not experiencing reported conflict issues.

Unauthorized routes would be used for motorized recreation and hunting and retrieving big game. Some of these routes are narrow and function like motorized trails for motorcycles, ATVs and UTVs. Some additional unauthorized motorized routes would continue to be created by motorized cross-country travel throughout the district.

The existing trails would continue to be managed for non-motorized use. While these are managed for non-motorized use, there would not be a closure order prohibiting use, so motorized use may occasionally continue to occur.

The alignment for a segment of the Continental Divide National Scenic Trail (CDT) was selected through a decision on July 3, 2007. Parts of the new trail were located on existing primitive ML 2 roads. This segment is managed for non-motorized use but under no action, some motorized use may still occur on these roads and consequently, CDT hikers may encounter motorized use.

Alternative B

Alternative B provides motorized access on 706 miles of system roads and trails, reducing the available system by 280 miles compared to the existing condition. This reduction would change how motorized recreationists travel the district. Users may choose to incorporate a non-motorized method such as hiking, horseback riding, or mountain biking to access certain areas of NFS lands. An example would be the area north and east of American Canyon where fewer motorized roads would be available for public use. If motorized recreationists value these areas for their OHV use, a reduction in the quality of their motorized recreation may occur, or they may choose to visit other areas.

The other change in motorized recreation in alternative B is designating motorized trails for ATV and motorcycle use, which were previously not available. Early stages of public involvement indicated a desire by motorized recreationists for a motorized trail system on the Mt. Taylor Ranger District. These trails would be designated from existing, more primitive ML1 and 2 roads that would be managed as trails, and unauthorized routes that would be added to the system as motorized trails. This change would enhance the experience of ATV and motorcycle riders compared to alternative A. However, for full size vehicle users, this will represent a reduction in roads available.

Single-track, narrower trails, 18 to 24 inches wide, are preferred by motorcyclists. Single-track enthusiasts seek a higher degree of challenge than is offered by a forest road or wider trail (Felton 2004). Alternative B would provide some opportunities of this type in the Zuni Mountains.

ATV riders have also indicated a similar preference for trails that are typically 50 inches or less in width, providing a higher quality experience, more challenge, and more connection with the natural environment. This alternative provides a variety of trail opportunities on both the Mt. Taylor and Zuni Mountain Units. Most of the trails being designated are primitive roads. Since these routes would be maintained as trails, over time the vegetation on the sides of the road would begin to grow in, creating a better riding experience for ATV users. Alternative B proposes a seasonal closure on 10 miles of designated motorized trails from December 1 through March 1. During this time (December through February), the proposed motorized trails would be snow

covered which limits access to this area; therefore, there would be minimal effect to the user's experience.

In alternative B, UTVs would not be allowed on motorized trails. The motorized trails would be for vehicles less than 50 inches in width. Most UTVs are wider than 50 inches, with most being 60 to 65 inches in width. Industry data indicates a decline in new ATV sales and an increase in side-by-side or UTV sales (Powersports Business 2007). UTV enthusiasts would be restricted to the roads designated for all vehicles.

Non-motorized trail users seeking solitude could maximize their experience by planning their trips to avoid designated motorized routes; therefore, minimizing any potential conflicts with motorized users. The non-motorized trail system would not be included on the MVUM and this prohibition could be enforced by law enforcement officers. This would benefit the Continental Divide National Scenic Trail where the prohibition could be enforced.

Several roads that connect to private property are not proposed for motorized designation. This would reduce the potential for motorized trespass onto adjacent private lands. Private landowners in these areas would need to access the motorized system from public roads.

Alternatives C and D

Alternatives C and D reduce overall access on National Forest System roads and trails by 13 percent compared to alternative A. The reduction in quality of the motorized experience would be less than alternative B since more roads and trails would be available for motorized recreation. Additional roads added to these alternatives are not in close proximity to private lands, therefore, the effect to private property is the same as alternative B.

Alternatives C and D are similar to alternative B in regard to effects of reduced motorized access. The differences are: (1) seasonally restricts motor vehicle travel on 29 miles of designated trails from December 1 to March 1 annually; and (2) alternative D allows vehicles up to 65 inches in width to travel on designated trails to accommodate UTVs.

Widening the width of trails to 65 inches would enhance motorized recreation experience for UTV enthusiasts since they would be able to ride the designated motorized trails. By adding more routes as loops, combined with the open system roads, these alternatives provide the most continuous riding opportunities for vehicles up to 65 inches in width. Some of the added roads would increase sightseeing opportunities for some motorized recreationists. Since these roads would be maintained as trails, over time the vegetation on the sides of the road would begin to grow in, creating a better riding experience for ATV and UTV users.

Like alternative B, alternatives C and D propose a seasonal closure from December 1 through March 1 annually but on 29 miles of designated trails. Even with 19 more miles of seasonally closed trails, the effect would be the same as alternative B where the proposed motorized trails would be snow covered which limits access to this area; therefore, there would be minimal effect to the motorized trail user's experience.

In addition, there would be 14 miles of trails open for additional hunter access to remote areas from September 1 to December 15. This would add to the hunter's experience who uses technology (motorized recreation) to enhance their hunting experience; conversely, some hunters seeking relief from motorized vehicles during this timeframe would have to hunt areas without

motorized trails to enhance their hunting experience. Some bow hunters and those with preference for more solitude and less noise intrusion indicate that prohibiting cross-country motorized travel and managing motorized travel would improve their experience.

Alternative E

There is a 57 percent reduction in designated system roads and trails available for public use from what are currently available, reducing the quantity and variety of routes available to motorized recreationists. This would reduce the recreation opportunities for OHV users, especially ATV/motorcycles because there are only 23 miles of trail for vehicles less than 50 inches wide and no single-track trails. With this alternative, users would have to incorporate and rely more on non-motorized access such as hiking, horseback riding, or mountain biking on NFS lands to access areas without designated roads and trails. Not all areas of the district would be accessible by motorized vehicles. For recreationists who desire to recreate away from motorized vehicles, this alternative provides more opportunities than the other action alternatives and would increase the quality of their recreation experience.

Trail Funding

Table 10 shows the estimated motorized trail short- and long-term costs of adding motorized trails to the trail system. The short term is the initial cost to bring the designated motorized trails to standard for public use. The long term is the annual operation and maintenance cost to keep motorized trails to standard in the future.

Table 10. Estimated motorized trail cost by alternatives

Alternative	Miles of Designated Motorized Trails Added to the System	Short-term Cost	Long-term Cost
		Cost to Bring Designated Motorized Trails to Standard	Annual Cost to Operate and Maintain Designated Motorized Trails
A	0	0	0
B	176	\$345,000	\$56,320
C	210	\$441,000	\$67,200
D	210	\$441,000	\$67,200
E	23	\$69,000	\$7,360

Alternative A

No motorized trails would be added to the trail system, so there would not be an increased cost for motorized trail maintenance and operation or initial cost to bring them to standard. Unauthorized routes would not be maintained and would continue to have unrestricted use.

Alternative B

There are short-term and long-term costs associated with adding unauthorized motorized trails to the system. Based on standard data for trail improvement and trail operation/maintenance, this

alternative would cost about \$345,000 for initial trail work and about \$56,320 per year for operation and maintenance. The annual operation and maintenance cost of this alternative is about 47 percent of the current forestwide trail budget. For the first few years, the operation cost is anticipated to be higher to provide for additional trail patrols.

Alternatives C and D

The initial cost to bring alternatives C and D proposed trails up to standard is approximately \$441,000. The annual operating and maintenance cost is approximately \$67,200. This operations and maintenance cost is approximately 56 percent of the current forestwide trail budget for alternatives C and D. The operation cost is also anticipated to be higher to provide for additional trail patrols the first few years.

Alternative E

Alternative E would cost about \$69,000 for initial trail work and about \$7,360 per year for operation and maintenance. The operating and maintenance cost is about 6 percent of the current forestwide trail budget. For the first few years, the operation cost is anticipated to be higher to provide for additional trail patrols.

Dispersed Recreation

Alternative A

Motorized dispersed camp spots would continue to be used. There could be additional new spots established by the public. However, the motorized dispersed camping locations tend to be relatively stable and there has not been a noticeable increase in size or quantity in many years.

Motorized cross-country travel would continue to be allowed on 86 percent of the district. Motorized recreationists would continue to enjoy the freedom to roam and explore anywhere topography and vegetation did not limit access within this area. This would likely result in additional unauthorized roads and trails becoming established. Unrestricted motorized cross-country travel would likely reduce the quality of the experience for non-motorized recreationists who visit the district for solitude. Some non-motorized recreationists may be displaced. For hikers, mountain bikers, and equestrian trail users, this may reduce the quality of their recreation experience.

Full size 4x4 enthusiasts would continue to drive unauthorized roads and challenge their crawling skills on rock outcrops along McKenzie Ridge. If this motorized activity becomes well known with extreme challenges for OHV use, there would likely be increased motorized use. Research indicates that people are willing to travel many miles to areas with challenging opportunities where they can test their equipment and skill. (State of Minnesota DNR 2007)

As populations continue to increase in the adjacent residential developments, there are likely to be more unauthorized routes developed for access to NFS lands from these residential areas. With additional unauthorized routes, there is an increased potential for trespass into the residential areas by visitors discovering and traveling these routes. In addition, there could be additional noise disturbance from OHVs as more people use the unauthorized routes near residential areas.

Alternative B

The change to dispersed recreation under alternative B is the prohibition of motorized cross-country travel throughout the district. Motorized access would be limited to designated roads, designated motorized trails, and motorized dispersed camping corridors. Some of the public would perceive the designated routes as a means of closing the forest for their use when motorized cross-country access was integral to their use of the forest. Their traditional areas of visitation may be inaccessible by motorized vehicle but still accessible by non-motorized means such as hiking, horseback riding, or mountain biking.

Prohibiting cross-country travel would improve opportunities such as hiking, bird watching, and wildlife viewing. A person seeking quiet recreation would be able to select areas where there will not be motorized vehicles impacting their experience.

Rock crawling by full size 4x4s in remote areas on the west end of the Zuni Mountains along McKenzie Ridge would no longer occur under alternative B. OHV enthusiasts would be displaced to other areas outside the Mt. Taylor Ranger District. State of Minnesota Department of Natural Resources indicates that people are willing to travel many miles to areas with challenging opportunities where they can test their equipment and skill. Web site blogs indicate that some users are already traveling to Utah and Colorado for challenging driving and rock crawling. Some indicate that they dislike closures and restrictions on public lands. Some OHV enthusiasts would “take their chance” and continue these activities in their favorite areas. Those seeking greater challenges would likely continue to travel to other areas.

This alternative would reduce the available known motorized dispersed camping locations to about 77 spots, an 85 percent reduction from alternative A. With corridors 100 feet on either side of specified roads (80 miles), motorized dispersed campers may feel that they were too close to the roads at this distance and would feel less safe and find the road noise and dust to reduce their sense of solitude. Reducing the available motorized dispersed camping spots would increase the competition for available spots. Field contacts with hunters that use camping trailers/RVs, indicate that they would look for alternative locations in designated motorized dispersed camping corridors and if they cannot find a suitable location, they would move to a campground or an RV park. They prefer camping in undeveloped areas but when faced with a choice of parking along the road for motorized dispersed camping, they would rather find a campground or RV park.

This could result in displacing motorized dispersed campers during high use periods, reducing the quality of their experience. Often campers return to the same site for many years. Where favorite sites are not available for motorized dispersed camping, these individuals would likely be disappointed. Some may move to a different motorized dispersed camping location, others may be displaced and choose not to camp on the district. With the reduction in available area, there may be additional sites developed within the designated corridors, due to increased use in more concentrated areas.

Trespass into residential development is anticipated to decrease with alternative B; however, residents who use unauthorized routes to access NFS lands from residential developments would likely perceive this change as an inconvenience.

Alternatives C and D

The effects are similar to alternative B, except alternatives C and D provide for an OHV area and increase the number of miles designated for motorized dispersed camping to 99 miles and the width to 300 feet on either side of roads. In addition, alternative D provides limited cross-country travel for motorized big game retrieval (see “Motorized Big Game Retrieval” section below).

Some OHV enthusiasts and rock crawlers would continue to challenge their skills within the designated OHV area on McKenzie Ridge. Those seeking greater challenges would likely continue to travel to other areas, and some may choose to continue to rock crawl outside the designated OHV area and risk a violation notice.

Alternatives C and D increase the number of miles designated for motorized dispersed camping to 99 miles and increase the width to 300 feet on either side of roads. Compared to alternative A, the overall reduction of the available known motorized dispersed camping spots is 65 percent (176 spots). The difference is, by adding 99 more spots in Alternatives C and D, the competition during the high use periods would be reduced and more of the frequently used motorized dispersed camping spots would be made available. Fewer motorized dispersed campers are anticipated to be displaced compared to alternative B.

Like alternative B, trespass into residential development is anticipated to decrease with these alternatives, and residents who use unauthorized routes to access NFS lands from residential developments would likely perceive this change as an inconvenience.

Alternative E

The prohibition of motorized cross-country travel and fewer roads designated for motor vehicle use would result in larger areas inaccessible by motorized vehicles. This would displace more motorized recreationists than alternatives A, B, C, and D; however, the district is still accessible by non-motorized means such as hiking, horseback riding, or mountain biking.

Rock crawling with full size 4x4s in remote areas on the west end of the Zuni Mountains along McKenzie Ridge would no longer occur. This would displace rock crawlers.

Like alternatives B and C, prohibiting cross-country travel would benefit some forms of non-motorized recreation such as bird watching and wildlife viewing opportunities and other activities that seek quiet recreation. The quality of the non-motorized recreation experiences would increase where there are fewer disturbances from motorized noise.

There would be no designated motorized dispersed camping corridors in this alternative. This alternative still allows for motorized dispersed camping one car length on either side of designated roads. For campers who prefer to be close to their vehicles and a distance from the road, they will likely be displaced to other locations. The district employees have observed that many dispersed campers use RVs or camping trailers, and camping within a car’s length of the road would be problematic and probably would not occur often. When set up for camping, these vehicles can occupy a space over 16 feet wide with slide outs extended. Finding a safe, level site this close to roads would be very difficult.

Motorized dispersed campers often seek a setting that is away from developed sites and their preference is to not camp in developed sites. Many may choose to camp in dispersed sites elsewhere, or not camp at all. Some displaced motorized dispersed campers may begin to use

trailheads and parking areas for overnight camping or choose to utilize developed campgrounds or local RV sites. Others may choose to continue camping at their favorite spots, which becomes an enforcement challenge.

Like alternatives B, C, and D, trespass into residential development is anticipated to decrease with this alternative and the residents who use unauthorized routes to access NFS lands from residential developments would likely perceive this change as an inconvenience. An effective information and enforcement program would be needed to gain compliance for the Travel Management Rule.

Developed Recreation

Alternative A

No change to visitor experience is anticipated from the existing condition in alternative A. Recreationists seeking developed site amenities would continue to use the existing facilities. This alternative would have no impact to people using campgrounds, trailheads, and parking areas.

Alternatives B, C, and D

Recreationists seeking developed site amenities would continue to use the existing facilities. With the reduced availability for motorized dispersed camping, some displaced motorized campers may choose to camp at available campgrounds. Alternatives C and D added more dispersed camping corridors; therefore, potentially fewer motorized dispersed campers would be displaced to campgrounds than alternative B (see “Dispersed Camping” section).

Parking at trailheads and parking areas is anticipated to increase under these alternatives because of limiting motorized travel to designated roads and restricting motorized dispersed camping to designated corridors. This may result in congested trailheads and parking areas during high use periods and may displace some non-motorized users during these times.

Alternative E

Demand for campground use is anticipated to increase because of no designated motorized dispersed camping corridors with this alternative. Capacity at the five campgrounds could be exceeded on high use periods such as holidays, weekends, or hunting seasons. This could affect the operating season where it may need to change to accommodate demand. Traditionally, many of the campgrounds have been closed during later season hunts, when the demand is high for motorized dispersed camping.

Parking at trailheads and parking areas is anticipated to increase under this alternative because of limiting motorized travel to designated roads and restricting motorized dispersed camping to one car length on either side of designated roads. This may result in more congested trailheads and parking areas than alternatives B, C, and D during high use periods and may displace non-motorized users during these periods.

Hunting

Alternative A

Motorized cross-country travel for big game retrieval is allowed in this alternative. Many hunters would continue to plan their big game hunts utilizing motor vehicles, both for scouting and retrieval. Elk is a popular species to hunt for in both the Mt. Taylor and Zuni Mountains; therefore, the district would continue to be impacted by a high volume of motorized cross-country travel from September to December. Motorized cross-country travel for scouting big game animals and riding ATVs or UTVs to remote locations to hunt would continue to occur. Some bow hunters would continue to be frustrated by motorized vehicles interrupting their big game hunt.

Alternatives B and C

Motorized travel would be restricted to designated system roads and trails. There are fewer roads and motorized trails available in alternative B compared to alternative C. As a result there would be less area available to scout for game using motorized vehicles in alternative B.

Cross-country motorized big game retrieval would be prohibited on the district under alternatives B and C. Hunters would not be able to use motorized vehicles to travel cross-country to retrieve downed big game animals. This would affect approximately 31 percent of all big game hunters (elk, mule deer, and black bear) who hunt on NFS lands in GMUs 9 and 10. This would mean that successful hunters that currently utilize a motorized vehicle to retrieve big game animals would have to change their big game retrieval methods. Big game hunters would need to rely on hiking, pack stock, or game carts for big game retrieval. Some hunters may adapt by hiking or using horses, while others may choose to hunt other areas off NFS lands or not hunt at all. Some hunters' experience would diminish due to these changes while the enjoyment of others (those who dislike vehicle use and noise) would increase. Some bow hunters and those with preference for more solitude and less noise intrusion indicate that prohibiting cross-country motorized travel would improve the quality of their hunting experience.

Alternative D

The roads and motorized trails that would be designated on the MVUM are the same in both alternatives C and D. The primary change for hunting is the availability of big game retrieval corridors.

Under alternative D, there are 78,790 acres designated (as 0.5 mile corridors along specified roads) where hunters can retrieve a legally tagged big game animal (elk, mule deer, and black bear) using motor vehicles. This would allow hunters the option to incorporate the use of motor vehicles for big game retrieval but only within designated corridors. Comments indicated it would be highly desirable to be able to utilize motorized vehicles for big game retrieval (Longan, 2008). Some hunters' experience would favorably increase with the opportunity of motorized big game retrieval compared to alternatives B, C, and E.

This 0.5-mile corridor on either side of specified roads would enhance some hunters' experience with preference for more solitude and less noise intrusion from motorized vehicles. During scoping, some bow hunters indicated that prohibiting motorized cross-country motorized travel would improve their hunting experience.

Alternative E

Cross-country motorized big game retrieval would be prohibited and motor vehicles would be restricted to designated roads and motorized trails. The effects would be similar to alternatives B and C. With a 35 percent decrease in roads and motorized trails available for access, there would need to be even less reliance on motorized vehicles to scout and hunt for big game. Those successful hunters that currently utilize a motorized vehicle to retrieve big game animals would have to change their big game retrieval methods. Big game hunters would need to rely on pack stock or game carts for big game retrieval.

Some hunters may adapt by hiking or using horses while others may choose to hunt other areas off NFS lands or not hunt at all. Some hunters' experience would diminish due to these changes; however, for hunters who prefer solitude, the reduction in motorized vehicle use will likely increase the quality of their hunting experience.

Cumulative Effects

Alternative A

When incremental effects from past, present, and reasonably foreseeable future projects are added to this alternative, there would not be any cumulative effects to motorized recreation use.

Alternatives B, C, D and E

Because all other forests in New Mexico and Arizona are proposing to prohibit cross-country motorized travel, including changes in motorized dispersed camping management and limiting or eliminating off-road motorized big game retrieval; the cumulative effect on the district would be part of a larger reduction in access for motorized vehicles. There may be a shift of some motorized recreation activities and hunting from NFS lands to private lands and other Federal lands or State lands. Displaced motorized recreationists would have to travel off district to other areas that provide unrestricted motorized recreation such as traveling to Rio Puerco, Socorro, Farmington, and nearby BLM lands or as far as southeast Utah and southern Colorado for challenging driving and rock crawling.

There would be a cumulative effect on the forestwide trail budget, when potential motorized trail expenses from other districts (Sandia, Mountainair, Magdalena, and Kiowa/Rita Blanca) are added to the districts' proposed motorized trails costs. Alternative E would require the least funding or partnerships to manage the motorized trail system; alternatives C and D would require the most funding and have the greatest impacts on the Cibola trails program.

Law Enforcement

Affected Environment

A 2007 report considered issues related to law enforcement on National Forest System lands based on interviews with law enforcement officers (LEOs). In Region 3, priority issues facing law enforcement professionals included off-road vehicle use and OHV activity on roadways. When asked what type of violations most commonly affect recreation visitors in Region 3, 24 percent of LEOs said motor vehicle violations including: OHV/ATV violations; speeding; and reckless operation. This is compared to 33 percent of LEOs reporting this issue nationally. OHV

management was identified as a challenge where 25 percent reported that past policing programs in this category had been unsuccessful (Chavez and Tynon 2007).

The district is patrolled by one LEO with occasional assistance of other LEOs in the zone. There are several employees at the district that are forest protection officers (FPOs). FPOs are trained to respond to petty offenses. The number of collateral duty FPO positions has been declining in recent years due to changes in the certification requirements and management of the law enforcement functions. At present, patrols are very limited due to the district’s capacity.

Motorized vehicle related violations that occurred on the district between 2000 and October 30, 2009, were extracted from the Law Enforcement Management Attainment Reports System (LEMARS) database (Table 11).

Table 11. Travel management violations on the Mt. Taylor Ranger District 2000-2009

Violation Type	Warning Notice	Incident Report	Citation Issued	Total
§ 261.15 It is prohibited to operate any vehicle off National Forest System, State or County Roads:				
(g) Carelessly, recklessly, or without regard for the safety of any person, or in a manner that endanger, or is likely to endanger, any person or property	3	1	0	4
(h) In a manner which damages or unreasonably disturbs the land, wildlife, or vegetative resources	5	34	2	41
(l) In violation of State law established for vehicles used off road	2	3	5	10
§ 261.52 Fire. When provided by an order, the following are prohibited: (e) Going into or being upon an area	18	13	0	31
§ 261.54 National Forest System Roads. When provided by an order, the following are prohibited:				
(a) Using any type of vehicle prohibited by the order	5	51	0	56
(d) Operating a vehicle in violation of the speed, load, weight, height, length, width, or other limitations specified by the order	7	8	49	64
(e) Being on the road	0	3	0	3
(f) Operating a vehicle carelessly, recklessly, or without regard for rights or safety of other persons or in a manner or at a speed that would endanger or be likely to endanger any person or property	0	0	1	1

As shown in Table 11, the most frequent violation where a citation was issued (49) was for operating a motor vehicle in violation of the posted regulations. Most of these violations are related to developed campground activities. Likewise, there were 18 warning notices issued for operating a motor vehicle within an area closed due to fire. There were also 51 incident reports written for using any type of vehicle prohibited by the order and 34 incident reports written for

damage or disturbance to land, wildlife, or vegetation. Most of the resource damage incident reports are related to the illegal woodcutting problem on the district. Incident reports document damage to government property or resources where an LEO was not able witness the violation.

There are no known serious vehicle accidents on Forest Service roads in the last 4 years. This does not mean that accidents have not occurred on the district, only that they have not been reported or resulted in law enforcement involvement.

The MVUM will be the primary information and enforcement tool for travel management but field law enforcement patrols would be critical to both sharing information and enforcing designations.

Environmental Consequences

Alternative A

It is anticipated that law enforcement priorities and patterns would remain unchanged. Patrols in the Zuni Mountain Unit would continue to be infrequent. Patrols in the Mt. Taylor Unit would continue to focus on the recreation sites and Chivato Mesa area of the district. Currently, the LEO is only able to issue a warning notice to 11 percent of individuals in violation of “using any type of vehicle prohibited by the order.” Most of these violations are associated with the Chivato Mesa closure order. This closure order encompasses 14 percent of the district. With limited LEO patrols, user conflicts would likely increase over time.

Alternatives B, C, D, and E

All of the action alternatives would reduce the miles of system roads available for public motorized use. This may facilitate patrols by concentrating people on the major arterial roads and reducing the size of the area to be patrolled. Additionally, the LEO may be able to identify roads that are being used but are not designated, possibly indicating that illegal activities are occurring along the roads. This may allow the LEO to focus their patrols on specific areas and prevent some illegal activities. The designation of motorized dispersed camping corridors in alternatives B, C, and D could also facilitate focused patrols and the enforcement of closure orders, particularly those related to fire restrictions. Alternative E could potentially increase the enforcement challenge as a result of displaced motorized campers who choose to continue camping at their favorite spots. Also, more patrols and enforcement by Forest Service personnel would be needed with the more restrictive motorized road system in alternative E because this alternative has fewer motorized recreation opportunities.

For all action alternatives, information and education as well as enforcement, would be emphasized for the first 2 to 3 years after the motor vehicle use map (MVUM) is released. Motor vehicle violations are expected to increase with more restrictive regulations, especially those associated with unauthorized motorized cross-country travel.

Alternative D with motorized big game retrieval corridors would increase the law enforcement challenge associated with motorized big game retrieval compliance. It will likely take a number of years of enforcement and education efforts to reduce this law enforcement challenge.

Cumulative Effects

The cumulative effects area for law enforcement includes all of the districts on the Cibola National Forest and National Grasslands. Law enforcement personnel are managed in a zone, which also includes the Santa Fe and Carson National Forests. Travel management decisions will be changing roads and trails available for public use in all three forests over the next year. Additional patrols are expected to be needed to respond to this change. An advantage of managing LEOs in a zone is that a number of officers can be shifted to one district for short-term assignments. These saturation patrols would increase the presence of LEOs on Mt. Taylor Ranger District.

Social and Economic

Affected Environment

The district is located in Cibola, McKinley, and Sandoval Counties in western New Mexico. Approximately 45,170 acres of the district fall within the western portion of Sandoval County, which has a low population density of between 2 and 6 people per square mile. Over half of the county's residents live in the southeastern portion, which is rapidly growing because of its proximity to the Albuquerque area (U.S. Census Bureau 2000). The population center of the county is not necessarily a part of the local economy for the district because it is far removed in terms of access and economically tied industries; therefore, Sandoval County is being excluded from the analysis because it skews the population characteristics of the local population and economy that are primarily affected by decisions on the district.

Population and the Local Economy

The population projections were produced by the University of New Mexico – Bureau of Business and Economic Research (UNM-BBER 2007) using cohort-component modeling and Decennial Census data for 1980, 1990 and 2000.

Economic data attributed to Headwaters Economics comes from the Economic Profile System, which is software that allows users to create a socioeconomic profile at a variety of geographic scales from existing and publicly available sources of data. The program is particularly useful in evaluating rural areas because it uses statistically sound methods of interpolation to estimate population and economic information that is not available due to disclosure protections.

Table 12. Historic and projected populations for Cibola and McKinley Counties

County	Historical			Projected		
	1980	1990	2000	2010	2020	2030
McKinley	56,499	60,656	74,798	88,163	101,750	114,854
Cibola	30,346	23,794	25,595	27,681	29,157	30,231
Area Total	86,845	84,450	100,393	115,844	130,907	145,085

UNM-BBER 2007

From 1980 to 2000, the population in Cibola County fell by 4,751 people, a 16 percent decline. Over the same period of time, McKinley County grew by 14,959 people, a 32 percent increase in population (UNM-BBER 2007). Even though both of these counties are projected to increase in population through 2030, they have shown little resilience to economic downturns in the past. The recessions of the late 1970s and early 1980s have had a huge economic impact on the area. Prior to those recessions, both counties had steady population growth; afterwards, they declined at a rate faster than the State and national economies (Headwaters Economics 2008).

A telephone survey of attitudes, values and beliefs concerning National Forest System lands was conducted throughout the Southwest in 2009. Of respondents in Cibola and McKinley Counties who had visited the Cibola National Forest in the previous year, 64 percent participated in “driving for pleasure on roads,” 30 percent participated in “hunting and trapping,” and 28 percent in “camping in undeveloped areas” and “off-highway vehicle driving” (McCollum, Dan, Berrens, Robert P., Thacher, Jennifer, et al. 2008).

Both counties have seen an increase in jobs and decrease in unemployment since 1996. In both counties, the predominant employment sectors are service, professional and government employment. Government employment has been the largest contributor of new jobs in the area from 1990 to 2000, increasing their share of employment approximately 30 percent (Headwaters Economics 2008). Prior to the early 1980s, the county was dependent on mining for the majority of jobs within the area. In fact, the Grants uranium district—which covered both McKinley and Cibola Counties—was the largest area of uranium production in the United States from the 1950s to the late 1970s. This sector experienced a sharp decline in the 1980s due to the Three Mile Island accident and the rapid decrease in uranium prices that followed (UNM-BBER 2007).

Many local communities view the resources on the district as part of the economic stability and growth in the region. They recognize that local businesses directly benefit from attracting responsible forest users. McKinley County has been working on several economic development strategies including promoting the surrounding Federal land as a mountain biking destination. While previous generations have primarily benefited from extractive industries such as timber and mining, recreation and visitation are an important component of future economic development strategies (Russell and Adams-Russell 2005).

Environmental Consequences

Alternative A

Alternative A would continue to result in conflict between user groups expressing opposite views on motorized recreation. Potential for increased conflict is eminent as the number of users increases because it allows unrestricted motorized access to 86 percent of the district. Alternative A reduces the capacity of local communities to create a diverse portfolio of high quality recreation experiences as part of their tourism marketing. There is an increased potential for user conflict between those who use technology (motorized recreation) to enhance their experience and those who seek solace from modern technology (non-motorized recreation) in their outdoor experience (Ouren et al. 2007). Even among recreationists participating in the same activity—such as hunting—there can be distinct differences in expectations and desired recreation experience largely correlated to the preference of the recreationists to take technology into nature or to escape or minimize interaction with technology. For instance, a bow hunter who uses no motorized or mechanical means to hunt is seeking a different experience from one who uses an ATV, GPS, and other equipment to facilitate their hunt. Alternative A offers the least opportunity

for recreation experiences where users can get away from the sights and sounds of people and technology (see “Recreation” section – “Trails and Roads”).

In 2005, focus groups were conducted to gather information about the attitudes, values, and beliefs of local forest users. These users indicated that while increasing access to the public is desirable, it often comes with “irresponsible” or “problem” users who are either uneducated on Forest Service rules and regulations or who lack an adequate land ethic to be a “responsible” user. The focus group highlighted OHV users as the “most prominent source of abuse” of NFS lands, particularly caused by off-trail use (Russell and Adams-Russell 2005).

Even though local communities have service sectors that can be supported partially by tourism, there is only little evidence that OHV use is a factor of bringing non-local dollars to the analysis area. The Mt. Taylor Quadrathlon and activities of outfitters and guides during hunting season are the predominant sources of non-local tourism dollars generated from NFS lands. McKinley County has also made an effort to market the local area as a destination for mountain biking and hiking. Hunting is the only one of these activities that has some dependence on motor vehicles. Camping with a recreational vehicle may also make a minor contribution to the local economy. Under alternative A, there would be no limitation to the scope of these activities in their use of motor vehicles on most of the district.

Alternatives B, C, and D

Alternatives B, C, and D would reduce the acres available for motor vehicle recreation. Due to the prohibition of cross-country motorized travel, motorized recreation users would be restricted to designated roads and motorized trails on the district. Several surveys of OHV users have recognized that shortages of OHV areas and areas closed to OHV uses are a common concern (Ouren et al. 2007). All of the action alternatives have some level of response to this concern.

The action alternatives would result in change to relative use levels of the existing diverse mix of recreation experiences because there would be areas that provide opportunities for motorized and non-motorized recreation. The limitation on where motorized use can occur would decrease the frustration of some local residents, who are concerned about abuse of the natural resources on NFS lands, only if it is enforced and is coupled with education and outreach (Russell and Adams-Russell 2005). Reducing these user conflicts would improve the experience of all recreation users.

The gain or loss of opportunities on the district is unlikely to affect the economic sectors that are supported by motorized recreation. Because of the day use nature of the majority of recreation opportunities on the district besides hunting, there would not be a measureable effect to the lodging and dining sectors of the economy. During hunting season there may be some reduction in retail sales because users will need less gasoline and may, therefore, make fewer trips to retail establishments for other products as well. However, retail sales dollars have very low retention in the local economy because the majority of the sales price is returned to the region of the manufacturer. This effect may occur but would be difficult to measure and, therefore, cannot be predicted reliably.

Hunters primarily camp for their lodging in order to minimize travel time during their recreation experience. The reduction in motor vehicle opportunities under all of the action alternatives is likely to increase this trend. Hunters will need more time to cover the same amount of ground for

scouting and hunting and may be less likely to use lodging in nearby communities. The loss of these opportunities is unlikely to generate a loss in sales within the recreational motor vehicle economic sector. The rate at which motor vehicle sales have increased over the last 5 years has largely been dependent on advances in technology and the increasing popularity of the sport. Off-highway vehicle registrations in New Mexico have increased 149 percent in the last 10 years and sales in motorized recreation vehicles have tripled.

Considering the ongoing economic recession and the low income levels of local residents (see “Environmental Justice” section), the market for these products is being limited, primarily, by macro-economic factors unrelated to effects of any of the alternatives. Even if the loss of recreation opportunities on the district were to affect the retail sales of vehicles used for motorized recreation and tourism related retail services, none of the alternatives would have measurable effects on the local economy.

Alternative E

The effects for alternative E are the same as the effects for alternatives B, C, and D concerning general motorized recreation. Even though there are fewer miles of roads and trails in this alternative, there is not a measureable difference between the action alternatives. Alternative E is different in another respect because it does not allow for motorized dispersed camping or motorized big game retrieval anywhere on the district. Motorized dispersed camping can be described as consisting of two modes of camping: tent-vehicle camping and RV/fifth wheel camping. Users who prefer tent-vehicle camping will not be displaced by this alternative because they can still pull one car length off the road and carry their belongings far enough away from the road to be undisturbed by other traffic or campers. However, users who wish to disperse camp with RVs and fifth wheels will find their opportunities on the district reduced by this alternative. During hunting season, the demand for motorized dispersed camping increases, especially for RV and fifth wheel camping. At the same time, for part of the hunting season, developed campsites are closed for the winter. Even if some of the RV-fifth wheel campers were willing to camp in a developed site, the demand for this use would undoubtedly exceed supply under alternative E. As a result, these campers are likely to be displaced off of National Forest System lands and onto State or private lands. Also, more hunters may stay in lodging in town and there may be greater incentives for private land holders to provide camping and hunting opportunities on their land. This may increase the cost of hunting and would have a positive economic benefit for the hospitality industry.

Cumulative Effects

The spatial and temporal boundaries of cumulative effects for this section are the same as the boundaries in the recreation section. The activities within this area that are considered in cumulative effects are other forest travel management processes.

Alternative A

Because all other NFS lands will be adopting designated road and trail systems and eliminating unrestricted cross-country travel in compliance with the Travel Management Rule, this alternative would result in increased off-road use on the district because it would offer opportunities for motorized recreationists that are not available elsewhere. At the same time, it may have the opposite effect on non-motorized recreationists. This may increase motorized recreation tourism

and reduce the quality of experience of other recreation users who are seeking solace from technology in the outdoors.

Alternatives B, C, and D

Alternatives B, C, and D all provide for motorized recreation on a designated system. These alternatives all provide for dispersed camping, and alternatives C and D allow for motorized big game retrieval corridors to different extents. Because all other forests in New Mexico are proposing to limit or eliminate off-road motorized big game retrieval compared to the existing condition, the cumulative effect of limiting or eliminating use on the district would be part of a larger reduction in vehicle access for motorized big game retrieval. However, since this change is happening, not only within the State but nationwide, it is unlikely that it would substantially reduce the economic contribution that non-local hunters have on the economy in this area. It may displace some hunters from NFS lands to private lands. Because it is not clear what is foreseeable in terms of motorized dispersed camping for the other forest's currently undergoing travel management, it is not possible to predict cumulative effects.

Alternative E

The cumulative effects for alternative E in terms of general motorized recreation are the same as the cumulative effects for alternatives A, C, and D. In addition, the increased cost to hunters is unlikely to result in any negative cumulative effects on the district because hunting is a price inelastic activity, meaning that increases in price do not decrease demand (Bilgic et al. 2008). This effect is, therefore, minor and not sufficient to produce cumulative effects. In terms of motorized dispersed camping, the cumulative effects depend on what the other forests undergoing travel management decide. If this alternative is selected and motorized dispersed camping corridors are permitted on other forests, RV and fifth wheel campers who are looking for a forested camping experience are likely to be displaced outside of the economic region and their tourism contribution would be lost. If other forests also do not implement motorized dispersed camping corridors, then fewer RV and fifth wheel campers may go outside the region because the distance they would need to travel would be prohibitive. They may instead find opportunities on State, private or other types of land, or change their mode of camping to one that is more easily accessible.

Environmental Justice

Affected Environment

Approximately one-third of the population of McKinley County and one-quarter of the population of Cibola County were living below the poverty line in 1999 (Table 13). McKinley and Cibola Counties have the highest percentage of American Indian residents among counties that border the Cibola National Forest. Seventy-four percent of McKinley County and 40.3 percent of Cibola County's population identified themselves as American Indian/Native American in the 2000 Census (Table 14).

Table 13. Percent of population living below the poverty threshold and per capita income

County	1999		
	Per Capita Income	Persons Below Poverty	Percent of Persons Below Poverty
Cibola	\$11,731	6,054	24%
McKinley	\$9,872	26,664	36%

UNM-BBER 2007

Table 14. Race and ethnicity from 2000 Census

County	Ethnicity		Race					Total
	Non-Hispanic	Hispanic	White Alone	African American	American Indian	Asian or Pacific Islander	Other	
Cibola	17,040	8,555	10,138	246	10,319	112	4,780	25,595
McKinley	65,522	9,276	12,257	296	55,892	376	5,977	74,798

UNM-BBER 2007

Environmental Consequences

All Action Alternatives

Native Americans in the area frequently supplement their household income with the use and sale of forest products, in particular piñon nuts. There is potential for a minor effect to this activity because of the more restricted access to some locations in the forest. Alternative E, which is the most restricted in terms of access, would have the largest effect on this activity. However, most piñon gatherers would still be able to access enough supply on foot or using mechanical support such as a wheelbarrow for household and commercial use (Benedict 2009).

The cost associated with owning and operating a motor vehicle is considerable. Low income households are unlikely to own a recreation-only motor vehicle such as an off-road motorcycle or an OHV because they do not have adequate discretionary income to afford to participate in the sport. However, low-income households may use National Forest System roads to acquire firewood and other subsistence products. Access to these products may only partially be provided by any of the action alternatives. However, firewood permits would allow explicit access for these purposes, as appropriate. Currently, there are only a few special forest product areas on the district because districtwide firewood access is allowed. In the long term, the demand for special forest products would continue to be met utilizing roads on the MVUM and by increasing the number and dispersal of designated special forest product areas. There are, therefore, no measurable effects to low-income populations by any of the action alternatives.

Wildlife Habitat and Special Status Species

Affected Environment

The travel management planning area (Mt. Taylor Ranger District) has a wide variety of wildlife species associated with varied habitats. In general, there are six basic wildlife habitat types: mountain grassland; mountain shrub; piñon-juniper woodland; mixed conifer; ponderosa pine and pine/oak; spruce/fir; and a small amount of riparian habitat with small inclusions of other types such as deciduous forest (Table 15). There is a direct connection between vegetation types and wildlife use of sites in an area. Ponderosa pine, piñon-juniper, and scattered mountain grassland areas are the primary habitats impacted by the existing motorized route network due to the higher percentage of routes in those habitats. Motorized cross-country travel is currently allowed throughout the analysis area causing additional impacts to all habitat types and associated species when and where that use occurs. Some decommissioned and unauthorized routes continue to be used, compounding this situation.

For the purpose of the wildlife species/habitat analysis, route density is defined as all motorized routes, including roads (system, unauthorized, and decommissioned) and trails. Motorized roads and trails are considered together as routes since the primary effects to wildlife are similar.

Table 15. Habitat acreages in the Mt. Taylor District analysis area

Habitat Type	Acres	Existing Route Density (miles per square mile)
Mountain Grassland	28,415	3.8
Mountain Shrub	1,136	2.8
Piñon-Juniper Woodland	119,378	0.9
Mixed Conifer Forest	25,002	1.2
Ponderosa Pine and Pine Oak Forest	257,741	1.3
Spruce/Fir	3,559	1.9
Riparian or wetland	8,986	4.5

For each of the habitats, analysis has focused on Cibola National Forest special status species including: management indicator species, threatened, endangered, candidate and sensitive species, and high priority migratory birds. A separate report was prepared for each of the special status species and is available in the project record. This environmental assessment summarizes information contained in those reports. The Fort Wingate Habitat Protection Area (HPA) was established by the New Mexico Department of Game and Fish for the protection of big game winter range. The area is approximately over 10,000 acres in size and is closed December 15 to March 31. The area is open to the public during the summer. Some motorized route designations are within the HPA. The 300-acre OHV area is also within the HPA.

Management Indicator Species (MIS)

There are 13 terrestrial MIS species identified for 10 different habitat types in the forest plan. Some species are listed for two different habitat types. MIS are used to determine how a

particular project could affect habitat and population trends on the forest. Once the habitats found within the analysis area were determined, only those MIS whose habitat (vegetation) types occur within the project area were analyzed. Of the 13 MIS identified, 10 are found within the analysis area. Table 16 displays the 10 species and their habitats. Refer to the project MIS report tiered from the Cibola National Forest MIS analysis report (2005) for a complete description of MIS species population and habitat trend. Both reports are available in the project record.

Table 16 displays the relation of the MIS species to the amount of habitat in the project area and the existing forestwide habitat and population trend.

Table 16. Management indicator species, respective habitats, and existing trends

Species	Habitat Type/Acres in Analysis Area	Habitat Trend	Population Trend
Elk	Mountain grassland - 28,415 acres Mixed conifer - 25,002 acres	Stable Upward	Upward
Mule deer	Mountain shrub - 1,136 acres Piñon-juniper - 119,378 acres	Downward Stable	Downward
Red-naped sapsucker	Deciduous forest (included in mixed conifer acres)	Stable	Upward
House wren	Riparian - 8,986 acres	Stable	Stable
Juniper titmouse	Piñon-juniper - 119,378 acres	Stable	Downward
Red-breasted nuthatch	Spruce-fir – 3,559 acres	Stable	Upward
Black bear	Spruce-fir – 3,559 acres Mixed conifer - 25,002 acres	Stable Upward	Stable
Pygmy nuthatch	Ponderosa pine - 257,741 acres	Stable	Stable
Hairy woodpecker	Mixed conifer - 25,002 acres	Upward	Downward
Merriam’s turkey	Ponderosa pine - 257,741 acres	Stable	Upward

Threatened, Endangered and Sensitive Species

Several wildlife or plant species lists were reviewed to determine potential species which may occur in the analysis area.

Table 17 shows federally threatened, endangered, proposed or Regional Forester’s sensitive wildlife and plant species having potential to occur within the analysis area. Other species were considered but were not included because the habitat type for the species does not occur in the analysis area. Refer to the biological assessment and evaluation (BAE) for a complete list of species considered but not evaluated.

Table 17. Special status species considered

Common Name	Special Status	Location within Project area
Mexican spotted owl	Federally Threatened/Critical Habitat	This species occurs in dense, multistory mixed conifer stands with large tree structure. Spotted owls prefer shaded, cool, moist canyon sites and mountain slopes with rock outcrops, cliffs, talus, and standing dead and down woody material. There are 17 protected activity centers within the district. There are 236,237 acres of critical habitat. Mexican spotted owl habitat is managed at three levels—protected, restricted, and other forest and woodland types—to achieve a diversity of habitat conditions across the landscape. Protected areas include delineated protected activity centers (about 400 acres each); mixed conifer and pine-oak forests with slopes greater than 40 percent where timber harvest has not occurred in the last 20 years; and reserved lands which include wilderness, research natural areas, wild and scenic rivers, and congressionally recognized wilderness study areas. Restricted areas include all mixed-conifer, pine-oak forests outside of protected areas and riparian habitat. Other forest and woodland types include all ponderosa pine, spruce-fir, woodland, and aspen forests outside protected and restricted areas. The analysis area is in the Colorado Plateau Recovery Unit (RU).
Zuni fleabane	Federally Threatened	The Zuni fleabane occurs on nearly barren detrital clay hillsides with soils derived from shale of the Chinle or Baca formations (often seleniferous).
Pecos sunflower	Federally Threatened	This species is found in saturated saline soils of desert wetlands.
Southwestern willow flycatcher	Federally Threatened	Prefers moist, shrubby areas, often with standing or running water. Currently, just under a mile of willow habitat exists along Bluewater Creek from Andrews' Cabin to NFSR 178.
Yellow-billed cuckoo	Federal Candidate	Yellow billed cuckoos in New Mexico prefer desert riparian woodlands comprised of willow, Fremont cottonwood and dense mesquite. (Hughes 1999).
Zuni bluehead sucker	R3 Sensitive/Federal Candidate	Habitat for the Zuni bluehead sucker is described as primarily shaded pools and pool-runs (0.3 to 0.5 meters deep) with water velocity < 10 cubic meters per second. This species occurs in Rio Nutria and Tampico Springs.
Northern goshawk	R3 Sensitive	Nests are typically in mature to old-growth forests composed primarily of large trees, with 60 to 70 percent canopy closure in large tree groups, near the bottom of moderate hill slopes, with sparse ground cover. There are 15 known post fledging family areas (PFAs) within the analysis area.
Bald eagle	R3 Sensitive	The analysis area provides winter habitat only. There are no known roosts.
American peregrine falcon	R3 Sensitive	Peregrine falcons inhabit open wetlands and canyons near cliffs. They prey chiefly on birds.
Spotted bat	R3 Sensitive	The spotted bat ranges throughout the western states. It is found in various habitats from desert to montane coniferous stands, including open ponderosa pine, piñon-juniper woodland, canyon bottoms, open pasture, and hayfields.

Common Name	Special Status	Location within Project area
Merriam’s shrew	R3 Sensitive	They are found in various grasslands, including grasses in sagebrush scrub and pinyon/juniper woodland, as well as mountain mahogany shrublands and mixed woodlands.
Gunnison’s prairie dog	R3 Sensitive	Gunnison’s prairie dog is usually found in grassland/herbaceous and shrubland areas, high mountain valleys, as well as open or slightly brushy country, rarely with scattered junipers and pines.
Cebolleta southern pocket gopher	R3 Sensitive	They have been found in sycamore, cottonwood and rabbitbrush riparian habitats (Bison 2009).
Mt. Taylor northern pocket gopher	R3 Sensitive	The habitat type locality for Mt. Taylor northern pocket gopher was taken 6 miles northeast of the summit of Mt. Taylor.
Northern leopard frog	R3 Sensitive	Northern leopard frogs are usually found in springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes. Usually they are permanent residents of water with rooted aquatic vegetation.
Rio Grande sucker	R3 Sensitive	This species is found in pools, runs, and riffles of small to moderately large streams, usually over gravel and/or cobble, also in backwaters and pools below riffles.
Zuni milkvetch	R3 Sensitive	This species is limited to the Zuni and Datil Mountains of New Mexico (Fletcher 1978).
Villous groundcover milkvetch	R3 Sensitive	This plant prefers sandy soils of volcanic origin on slopes, benches, and ledges in xeric pine forest.
Sivinski’s fleabane	R3 Sensitive	This species is found in Chinle shale in piñon-juniper woodland and Great Basin desert scrub.

High Priority Migratory Birds

The “Cibola National Forest 2008 Breeding Bird Survey Report” provides a summary of the potential occurrence of high priority migratory bird species by habitat type. Those species potentially occurring in habitats similar to the analysis area were reviewed.

Table 18 summarizes high priority migratory bird species and habitat analyzed. On the Cibola National Forest, populations of birds are monitored through the use of breeding bird surveys (BBS) on geographic areas to detect population and trend during the breeding period. There are two types of BBS surveys done on the Cibola National Forest and both types of survey routes are run on the District including: Bluewater Lake (a USGS BBS route in the Zuni Mountains); Mt. Taylor (a USGS BBS route in the San Mateo Mountains); and six shorter BBS routes at Upper Bluewater, Lower Bluewater, Monighan, Rinconada, Limekiln Mesa, and Sawyer Canyon. In addition, there is one important bird area (IBA) on the district at Rinconada Canyon. This IBA was designated by the New Mexico Audubon Society through their IBA program. There are no important overwintering areas on the district. Refer to the high priority migratory bird report in the project record for a complete description of species and habitats and effects alternatives.

Table 18. High priority migratory bird species and associated habitat

Priority Bird Species	Habitat
Piñon jay	Piñon-juniper woodland is used most extensively by this species but flocks also breed in sagebrush, scrub oak, and chaparral communities.
Black throated gray warbler	This species can be found in piñon/juniper with some oak understory between 7,000 and 8,000 feet, but can also be common in more mesic piñon/juniper with a high canopy closure.
Band-tailed pigeon	This species may be found from piñon/juniper up through spruce/fir depending on availability of food that includes a wide variety of mast such as fruits and nuts, especially acorns and piñon pine nuts.
Gray flycatcher	This species is found in piñon/juniper woodland up into the fringes of ponderosa pine, together with some understory of oak, mountain mahogany, etc., and often in semi-mixed xeric conditions.
Dusky grouse	Dusky grouse prefer open, shrubby high meadows in summer and coniferous forest in winter.
Flammulated owl	Flammulated owls occur in ponderosa pine, mixed conifer and spruce/fir areas with large snags.
Black-chinned Hummingbird	On the Cibola National Forest, this species is the foothills hummingbird that occurs on all mountain districts up to about 7,000 ft.
Broad-tailed hummingbird	This mountain hummingbird is found from about 7,000 feet upward. It frequents meadows and open forest with a shrubby component and forbs.
Lewis's woodpecker	On the district, this species occurs in mid to high elevation, riparian woodland and open ponderosa forests.
Williamson's sapsucker	On the Cibola National Forest, they are uncommon in ponderosa pine, mixed conifer, and spruce/fir throughout the mountain districts.
Red-naped sapsucker	On the Cibola they are found in riparian woodland, ponderosa pine, mixed conifer and spruce/fir. This species prefers aspen and cottonwoods for nesting and are often found in oaks in winter.
Olive-sided flycatcher	This species breeds in habitat along forest edges and openings including burns, natural edges of bogs, marshes, open water, semi-open forest, and harvested forest with some structure retained.
Hammond's flycatcher	On the district, this species occurs in summer, primarily in ponderosa pine (old growth) and mixed conifer, especially where blue spruce or aspen is part of the mix but also in middle to high elevation riparian areas.
Grace's warbler	On the district, this species is fairly common in ponderosa pine but may extend into mixed conifer if ponderosa pine is also present.
Brewer's sparrow	On the district, this species has adapted to the rabbitbrush in the Zuni Mountains especially where it grows in large unbroken tracts, as in upper Bluewater Canyon.
Vesper sparrow	On the district, this species is found in dry meadows with some shrub component on all mountain districts from about 7,000 feet to at least 8,400 feet.

Environmental Effects

General Effects to All Alternatives – Wildlife

Motorized use of roads and trails and cross-country motorized travel off of system roads and trails affect terrestrial species through:

- Loss of habitat due to conversion of native vegetation to a particular route/trail surface (paved, gravel, dirt);
- Fragmentation of habitats due to road and trail system development and cross-country motorized travel off of system roads and trails;
- Interruption in migratory patterns of wildlife to reach breeding habitat or winter range;
- Lack of habitat use by wildlife due to disturbance caused by use of the road or trail system and cross-country motorized use; and
- Direct mortality due to vehicle collisions.

Routes are considered to have similar effects regardless of whether they are in the existing system or new route designations. Routes being added to the system as new route designations are existing two track routes currently being used by the public. For the wildlife species/habitat analysis, motorized roads and trails are considered together as routes since the primary effects to wildlife are similar. Effects are related to route densities, motorized traffic along those routes, and possible cross-country motorized travel off of system roads and trails potentially contributing to wildlife disturbance/harassment and habitat fragmentation. Overall, in all action alternatives there is a net reduction in both system routes and areas affected by motorized use. Motorized cross-country travel will be reduced from the current situation, reducing impacts to all habitat types and associated species when and where that use occurred. Some decommissioned and unauthorized motorized routes are proposed to be added to the system but there would be an overall reduction in motorized routes for all action alternatives.

In a letter dated May 12, 2009, the New Mexico Department of Game and Fish (NMDGF) stated that the agency is in favor of closing many routes to motor vehicle traffic to lessen fragmentation and disturbances from motorized use. The team that developed the proposed action and alternatives worked closely with the NMDGF to determine sufficient and strategically located roads and trails to remain open to vehicle use. The team assured that reasonable access to hunting areas is provided, to meet the NMDGF's need for harvest success and wildlife conservation. Alternative analysis also provide descriptions of how the intent of Executive Order 13443-Facilitation of Hunting Heritage and Wildlife Conservation was met.

Motorized use of routes during hunting season can provide increased hunter opportunity especially for disabled and youth hunters and increased harvest of game species, but motorized use can also reduce the quality of hunts for some users since noise associated with that use can displace wildlife. In another letter dated February 28, 2006, the NMDGF confirmed their position related to motorized big game retrieval (MBGR), stating that individual national forests not provide special treatment to non-mobility impaired hunters so that the spirit and intent of the Travel Management Rule is maintained. The NMDGF suggested that MBGR be consistent across forests in the State to ensure compliance and enforcement capabilities. The Southwestern Region of the Forest Service also provided guidance for MBGR in their Travel Management Rule Guidelines (Revised June 30, 2008). For the purposes of this analysis only elk, mule deer, and

black bear are being considered for MBGR on Game Management Unit 9 (Mt. Taylor) and Unit 10 (Zuni Mountains). Other species such as cougar are not being considered for MBGR since there are very few cougar harvested on the district.

Direct Habitat Loss

Loss of habitat from road and trail surfaces (due to conversion of native vegetation to a particular route/trail such as pavement, gravel, or dirt) is generally minor. None of the existing unauthorized routes will be decommissioned and revegetated so direct habitat loss does not change by alternative in the near term. Undesignated routes would not be closed or rehabilitated, so overall habitat loss would be the same as the existing condition, although many unauthorized roads and trails are expected to recover without repeated use.

Direct Mortality

Predators and scavengers feeding on road kill and animals attracted to salts or vegetation on or alongside roads can be subject to direct mortality from vehicles. In general, effects of motorized roads and trails on most wildlife species are negative (Boyle and Samson 1985). Route surfaces which allow for greater speeds of motorized vehicles present a greater risk to wildlife.

Indirect Disturbance

While the totals of direct habitat loss are relatively low, there is an indirect habitat loss that includes the area around motorized routes where wildlife will avoid using habitat. This can be thought of as a “buffer” around the route that wildlife will generally avoid while the routes are in use (see the discussion of noise impacts in the associated biological assessment and evaluation (BAE), the management indicator species (MIS) report, and the migratory bird (MB) report). This does not mean the animals never use these areas, only that the majority of animals tend to avoid these zones while the motorized route or motorized cross-country area is in use. For purposes of this analysis, 2,275 feet or 4.3 tenths of a mile, will be used as an indicator average for displacement off motorized routes or use areas (from Gaines et al. 2003). Lack of wildlife use in habitats along motorized roads and trails can also be correlated to the level of use a route or area receives over a period of time. Low use routes or areas may tend to have wildlife using roadside habitats more frequently than routes with high traffic volume.

Table 19. Potential motorized route displacement by alternative (700 meter buffer)

Alternative	Mt. Taylor Area	Zuni Mountains
No Action	1,189.2 sq. mile	1,618.1 sq. mile
Proposed Action	296.9 sq. mile	636.7 sq. mile
Alternatives C and D	348.4 sq. mile	682.7 sq. mile
Alternative E	166.1 sq. mile	284.5 sq. mile

Studies on the issue of road avoidance as it impacts species are relatively numerous (primarily for big game species such as elk, mule deer, and black bear). The most common interaction identified

in the literature relative to motorized roads and trails and cross-country motorized use was displacement and avoidance, where animals altered their use of habitats in response to the motorized routes. While wintering areas have traditionally received the most attention as a high stress period for many wildlife species, the importance of summer habitat (breeding and foraging areas) is now perceived as just as important where impact analysis is concerned. Animals must have access to adequate forage which allows them to nurse young, and provide young animals and themselves with enough fat stores to help them survive the winter. This not only includes suitable forage quality but areas where they are not constantly being disturbed and utilizing energy to avoid the disturbance. Canfield et al. (1999) states that the effects of open motorized trail use are likely similar to those resulting from open roads.

The interactions associated with non-motorized trails were similar to that of motorized trails and include displacement, avoidance, and disturbance at a specific site during a critical period. The interaction varied depending upon wildlife species, with some more sensitive to motorized trail use and others more sensitive to non-motorized trail use. Although both forms of recreation have effects on wildlife, motorized trails showed a greater magnitude of effects than non-motorized trails, such as longer wildlife displacement distances, for a larger number of focal species (Gaines et al. 2003).

In a study completed for the Bureau of Land Management in California, Weinstein (1978) observed that OHV use in riparian areas caused many bird species to alter their use of habitat, by flushing more readily and abandoning key nesting areas. Knight and Gutzwiller (1995) stated: “human occupation and activity are clearly and directly correlated with declines in breeding populations of birds.” Human disturbance associated with travel management can elicit both physiological and behavioral responses from birds, which can affect reproductive success and survival. Birds may change nest locations in response to human disturbance. Alternate nest sites may be less suitable in terms of security and thermal cover, availability of foraging habitat, perch sites, etc. (Knight and Gutzwiller 1995). However, they also noted that although noise associated with human travel is certainly a disturbance factor that can influence bird behavior, birds are able to adapt and habituate more quickly to mechanical (or motorized) noise than to human presence. Therefore, non-motorized use on and off trails may be a more severe disturbance factor for some birds than motorized travel restricted to designated routes.

Noise Disturbance

Many studies have been conducted on the effects of noise disturbance on wildlife displacement and avoidance. Noise from developing, using, and maintaining routes affects wildlife within hearing distance. Studies on the issue of route avoidance as it impacts species are relatively numerous (primarily for big game species such as elk, mule deer, and black bear). The most common interaction identified in the literature was displacement and avoidance, where animals altered their use of habitats in response to the motorized routes. Usually, disturbance from OHV use is qualified as the vehicle use itself as well as the associated noise from the activity.

Route Densities

High route densities can affect wildlife negatively through harassment, displacement, or vulnerability to hunters and poachers. The Rocky Mountain Elk Foundation has funded several studies on the effects of roads on elk and, in particular, the effects on mature bulls. These studies have found that hunter densities increase in proportion to road densities. The more roads you have

in an area, the more hunter access, resulting in more hunting pressure and harvesting of mature bulls. Mule deer are expected to show the same results. One study in particular (Stalling, 1994) summarized elk mortality in three different areas as follows:

- High density of open roads;
- Roads closed to motorized vehicles during hunting season; and
- Area with no roads.

In the area with a high density of open roads, only 5 percent of all bulls lived to maturity (4.5 years). None of the bulls lived past 5.5 years and the herd contained about 10 bulls for every 100 cows. In the area with roads closed during hunting season, 16 percent of the bulls lived past maturity, most reaching 7.5 years. The herd contained 20 bulls for every 100 cows. In the area with no roads, 30 percent of the bulls lived to maturity, most reaching 10 years. This herd contained 35 bulls per 100 cows. The study found that as road access increases, elk become increasingly vulnerable to hunting mortality. This trend will result in elk populations with undesirable sex and age structure, increasingly complex and restrictive hunting regulations to protect elk herds, and a loss of recreational opportunity. The existing forest plan road density guidance is a maximum of 1.9 miles of road per square mile. The forest plan also provided variable road density guidance for different vegetation or slope types within each management area. Road density guidance varied from a low of 0.14 to 1.6. Appendix B explains why that variable guidance is not being carried forward in the proposed action.

Table 20. Open road density by alternative

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Average Road Density (miles of road per square mile)	1.5 miles	0.9 mile	1.0 mile	1.0 mile	0.56 mile

Alternative E provides the fewest miles of motorized routes resulting in the least amount of habitat displacement, habitat fragmentation, and direct habitat loss compared to all the other alternatives.

Management Indicator Species

The general wildlife effects described above apply to management indicator species (MIS) habitat populations. Table 21 describes the rationale for the estimated effects determination including affects to forestwide population and habitat trend. The Forest Service is required to analyze impacts to specific habitat types and the primary species associated with these habitat types (see the MIS report for more detailed discussion of OHV noise impacts to wildlife).

Table 21. Effects on management indicator species habitat and population trend

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Elk (mixed conifer)	<p>Under this alternative, 25,001 acres of mixed conifer habitat would be available for motorized cross-country vehicle use. Only 48 miles (<5 percent) of motorized routes are in mixed conifer habitat. Because of the low percentage of routes in this habitat type, the forestwide population trend is expected to remain upward and forestwide habitat trends are expected to remain stable. Additionally, much of the mixed conifer habitat is on steep slopes that would rarely be used for OHV travel. A small percentage of mixed conifer habitat could be impacted further by continued off-road/trail use, reducing habitat quality with a potential increase in disturbance to elk on breeding range.</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel.</p> <p>Motorized big game retrieval (MBGR) would be prohibited under this alternative, reducing impacts to habitat and populations because vehicles will stay on already disturbed areas such as designated routes.</p> <p>This alternative would allow motorized dispersed camping along 80 miles of road which would reduce direct impacts to elk compared with alternative A, but would increase elk contact with vehicles, increasing noise, displacement and direct mortality compared with alternative E.</p> <p>Rerouting of NFSR 447 would have no impact on mixed conifer habitat since it is not in that habitat type.</p> <p>Overall under this alternative, forestwide population trend would</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel.</p> <p>There would be a 13 percent increase in the miles of routes in mixed conifer habitat (4.7 miles) compared to alternative B. This increase in route miles is expected to have a minimal impact since it is a small percent of the total habitat area.</p> <p>The 344-acre OHV area would not affect mixed conifer habitat.</p> <p>Camping corridors would be allowed 300 feet on either side of the road along 99 miles with effects to habitat and population similar to alternative B except more areas are available to camp reducing habitat availability for elk.</p> <p>Overall under this alternative, forestwide population trend would remain upward and forestwide habitat trend is expected to remain stable.</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel.</p> <p>Miles of routes compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to habitat from motorized cross-country big game retrieval along 287 miles of road. Off-road travel would be available seasonally during the hunting season and only to licensed hunters. Impacts would be greater in mixed conifer because that is generally where elk are located during hunting season. Elk would be impacted by increased noise, habitat displacement, and habitat fragmentation. This impact is less than alternative A, but greater than alternatives B, C, and E.</p> <p>Effects of camping corridors would be the same as alternative C. Overall under this alternative, forestwide</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel.</p> <p>Due to the reduced amount of designated routes under alternative E, there would be a 33 percent reduction in route miles in mixed conifer habitat compared to alternative B and a 40 percent reduction compared to alternatives C and D.</p> <p>Designation for MBGR and motorized dispersed camping would be removed, reducing potential for habitat displacement and fragmentation along 80 to 99 miles of road in alternatives B, C, and D. Under this alternative, forestwide population trend would remain upward and forestwide habitat trend is expected to remain stable.</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		<p>remain upward and forestwide habitat trend is expected to remain stable.</p>		<p>population trend would remain upward and forestwide habitat trend is expected to remain stable. MBGR may allow increased hunter opportunity for elk, but may also result in lower hunting success.</p>	
<p>Elk (mountain grassland)</p>	<p>About 28,415 acres of mountain grassland habitat would continue to be available for cross-country motorized vehicle use, reducing habitat quality in mountain grassland over time. When considered as a habitat type, mountain grassland has one of the highest densities of routes per square mile at 3.8. This route density is well above what is recommended in the forest plan as an average across the landscape, although the plan did not consider road densities by habitat type. There would be a potential increase in disturbance to elk through noise and displacement. Under</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel and reducing route densities. Elimination of MBGR in this alternative would also reduce impacts to vegetation because OHVs would stay on already disturbed areas (designated routes), allowing recovery of any degraded vegetation. There will be a 26 percent reduction in route miles (2.82 mi/sq. mile) resulting in continuation of a stable habitat trend and preventing the trend from declining.</p> <p>Motorized dispersed camping within a 100-foot corridor on 80 miles of road would reduce direct impacts to elk compared</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel.</p> <p>There would be a 4 percent increase of routes in grassland habitat compared to alternative B. This amount is expected to have a minimal impact because it is a small percentage of the total habitat area. There will be a 22 percent reduction in route miles (2.93 mi/sq. mile) which means habitat trends are not expected to decline such as the case in alternative A.</p> <p>The 344-acre OHV area is not expected to have an impact because it is not located within grassland habitat. Camping corridors along 99 miles of road would affect habitat and population similar to</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel.</p> <p>Miles of route compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to elk foraging habitat from motorized big game retrieval along 287 miles of road. Cross-country, off-road travel would be available seasonally during the hunting season and only to licensed hunters. Impacts would be greater in grassland habitat because those areas are generally less steep and are located adjacent to existing roads. Elk would be impacted by increased noise, habitat displacement, and habitat fragmentation. Effects of</p>	<p>Route designations would benefit elk habitat by eliminating cross-country motorized travel. Due to the reduced amount of designated routes under alternative E (10 percent less than alternative B and 13 percent less than alternatives C and D) there would be a reduction in disturbance to mountain grassland habitat. No MBGR and motorized dispersed camping would reduce potential for habitat displacement and fragmentation along 80 to 99 miles of road in alternatives B, C, and D.</p> <p>Under this alternative, forestwide population</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>this alternative forestwide population trends are expected to remain stable, but forestwide habitat trends may decline since mountain grasslands are particularly available for cross-country motorized use due to their location near existing roads and their relatively flatter terrain.</p>	<p>with alternative A, but would increase elk contact with vehicles and people, increasing noise, displacement and direct mortality when compared with alternative E which does not provide motorized dispersed camping.</p> <p>The reroute of NFSR 447 is not located within mountain grassland habitat, therefore, no impact from the reroute is expected.</p> <p>Under this alternative, forestwide population trend would remain upward and forestwide habitat trend would remain stable.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect elk because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>alternative B except more areas are available to camp and the corridor width is three times larger reducing habitat quality for elk.</p> <p>Forestwide population and habitat trends would remain stable.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect elk because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>camping corridors would be the same as alternative C.</p> <p>Overall under this alternative, forestwide population and habitat trend would remain stable. MBGR may allow increased hunter opportunity for elk, but may also result in lower hunting success.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect elk because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>and habitat trends could increase over time.</p> <p>Designation of routes in the Ft. Wingate HPA would not affect elk because there would be a reduction in the number of routes within the HPA and it would remain closed during the winter.</p>
<p>Mule deer (piñon/juniper)</p>	<p>Additional habitat loss could occur on 119,378 acres of piñon-juniper habitat due to unrestricted cross-</p>	<p>Prohibitions of cross-country motorized travel would allow recovery of piñon-juniper habitat benefiting mule deer.</p>	<p>Prohibitions of cross-country motorized travel would allow recovery of piñon-juniper habitat benefiting mule deer. There</p>	<p>Prohibitions of cross-country motorized travel would allow recovery of piñon-juniper habitat benefiting mule deer. Miles</p>	<p>Route designations would benefit mule deer habitat by eliminating cross-country motorized travel. Due to the</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>country motorized travel. Many piñon-juniper areas allow easier access due to their gentle slopes. These areas would be subject to habitat loss and disturbance if vehicles are not restricted to designated routes.</p> <p>About 174 miles (17 percent) of routes are in piñon-juniper habitat. Under this alternative, forestwide population trends would remain downward and forestwide habitat trends could decline from the currently stable condition.</p>	<p>Many of the routes in piñon-juniper habitat would remain open resulting in a small change to habitat conditions. There would be about 25 percent fewer routes in alternative B, compared to alternative A. Direct impacts such as noise disturbance and direct mortality would be reduced because mule deer would have less contact with vehicles on the district because opportunities for motorized dispersed camping would be reduced.</p> <p>Reroute of NFSR 447 is located within piñon-juniper habitat but impacts from the reroute are not expected to change habitat structure important to mule deer, therefore, no impacts are expected.</p> <p>Forestwide population and habitat trends could increase over time.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect mule deer because</p>	<p>would be about 17 percent more motorized routes in alternative C (+27 miles), compared to alternative B. The increase of roads from alternative B is expected to have a minimal impact since deer use this habitat mainly during the winter and snow generally limits motorized route use during that time.</p> <p>The 344-acre designated OHV area would be located in ponderosa pine habitat, but much of the area is rocky and open with only small amounts of understory vegetation which may have some use by mule deer. Motorized use of the area is likely to displace deer due to noise and habitat fragmentation and result in direct habitat loss if OHVs are present during the winter. Because of the small size of the area, it is not expected to cause a decrease in the forestwide population or habitat trends. The increase of camping corridors from 100 feet to 300 feet could impact piñon-juniper habitat because it gives campers</p>	<p>of motorized route available for use is the same as alternative C. Impacts to vegetation from MBGR are expected to be greater in piñon-juniper under this alternative. The impact due to the reroute of NFSR 447 is the same as alternatives B and C. The increase of camping corridors from 100 feet to 300 feet is the same as alternative C. Forestwide population trend could decrease slightly over time but forestwide habitat trends would remain stable. MBGR may allow increased hunter opportunity for mule deer, but may also result in lower hunting success.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect mule deer because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>reduced amount of designated motorized routes and dispersed camping under alternative E (5 percent less than alternative B and 21 percent less than alternatives C and D). There would be a reduction in disturbance to piñon-juniper habitat and mule deer populations. Forestwide population and habitat trends could increase over time.</p> <p>Designation of routes in the Ft. Wingate HPA would not affect mule deer because there would be a reduction in the number of routes within the HPA, and it would remain closed during the winter.</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		these routes would remain closed from December 15 to March 31 protecting winter range habitat.	more areas to use which make less habitat available for deer. Forestwide population and habitat trends could increase over time. Designation of routes and the OHV area in the Ft. Wingate HPA would not affect mule deer because these routes would remain closed from December 15 to March 31 protecting winter range habitat.		
Mule deer (mountain shrub)	Additional habitat loss could occur on 1,136 acres of mountain shrub habitat due to unrestricted cross-country motorized travel. Only about 3 miles of motorized routes are located in this habitat type. Some of this habitat is accessible for OHV use, but because this habitat type is dense and sometimes on steep slopes, the risk of OHV use is relatively low. Population and habitat could remain on a downward trend.	Prohibitions of cross-country motorized travel on the district would allow recovery of mountain shrub habitat benefiting mule deer. Many of the existing routes would remain open in this habitat type resulting in no change to habitat availability. Reduced direct impacts are expected because mule deer would have less contact with vehicles on the district compared to alternatives A, C and D, thus, reducing noise disturbance, habitat fragmentation and direct	Route designations would benefit mule deer and their habitat by eliminating cross-country motorized travel. Many of the existing routes would remain open in this habitat type resulting in no change to habitat availability. The 344-acre designated OHV area would not be located within mountain shrub habitat, therefore, there would be no impact. The increase of camping corridors from 100 feet to 300 feet could impact mountain shrub habitat because it gives campers more areas to camp making less habitat available for	Route designations would benefit mule deer and their habitat by eliminating cross-country motorized travel. Many of the existing routes would remain open in this habitat type resulting in no change to habitat availability. MBGR would be allowed along 287 miles of road, but due to seasonal restrictions and hunting permit limitations, impacts would be fairly minimal. The impact due to the rerouting of NFSR 447 is the same as alternatives B and C. The increase of camping corridors from 100 feet to 300 feet is the same as alternative C. Under this	Route designations would benefit mule deer habitat by eliminating cross-country motorized travel. Many of the existing routes would remain open in this habitat type resulting in no change to habitat availability. Impacts under this alternative are expected to be less than alternatives A, B, C, and D because there would be no MBGR along 287 miles of road and no motorized dispersed camping along 80 to 98 miles of road. Under this alternative, forestwide

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		<p>mortality.</p> <p>The reroute of FSR 447 is not located within mountain shrub habitat, therefore, no impacts are expected.</p> <p>Under this alternative, forestwide population and habitat trends would remain in a downward trend.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect mule deer because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>deer, although less camping is likely here due to the lack of shade and relatively steeper slopes.</p> <p>Forestwide population and habitat trends would remain in a downward trend.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect mule deer because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>alternative, forestwide population and habitat trends would remain in a downward trend. MBGR may allow increased hunter opportunity for mule deer, but may also result in lower hunting success.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect mule deer because these routes would remain closed from December 15 to March 31 protecting winter range habitat.</p>	<p>population trends could increase slightly over time. Forestwide habitat trends would remain downward due to lack of change in the number of routes available.</p> <p>Designation of routes in the Ft. Wingate HPA would not affect mule deer because there would be a reduction in the number of routes within the HPA and it would remain closed during the winter.</p>
<p>Black bear (mixed conifer)</p>	<p>Under this alternative, the entire 25,001 acres of mixed conifer habitat would be available for cross-country motorized use. Only 48 miles of motorized route (<5 percent) are in mixed conifer habitat. Because of the low percentage of motorized routes in this habitat type, forestwide population trend is expected to remain stable and forestwide</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>Motorized big game retrieval (MBGR) would not be provided under this alternative, reducing impacts to habitat and populations because vehicles would stay on already disturbed areas such as designated motorized routes.</p> <p>Motorized dispersed</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>There would be a 13 percent increase in the miles of motorized routes in mixed conifer habitat (4.7 miles) compared to alternative B. This increase in motorized route miles is expected to have a minimal impact since it is a small percentage of the total habitat area.</p>	<p>Route designations would benefit bear habitat by eliminating motorized cross-country travel.</p> <p>Miles of motorized routes compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to habitat from motorized big game retrieval along 287 miles of road. Off-road travel would be available seasonally during the hunting season and only to licensed</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>Due to the reduced amount of designated motorized routes under alternative E, there would be a 33 percent reduction in motorized route miles in mixed conifer habitat compared to alternative B and a 40 percent</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>habitat trends are expected to remain upward. Additionally, much of the mixed conifer habitat is on steep slopes that would rarely be used for OHV travel. A small percentage of mixed conifer habitat could be impacted further by continued off-road/trail use, reducing habitat quality with a potential increase in disturbance to black bear.</p>	<p>camping along 80 miles of road would reduce direct impacts to bear compared with alternative A, but would increase bear contact with vehicles, increasing noise, displacement and direct mortality compared with alternative E.</p> <p>The reroute of NFSR 447 would have no impact on mixed conifer habitat since it is not in that habitat type.</p> <p>Overall under this alternative, forestwide population trend of black bear would remain stable and forestwide habitat trend is expected to remain upward.</p>	<p>The 344-acre OHV area would not affect mixed conifer habitat. Camping corridors would be allowed 300 feet on either side of the road along 99 miles with effects to habitat and population similar to alternative B except more areas are available to camp, reducing habitat availability for black bear due to a reduction in habitat security and potential for increased susceptibility to illegal hunting.</p> <p>Under this alternative, forestwide population trend would remain stable and forestwide habitat trend is expected to remain upward.</p>	<p>hunters. Black bear would be impacted by increased noise, habitat displacement, and habitat fragmentation. Effects of camping corridors would be the same as alternative C.</p> <p>Overall under this alternative, forestwide population trend would remain stable with slight local declines due to increased access, but forestwide habitat trend is expected to remain upward.</p> <p>MBGR may allow increased hunter opportunity for black bear, but may also result in lower hunting success.</p>	<p>reduction compared to alternatives C and D.</p> <p>Designation for MBGR and motorized dispersed camping would be removed, reducing potential for habitat displacement and fragmentation, and increased illegal harvest along 80 to 99 miles of road compared to alternatives B, C, and D.</p> <p>Under this alternative, forestwide population trend would remain stable and forestwide habitat trend is expected to remain upward.</p>
<p>Black bear (spruce/fir)</p>	<p>Under this alternative the entire 3,559 acres of spruce/fir habitat would be available for motorized cross-country use. Currently, only 10 miles of motorized route (<1 percent) are in this habitat type.</p> <p>All of the spruce/fir habitat type is on steep slopes that would rarely</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>Motorized big game retrieval (MBGR) would not be provided under this alternative, reducing impacts to habitat and populations because vehicles would stay on already disturbed areas</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>This alternative increases designated routes by only 1.5 miles in spruce/fir habitat compared to alternative B. This increase in motorized route miles is expected to have a minimal impact since it is a small</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>Miles of motorized route compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to habitat from motorized big game retrieval along 287 miles of road. Off-road travel would</p>	<p>Route designations would benefit black bear habitat by eliminating motorized cross-country travel.</p> <p>Due to the reduced amount of designated motorized routes under alternative E, there would be a 42 percent reduction (-4.8 miles) in spruce/fir habitat</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>be used for OHV travel. A small percentage of spruce/fir habitat type could be impacted further by continued off-road/trail use, reducing habitat quality with a potential increase in disturbance to black bear.</p> <p>Because of the low percentage of motorized routes in this habitat type, forestwide population trend is expected to remain stable and forestwide habitat trend is expected to remain stable.</p>	<p>such as designated roads. Motorized dispersed camping along 80 miles of road would reduce direct impacts to bear compared with alternative A, but would increase bear contact with vehicles, increasing noise, displacement and direct mortality compared with alternative E.</p> <p>The reroute of NFSR 447 would have no impact on spruce/fir habitat since it is not in that habitat type.</p> <p>Overall under this alternative, forestwide population trend of black bear would remain stable and forestwide habitat trend is expected to remain stable.</p>	<p>percentage of the total habitat area.</p> <p>The 344-acre OHV area would not affect spruce/fir habitat. Camping corridors would be allowed 300 feet on either side of the road along 99 miles with effects to habitat and population similar to alternative B except more areas are available to camp reducing habitat availability for black bear due to a reduction in habitat security and potential for increased susceptibility to illegal hunting.</p> <p>Under this alternative, forestwide population trend would remain stable and forestwide habitat trend is expected to remain stable.</p>	<p>be available seasonally during the hunting season and only to licensed hunters who legally harvested elk, mule deer, and black bear. Impacts would be less in spruce/fir habitat because those areas are generally very steep. Under this alternative, black bear would be impacted by a small increase in noise, habitat displacement, and habitat fragmentation. This impact is less than alternative A, but greater than alternatives B, C, and E. Effects of camping corridors would be the same as alternative C.</p> <p>Overall under this alternative, forestwide population and habitat trend would remain stable. MBGR may allow increased hunter opportunity for black bear, but may also result in lower hunting success.</p>	<p>compared to alternative B and a 58 percent reduction (-5.6 miles) compared to alternatives C and D. Motorized route mileage in the spruce/fir habitat type is relatively low under all alternatives.</p> <p>Designation for MBGR and motorized dispersed camping would be removed, reducing potential for habitat displacement and fragmentation, and decreased illegal harvest along 80 to 99 miles of road compared to alternatives B, C, and D.</p> <p>Under this alternative, forestwide population trend would remain stable and forestwide habitat trend is expected to remain stable because motorized route densities are low.</p>
Merriam’s turkey (ponderosa pine)	The entire 257,741 acres of ponderosa pine and pine/oak habitat would be available for motorized cross-country	Route designations would benefit Merriam’s turkey habitat by eliminating motorized cross-country	Route designations would benefit turkey habitat by eliminating motorized cross-country travel.	Route designations would benefit turkey habitat by eliminating motorized cross-country travel.	Route designations would benefit turkey habitat by eliminating motorized cross-country

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>use. There are currently about 535 miles of motorized route in this habitat type, representing about 50 percent of all routes. When considered as a habitat type, ponderosa pine/pine oak has route densities of 1.3 miles per square mile which is below the forest plan guideline of 1.9.</p> <p>Much of this habitat (due to terrain) is very accessible to off-route travel by cross-country motorized use. This habitat would continue to be impacted by unrestricted motorized travel.</p> <p>Forestwide population trends are expected to remain upward with localized declines in population. Forestwide habitat trend could decline as well.</p>	<p>travel.</p> <p>Elimination of MBGR would reduce impacts to ponderosa pine and pine/oak vegetation because motorized vehicles would stay on already disturbed areas (designated roads). This would allow recovery of any degraded vegetation.</p> <p>Motorized dispersed camping would be allowed along 80 miles of road which would reduce impacts to turkey compared to alternative A, but would increase contact with vehicles, increasing disturbance due to noise, displacement and direct mortality compared with alternative E.</p> <p>The reroute of NFSR 447 is not located within ponderosa pine, therefore, no impacts are expected.</p> <p>Under this alternative, forestwide population trends would remain upward and forestwide habitat trends would remain stable.</p> <p>Designation of routes in</p>	<p>This alternative increases designated routes by 26 miles in ponderosa pine/pine oak habitat compared to alternative B. This increase in motorized route miles is expected to have a minimal impact since it is a small percentage of the total habitat area.</p> <p>The 344-acre OHV area would not affect ponderosa pine habitat that is occupied by turkey because it is rocky, open and without habitat components needed by turkeys. Camping corridors would be allowed 300 feet on either side of the road along 99 miles with effects to habitat and population similar to alternative B except more areas are available to camp reducing habitat availability for turkey due to a reduction in habitat security and potential for increased susceptibility to illegal hunting.</p> <p>Forestwide population trend would remain upward and forestwide habitat trend is expected to remain stable.</p>	<p>Miles of motorized route compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to habitat from motorized big game retrieval along 287 miles of road. Off-road travel would be available seasonally during the hunting season and only to licensed hunters to retrieve legally taken elk, mule deer, and black bear. Impacts may be more in ponderosa pine and pine/oak habitat because those areas are generally less steep. Under this alternative, turkey would be impacted by a small increase in noise, habitat displacement, and habitat fragmentation. Effects of camping corridors would be the same as alternative C.</p> <p>Forestwide population trend may decrease slightly and forestwide habitat trend would remain stable.</p> <p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect Merriam's turkey because these routes would remain closed from</p>	<p>travel.</p> <p>Due to the reduced amount of designated motorized routes under alternative E, there would be a 22 percent reduction in motorized route miles in ponderosa pine/pine oak habitat compared to alternative B and a 26 percent reduction compared to alternatives C and D.</p> <p>Designation for MBGR and motorized dispersed camping would be removed, reducing potential for habitat displacement and fragmentation, and increased illegal harvest along 80 to 98 miles of road compared to alternatives B, C, and D.</p> <p>Forestwide population trend would remain upward and forestwide habitat trend is expected to remain stable.</p> <p>Designation of routes in the Ft. Wingate HPA would not affect Merriam's turkey</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		<p>the Ft. Wingate HPA would not affect Merriam’s turkey because these routes would remain closed from December 15 to March 31 protecting winter range.</p>	<p>Designation of routes and the OHV area in the Ft. Wingate HPA would not affect Merriam’s turkey because these routes would remain closed from December 15 to March 31 protecting winter range.</p>	<p>December 15 to March 31 protecting winter range.</p>	<p>because there would be a reduction in the number of routes within the HPA and it would remain closed during the winter.</p>
<p>Juniper titmouse (piñon-juniper)</p>	<p>Additional habitat loss could occur on 119,378 acres of piñon-juniper habitat due to unrestricted motorized cross-country vehicle travel. Many piñon-juniper areas allow easier access for motorized cross-country travel due to their gentle slopes. These areas would be subject to habitat loss and disturbance to juniper titmouse if motorized vehicles are not restricted to designated routes.</p> <p>About 174 miles (17 percent) of motorized routes are in piñon-juniper habitat.</p> <p>Forestwide population trends would remain downward and forestwide habitat</p>	<p>Prohibitions of motorized cross-country travel would allow recovery of piñon-juniper habitat benefiting juniper titmouse. Many of the routes in piñon-juniper habitat would remain open resulting in small change to habitat conditions. There would be about 25 percent fewer motorized routes in alternative B, compared to alternative A. Fewer motorized routes would reduce direct impacts (noise disturbance and direct mortality) because the titmouse would have less contact with vehicles on the district as MBGR and motorized dispersed camping would be reduced compared to alternatives C and D. The reroute of NFSR 447 is located within piñon-juniper habitat but impacts</p>	<p>Prohibitions of motorized cross-country travel would allow recovery of piñon-juniper habitat benefiting juniper titmouse. There would be about 17 percent more motorized routes in alternative C, compared to alternative B. The increase of motorized routes from alternative B is expected to have a minimal impact. The 344-acre designated OHV area is located in ponderosa pine habitat and would not have much use by juniper titmouse. There is some piñon-juniper in the area and use of the area may displace the titmouse due to noise and habitat fragmentation and result in a small amount of direct habitat loss. Because of the size of the area, it is not expected to cause a decrease in the forestwide population trend or</p>	<p>Prohibitions of motorized cross-country travel would allow recovery of piñon-juniper habitat benefiting juniper titmouse. Miles of motorized route is the same as alternative C. Impacts to vegetation from MBGR are expected to be greater in piñon-juniper under this alternative. The impact due to rerouting NFSR 447 is the same as alternatives B and C. The increase of camping corridors from 100 feet to 300 feet is the same as alternative C. Forestwide population would remain downward and forestwide habitat trends could decline slightly.</p>	<p>Route designations would benefit juniper titmouse habitat by eliminating motorized cross-country travel. Due to the reduced amount of designated motorized routes, MBGR and dispersed camping under alternative E (5 percent less than alternative B and 21 percent less than alternatives C and D), there would be a reduction in disturbance to piñon-juniper habitat and juniper titmouse populations. Forestwide population trend would remain downward and forestwide habitat trends could increase over time.</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>trends could decline from the currently stable condition.</p>	<p>from the reroute are not expected to change habitat structure important to titmouse so no impacts are expected.</p> <p>Forestwide population trend would remain downward and forestwide habitat trends could increase over time.</p>	<p>forestwide habitat trend. The increase of camping corridors from 100 feet to 300 feet could impact piñon-juniper habitat because it gives campers more areas to use which takes more habitat from the titmouse. Forestwide population trend would remain downward and forestwide habitat trends could remain stable.</p>		
<p>Pygmy nuthatch (ponderosa pine)</p>	<p>Under this alternative, the entire 257,741 acres of ponderosa pine and pine/oak habitat would be available for cross-country motorized use. There are currently about 535 miles of motorized route in this habitat type representing about 50 percent of all motorized routes.</p> <p>Much of this habitat (due to terrain) is very accessible to off-route travel by motorized cross-country travel. This habitat would continue to be impacted by unrestricted motorized travel.</p>	<p>Route designations would benefit pygmy nuthatch habitat by eliminating motorized cross-country travel. These effects are similar for all action alternatives.</p> <p>Elimination of MBGR would reduce impacts to ponderosa pine and pine/oak vegetation because motorized vehicles would stay on already disturbed areas (designated motorized routes). This would allow recovery of any degraded vegetation.</p> <p>Motorized dispersed camping would be allowed along 80 miles of road which would reduce</p>	<p>These effects are similar to alternative B.</p> <p>Designated routes increase by 26 miles in ponderosa pine/pine oak habitat compared to alternative B. This increase in motorized route miles is expected to have a minimal impact since it is a small percentage of the total habitat area.</p> <p>The 344-acre OHV area in ponderosa pine habitat may displace individual birds from the area. There is no ground cover in the area and only noise disturbance could impact individuals. Camping corridors 300 feet on either side of the road along 99 miles with effects</p>	<p>These effects are similar to alternative B.</p> <p>Miles of motorized route compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to habitat from motorized big game retrieval along 287 miles of road. Off-road travel would be available seasonally and only to licensed hunters. Impacts may be more in ponderosa pine and pine/oak habitat because those areas are generally less steep. Pygmy nuthatch would be impacted by an increase in noise, habitat displacement, and habitat fragmentation. Effects of</p>	<p>These effects are similar to alternative B.</p> <p>Due to the reduced amount of designated motorized routes under alternative E, there would be a 22 percent reduction in motorized route miles in ponderosa pine/pine oak habitat compared to alternative B and a 26 percent reduction compared to alternatives C and D.</p> <p>Designation for MBGR and motorized dispersed camping would be removed, reducing potential for habitat displacement and fragmentation along 80</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>Forestwide population trends are expected to remain stable with localized declines in population. Forestwide habitat trend could decline as well.</p>	<p>impacts to pygmy nuthatch compared to alternative A, but would increase contact with vehicles, increasing disturbance due to noise, displacement and some direct mortality compared with alternative E.</p> <p>The reroute of NFSR 447 is not located within ponderosa pine, therefore, no impacts are expected.</p> <p>Forestwide population and habitat trends would remain stable.</p>	<p>to habitat and population similar to alternative B except more areas are available to camp, increasing habitat fragmentation and displacement of individual birds from noise.</p> <p>Forestwide population and habitat trends are expected to remain stable.</p>	<p>camping corridors would be the same as alternative C. Forestwide population and habitat trend would remain stable.</p>	<p>to 99 miles of road compared to alternatives B, C, and D.</p> <p>Forestwide population and habitat trend are expected to remain stable.</p>
<p>Hairy woodpecker (mixed conifer)</p>	<p>Under this alternative, the entire 25,001 acres of mixed conifer habitat would be available for cross-country motorized use. Only 48 miles of motorized route (<5 percent) are in mixed conifer habitat. Because of the low percentage of motorized routes in this habitat type, forestwide population trend is expected to remain downward and forestwide habitat trends are expected to remain upward. This</p>	<p>Route designations would benefit hairy woodpecker habitat by eliminating motorized cross-country travel. These effects are similar to all action alternatives.</p> <p>Motorized big game retrieval (MBGR) would not be provided under this alternative, reducing impacts to habitat and populations because vehicles would stay on already disturbed areas such as designated motorized routes.</p> <p>Motorized dispersed</p>	<p>There would be a 13 percent increase in the miles of motorized routes in mixed conifer habitat (4.7 miles) compared to alternative B. This increase in motorized route miles is expected to have a minimal impact since it is a small percentage of the total habitat area.</p> <p>The 344-acre OHV area would not affect mixed conifer habitat. Camping corridors would be allowed 300 feet on either side of the road along 99 miles, with effects to habitat and</p>	<p>Miles of motorized routes compared to alternative B is the same as alternative C.</p> <p>There would be additional impacts to habitat from motorized big game retrieval along 287 miles of road. Off-road travel would be available seasonally during the hunting season and only to licensed hunters. Woodpeckers would be impacted by increased noise, habitat displacement, and habitat fragmentation. Effects of camping corridors would be the same as alternative C.</p>	<p>Due to the reduced amount of designated motorized routes under alternative E, there would be a 33 percent reduction in motorized route miles in mixed conifer habitat compared to alternative B and a 40 percent reduction compared to alternatives C and D.</p> <p>Designation for MBGR and motorized dispersed camping would be removed, reducing potential for habitat displacement and</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>could mean that motorized vehicles are not the main cause for a downward trend. Additionally, much of the mixed conifer habitat is on steep slopes that would rarely be used for motorized cross-country travel. A small percentage of mixed conifer habitat could be impacted further by continued off-road/trail use, reducing habitat quality with a potential increase in disturbance to hairy woodpecker.</p>	<p>camping along 80 miles of road would reduce direct impacts to the woodpecker compared with alternative A, but would increase bird contact with vehicles, increasing noise, displacement and direct mortality compared with alternative E.</p> <p>The reroute of NFSR 447 would have no impact on mixed conifer habitat since it is not in that habitat type.</p> <p>Forestwide population trend of hairy woodpecker would remain downward and forestwide habitat trend is expected to remain upward.</p>	<p>population similar to the PA except more areas are available to camp reducing habitat availability for hairy woodpecker due to an increase in human use.</p> <p>Forestwide population trend would remain downward and forestwide habitat trend is expected to remain upward.</p>	<p>Forestwide population trend would remain downward with slight local declines due to increased access, but forestwide habitat trend is expected to remain upward.</p>	<p>fragmentation along 80 to 99 miles of road compared to alternatives B, C, and D.</p> <p>Forestwide population trend may increase slightly or remain downward and forestwide habitat trend is expected to remain upward.</p>
<p>House wren (riparian)</p>	<p>There are currently 63 miles of motorized routes in riparian habitat with an average motorized route density in this type at 4.5 miles per square mile.</p> <p>Most riparian habitat (excluding those areas already under a closure order), including parts of Bluewater and Rio Nutria, would be</p>	<p>Route designations would benefit house wren habitat by eliminating motorized cross-country travel. This effect is similar for all action alternatives.</p> <p>Motorized big game retrieval (MBGR) would not be provided under this alternative, reducing impacts to habitat and populations because vehicles would stay on</p>	<p>There would be a 13 percent increase in miles of motorized routes in riparian habitat (6.6 miles) compared to alternative B. This increase in motorized route miles is expected to have a larger impact because motorized route densities are already high in this habitat type. Motorized routes in riparian habitat have the potential to seriously impact soils, bank</p>	<p>Impacts to vegetation from motorized big game retrieval are expected to be greater in riparian areas because vehicles traveling off road could impact fragile soils and other riparian characteristics such as bank cover and stability. The impact due to the re-route of NFSR 447 is the same as alternatives B and C. Miles of motorized routes compared to</p>	<p>Due to the reduced amount of designated motorized routes under alternative E, there would be a reduction in disturbance to riparian habitat. This impact is expected to be less than alternatives A, B, C, and D because there would be fewer motorized routes and no cross-country travel. Forestwide population</p>

Species/ Primary Habitat	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	<p>impacted because the area would remain open to ORV access causing a decline in the quality and extent of riparian habitat. Other riparian areas on the district including Cottonwood Creek, Water Canyon, and springs, seeps and wet meadows would also continue to be affected.</p> <p>Forestwide population trend of the house wren is expected to remain stable and the forestwide habitat trend is expected to decline.</p>	<p>already disturbed areas such as designated motorized routes.</p> <p>This alternative would allow motorized dispersed camping along 80 miles of road which would reduce direct impacts to house wren compared with alternative A, but would increase bird contact with vehicles, increasing noise, displacement and direct mortality compared with alternative E.</p> <p>The reroute of NFSR 447 would have no impact on riparian habitat since it is not in that habitat type.</p> <p>Forestwide population trend of house wren would remain stable and forestwide habitat trend is expected to improve.</p>	<p>cover and stability, and diversity of riparian plants.</p> <p>The 344-acre OHV area would not affect riparian habitat. Camping corridors are not located in riparian habitat.</p> <p>Forestwide population trend would remain stable and forestwide habitat trend is expected to decline slightly.</p>	<p>alternative B is the same as alternative C.</p> <p>The increase of camping corridors from 100 feet to 300 feet would not impact riparian habitat because camping within 300 feet of water is prohibited and most campers tend to avoid wet areas.</p> <p>Forestwide population trend would remain stable and forestwide habitat trend is expected to decline slightly.</p>	<p>trend would remain stable, but forestwide habitat trends are expected to increase over time.</p>

Threatened, Endangered and Sensitive Species

Effects to special status species are related to habitat loss and alteration, direct mortality, habitat fragmentation, and displacement due to noise and human presence. A biological assessment and evaluation (BAE) will be prepared for the preferred alternative after the public comment period on the EA. The BAE will be provided to the U.S. Fish and Wildlife Service for informal consultation and concurrence for those species which may be affected by the project.

Mexican Spotted Owl

Alternative A

Under alternative A, motorized vehicle travel within protected or restricted MSO habitats is expected to be greater than the action alternatives because motor vehicles are currently allowed to drive cross country in most places on the district. Areas within critical habitat, protected and restricted habitat (mixed conifer, pine/oak and riparian) are most valuable to MSO. Motor vehicles may degrade or destroy spotted owl habitat, particularly meadow and shrub habitats, vital to the owl’s prey. Noise produced by vehicles and vehicle riders may disturb spotted owls at important nesting and roosting sites. This is a greater effect than alternatives B, C, D and E because more motorized routes are available for use. Most nests are located in areas where motorized vehicles cannot access (steep slopes, canyon bottoms) and most motorized cross-country activity occurs during the day whereas most MSO activity occurs during the night. This also minimizes direct effects that motorized vehicles have on MSO. There is still a chance that individual birds can be disrupted from human and noise disturbance, causing the bird to leave the area or move to an adjacent area. The determination of effect for MSO under alternative A is “May affect species, not likely to adversely affect species or its habitat.”

Alternatives B, C, D and E

The effects of prohibiting cross-country travel off of designated routes reduces much of the direct and indirect effects to Mexican spotted owl protected and restricted habitat. Refer to Table 22 for miles of motorized routes located within protected activity centers (PACs), in critical habitat (CH), and in protected or restricted habitat. Alternative D effects are similar to B, C, and E with the exception of motorized big game retrieval (MBGR). Effects are expected to be minimal because MBGR has seasonal restrictions. MBGR is allowed only during big game hunting seasons. Currently, most motorized cross-country use is for deer and elk hunts, with a small amount for black bear and cougar; these hunts occur after the MSO breeding season is over and young have fledged the nest. Under alternative D, MBGR would be allowed only for elk, mule deer, and black bear. Such motorized use would not directly affect nesting birds or their young, although it could still impact wintering individuals and displace them to adjacent areas.

Table 22. Miles of motorized routes in MSO habitat

Miles of Motorized Routes	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
PACs	34	19	22	22	8
Critical Habitat	431	367	400	400	174
Protected Habitat (outside PACs)	12	7	8	8	1.57

Protected Habitat

Mexican spotted owl nests are usually located in areas that motorized vehicles cannot access such as steep walled canyons and cliffs, so a nest near a designated motorized route is unlikely. Alternative E has the least amount of motorized routes intersecting PACs, which provides the least amount of potential noise disturbance and habitat fragmentation to MSO. Indirectly, noise impacts cause habitat displacement and avoidance where animals alter their use of habitats in response to the use of motorized routes.

Restricted Habitat

Designated routes in restricted habitat may also affect MSO due to noise caused by the use and maintenance of motorized routes. Alternatives B, C, D, and E, contain a reduction in authorized motorized route density compared to alternative A, Table 22. Alternative E has the least amount of motorized routes in restricted habitat. Motorized dispersed camping, either 100 feet or 300 feet off the road, is not expected to impact MSO or critical habitat because proposed dispersed camping corridors are not within any known PACs and most campers usually use open and flat areas for camping which are used less frequently by MSO. The reroute of NFSR 447 is not expected to affect MSO or critical habitat because it is outside of protected, restricted or critical habitat and no PACs are within this area. Proposed designated OHV areas are not within any known PACs or protected/restricted habitat so there would be no effect to breeding MSO. Seasonal motorized trail designations with closures, identified in alternative C, would reduce any chances of effects to nesting birds and their young because they are only open outside of the breeding season. Alternative A may have effects on herbaceous vegetation, but most motorized cross-country use is in late summer and fall, by which time much of the herbaceous vegetation starts to go dormant and comes back the following year. Areas with steep slopes and high canyon walls are usually not accessed by motorized vehicle users. Down woody debris is generally not affected by motorized cross-country use, but higher availability of motorized dispersed camping may allow removal of this resource for firewood. At times, large woody debris functions as a barrier to motorized cross-country vehicle use. The determination of effects for MSO is “May affect species, not likely to adversely affect species or its habitat” for alternatives B, C, D and E.

MSO Critical Habitat – All Alternatives

When considering effects to critical habitat, primary constituent habitat elements are reviewed to determine a project’s potential affect. Primary constituent elements for MSO are related to maintenance of desired forest structure, desired canyon habitat structure and maintenance of adequate prey species habitat.

Alternative A

Alternative A may have an effect on herbaceous vegetation but most motorized cross-country vehicle use is in late summer and fall, during hunting seasons, by which time much of the herbaceous vegetation starts to go dormant and comes back the following year. Areas with steep slopes and high canyon walls used most often by MSO are usually not accessed by motorized vehicle users. Down woody debris is generally not affected by motorized cross-country vehicle use, but motorized dispersed camping may allow removal of this resource for firewood. At times, large woody debris functions as a barrier to motorized cross-country vehicle use.

Alternatives B, C, and D

Alternatives B, C, and D are not expected to have a negative impact to primary constituent elements. Motorized use has been ongoing in the analysis area for many years and does not directly affect tree species or fruits/seeds; however, such use may affect herbaceous vegetation and ground litter. Alternatives B, C, D, and E would help maintain plant diversity, density, vigor and regeneration over time. Designated motorized camping corridors are located within critical habitat in alternatives C and D because of the large amount of acres of critical habitat in the analysis area and many of the existing popular camping sites were located in designated critical habitat prior to its designation. Motorized dispersed camping activity is not expected to reduce habitat quality in critical habitat.

Zuni Fleabane

Alternative A

Impacts to this species are expected because vehicles are allowed off designated roads and this could degrade suitable habitat where the Zuni fleabane occurs. Impacts from vehicles traveling off road could eliminate suitable habitat. The determination of effects for Zuni fleabane under alternative A is “May affect species, not likely to adversely affect species or its habitat.”

Alternatives B, C, D and E

There would be no impacts to Zuni fleabane because motorized travel would be prohibited off of designated roads. This is expected to prevent degradation to any of the known areas where Zuni fleabane occurs. Motorized dispersed camping is not expected to have an impact to this plant because none of the corridors are in areas of known populations. Motorized big game retrieval is limited to designated corridors throughout the district which do not include Zuni fleabane habitat. The reroute of NFSR 447 is not located within Zuni fleabane habitat and, therefore, no effect would occur. The OHV area or motorized big game retrieval corridors are not within Zuni fleabane habitat. The determination of effect for Zuni fleabane is “No effect to species or its habitat.”

Pecos Sunflower

Alternative A

The determination of effect for the no action alternative would be “May affect species, not likely to adversely affect species or its habitat” for Pecos sunflower since motorized cross-country vehicles would be able to access some riparian habitats. Impacts to other riparian areas would be minimal under alternative A because they are often fenced off or are inaccessible due to private land inholdings which block access.

Alternatives B, C, D, and E

No effects are expected for the Pecos sunflower under alternatives B, C, D, or E because riparian/wetland areas within the analysis area are protected from motor vehicle traffic through fencing and no motorized route access, except for upper Bluewater Creek and at some seeps and springs. In upper Bluewater, the road is available for administrative use only. The reroute of NFSR 447 is not expected to affect this species because it is not located in riparian habitat. There

are no riparian areas within the motorized dispersed camping corridors, motorized big game retrieval areas, or OHV areas; therefore, no effect is expected due to those designations.

Southwestern Willow Flycatcher

Alternative A

The determination of effect for the no action alternative would be “May affect species, not likely to adversely affect species or its habitat” for Southwestern willow flycatcher, since motorized cross-country vehicles would be able to access some riparian habitats. Impacts to other riparian areas would be minimal under alternative A because they are often fenced off or are inaccessible due to private land inholdings which block access.

Alternatives B, C, D, and E

No effects are expected for the Southwestern willow flycatcher under alternatives B, C, D, and E because riparian/wetland areas within the analysis area are protected from motor vehicle traffic through fencing and no motorized route access, except for upper Bluewater Creek and at some seeps and springs. In upper Bluewater, the road is available for administrative use only. The reroute of NFSR 447 is not expected to affect these species because it is not located in riparian habitat. There are no riparian areas within the motorized camping corridors, motorized big game retrieval areas, or OHV areas; therefore, no effect is expected due to those designations. The determination of effects for Southwestern willow flycatcher is “No effect to species or its habitat.”

Yellow-billed Cuckoo

Alternative A

Impacts to other riparian areas would be minimal under alternative A because they are often fenced off or are inaccessible due to private land inholdings which block access. The determination of effect for the yellow-billed cuckoo would be “May impact species but would not result in a trend toward Federal listing or loss of viability.”

Alternatives B, C, D, and E

No effects are expected for the yellow-billed cuckoo under alternatives B, C, D, and E because riparian/wetland areas within the analysis area are protected from motor vehicle traffic through fencing and no motorized route access, except for upper Bluewater Creek, and at some seeps and springs. In upper Bluewater, the road is available for administrative use only. The reroute of NFSR 447 is not expected to affect this species because it is not located in riparian habitat. There are no riparian areas within the motorized camping corridors, motorized big game retrieval areas, or OHV areas; therefore, no effect is expected due to those designations. The determination of effects for yellow-billed cuckoo is “No effect to species or its habitat.”

Zuni Bluehead Sucker

Alternative A

Impacts to the Zuni bluehead sucker are not expected because existing habitat is fenced off or is inaccessible due to private land inholdings which block access. If this area became accessible to motorized users, riparian habitat surrounding the Rio Nutria could be degraded with motorized

cross-country vehicles driving off routes, also causing sedimentation in the stream if vehicles get close enough or cross the stream. Sedimentation could cause loss of spawning habitat and direct mortality to the bluehead sucker. If access were available, it is possible that there would be a loss of species viability leading to species listing.

Alternatives B, C, D, or E

Impacts are not expected because there are no proposed motorized routes, camping corridors, OHV areas or motorized big game retrieval designations near the Rio Nutria where the Zuni bluehead sucker is located. The reroute of NFSR 447 would have no impact to the Zuni bluehead sucker because the road is not located near where the bluehead sucker occurs. The determination of effect for Zuni bluehead sucker for alternatives B, C, D, and E is “No effect to species or its habitat.”

Northern Goshawk, Bald Eagle, American Peregrine Falcon

Alternative A

Impacts to northern goshawk, bald eagle, and American peregrine falcon are expected because motorized travel may occur off designated motorized routes. Indirect impacts from vehicle access to nest sites are possible which could cause birds to abandon their nest due to noise and human activity. Motorized travel off roads/trails can also have an impact to the prey species of northern goshawk, bald eagles, and peregrine falcons. Driving in open meadows and shrubby areas can reduce habitat for small rodents and birds that these predators feed on. It can also have an impact on the food source of important prey species reducing prey availability. This could impact the bald eagle, peregrine falcon and northern goshawk by causing the bird to leave the area and find more suitable habitat. On the whole, these raptors would be impacted but it would not lead to Federal listing of the species. The determination of effect for northern goshawk, bald eagle, and peregrine falcon is “May impact species but would not result in a trend toward Federal listing or loss of viability.”

Northern Goshawk

Alternatives B, C, D, and E

Alternatives B, C, D, and E would reduce the number of motorized routes within known goshawk post fledging family areas (PFAs) and prohibit cross-country motorized travel reducing impacts to nesting and foraging areas. Alternative E has the least amount of designated routes in goshawk habitat. There are 5.3 miles of motorized big game retrieval in PFAs, but use would not occur during the breeding season, and goshawks are generally absent from breeding territory during the hunting season. There are 1.3 miles of motorized dispersed camping in goshawk PFAs which may occur during the breeding season. If prolonged camping occurs at or near a nest site, the goshawk could abandon the nest. The OHV area is not within preferred goshawk or prey habitat and is not near known PFAs so there would be no impact to goshawk as a result of designating the OHV area. The reroute of NFSR 447 is not within a goshawk PFA.

Table 23. Miles of designated routes in goshawk PFAs

Miles of Motorized Routes	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Within a PFA	18.8	13	15.7	15.7	4.8
Motorized big game retrieval within PFA	18.8	0	0	5.3	0
Motorized dispersed camping within PFA	18.8	1.3	1.3	1.3	0

Bald Eagle

Alternatives B, C, D, and E

Under the action alternatives, impacts to the species and its prey are reduced overall compared to alternative A because there would be a reduction in motorized use. Individual birds may be disturbed by motorized use while perching or foraging. The only exception to travel off designated routes or OHV areas is alternative D, which allows motorized big game retrieval in specific areas, along with a seasonal restriction. Cross-country motorized big game retrieval would only be allowed during big game hunting season, at which time bald eagles may be in the area. Generally bald eagles would be tolerant of motorized big-game retrieval because of its limited duration and location. The reroute of NFSR 447 is not expected to impact the bald eagle because there is not much availability of foraging habitat in this area. There are 344 acres proposed for use as an OHV area, which can be considered as lost habitat due to unregulated off-road/trail use. In those areas, wildlife would be displaced due to the noise and habitat fragmentation. There would be an increased potential of direct mortality to potential prey species. This impact is expected to be minimal because the OHV area is less suitable as foraging habitat compared to other areas. As previously mentioned, it is possible that individual birds may be disturbed while hunting or perching but this impact is not expected to lead to Federal listing or loss of viability.

Peregrine Falcon

Alternatives B, C, D, and E

There are only a few known territories of peregrine falcon in the analysis area and none of the designated routes, motorized dispersed camping corridors, or motorized big game retrieval areas intersect those territories. The reroute of NFSR 447 is not in peregrine falcon breeding habitat. Designations may reduce prey availability somewhat due to direct habitat loss and fragmentation, but overall there would be a reduced affect to prey populations compared to alternative A.

The determination of effect for northern goshawk and bald eagle is “May impact species but would not result in a trend toward Federal listing or loss of viability.” The determination of effect for peregrine falcon is “No impact on the species.”

Spotted Bat

Alternative A

Alternative A may have a bigger impact to spotted bats because motorized travel off road/trail is permitted which may impact the bat and its prey species. Habitat degradation could occur due to motorized cross-country vehicles driving through meadows and grass/shrub areas, reducing foraging habitat. Vehicles themselves are not expected to have major direct impacts on the spotted

bat because motorized cross-country vehicles are more active during the daylight hours when bats are least active. The determination of effect for spotted bat under alternative A is “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability.”

Alternatives B, C, D and E

Impacts are expected to be minimal because alternatives B, C, and E prohibit motorized travel off designated routes. Most motorized cross-country vehicle use happens during the day or at dawn and sunset. Once it is completely dark, most motorized cross-country vehicle users are not active, and that is the time spotted bats are mostly active. Main roads may still have motor vehicle activity after dark but impacts to spotted bats are expected to be minimal. Motorized dispersed camping and designation of the OHV area are not expected to have an impact because many of the designated areas are already highly disturbed. Bats may occasionally travel through a camp, but because spotted bats are extremely rare, they are unlikely to be affected. The reroute of NFSR 447 is not expected to impact spotted bats because construction activities would occur during the daytime, and because this bat is very rare, the likelihood of a roost site being encountered during construction is extremely remote. Alternative D is similar to B, C and E with the exception of motorized big game retrieval. Impacts are expected to be minimal because most hunters wait until daylight to retrieve their animal when bats are least active, although roost sites could be impacted by this minimal disturbance. The determination of effect for spotted bat for alternatives B, C, D, and E is “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability.”

Merriam’s Shrew, Gunnison’s Prairie Dog, Cebolleta Southern Pocket Gopher, Mt. Taylor Northern Pocket Gopher

Alternative A

Alternative A may have a bigger impact on these species because cross-country motorized travel is permitted. Not only can individual shrews, prairie dogs and gophers be runover resulting in direct mortality, but habitat degradation can occur. The determination of effect for Merriam’s shrew, Gunnison’s prairie dog, Cebolleta pocket gopher, and Mt. Taylor northern pocket gopher is “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability.”

Alternatives B, C, D, and E

Impacts for Merriam’s shrew, Gunnison’s prairie dog, Cebolleta southern pocket gopher, and Mt. Taylor northern pocket gopher are expected to be minimal because alternatives B, C, and E prohibit cross-country motorized travel. Motorized dispersed camping is not expected to have an impact because many of the designated areas are already highly disturbed so shrews, prairie dogs and gophers would avoid those areas due to habitat unsuitability. The reroute of NFSR 447 in alternatives B, C, D and E is not expected to impact the Cebolleta southern pocket gopher or Mt. Taylor northern pocket gopher because it is outside of suitable habitat. Impacts to Merriam’s shrew and Gunnison’s prairie dog are expected including temporary displacement while the reroute is taking place, and some possible direct mortality. Alternative D is similar to B, C and E with the exception of motorized big game retrieval. Also under alternative D, habitat degradation is expected to be somewhat higher due to some additional habitat loss and possible mortality. There are 344 acres proposed for use as an OHV area, except in alternatives B and E. The OHV area can be considered as lost habitat due to uncontrolled off-road use. In those areas wildlife

would be displaced due to the noise and habitat fragmentation as well as increased potential of direct mortality. The determination of effect for Merriam’s shrew, Gunnison’s prairie dog, Cebolleta pocket gopher, and Mt. Taylor northern pocket gopher is “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability.”

Northern Leopard Frog

Alternative A

The determination of effect for alternative A would be “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability,” since motorized cross-country vehicles would be able to access some riparian habitats. Impacts to other riparian areas would be minimal under alternative A because they are fenced or inaccessible due to private land inholdings which block access.

Alternatives B, C, D, and E

Threats and degree of threat to amphibians vary greatly across the species range. Threats include habitat loss, habitat degradation, introduction of aquatic invasive species, and direct mortality. The northern leopard frog is not expected to be impacted by the district travel management plan because there are only three areas that have permanent water on the district. None of the potential designations for motorized dispersed camping, MBGR, the OHV area or rerouting of NFSR 447 are in potential leopard frog habitat. Bluewater Creek is a perennial stream that is fenced from any motor vehicle access, except for occasional administrative use. Under alternatives B, C, D, and E, other potential habitat areas of the leopard frog are unavailable for use because they are blocked by private land inholdings. The determination of effect for northern leopard frog is “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability” under these alternatives.

Rio Grande Sucker

Alternative A

The determination of effect for alternative A would be “May impact species but would not result in a trend toward Federal listing or loss of viability,” since motorized cross-country vehicles would be able to access some aquatic habitats. Impacts to other aquatic areas would be minimal under alternative A because they are fenced or inaccessible due to private land inholdings which block access.

Alternatives B, C, D, and E

There would be no impacts to the Rio Grande sucker as a result of implementing the action alternatives. This species has a large range throughout much of the U.S. and southern Canada and is still common in many areas and in a diverse array of pristine and disturbed habitats. Species populations have declined in some areas due to habitat loss and degradation, overexploitation, interactions with nonnative species, and unknown causes, but the overall range remains essentially undiminished (www.natureserve.org). None of the potential designations for motorized dispersed camping corridors, MBGR, the OHV area or rerouting of NFSR 447 are in potential Rio Grande sucker habitat. There is only one water source, Bluewater Creek, where the species could occur, but currently it is not known to occupy that creek. This lower portion of the area is currently fenced off from motor vehicle traffic and the upper area is only available for

administrative use. The determination of effect for the Rio Grande Sucker is “No impact on the species” for alternatives B, C, D, and E.

Zuni Milkvetch, Villous Groundcover Milkvetch, Sivinski’s Fleabane, Chaco Milkvetch

Alternative A

Continuation of impacts is expected to occur because under alternative A, vehicles are allowed off designated routes and this could degrade suitable habitat where these plants occur. Impact from vehicles traveling off road/trail could eliminate suitable habitat. The determination of effects for Zuni milkvetch, Villous groundcover milkvetch, Sivinski’s fleabane, and Chaco milkvetch is “May impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability.”

Alternatives B, C, D and E

There would be no impacts to the Zuni milkvetch, villous groundcover milkvetch, Chaco milkvetch and Sivinski’s fleabane because motorized travel would be prohibited off of designated roads. In alternative D where MBGR is proposed, suitable habitat for these plant species does not occur. Route designations are expected to prevent degradation to any of the known areas where these plants occur. Designated camping is not expected to have an impact to these plants because none of the potential designations are in areas of known populations. The reroute of forest road 447 or the potential OHV area are not located within Zuni milkvetch, villous groundcover milkvetch, Chaco milkvetch and Sivinski’s fleabane habitat; therefore, no effect is expected. The determination of effects for Zuni milkvetch, villous groundcover milkvetch, Sivinski’s fleabane, and Chaco milkvetch is “No impact on the species.”

High Priority Migratory Birds

Impacts are considered to be minimal because the action alternatives prohibit or reduce travel off of designated routes which is an improvement compared with the existing situation (alternative A). Therefore, population and habitat trends for migratory birds are expected to improve. Implementation of the action alternatives is expected to reduce degradation to all habitat types within the district. Under all alternatives, unintentional take of migratory birds due to nest disturbance may occur as a result of motorized use along designated routes or off-route dispersed motorized use. In addition, construction of about 1 mile of road reroutes may occur during the breeding bird nesting season—April 15 to July 31—which could result in unintentional take as a result of this construction activity.

Alternative A

Alternative A is expected to have greater impacts than alternatives B, C, D and E. Under alternative A, vehicles are allowed off designated routes and this could degrade suitable habitat where these breeding birds occur. Impacts from vehicles traveling off designated routes could reduce suitable habitat and also disturb nesting birds and cause nest abandonment.

Alternatives B, C, D and E

Designation of motorized dispersed camping areas may have an impact to high priority bird species but all of the designated areas are where camping has been ongoing for decades. Many of these areas are already considered disturbed which means nesting birds should not face additional disturbances. The number of acres where designated camping is being allowed has been reduced from alternative A, which means fewer areas would be impacted, thereby reducing the impact on migratory birds. The reroute of NFSR 447 is in piñon-juniper habitat. Some breeding birds may be impacted due to minimal tree removal or temporary displacement due to construction noise. If nests are located in trees to be removed and construction occurs during the breeding season, then minimal unintentional take could occur. The OHV area is in open rocky ponderosa pine habitat. Use of this area could displace birds and result in reduced use of the area for breeding due to uncontrolled off-highway use. It is not expected to result in an overall population reduction of ponderosa pine birds in the analysis area.

Under alternative D, an additional 287 miles of roads would be available for MBGR, but this use is not expected to increase risks to migratory birds because MBGR is only allowed during the big game hunting season, which is after the time many migratory birds have fledged young and are getting ready to migrate. There would be a minimal amount of indirect habitat loss as a result of cross-country travel, but this result is expected to be minor since MBGR is limited to a one-time use.

Proposed designated routes in the Rinconada IBA would have a minimal effect on migratory birds and associated habitat since the route already exists and route availability would facilitate monitoring and wildlife viewing. Unintentional take may result from designating routes within the IBA. There would be no effect to important overwintering areas, since none have been identified on the district.

Cumulative Effects

MIS, TES, and High Priority Migratory Bird Species

Cumulative impacts to management indicator species, threatened, endangered or sensitive species, and high priority migratory bird species are discussed in a broad outline that focuses impacts to wildlife species from noise disturbance, direct mortality, and habitat degradation. Treatments and projects considered as past, present, and reasonably foreseeable future actions include: prescribed burns; WUI fuels reduction treatments; cattle grazing; special use permits; timber thinning; uranium mining; and exploration.

Alternative A

Under alternative A, motorized travel off of existing roads and trails would be allowed to be reduced even further, as the habitat becomes increasingly more fragmented. Unrestricted spring, summer, and fall use of routes and off-route areas would increase noise disturbance impacts to wildlife incrementally over time. Impacts would become additive, as OHV use increases and private land development increases as well. When only the steepest areas, where OHVs cannot go, become refuges for wildlife, there could be increased energy cost to wildlife associated with foraging and traveling in steep terrain.

User-created trails can be expected to increase erosion, which can have impacts to surrounding habitats far greater than just the trail surface itself.⁶ New user-created trails would receive increasing use from all types of recreation users over time—such as mountain bikes, horses, and OHVs—adding to the current density of trails and roads by an as yet unknown amount. This could also create unwanted trails to wildlife watering areas that are built away from roads so wildlife can water with little disturbance. These trails could increase human disturbance to wildlife.

Ongoing projects or programs such as WUI treatments, cattle grazing, and forest health treatments are expected to continue as regeneration takes place. Unrestricted OHV use off of roads and trails may create routes through these treatments after they occur since habitat would be more open. This potentially reduces forage recovery and wildlife security in the thinned areas. In areas such as washes and areas of more gentle terrain with low ridges between the washes, loss of vegetation could potentially be severe in these dry habitats, reducing forage for wildlife and increasing erosion. Areas where mineral exploration occurs, and possibly actual mining in the future, may keep wildlife away from surrounding areas of suitable foraging habitat. Cumulative impacts over time to wildlife from noise disturbance and habitat loss would be greatest under alternative A.

Alternative B

Maintenance of existing WUI treatments and additional treatments is expected to occur as timber regeneration takes place. Most thinning in WUI areas would take place adjacent to road systems, so additional disturbance to wildlife from noise and human activity is not expected to occur. Maintenance and additional WUI treatments and enforcement of off-route travel are within the control of the Agency. Past, present, and future cumulative impacts in areas where private land development is anticipated would substantially reduce security areas and travel corridors for wildlife. Areas on National Forest System lands which border private land where development is occurring could become more important for wildlife migration and dispersal. Future private land development, however, is outside “control” of the action Agency.

Vehicle use on designated roads and trails could be expected to increase in the future, as well as other recreational activities such as mountain biking, horseback riding, and hiking. All these increased activities would cause disturbance for a longer period during daylight. With the elimination of cross-country travel, many areas where cattle grazing, timber harvesting, and prescribed burning occur could regenerate with fewer problems; therefore, improving wildlife foraging, nesting, burrows, and den habitat. Wildlife would have other areas to find security during times when human disturbance is present, meaning their habitat is less fragmented and more secure. Prohibition of cross-country travel would improve wildlife security over time. Cumulative impacts on the district, particularly with offsite development increasing—especially in the Zuni Mountains—would put more pressure on NFS lands as refuges from human impacts.

Alternative C

This alternative adds more motorized routes within the district along with additional areas of motorized dispersed camping. When considered with other disturbance such as prescribed burning, cattle grazing, timber thinning, and other actions on the district, alternative C would

⁶ Downcutting and side channeling are a result of heavy rains causing soil erosion.

have a greater impact to wildlife. Many of the impacts would be the same as alternative B. More motorized routes generally mean more fragmentation. Eliminating cross-country travel could balance out the number of areas where wildlife could find refuges from human disturbance. Noise disturbance along with other cumulative impacts would still have a greater impact on wildlife under this alternative. Consequently, cumulative impacts to wildlife from noise disturbance and habitat loss/fragmentation would be greater than alternative B.

Alternative D

Under this alternative, impacts would be similar to alternative C with the addition of motorized big game retrieval. Areas with past, present and future actions occurring could see a slower recovery time. Even though hunters would be limited to 0.5 mile from the designated road and use would only be during the hunting season, habitat degradation can still occur, especially in areas where cattle grazing, prescribed burning, and timber harvest have occurred. Cumulative impacts to wildlife from noise disturbance and habitat loss/fragmentation would again be greater than alternative B.

Alternative E

This alternative is expected to have the least amount of cumulative impacts to wildlife. In addition to all of the forest projects and actions, the amount of designated motorized routes would be less than the other alternatives. With cross-country travel eliminated, noise disturbance would be reduced and a greater number of acres would be available as wildlife refuges. Cumulative impacts of alternative E to wildlife would be less than alternatives A, B, C, and D.

Hydrology, Soils, and Air

Affected Environment

The analysis area is located in portions of 49 individual 6th field Hydrologic Unit Code (HUC) watersheds that total 445,623 acres of NFS lands. The project area includes lands within the district in the Zuni Mountains Unit and Mt. Taylor Unit.

Watershed

Watershed boundaries were identified using the forest watershed GIS layer. Boundaries are based on HUC 6th level watersheds. The project area lies within portions of 49 6th level HUC watersheds. The analysis area in the Zuni Mountains Unit drains to the Upper Puerco River, Zuni River, North Plains, and Rio San Jose 4th HUC watersheds while the analysis area in the Mt. Taylor Unit drains to the Rio San Jose and Arroyo Chico 4th HUC watersheds.

Of the 49 watersheds within the analysis area, only 3 have perennial streams. Table 24 shows the ephemeral/intermittent and perennial stream miles within those three watersheds. Overall, within the analysis area there are approximately 1,498 miles of ephemeral/intermittent stream channels and 12 miles of perennial streams.

Table 24. Ephemeral/intermittent and perennial stream miles located in 6th HUC watersheds that have perennial stream miles

6th HUC Code and Name	Ephemeral/Intermittent Stream Miles	Perennial Stream Miles
Ojo Redondo – Bluewater Creek	47	2
Bluewater Lake – Bluewater Creek	52	5
Rinconada Creek	18	5

The open route densities in the project area range from 0 to 2.8 miles per square mile on the National Forest System lands within each of the 6th field HUCs.

Climate and Topography

Elevation in the analysis area ranges from 6,300 feet to 11,301 feet at the top of Mt. Taylor. Most of the annual precipitation comes in the form of rain originating from convective thunderstorms during the months of July through September. The average annual precipitation is generally less than 14 inches per year; however, the intensity of the precipitation also affects the hydrology of the analysis area. Precipitation intensity, the amount of water per unit of time, tends to be very high in this part of the state due to the convective nature of the storms.

Soils and Mass Movement Potential

General soil characteristics on the Cibola National Forest are described within the terrestrial ecosystem survey (TES). The Mt. Taylor travel management analysis area contains 79 individual TES Map Units. Approximately 19 percent of the analysis area has soils with severe erosion potential. Currently, approximately 90 miles of open road are located on soils with severe erosion potential. Currently, campers, hunters, and the general public can go off road on these soils to disperse camp, retrieve big game, or use their OHVs.

Approximately 14 percent of the analysis area has soils with severe mass wasting potential. Currently, approximately 54 miles of open road are located on soils with severe mass wasting potential. Just like with severe erosion potential soils, campers and hunters can also go off road on severe mass wasting potential soils to disperse camp, retrieve big game, or use their OHVs.

Water Quality

The Federal Clean Water Act (CWA) requires states to restore and maintain the chemical, physical and biological integrity of the Nation’s waters. Section 303 of the act requires states to adopt water quality standards necessary to protect designated uses whenever possible. Designated uses refer to what the water is used for, such as livestock watering, municipal water, or aquatic life. Section 303(d) of the CWA requires the identification and prioritization of water bodies where state water quality standards are not met. Very few waters have been assessed by the State of New Mexico within the project area.

A review of the 2008-2010 State of New Mexico’s Integrated Clean Water Act §303(d)/§305(b) Report (NMED, 2008) indicates that one listed reach and one freshwater reservoir are within the project boundaries. Bluewater Creek from Bluewater Reservoir to the headwaters, is listed for not supporting coldwater aquatic life. Probable causes include nutrient eutrophication, sedimentation, temperature, and turbidity. The probable sources for the impairment are listed as forest roads, loss of riparian habitat, grazing, silviculture harvest, and streambank modifications. The listed reservoir is McGaffey Lake for warm-water aquatic life. Probable causes of impairment are listed as pH and nutrients/eutrophication. The probable sources for the impairment are listed as loss of riparian habitat, natural sources, and streambank modifications.

Streamflow Regime

The terms perennial, intermittent, and ephemeral refer to the average flow characteristics of a stream. Distinctions between these types of streams are based on the connectivity of the stream to the water table. Influent streams “lose” water to the water table whereas effluent streams “gain” water from the water table. Perennial streams have flow year-round and baseflow even during dry periods since they are predominately effluent. In contrast, intermittent streams have surface flow for only certain times of the year, and are influent at other times. Ephemeral streams have surface flow for relatively short periods of time just in response to precipitation. These streams are influent and lose water to the water table at all times. The channels of ephemeral streams are generally well above the water table. Except for the 12 miles of perennial streams in the project area, the stream channels within the analysis area only carry water in direct response to precipitation, or carry water seasonally and are considered to be ephemeral or intermittent. Lands within 300 feet of streams were analyzed to determine which alternative(s) would have the greatest impact/benefit to this resource.

NFSR 447 Reroute

The current road where the reroutes would occur is in the terrestrial ecosystem survey (TES) Map Unit 31. TES Map Unit 31 is generally a soil type that has slopes between 0 and 5 percent, has a slight to moderate erosion hazard potential, and a low mass wasting potential. Map Unit 31 makes up the entire Bonita Canyon meadow area.

Air Quality

The Mt. Taylor travel management analysis area sits within the Colorado River air-shed. Existing information indicates the area is not in a nonattainment area which means that currently National Ambient Air Quality Standards (NAAQS) are not being exceeded on a regular basis (EPA, 2009). In addition, scoping identified no issues related to air quality.

Environmental Effects

Issues Related to Hydrology/Soils Brought Forward from Scoping

There was one issue brought forward from scoping directly related to hydrology and soils. That issue states that, “Alternative B has too much land designated for motorized dispersed camping, which will result in more off-road use in these areas and, therefore, greater impact to resources.” In order to address this concern, four separate measures were developed. They are as follows:

- Measure 1: Comparison of motorized dispersed camping acres available under each alternative. Rationale: The fewer acres of motorized dispersed camping available for use means that fewer acres would be disturbed by this activity; thus reducing user-created routes, soil compaction, and vegetation and riparian removal.
- Measure 2: Comparison of motorized dispersed camping acres within 300 feet of streams under each alternative. Rationale: The fewer acres available to motorized dispersed camping within 300 feet of streams would reduce damage to stream channels and reduce sediment entering streams over time.
- Measure 3: Comparison of motorized dispersed camping acres located on severe erosion potential soils under each alternative. Rationale: The fewer acres of motorized dispersed camping on severe erosion potential soil, the less likely that erosion and subsequent sedimentation to streams would occur.
- Measure 4: Comparison of motorized dispersed camping acres located on severe mass wasting potential soils under each alternative. Rationale: The fewer acres of motorized dispersed camping on severe mass wasting potential soils would result in a reduction of impacts to unstable soils; thus, reducing the potential for increased sediment yields.

Table 25 shows the differences between alternatives for the four measures developed to address the motorized dispersed camping issue.

Implementation of any of the action alternatives (B, C, D, or E) would reduce the impacts from motorized dispersed camping. Currently, 445,623 acres of the analysis area are available to motorized dispersed camping, limited only by canyons or steep slopes. This would be reduced to 6,994 acres in alternatives C and D, 1,933 acres in alternative B, and 0 acres in alternative E.

Table 25. Comparison of motorized dispersed camping measures

Motorized Dispersed Camping	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Acres available	445,623	1,933	6,994	6,994	0
Within 300 feet of streams	125,241	518	1,859	1,859	0
Acres proposed on soils with severe erosion potential	87,889	156	607	607	0
Acres proposed on soils with severe mass wasting potential	66,364	40	208	208	0

Motorized dispersed camping would also be reduced in areas within 300 feet of streams. Currently, 125,241 acres within 300 feet of stream channels are available to motorized dispersed recreation. This would be reduced to 1,859 acres in alternatives C and D, 518 acres in alternative B, and 0 acres in alternative E. This reduction would protect sensitive streamside soils and channel morphology and reduce the risk for erosion and subsequent sediment to streams caused by motorized use in these areas.

Motorized dispersed camping on soils with potential for both severe erosion and mass wasting would also be reduced under all action alternatives. Currently, approximately 87,889 acres of severe erosion potential soils and 66,364 acres of severe mass wasting potential soils are available to dispersed motorized recreation activities. Alternative E does not allow motorized dispersed

camping on these types of soils while alternatives C and D allow 607 acres of dispersed motorized camping on severe erosion potential soils, and 208 acres on severe mass wasting potential soils. Alternative B would allow motorized dispersed camping on 156 acres of severe erosion potential soils, and 40 acres of severe mass wasting potential soils.

Table 25 illustrates that implementation of any of the action alternatives would improve hydrology and soils in regards to dispersed motorized camping. Alternative E would protect hydrology and soil resources the most, followed by alternative B, alternative C, and then alternative D.

General Watershed Conditions

Table 26 shows that implementation of any of the action alternatives (B, C, D, or E) would improve general watershed conditions by reducing the routes where motorized travel can occur. Routes available for motorized use for the no action alternative include trails and roads on National Forest System roads with Forest Service jurisdiction, including decommissioned roads. Currently, 1,399 miles of routes can be used for motorized travel. In alternative B—the proposed action—miles would be reduced by 43 percent. Alternatives C and D would reduce available miles by 38 percent, and alternative E would reduce the miles by 70 percent.

Acres of land available for cross-country travel and motorized big game retrieval would also be reduced no matter the action alternative selected. Currently, 445,623 acres within the project area are available for cross-country travel and motorized big game retrieval. Cross-country travel use would be reduced to 344 acres in both alternatives C and D, and 0 acres in alternatives B and E. As for motorized big game retrieval, the opportunity would be reduced to 78,791 acres in alternative D, and 0 acres in all other action alternatives.

Table 26. Comparison of general watershed condition measures

Routes and Land	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Percent reduction in available routes	0	43	38	38	70
Average available route density (miles/square mile)	2.0	1.1	1.2	1.2	0.6
Acres available for cross-country travel areas	445,623	0	344	344	0
Acres available for motorized big game retrieval	445,623	0	0	78,791	0

Implementation of any of the action alternatives would improve general watershed conditions by reducing open motorized roads, and by reducing the acres available for motorized big game retrieval and OHV use. Alternative E would reduce use the most, followed by alternative B and then alternatives C and D, in that order. Alternative A would reduce use the least.

Water Quality and Streams

Table 27 compares the miles of routes located within 300 feet of a stream, miles of routes located within 300 feet of a Section 303 (d)⁷ or Section 305 (b)⁸ stream, and acres of land available for motorized big game retrieval and motorized dispersed camping within 300 feet of a stream. These measures focus on lands adjacent to streams. By reducing the amount of motorized use in these areas, it is expected that sediment entering these channels from motorized travel would be reduced and that stream channels and, where it occurs, riparian vegetation would not be degraded.

Table 27. Comparison of water quality and stream condition measures

Routes and Land Available	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Miles of available routes within 300 feet of streams	450	261	289	289	136
Miles of available routes located with 300 feet of Section 303 (d) and Section 305 (b) streams	8.0	4.6	4.6	4.6	4.6
Acres of land available for motorized big game retrieval located within 300 feet of streams	125,241	0	0	580	0
Acres of motorized dispersed camping within 300 feet of streams	125,241	518	1,859	1,859	0

Table 27 shows that implementation of any of the action alternatives (B, C, D, or E) would reduce the motorized use of areas within 300 feet of stream channels. Currently, 450 miles of routes are available to motorized travel within 300 feet of streams. This would be reduced to 261 miles in alternative B (proposed action), 289 miles in alternatives C and D, and 136 miles in alternative E.

Currently, 8 miles of routes are available to motorized travel within 300 feet of impaired streams. This would be reduced to 4.6 miles in alternatives B, C, D, and E.

Acres of land available for motorized big game retrieval and motorized dispersed camping within 300 feet of streams would also be reduced no matter the action alternative selected. Currently, 125,241 acres within the analysis area are available for motorized big game retrieval and motorized dispersed camping within 300 feet of streams. Motorized big game retrieval use would be reduced to 580 acres in alternative D and 0 in alternatives B, C, and E. As for motorized dispersed camping, the opportunity would be reduced to 1,859 acres in alternatives C and D, 518 acres in alternative B, and 0 acres in alternative E.

Implementation of any of the action alternatives would improve water quality and stream condition by decreasing the acres of open route miles within 300 feet of streams, decreasing the open route miles within 300 feet of Section 303(d) and Section 305(b) streams, and decreasing the motorized big game retrieval and motorized dispersed camping acres within 300 feet of

⁷ Section 303(d) of the 1972 Clean Water Act requires states, territories, and authorized tribes to develop lists of impaired waters. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop total maximum daily loads for these waters.

⁸ Section 305 (b) of the 1972 Clean Water Act requires the Environmental Protection Agency and the states to compile a biennial report to Congress on the Nation's water quality.

streams. Of the action alternatives, alternative E would protect water quality and stream channels the most followed by alternatives B, C, and D, in that order.

Soils

Soil productivity is important to maintaining continued soil formation, nutrient recycling, and overall ground cover; therefore, limiting the amount of acres available to cross-country travel is important to protecting this resource. Table 28 shows the acres available for motorized big game retrieval and OHV use on both severe erosion and severe mass wasting potential soils.

Table 28 shows that implementation of alternatives B, C, D, or E would reduce the amount of cross-country travel that is currently taking place within the project area. Currently, there are 87,889 acres of severe erosion potential soils within the analysis area where motorized big game retrieval and OHV use occur. There would be no OHV use allowed on severe erosion potential soils except for where it occurs on open roads and motorized trails under any action alternative. Alternative D would allow motorized big game retrieval on 11,251 acres. Alternatives B, C, and E would not allow motorized big game retrieval on severe erosion potential soils.

Table 28. Comparison of sensitive soils potentially affected

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Motorized big game retrieval on severe erosion potential soils	87,889	0	0	11,251	0
OHV use on severe erosion potential soils	87,889	0	0	0	0
Motorized big game retrieval on severe mass wasting potential soils	66,364	0	0	6,457	0
OHV use on severe mass wasting potential soils	66,364	0	0	0	0

Approximately 66,364 acres of severe mass wasting potential soils are available to motorized big game retrieval and OHV use. There would be no OHV use allowed on severe mass wasting potential soils under any action alternative except for where it occurs on open roads and motorized trails. Alternative D would allow motorized big game retrieval on 6,457 acres. Alternatives B, C, and E would not allow motorized big game retrieval on severe mass wasting potential soils.

Implementation of any of the action alternatives would improve the soil resource by decreasing the overall acres available as well as the acres available on severe erosion and mass wasting potential soils for off-road motorized use, motorized big game retrieval, and motorized dispersed camping from the existing condition. Alternative E would not allow cross-country use for any reason. Therefore, it would be the most beneficial to the soil resource. Alternative B would allow 156 acres of motorized dispersed camping on severe erosion potential soils, and 40 acres on soil with severe mass wasting potential. Further, it would not allow any motorized big game retrieval or off-road motorized use on severe erosion potential or severe mass wasting potential soils, making it the next best alternative in terms of the soils resource.

NFSR 447 Reroute

The reroute is located in a dry meadow system that may see water once every few years. There are no wetland soils or riparian vegetation associated with this area. Reroute sections 2 and 3 would be greater than 500 feet from any stream channel and are not involved with a stream.

Overall, approximately 1.7 acres of new disturbance would occur with construction of the new road in alternatives B, C, D, and E. No new disturbance would occur under alternative A. None of the action alternatives would impact water quality, sediment to streams, wetlands, stream channels, ground water flow, or riparian areas with the construction.

Should sediment be produced from the newly constructed roads, it would be filtered out in the meadow via a channel that ends there. The water would infiltrate in the ground and filter out the pollutants. Further, no wetlands, stream channels, or riparian areas are present in this part of Bonita Canyon, so no effects would occur to these resources. Finally, the roads would be bladed at low depths and no cut and fill slopes created; therefore, ground water flows would not be impacted.

The only effect would be localized as the new road segments would impact the dry meadow system and create new disturbance but it is felt that overall hydrologic processes would not be compromised. The slopes of these routes would be less than 2 percent and no cut and fills slopes would be necessary; thus eliminating the chance of slump and road cut erosion.

Air Quality

The analysis area air quality is currently in attainment. None of the action alternatives would result in changes to use patterns that would have a measurable effect on the amount of criteria pollutants entering the air-shed from activities related to travel management. Therefore, none of the action alternatives would likely affect the air quality in the air-shed and NAAQS would continue to be met. Under no action, there would be no change to uses that generate pollutants and no change to air quality related to travel management.

Cumulative Effects

The analysis area is defined by the boundaries of the 6th level watersheds. This analysis discusses the information relevant to the cumulative effects analysis for the 49 6th level watersheds involved in the district. This analysis considers past, present and reasonably foreseeable future projects' effects related to this project. Past projects on the forest created the current condition so they are not listed separately. Current and reasonably foreseeable future projects that occur on the Mt Taylor Ranger District include vegetation and fuels management projects, grazing, uranium exploration and mining, recreation, and watershed and wildlife improvement projects. Vegetation and fuels management projects have the potential to increase soil erosion but these effects are short term and localized. Grazing has an impact on soil erosion and stream channels which varies by allotment and soil type. The current condition combined with the additive effect of these current and reasonably foreseeable activities results in areas of unsatisfactory and impaired soil condition which continue to effect watershed condition and soil productivity across the district. Watershed improvement projects and improved grazing strategies result in improved soil and stream conditions, depending on the type of project. Generally, at least 1,000 acres of watershed improvement activities occur each year on the forest. This results in continual improvement in

soil and watershed conditions, working toward a reduction in the acres of unsatisfactory and impaired soil condition.

Alternative A

Under alternative A, there would be 1,399 miles of combined roads and trails available to motorized use, and 445,623 acres available to OHV, dispersed recreation, and motorized big game retrieval use on the district. This means there would be no change to the current effects that are occurring to the soil and watershed resources from motor vehicle use. It is assumed that similar rates of motorized dispersed camping and motorized big game retrieval would continue and the existing effects seen from the available road and trail system would continue. Unrestricted cross-country motorized use of roads/trails may create additional user-created routes that would increase soil erosion and reduce watershed condition.

Alternatives B, C, D, and E

Alternatives B, C, D, and E would all reduce the combined miles of open roads and trails and reduce the acres available for OHV, motorized dispersed camping, and motorized big game retrieval below the existing condition (alternative A). The action alternatives reduce the combined open miles of road and trail use as well as the acres of cross-country travel below the existing condition which is an improvement to the soil and watershed resource within the project area. These proposed actions would result in beneficial effects by reducing the amount of soil erosion and improving soil and watershed condition. There would be no additional deleterious cumulative effects to soil or water resources from any of the action alternatives.

Alternative E would be the most beneficial in terms of cumulative effects, followed by alternative B, alternative C, and then alternative D.

Other Resources – Fire, Range, and Vegetation

Affected Environment

Fire

Historically, low intensity fires burned throughout the area with relative frequency and played an important role in maintaining an ecosystem that was somewhat resistant to large, uncharacteristic wildfires. A shift in land management around the turn of the 20th century resulted in an emphasis on fire suppression. Since then, land management activities such as fire suppression, timber harvesting, and grazing programs have affected vegetation and fire regimes within the area. Due to the late seral, closed state of existing vegetation, increased fuel loadings, and many missed fire cycles, the majority of the project area is at risk for loss of key ecosystem components. An extended departure from the natural regime has occurred across the project area.

For the last 5 years, fire frequency records show the district had approximately 200 wildfires. Out of the 200 fires, 15 were human caused. There is no documentation of any fires that were caused by motorized cross-country travel.

Range

Range management maintenance on existing wells, springs, fences, and earth tanks are authorized under grazing permits. Range management activities, including the use of motorized cross-

country travel, are approved by an annual allotment management plan. There are 29 grazing allotments on the Mt. Taylor Ranger District. Each of these allotments has a term grazing permit that authorizes the grazing of livestock and implementation of various management activities needed for this activity.

Motor vehicle uses contribute to the introduction of undesired plant species onto NFS lands. There is no method to determine exactly when or how a certain species gained access and establishment on NFS lands. Motor vehicles transport seed sources from infested lands to non-infested areas and over time, small seed sources can multiply and increase populations exponentially. Seed dispersal occurs through motorized and non-motorized activities taking place on the district.

Vegetation

The Mt. Taylor Ranger District has districtwide and designated area opportunities for special forest and botanical forest products. The districtwide plan allows permit holders overland motorized access anywhere on the district except in sensitive wildlife areas.

Commercial timber contractors utilize routes designated by Forest Service personnel for implementation of contracts. These designations are independent of designations for public use. Contractors maintain or pay for the maintenance of routes impacted by their use.

The frequency of use needed for the majority of routes is low. Generally, in forests like those found on the district, vegetation treatment entries into a given timber stand occur once every 15 years or longer. In the interim, these roads are usually not needed.

Timber management is conducted within areas designated as suitable timberlands, or in piñon-juniper woodlands with potential for firewood product removal. Most wildlife habitat improvement and fuels management needs also lie within these lands.

The forest plan identifies 220,206 acres of suitable timberlands on the district. Management emphasis for these lands is on timber production in a manner compatible with other resource objectives, such as wildlife, range, fire, and recreation management (Forest Plan, 1996). Additionally, 127,115 acres of piñon-juniper woodlands are managed on the district to provide special forest products such as firewood, in a manner compatible with other resource management objectives.

Currently, there are eight active timber sale or stewardship contracts on the district, one active timber stand improvement (thinning) contract, and three active prescribed burn projects for fuels reduction. Stewardship contracts are used to exchange goods for services. Additional contracts are planned for the immediate future. Each year, the district averages in excess of 2,000 permits for special forest products. Special forest products and forest botanical products include a wide array of items, which include, but are not limited to: firewood; posts/poles; plant materials; transplants, also known as wildlings; seeds; nuts; and Christmas trees.

Environmental Effects

Management of range and vegetation resources is dependent on motorized access. Fire patrols, suppression, and management of vegetation to reintroduce historic low intensity fire regimes are also dependent on motorized access. Some motor vehicle uses are exempt from the prohibitions

of the designation process of travel management (CFR 212.51(a)). Exemptions related to these resource management concerns include: “ (4) limited administrative use by the Forest Service; (5) use of any fire, military, emergency, or law enforcement vehicle for emergency purposes; (8) motor vehicle use that is specifically authorized under a written authorization issued under Federal law or regulations.”

Common to All Alternatives

The use of all Forest Service system roads for administrative purposes, such as fire patrol and suppression, would continue no matter which alternative was selected (36 CFR 212.51 (a)). The alternatives would not affect the fuel composition or structure, so the appropriate measure related to fire is how each alternative affects the potential for human-caused fires. This analysis assumes that human-caused fire ignitions are correlated with the amount of roads and trails designated for public use.

Common to All Action Alternatives (B, C, D and E)

Grazing

All MRD permittees have a term grazing permit with terms and conditions of grazing and required related activities described within the legal document. Legitimate motorized vehicle use in non-wilderness areas related to permitted grazing activities will continue to support their authorized grazing activities. As a critical component of allotment management, any changes with the implementation of travel management should be conducted in careful and considered consultation with grazing permit holders (Federal Land Policy and Management Act of 1976, Sec 402 (d) (e)). All authorizations for cross-country motorized travel are subject to other existing regulations intended to protect natural and/or heritage resources.

Vegetation Management and Forest Products

Limiting public access to designated routes would confine overland motorized access for retrieval of special forest products and botanical forest products to designated areas or along designated routes; however, there would be no adverse effect on this activity, provided there are a sufficient number of designated special forest products and botanical forest products areas in a variety of locations on the district.

Limiting public access to designated routes would not affect the commercial timber program. Commercial contractors would be able to use those routes deemed necessary by the Forest Service for the limited duration of contract implementation.

All existing roads are available for forest vegetation management, the use of those roads is consistent with the Travel Management Rule as an exemption per 36 CFR 212.51(a,8).

All action alternatives propose to convert some existing roads to motorized trails. Converting existing roads to motorized trails eliminates the availability of these routes for forest vegetation management, because the equipment needed is typically wider than 50 inches.

Alternative A

Grazing Management

The activities discussed above would continue across the district with this alternative. Alternative A would have no effect on the management of livestock and range improvements by term grazing permittees.

Invasive plant species and existing undesired plant populations would increase at a greater rate with alternative A because of unrestricted motorized travel. Distribution of seed sources would occur at an increased rate, and populations would gain access to areas off of roadways under alternative A. Alternative A is considered the highest risk alternative in respect to undesired plant population growth.

Vegetation Management and Forest Products

Alternative A has no effect on forest vegetation management, because no existing roads are designated for converting to motorized trails.

Fire Management

Under this alternative existing human-caused fire ignitions are expected to continue as in years past. There would be no change in the current road system or motorized dispersed camping.

Alternatives B, C, D

Vegetation Management and Forest Products

Alternatives B, C, and D would designate several routes that previously were not on the forest road system. Some of these routes would provide additional access for forest vegetation management.

Fire Management

Alternatives B, C and D would concentrate the public to designated motorized dispersed camping corridors (100 feet on either side of 80 miles of designated roads for alternative B, and 300 feet on either side of 99 miles of designated roads for alternatives C and D). This would limit the ignition of human-caused fires along these corridors. Alternatives C and D designate a 344-acre OHV area on McKenzie Ridge on the west end of the Zuni Mountains. Human-caused fire ignitions are anticipated to be low because the terrain is rocky with low fuel loads and litter.

Alternatives B, C, D, E

The reroute along NFSR447 in Bonita Canyon would have no effect on forest vegetation management, range management, or fire because it would not change access or use. These alternatives offer different levels of restriction for off-road motorized travel.

Grazing Management

Range management activities would continue to be authorized as administrative use for routes identified and approved in the annual operating plan. Because none of the alternatives propose physical closure or decommissioning of routes, access for range management functions would not be impeded and use would continue as authorized in the grazing permit.

Since motorized use is limited to a designated system of roads and associated corridors, the risk or threat of undesired plant species establishing or increasing in population is lower than alternative A. Treatment of future populations would be manageable because of limited cross-country travel under alternatives B, C, and E.

Alternative D offers a 344-acre OHV area where off-road travel would be allowed. The OHV area is located within the Prewitt/6A Allotment. No effects related to livestock grazing capacity would occur with the addition of the OHV area. The area makes up a small percentage of the allotment and does not provide grazing capacity. Available forage is at amounts less than 100 pounds per acre and is, therefore, classified as unsuitable rangeland within the proposed OHV area.

Vegetation Management and Forest Products

Only existing roads needed for forest vegetation management that are converted to motorized trails would have an effect on the timber resource if these routes are permanently converted to trails. The effect would be lost access for equipment to implement vegetation management treatment activities and remove forest products in an economically feasible manner.

Fire Management

Alternative D also allows motorized cross-country travel 0.5 mile on either side of specified system roads for motorized big game retrieval during the big game hunting seasons (September through December). This is the fall and winter months where temperatures are lower than the summer months and where relative humidity is usually higher at this time of year; therefore, human-caused fire ignitions are not expected to change. Also, motorized cross-country travel is a one-time trip to retrieve a downed big game animal.

Alternative E reduces the number of miles of designated motorized routes, no motorized dispersed motorized camping corridors, and does not allow motorized cross-country big game retrieval. With fewer designated roads, it is anticipated that human-caused fire ignitions would be less than the other alternatives.

Cumulative Effects

Grazing Management

Range management activities will continue as in the past with required vehicle travel for livestock management and maintenance of improvements being authorized by the term grazing permit. Cumulative effects to rangeland activities will occur when travel routes are administratively closed and no longer maintained on a regular basis. This lack of maintenance could affect permittee operations due to changed conditions in the travel ways. In some cases, maintenance may be done by permittees to a level that will allow for short-term use to maintain improvements and conduct livestock management activities.

Vegetation Management and Forest Products

In 1998, the Checkerboard Transportation Plan Decision Notice designated motorized routes on Chivato Mesa, located in the northeast portion of the Mt. Taylor Division. The area comprises approximately 50,000 acres. Less than 500 acres in this area are designated in the forest plan as suitable timberlands. There are approximately 27,000 acres of potential firewood lands in this location, roughly 25 percent of the total amount of potential firewood lands on the district. No

roads were designated for conversion to motorized trails, nor were any routes decommissioned; therefore, there was no lost access for forest vegetation management. For this reason, the Checkerboard Transportation Plan would have no cumulative effect on access to the timber resource.

No other past, present, or foreseeable future actions restrict the administrative use of roads for forest vegetation management, so there are no cumulative effects from other projects.

Fire Management

The vegetation treatment, past large fires, and prescribed burn projects have reduced fuel loading in portions of the district. Implementation of these projects when added with the reduction in available motorized routes including roads and motorized trails compared to the existing management would further reduce the probability of human-caused fires.

Heritage

Affected Environment

Heritage Protocol for Travel Management

The Cibola National Forest meets its Section 106 responsibilities under a regionwide programmatic agreement signed by the Forest Service, State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation. This agreement serves in lieu of procedures set out in 36 CFR 800. The “R3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities” allows for the development of protocols related to specific undertakings. The Forest Service in consultation with tribes, the SHPOs and Advisory Council developed a protocol for travel management route designation (Appendix I: Standard Consultation Protocol for Travel Management Route Designation), hereafter referred to as the TM heritage protocol. Refer to U.S. Forest Service 2007.

The TM heritage protocol provides guidance on the potential for the Travel Management Rule to affect heritage sites, the extent of archaeological survey needed, completing survey after the NEPA decision is signed, and site protection measures.

Potential for Travel Management Rule to Affect Heritage Sites⁹

The TM heritage protocol sets out the activities that are not considered to have any appreciable potential to affect heritage resources. As a rule, designation of existing system roads and trails, and their associated constructed features that are already open for motor vehicle use will have little or no potential to affect historic properties. “If heritage resources are present on these roads, motorized trails, or constructed features, they were likely impacted by the original construction or formation of the road or trail and subsequent maintenance and/or use” (U.S. Forest Service

⁹ Impacts in NEPA analysis are considered to be either adverse or beneficial to historic properties (archaeological resources). Under the National Historic Preservation Act, Section 106 (NHPA), effects to sites are classed as either adverse or not adverse. In either case, “adverse” means that the effect will diminish the important characteristics of the archaeological resource. Mitigation measures can lower the intensity of an adverse effect determination (in NHPA terminology) in order to reach a no effect determination (in NEPA terminology). A beneficial effect means an activity lowers the potential for impacts to an archaeological resource or enhances the preservation of a site. “Effects” in this environmental assessment is used in the NEPA sense.

2007:3). The TM heritage protocol does recognize that even currently open motorized routes may be adversely affecting archaeological resources in specific cases, and the protocol provides for addressing those situations.

The TM heritage protocol specifies those travel management activities that do have the potential to disturb or damage archaeological resources. Relevant to the alternatives proposed for the Mt. Taylor Ranger District are designation of user-defined, decommissioned, and closed roads as now open to motorized vehicles, designation of areas for OHV recreational use, and designation of corridors for motorized dispersed camping. These actions require archaeological clearance as per the TM heritage protocol

The TM heritage protocol does not specifically address the potential of motorized big game retrieval (MBGR) to affect archaeological resources. The effect of this activity is considered to be negligible for the two game management units of the Mt. Taylor Ranger District because the activity is highly dispersed and only occurs seasonally. An estimated 754 deer or elk hunters a year are expected to travel cross-country in motorized vehicles to retrieve big game. (Refer to “Recreation” section, “Affected Environment”). The likelihood of a motorized trip to retrieve a legally tagged animal adversely affecting a site is extremely small; therefore, MBGR is considered as having no potential to affect heritage resources and is exempted from consultation under NHPA.

The potential of different activities of the Travel Management Rule to affect heritage resources on the Mt. Taylor Ranger District is summarized in Table 29.

Table 29. Potential of travel management activities to affect heritage resources

Activity		Potential Effects to Archaeological Resources
Managing motorized travel/implementing the Travel Management Rule		Yes–Beneficial Effects. Area open to motorized travel is decreased. User-created trails beyond the designated routes not allowed.
Designating Motorized Travel Ways: Roads open to all vehicles, ATV trails, and single track trails	Designating system roads (NFSRs) that are currently open (No system trails currently exist).	No effects to sites except in specific cases (per TM heritage protocol). Effects are known to be occurring to heritage resources from use of one open NFSR.
	Designating currently closed/decommissioned roads/trails, user-defined roads/trails or newly constructed roads/trails.	Effects to heritage resources will be determined and the appropriate mitigation measures will be implemented (per TM heritage protocol) after an archaeological survey has been completed and prior to inclusion on the MVUM.
Designating OHV Areas		Effects to heritage resources will be determined and the appropriate mitigation measures will be implemented (per TM heritage protocol) after an archaeological survey has been completed and prior to inclusion on the MVUM.
Designating Motorized Big Game Retrieval Areas		Yes–Only negligible effects. Activity is highly dispersed and seasonal. Likelihood of such driving affecting a site is extremely small.
Designating Camping Corridors		Effects to heritage resources will be determined and the appropriate mitigation measures will be implemented (per TM heritage protocol) after an archaeological survey has been completed and prior to inclusion on the MVUM.

Archaeological Inventory

The protocol addresses survey strategy and provides for less than 100 percent survey for areas previously surveyed to standard, areas on 40 percent or greater slopes, areas where known site density is low, and areas where prior use has already disturbed the area and continued use is not expected to cause additional significant damage to resources. For project areas subject to less than 100 percent survey, the size and design of the sample surveys shall be determined by the forest archaeologist. Survey in addition to the initial sampling survey may be required under certain conditions.

The TM heritage protocol provides for signing the NEPA decision prior to completion of all archaeological survey under certain conditions. To meet the deadlines associated with implementing the rule, some of the heritage inventory and clearance for Mt. Taylor travel management will be completed after the NEPA decision. The heritage inventory and clearance work will continue in a phased manner as per the Region 3 TM heritage protocol (USDA Forest Service 2007). Routes and areas that are approved in the travel management decision will not be open to the public or shown on the MVUM until heritage clearances have been completed. The district plans to complete the surveys and clearance within 3 years of the final decision.

Site Protection

Through implementation of the TM heritage protocol, project activity areas with the potential to impact archaeological resources will be inventoried prior to project implementation, and any sites found will be recorded. Mitigation of effects to sites will be done where needed to reach a finding of no effect or no adverse effect before the route, area or camping corridor is shown on the MVUM. The mitigation that is undertaken will vary with the type of site and its relationship to project impacts. Mitigation could range from site avoidance, to dropping a route or corridor from designation, to data recovery of information from the site. The Forest Service will consult with the SHPO about proposed mitigation. The following are potential mitigation measures outlined in the TM heritage protocol:

- Drop proposed motorized road/trail/area designations
- Revise designation; shorten road length to stop motorized travel a distance from a site
- Reroute or modify designated roads/trails
- Use temporary emergency closure of road/trail/area
- Monitor site condition and effectiveness of protection measures
- Leave roads/trails/areas off the public map until Sec. 106 of the National Historic Preservation Act consultation requirements are met
- Do data recovery to collect significant information from sites that will be impacted.
- Provide for extra enforcement of travel management designations in certain situations.
- Plate over resources in road/trail

Heritage Resources on the Mt. Taylor District

More than 2,700 sites have been recorded to date, with an estimated 28 percent of the entire district (515,536 acres) inventoried. The district has a large variety of heritage resources dating

from about 8,000 years ago to modern times. Indigenous use is evident from Archaic Period hunting and gathering to present day Puebloan traditional activities. The prehistoric, or Ancestral Puebloan use included settlement within the lowlands and limited activity use, such as hunting and plant gathering, in the higher elevations. Chacoan outlier sites are located near the Mt. Taylor unit and many prehistoric sites on the district had ties to the occupation of Chaco Canyon¹⁰. Navajo groups moved into the area by the 1600s and were well established by the late 1700s. Navajo sites dating both before and after the Long Walk to Bosque Redondo are present on forest land. A significant portion of the Mt. Taylor Unit of the district has been determined a landscape-scale traditional cultural property by a number of Native American tribes, with areas of traditional use by native peoples being located in the Zuni Mountains. European/Anglo occupation began with Spanish settlement in the early 1800s. Sheep and cattle grazing have a long history in the region. In the Zuni Mountain Unit, intensive railroad logging took place between 1890 and 1940. On the Mt. Taylor Unit, truck logging likely began in the 1920s. Portable sawmills, as well as logging camps, can be found on both units. Mining of coal, uranium, and fluorspar has left industrial sites on the land.

Average site density for the various watersheds or geographic areas on the Mt. Taylor Unit is approximately 10 sites per square mile with an average range of 5 to 16 sites per square mile. The average density of sites for the geographic areas on the Zuni Mountain Unit is approximately 11 sites per square mile with an average range of 7 to 13 sites per square mile. Certain specific areas on the district have site densities as high as 35 to 50 sites per square mile (U.S. Forest Service 2000).

Environmental Effects

Effects to Heritage Sites from Motorized Travel

The affected area for heritage resources for this analysis includes the area of the district containing routes currently used for motorized travel. Of the portions of the district where motorized travel is currently allowed, approximately 32 percent has been archaeologically surveyed. In 2008, using the extant data in geographic information system (GIS) layers, the forest determined that there were more than 800 recorded sites located within a 60m (200 foot) wide corridor centered on the known roads on the district. Note that archaeological surveys have not taken place for some road corridors. There is a backlog for archaeological surveys needed for road maintenance which is being addressed as funding becomes available. In addition, there are many recorded sites—on the order of 1,000 or more—in the analysis area beyond road corridors. These sites are located in areas where the district at present allows unrestricted motorized travel; therefore, the vast majority of the recorded heritage sites are located where motorized travel is now occurring or can occur.

Heritage resources can be negatively impacted by unmanaged, cross-country motorized travel and, in some cases, by unmanaged motorized travel on existing roads. Sites are affected by vehicular travel particularly when soils are wet and muddy. Not only is the existing roadbed rutted, but bypass routes around the damaged road areas can be developed within site boundaries. Motorized vehicular travel within heritage sites can cause damages to features and artifacts, compact the soils and disturb the stratigraphic context of the site, cause soil loss, and lessen vegetative cover which can lead to increased erosion. Studies have shown that off-highway

¹⁰ Chacoan Outliers are prehistoric ruins located outside Chaco Canyon, NM, but which are part of a system of sites linked to the occupation of Chaco Canyon in the period of approximately AD 800-1300.

vehicle (OHV) tire treads pick up and displace the top several centimeters of soil and OHV driving also compacts and deforms the subsurface soils. Surface vegetation is disrupted or destroyed and soil compaction reduces water infiltration rates so plants have a difficult time regenerating, especially in arid environments. Loss of vegetation leads to increased soil loss through wind erosion and sheet washing and gullying, especially in steep terrain (Nickens 1992). OHV driving thus can remove cultural context and expose artifacts and features. Shallow sites are particularly vulnerable. Scars made by OHV driving have been found to be very visible and long lasting, and the landscape hard to restore (Sampson 2007).

Heritage sites are also affected by motorized travel where vehicular access facilitates camping on sites. Modern hearths placed on prehistoric sites could destroy information that would be important for chronological dating of the prehistoric and/or historic occupation of the site. Sites in designated camping corridors may be affected by site vandalism such as unauthorized digging, artifact collection, or cutting up features/structures constructed of wood for firewood.

Common to All Alternatives

All alternatives include rerouting the existing road around the sections of NFSR 447 and blocking off short stretches of the road. Damage to heritage resources from motorized travel along this open NFSR was identified during the travel management NEPA process.

Comparison of Effects of Alternatives

In the current situation (alternative A – no action) there is the potential for nearly all sites to be impacted because of unrestricted motorized travel. Implementing the Travel Management Rule through any of the action alternatives would have beneficial effects on archaeological resources in that the alternatives would reduce the amount of area open to motorized travel and, thereby, reduce the potential for impacts to archaeological resources. Alternative E would have the least potential for effects to sites, followed by alternative B, which has more potential than E to affect sites. Alternatives C and D, which have the most area open to motorized travel, would have the most potential of the action alternatives for effects to heritage resources and, therefore, would be the least beneficial.

Effects to Sites

For routes that are not open system roads, the effects on heritage resources from motorized travel on roads and trails are not differentiated in this analysis. Effects to sites are considered to be similar whether the designation is of a road, ATV trail, or single track trail. Additionally whether the route being designated is an unauthorized route, a closed system road, a decommissioned system road, or a newly constructed trail does not affect the analysis. Motorized travel is considered to have a similar potential to impact heritage resources. Camping corridor designation and OHV area designation have somewhat more potential for damaging heritage resources than merely designating a route as open to motorized travel. However, the acres open to motorized travel—whether in roads, trails, OHV areas or camping corridors—are combined in the analysis.

Alternatives B, C and D propose to add varying numbers of miles of unauthorized routes to the open system road network. These action alternatives will be restricting the overall miles where motorized travel is allowed; therefore, the addition of unauthorized routes will not increase the total number of miles open to motorized travel. The activity of adding roads to the NFSR network

will not affect heritage resources. Inventory of designated routes and the protection of sites per the TM heritage protocol will provide for any of the action alternatives to have no effect or no adverse effect on heritage resources.

The measure of negative effects to heritage resources that is used in this analysis of travel management involves the estimated number of “sites to be protected.” “Sites to be protected” are those heritage sites whose National Register of Historic Places status is listed, nominated, eligible, undetermined, or unevaluated. Under current laws and regulations, such sites, or their important information, need protection. “Sites to be protected” do not include those that have been determined not eligible to the National Register through consultation with the State Historic Preservation Officer.

The actual number of “sites to be protected” in the entire no action alternative area, or within the project areas of the action alternatives, is not known at the current time because complete archaeological inventory of those areas has not been accomplished to date. At the current time we do not know the number of sites, the types of sites, or the National Register status of sites actually present in each of the alternatives. We can estimate the number of “sites to be protected” that will be found within the alternatives. To do so, the average density of “sites to be protected” in the area of alternative A was calculated; that number is 7.45 sites per square mile. Although the acres surveyed to date do not represent a statistically valid sample of the district, alternative A encompasses most of the district and has the most acres of survey of any of the alternatives. Coverage of this alternative includes a range of topographic settings and elevations.

“Sites to be protected” in Table 30 provides a relative view of the differences among the alternatives in terms of the number of sites estimated to be located in areas where motorized travel has the potential to affect heritage resources.

Table 30. Comparison of alternatives by estimated number of “sites to be protected”

Alternative	Square Miles/Acres of Project Area Where Heritage Sites May be Affected by Motorized Travel*	Estimated Number of “Sites to be Protected” in Project Areas Where Heritage Sites May be Affected by Motorized Travel**
A	696.29 square miles (445,623 acres)	5,187.4
B	5.40 square miles (3,465 acres)	40.2
C and D	14.98 square miles (9,587.7 acres)	111.6
E	0.13 square miles (84 acres)	1.0

* See Table 29 for definition of which activities have the potential to affect heritage sites. Entries do not include open system roads and do not include overlap of designated routes and dispersed camping corridors. The corridor width used for roads and trails in this computation is 30m (98 feet).

** Average “sites to be protected” density calculated for alternative A is 7.45 sites per square mile. (Analysis of alternative A showed 1,657 sites recorded in 142,345 acres or 222.4 square miles). To calculate estimated number of sites in an alternative, the method is to multiply square miles by 7.45 and round to one decimal place.

Alternative A, no action, has many more sites that could be impacted than any of the action alternatives. Alternative B is estimated to have about a third the number of “sites to be protected” estimated for alternatives C and D. Alternative B has less acreage within designated camping

corridors, so has less potential from the effects of dispersed camping to sites than alternatives C and D. Alternative B also has no OHV area designated. Because alternative E has no designated camping corridors, no designated OHV area, and very few miles of designated non-open system roads, the estimated number of sites that could be negatively affected is extremely small.

Since mitigation will be implemented for the “sites to be protected” in alternatives B, C, D and E; none of the action alternatives will have an effect on the heritage resources themselves. Under the TM heritage protocol, project activity areas with the potential to impact archaeological resources will be inventoried prior to project implementation. Mitigation will be done where needed to reach a finding of no effect or no adverse effect before the route, area, or camping corridor is shown on the MVUM. Under alternative A, implementing mitigation measures for sites affected by motorized travel is less likely than in the action alternatives because there is no coordinated plan for managing motorized travel or for discovering or mitigating its effects to sites.

Table 30 provides information to make a relative comparison of the action alternatives in regard to what the cost of mitigation might be. Mitigation that is undertaken will vary with the type of site and its relationship to project impacts. Mitigation could range from site avoidance, to dropping a route or corridor from designation, and/or data recovery of information from the site. Though specific mitigation measures will vary, it is reasonable to assume that the more sites that need protection, the higher the overall cost of mitigation will be. Alternatives C and D would have the highest cost for mitigation of heritage resources, alternative E the lowest and alternative B, a cost in between.

Alternative A

Alternative A possesses the greatest potential of the alternatives for effects to heritage resources because of the amount of area and miles of routes open to motorized travel. Under this alternative no management actions would be undertaken to limit motorized driving, and no new restrictions would be put in place. Existing user-defined routes would continue to be used and new ones likely made. Heritage resources would continue to be at risk from unmanaged off-road driving and camping. To the extent possible, impacts would be mitigated, but the opportunity to do so and the effectiveness of the measures would be less than in the other alternatives because no coordinated, funded plan for management of motorized travel would be implemented.

Alternatives B, C, D, and E

All of the four action alternatives have the potential to affect heritage resources, but because motorized use will be reduced, the overall affect would not be considered adverse. The TM heritage protocol will be implemented for the alternative that is selected. If an archaeological survey identifies a site that is evaluated to need protection, then measures such as those listed above will be put in place to protect the site or its important information. The alternatives will vary in regard to the cost of the mitigation, with alternative E having the lowest cost and alternatives C and D the highest. Alternative B would have a cost somewhere between the costs for E and C/D.

Under all four of the action alternatives, the three known sites currently being affected by motorized travel would have reroutes constructed to mitigate potential effects to the sites.

Cumulative Effects

Cumulative effects to heritage sites are not predicted to occur because of Forest Service sponsored projects. Past actions by the Cibola National Forest include management of motorized travel through forest plan closures and the Checkerboard Travel Management Plan. Those actions have served to reduce motorized travel in areas adjacent to the present project area and, thus, to reduce the effects from that travel to heritage resources. Present actions on national forest land such as permitted grazing and vegetation treatments are following regulations and procedures in regard to protecting heritage and natural resources. Through the use of avoidance, site protection measures, and mitigation, they will not adversely affect heritage resources. Forest Service projects listed as future actions will also follow such regulations and procedures.

A present action, Sky Mountain Ranch Subdivision, and a future action, Tampico Springs Subdivision, on private land, have the potential to increase residential use within the forest boundaries. At times, “halos” of use, including motorized travel, develop on the forest land around subdivisions. Impacts to heritage sites in areas surrounding subdivisions could increase. The number of people who will actually become residents in these subdivisions is unknown at present, especially given the current economic climate. Therefore, we cannot say that the two residential subdivision projects would definitely cause cumulative effects to heritage resources, only that the potential is present.

Action Alternatives

With appropriate mitigation and site protection measures implemented under the TM heritage protocol, each of the action alternatives would have no effect or no adverse effect on archaeological sites. Even if the subdivision developments result in effects to sites, the decision to implement the Travel Management Rule would have no cumulative effects if alternative B, C, D, or E is chosen.

No Action Alternative

Alternative A will have effects to heritage resources and it is possible that the two planned subdivisions will affect heritage resources. It is unknown if the effects to heritage sites from the no action alternative will be cumulative to those resulting from present and planned residential subdivision developments, but the potential is present. All future Forest Service projects located on the Mt. Taylor Ranger District will follow all regulations and procedures regarding the protection of significant heritage resource sites.

Contemporary Indian Uses

Affected Environment

The lands managed by the Mt. Taylor Ranger District (Mt. Taylor Unit and Zuni Mountain Unit) hold considerable cultural significance for area tribes, including: the Navajo Nation, the Hopi Tribe, the western Pueblos of Acoma, Zuni and Laguna, many of the Rio Grande Pueblos, and the Jicarilla Apache. These lands have long standing and ongoing historical, cultural, and religious importance for these tribes. The lands have been used and continue to be used by many of the tribes for a variety of traditional cultural and religious activities. These activities include, but are not limited to: collection of plants, stone, minerals, pigments, feathers, soil and sand; hunting; religious pilgrimages; accessing springs; and making special offerings. All consider the lands to

be culturally significant. Some tribes have acknowledged and have identified places and properties of religious and cultural significance.

Environmental Consequences

Alternative A

For cross-country motorized travel, there is a potential to effect places or properties of cultural and religious significance and traditional use of the area by practitioners. This alternative does not reduce potential disruption of traditional cultural and religious activities. No tribe has indicated that the current road system is inadequate for their continued use of the national forest lands for cultural and religious activities. Keeping the routes as they are currently used would continue to provide necessary access for traditional practitioners, and allow them to continue to use the areas for traditional cultural and religious activities.

Some open system roads that access Zuni, Acoma, and Laguna Pueblo lands have been identified by these tribes as a concern because they facilitate motorized trespass onto tribal lands. Under this alternative, these roads would continue to contribute to trespass issues.

Alternative B

Designation of FR453E would provide continued motorized access to the saddle of Mt. Taylor, benefiting contemporary tribal uses. Change in its designation from an open system road to a trail for vehicles less than 60 inches in width would continue to provide motorized access to the saddle of Mt. Taylor, but would require tribes to change their method of transportation. Because most traditional practitioners access traditional use areas in full sized vehicles, this change in designation would affect access and traditional use in the area of the saddle and the summit of Mt. Taylor. One tribe has indicated that this change is less desirable because it will limit the motorized options for transporting elderly practitioners who need to perform traditional cultural and religious activities in the vicinity of the saddle of Mt. Taylor. Compared to the no action alternative, there are fewer motorized routes proposed and generally more restriction on the use of vehicles. As a result, there would be a reduced potential to effect places or properties of cultural and religious significance as a result of alternative B.

Prohibiting motorized cross-country travel and converting motorized travel to designated roads and trails would reduce the potential for trespass onto some tribal lands. Designation of FR191J as a motorized trail would not likely reduce the risk of trespass onto Zuni Pueblo lands or reduce the threat to culturally sensitive sites in the area. Under this alternative, the risk of motorized trespass on FR1300, 1300AC and 1300A onto Laguna Pueblo lands would be eliminated. The risk for motorized trespass on FR193H and 193H2 onto Acoma Pueblo land on Horace Mesa would remain, but motorized access is needed by the pueblo and would still be available.

Designating corridors for motorized camping has the effect of consolidating public use close to roads. This has the potential to reduce disruption of traditional cultural and religious activities, as these activities are generally done further away from roads to ensure privacy.

Alternative C

The effects to places or properties of cultural and religious significance and to traditional uses of the area are the same as alternative B, as is the risk of motorized trespass identified by the Pueblos of Zuni, Laguna, and Acoma.

This alternative has more miles of motorized camping corridors than alternative B. The effects of establishing these corridors are the same as alternative B.

The elimination of motorized big game retrieval would affect some tribes who have indicated their need to collect the animal whole. It would require those hunters to change their method of big game retrieval and/or limit their hunt to within the retrieval corridors.

Alternative D

The effects to places or properties of cultural and religious significance and to traditional uses of the area are the same as alternative B, as is the risk of motorized trespass identified by the Pueblos of Zuni, Laguna, and Acoma.

Route designation and miles of camping corridor is higher than alternative B, and similar to alternative C, with the addition of motorized big game retrieval corridors. Establishment of motorized big game retrieval corridors provides for less off-road driving than is currently allowed under no action, and would likely be a benefit for some tribes because it would reduce the risk of disruption of traditional cultural and religious activities and would likely improve the hunting experience. It would also benefit those tribes that need to collect the animal whole because it would eliminate the need to cut up the animal before transporting it.

Alternative E

The effects to places or properties of cultural and religious activities are the same as alternative B. Under this alternative, FR453E is not designated for motorized use. As a result, there would be an effect to the tribes' ability to access traditional use areas in the vicinity of the saddle of Mt. Taylor.

The risk of motorized trespass identified by the Pueblos of Zuni, Laguna, and Acoma would remain the same as under alternative B. The lack of camping corridors may impact the tribes' ability to gather piñon nuts. Most of this gathering is done for personal use; however, it does play an economic role for the Navajo. This alternative does not include the designation of motorized big game retrieval corridors; therefore, the effects to hunting by some tribes would be the same as alternative C.

Cumulative Effects

All Alternatives

While the landscape-level traditional cultural property referred to as the Mt. Taylor TCP is well recognized, additional places and properties of cultural and religious significance and contemporary traditional use areas have been identified on the Mt. Taylor Ranger District. Contemporary traditional uses in the area have been affected by many other past, present, and reasonably foreseeable actions such as: mineral exploration and mining; development of electronic communication sites; commercial timber harvesting; private land development; and road construction. There are no other proposals or activities on the district that would have an

additive effect on the tribes' ability to access traditional use areas. None of the alternatives contribute to cumulative effects on the district.

Chapter 4 – Agencies and Persons Consulted

The Forest Service consulted and/or coordinated with the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during development of this environmental assessment:

ID Team Members and/or Preparers

Arnold Wilson – District Recreation Staff/ID Team Leader

Keith Baker – Forest NEPA Coordinator

Sara Dechter – Social Science (Planner)

Rob Arlowe – Forest Geographic Information System Specialist

Cynthia Benedict – Forest Archaeologist

Nancy Brunswick – Forest Recreation/Landscape Architect

Victor Wyant – Zone Silviculturist

Richard Graves – Forest Engineer

Henry Martinez – Civil Engineer

Beverly Degruyter – Forest Wildlife Biologist

Matt Reidy – District Ranger

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Jon Williams – Acting District Ranger

Linda Popelish – District Archaeologist

Consuelo Zamora – District Wildlife Biologist

James Duran – District Range Conservationist

Rick Newmon – Forest Range Staff

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Darwin Vallo – Forest Law Enforcement Officer

Marsha Hagerdon – Forest Visitor Services Information Assistant

Mark Chavez – Public Affairs/Web Manager

Livia Crowley – Forest Hydrologist

Chad Hermandorfer – TEAMS Hydrologist

Federal, State, and Local Agencies

U.S.D.I. Fish and Wildlife Service

Bureau of Land Management

National Park Service

Natural Resources Conservation Service

Chapter 4 – Agencies and Persons Consulted

New Mexico Department of Game and Fish

New Mexico State Historic Preservation Office

New Mexico Department of Transportation

Cibola County Commissioners

McKinley County Commissioners

Tribes

Pueblo of Acoma

Pueblo of Laguna

Pueblo of Zuni

Pueblo of Sandia

Pueblo of Jemez

Hopi Nation

Navajo Nation

Jicarilla Apache

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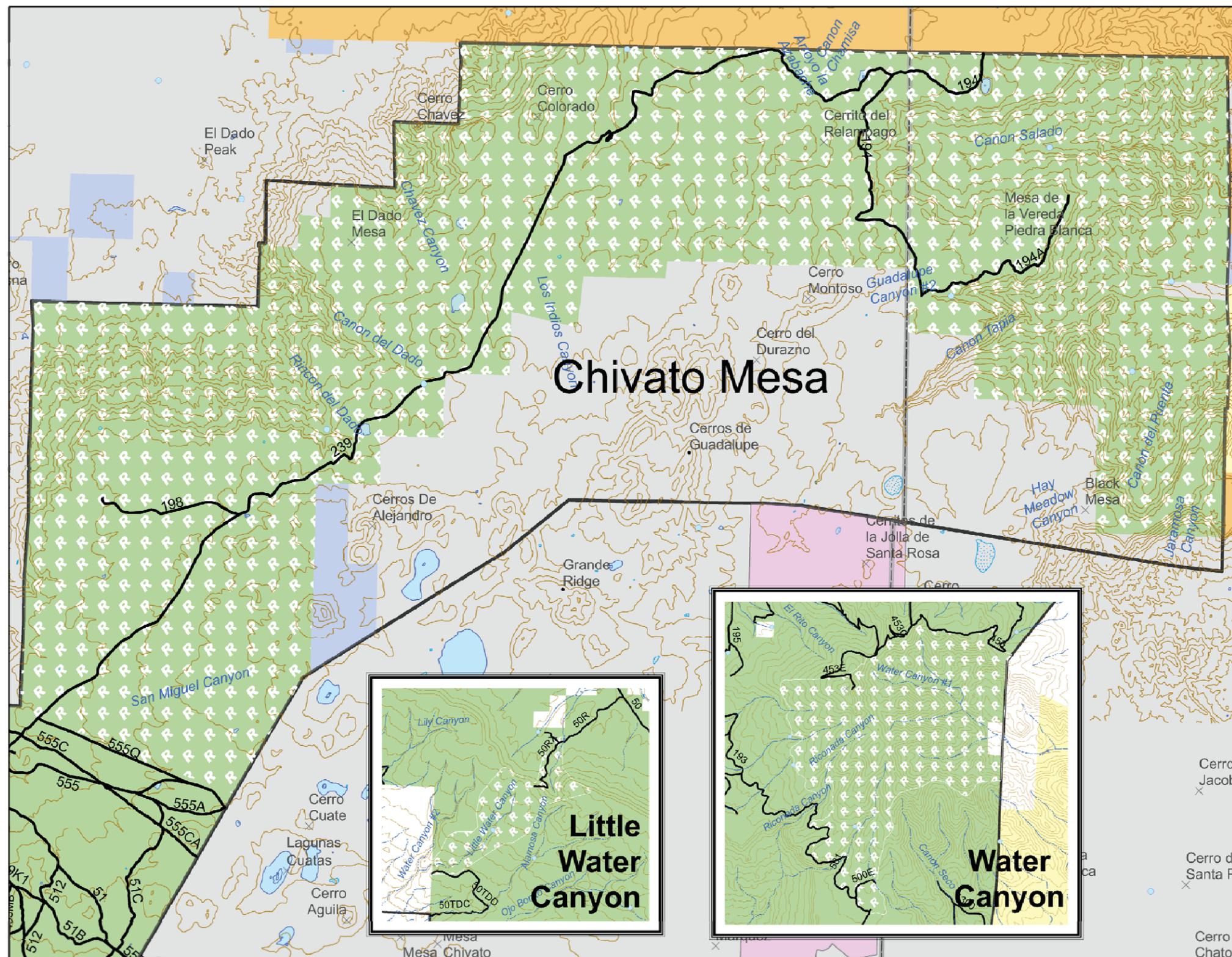
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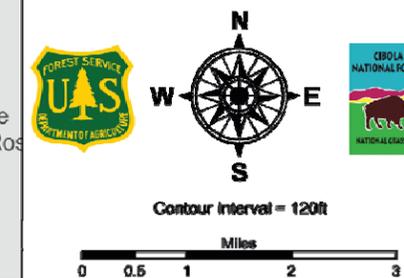
Appendix A - Maps

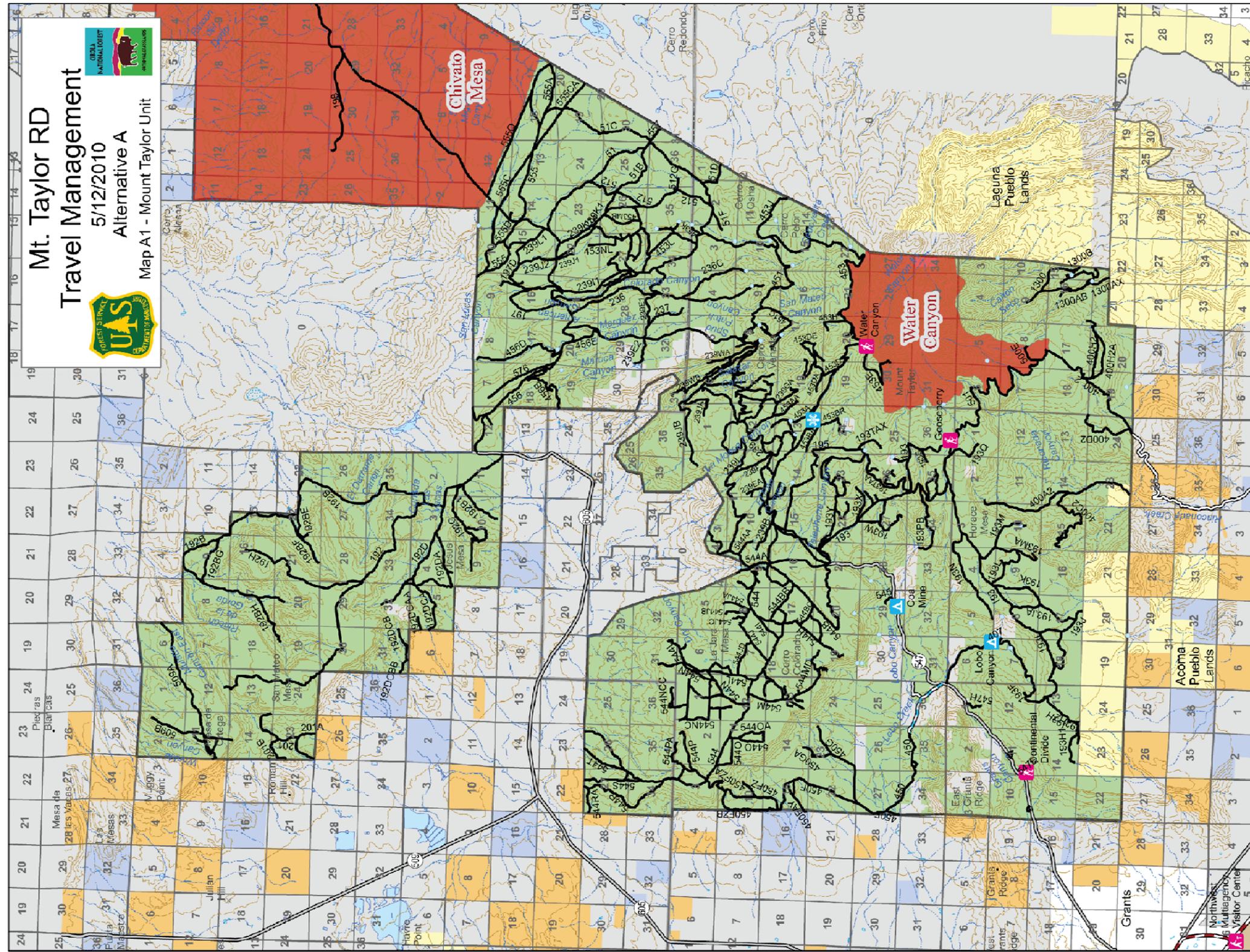


Mt. Taylor RD Travel Management 5/14/2010 Map PD1 - Areas Outside The Analysis Area

- Open System Roads
- Highways
- County and Local Public Roads
- Areas Covered by a Previous Decision
- Forest Service Lands
- BLM Lands
- State Lands
- Tribal Lands
- National Park Service Lands
- Private Lands

The Cibola National Forest uses the most current data available. Updates are performed as new information becomes available. No warranties are made regarding the accuracy of these data.

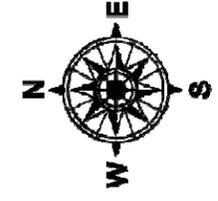




**Mt. Taylor RD
Travel Management
Alternative A
5/12/2010**

Map A1 - Mount Taylor Unit

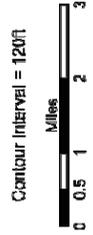
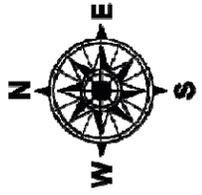
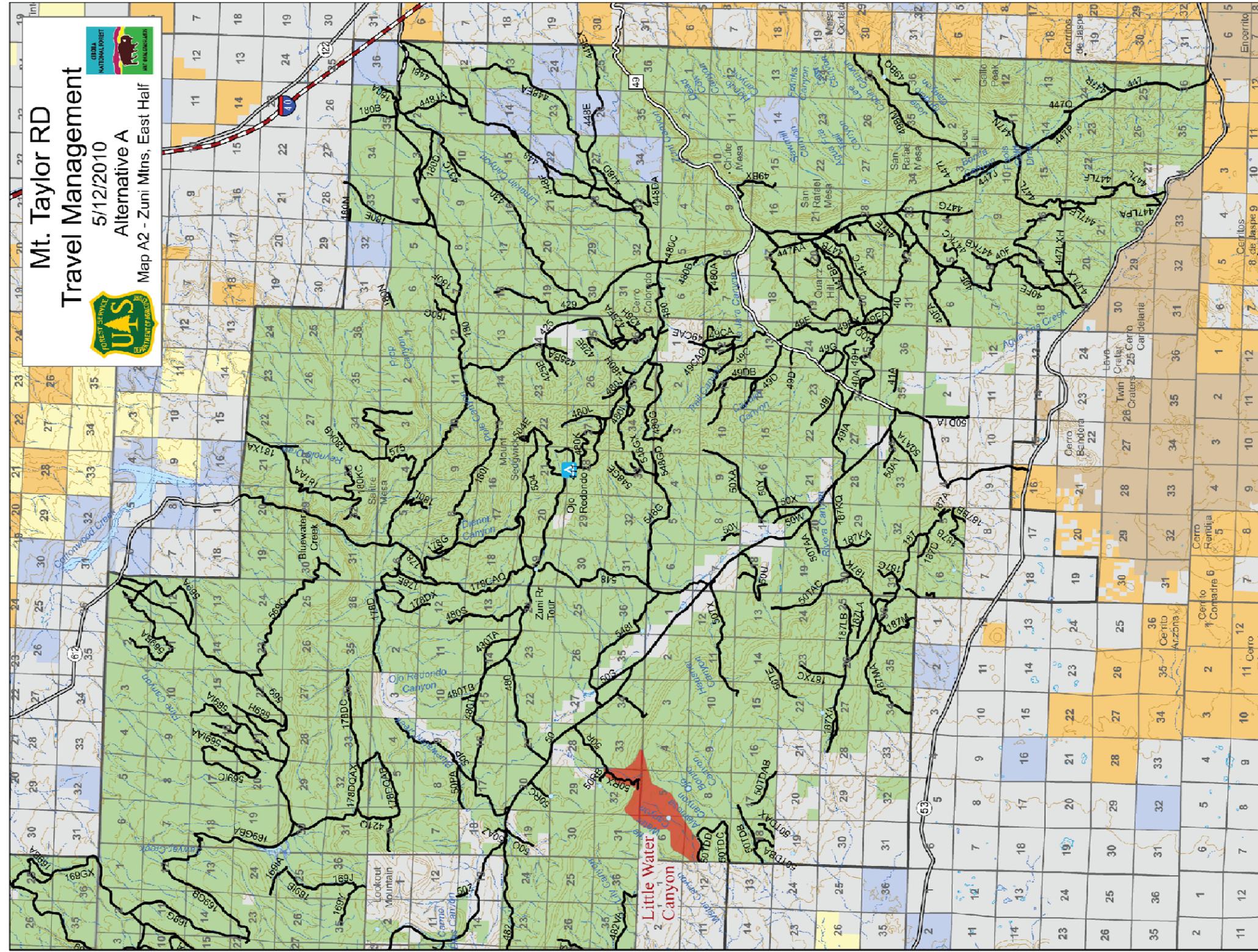




The Cibola National Forest uses the most current data available. Updates are performed as new information becomes available. No warranties are made regarding the accuracy of these data.

Refer to the Base Layer Legend sheet preceding these maps for a key to base layer map symbols.

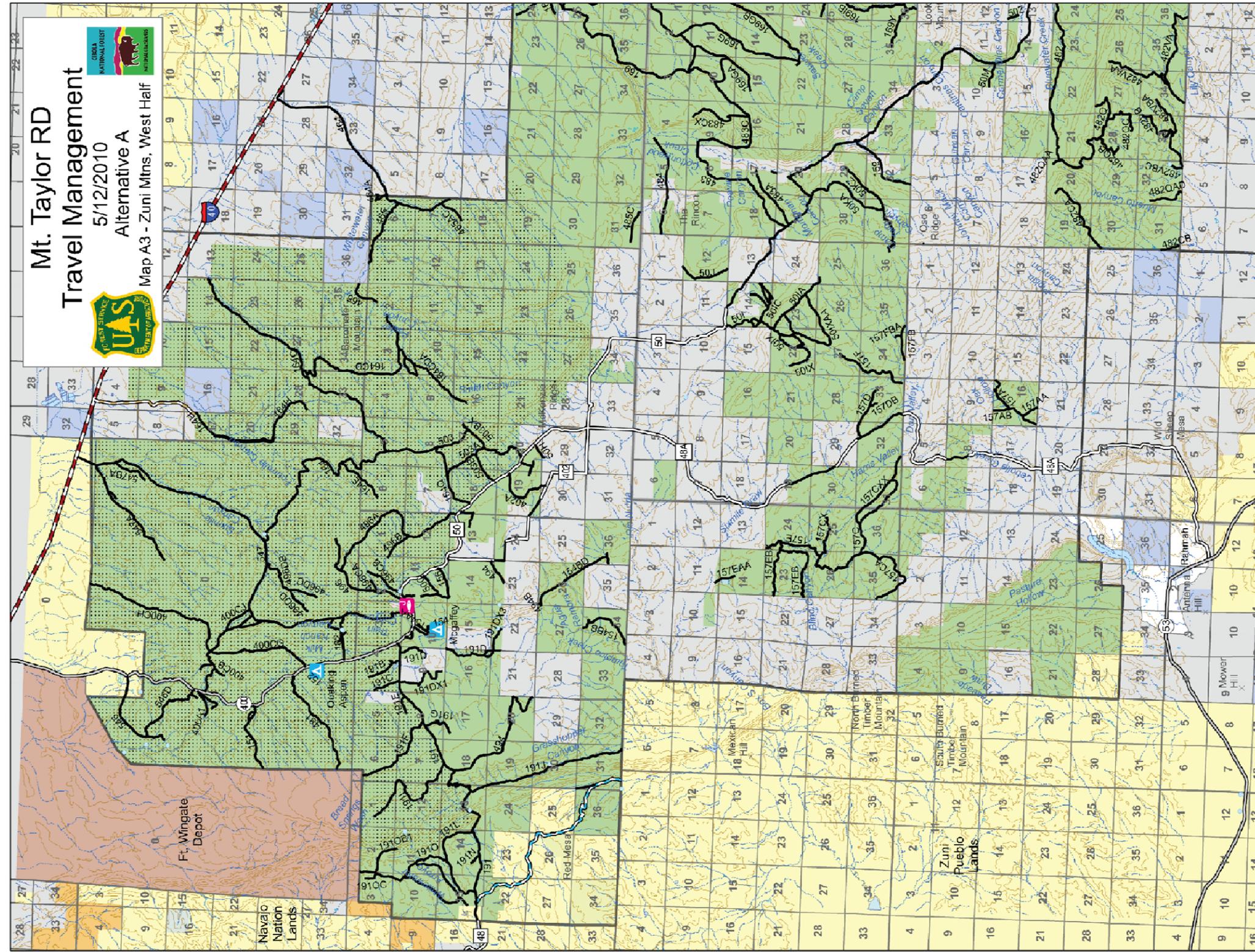
FS Transportation System
 Open System Roads
 Open to All Vehicles



The Cibola National Forest uses the most current data available. Updates are performed as new information becomes available. No warranties are made regarding the accuracy of these data.

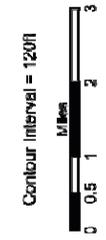
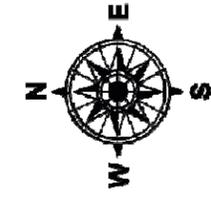
Refer to the Base Layer Legend sheet preceding these maps for a key to base layer map symbols.

FS Transportation System
 Open System Roads
 Open to All Vehicles

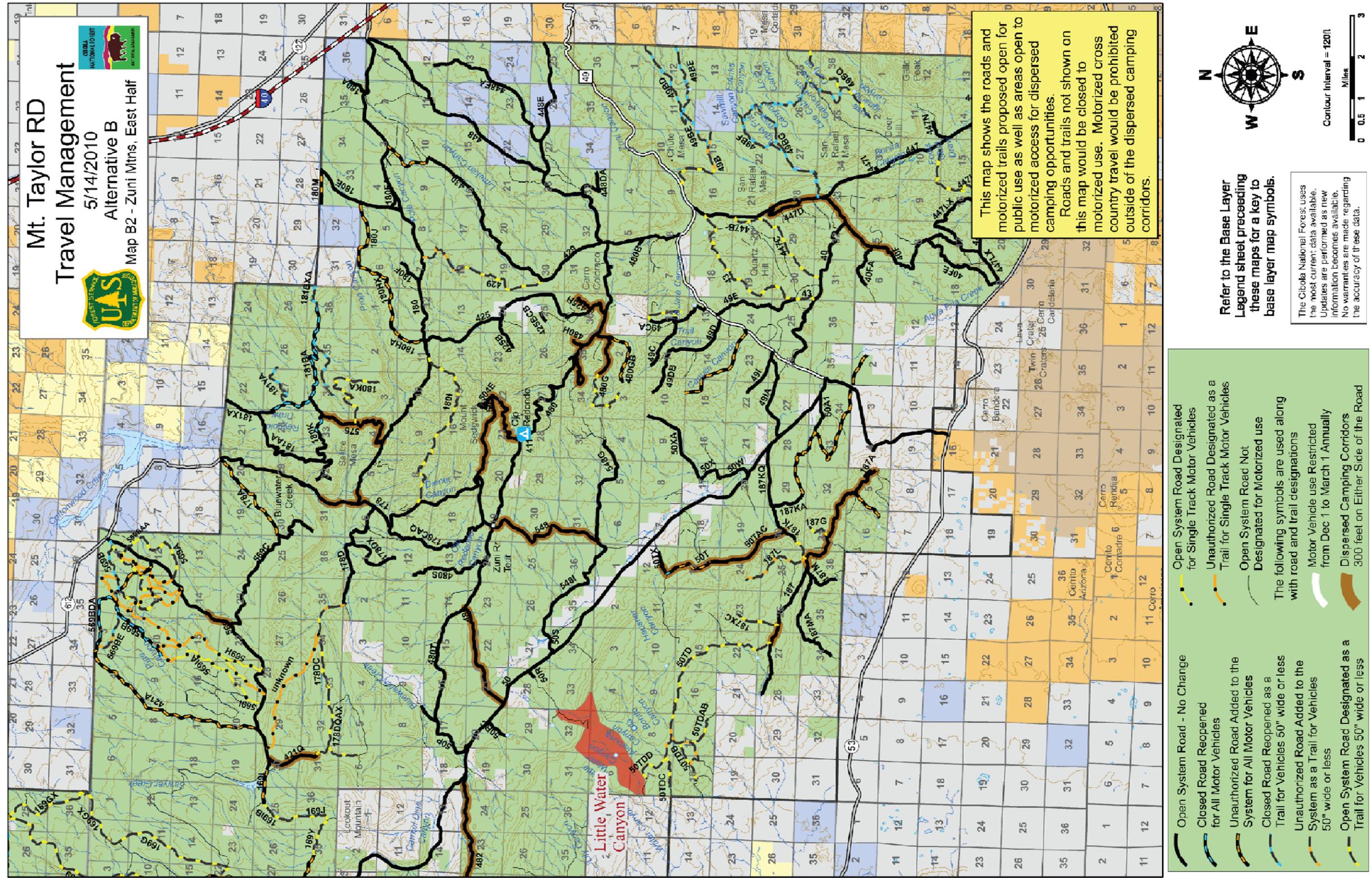


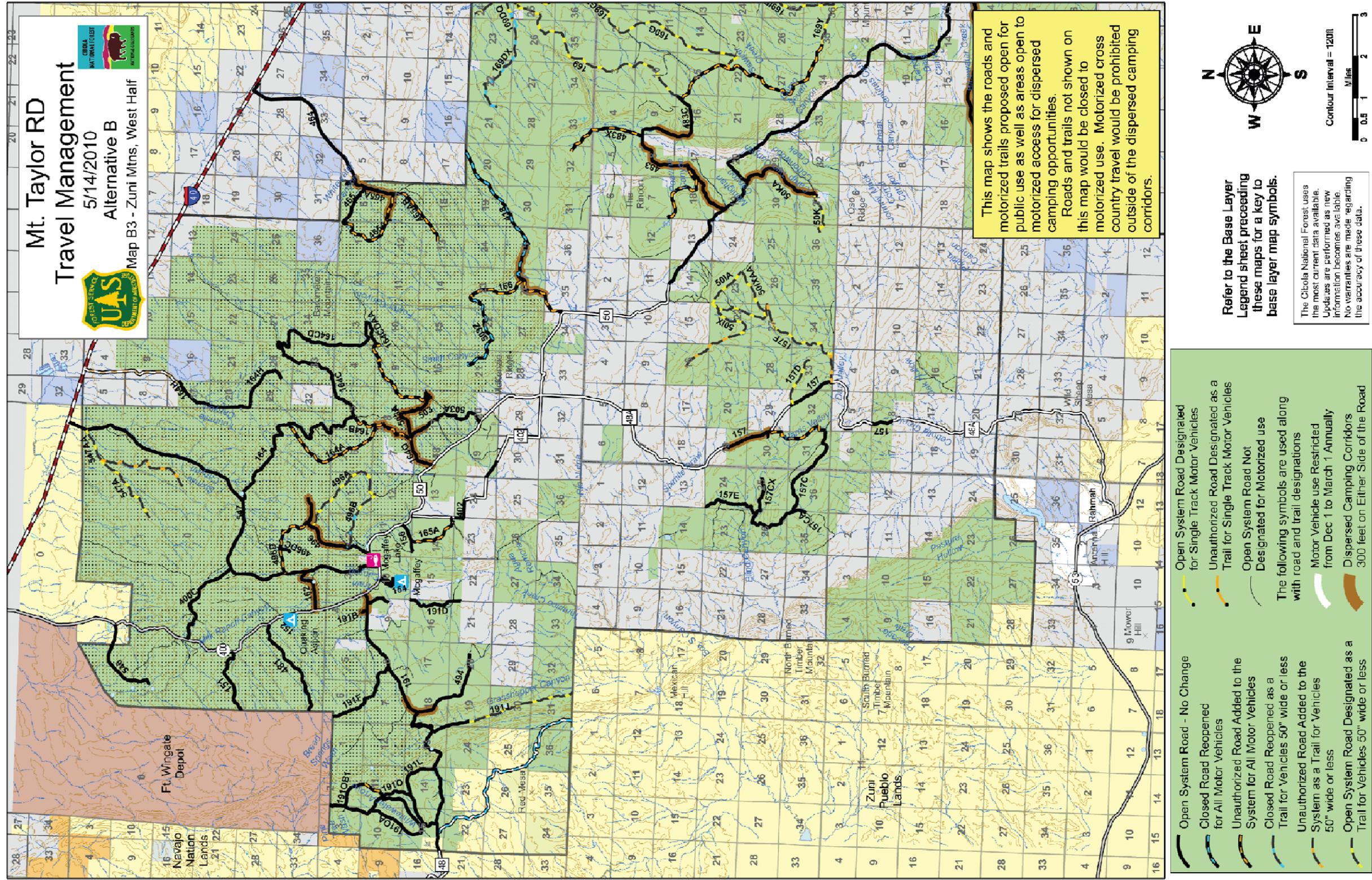
Fs Transportation System
 Open System Roads
 Open to All Vehicles

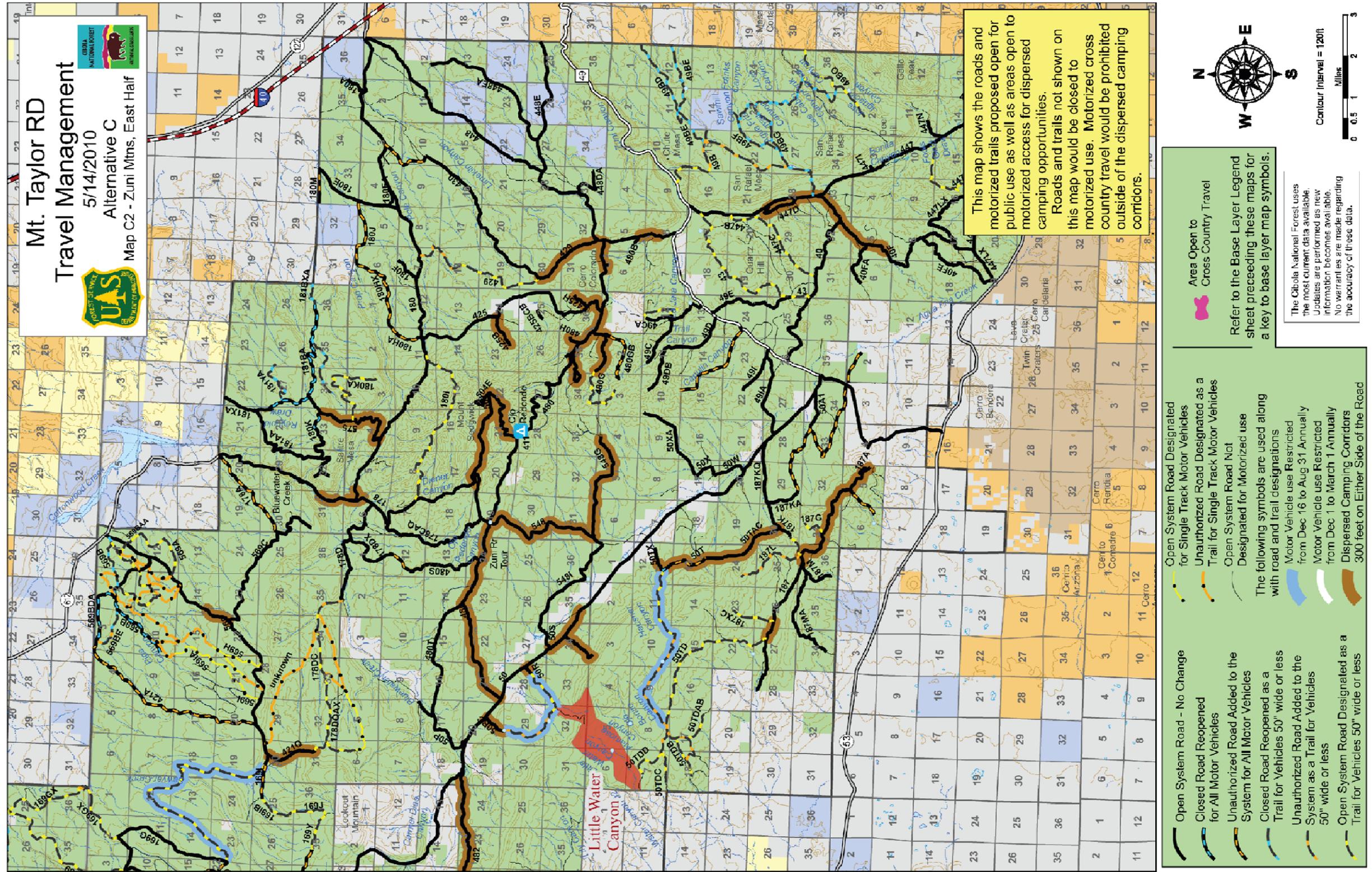
Refer to the Base Layer Legend sheet preceding these maps for a key to base layer map symbols.

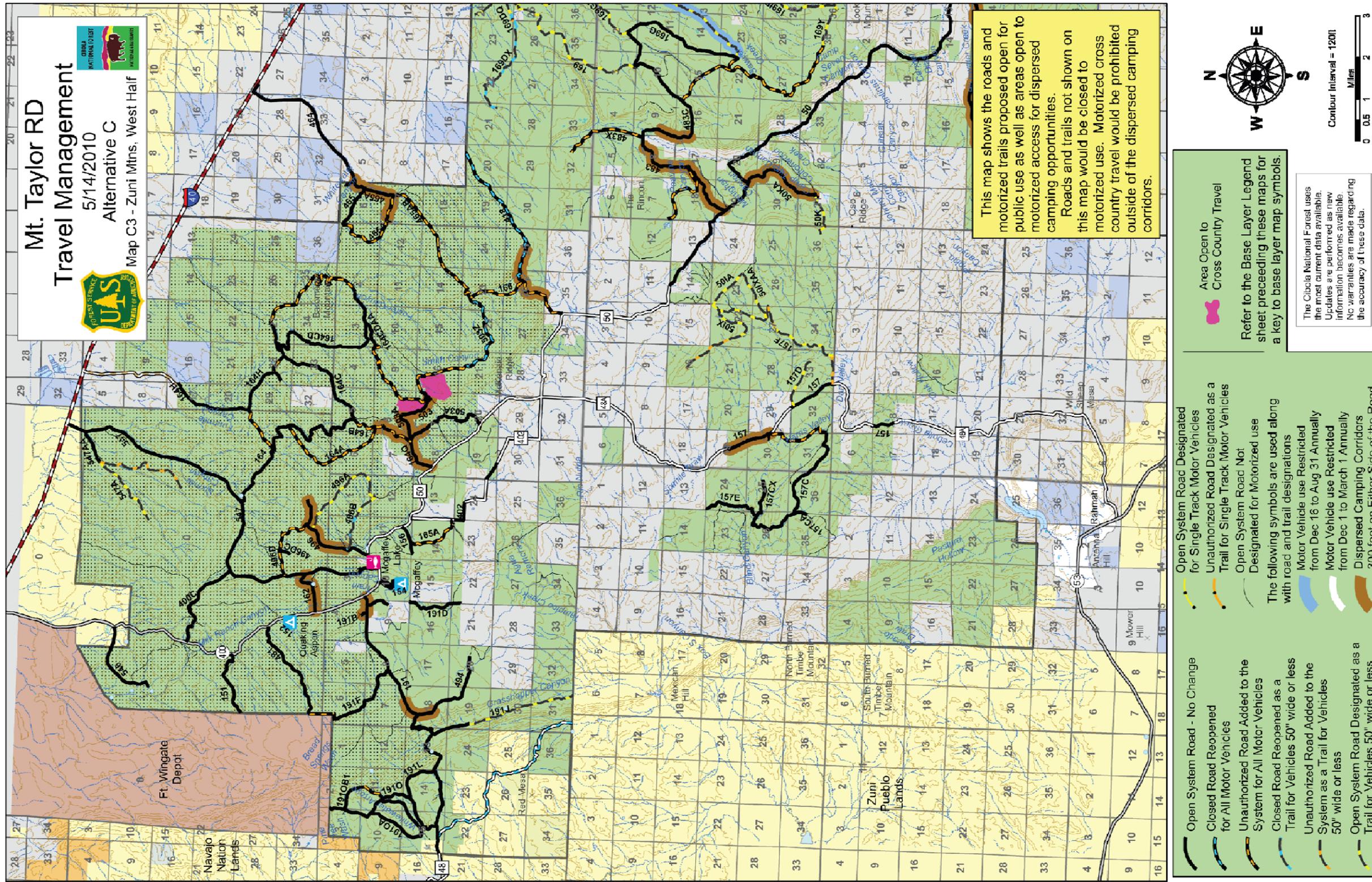


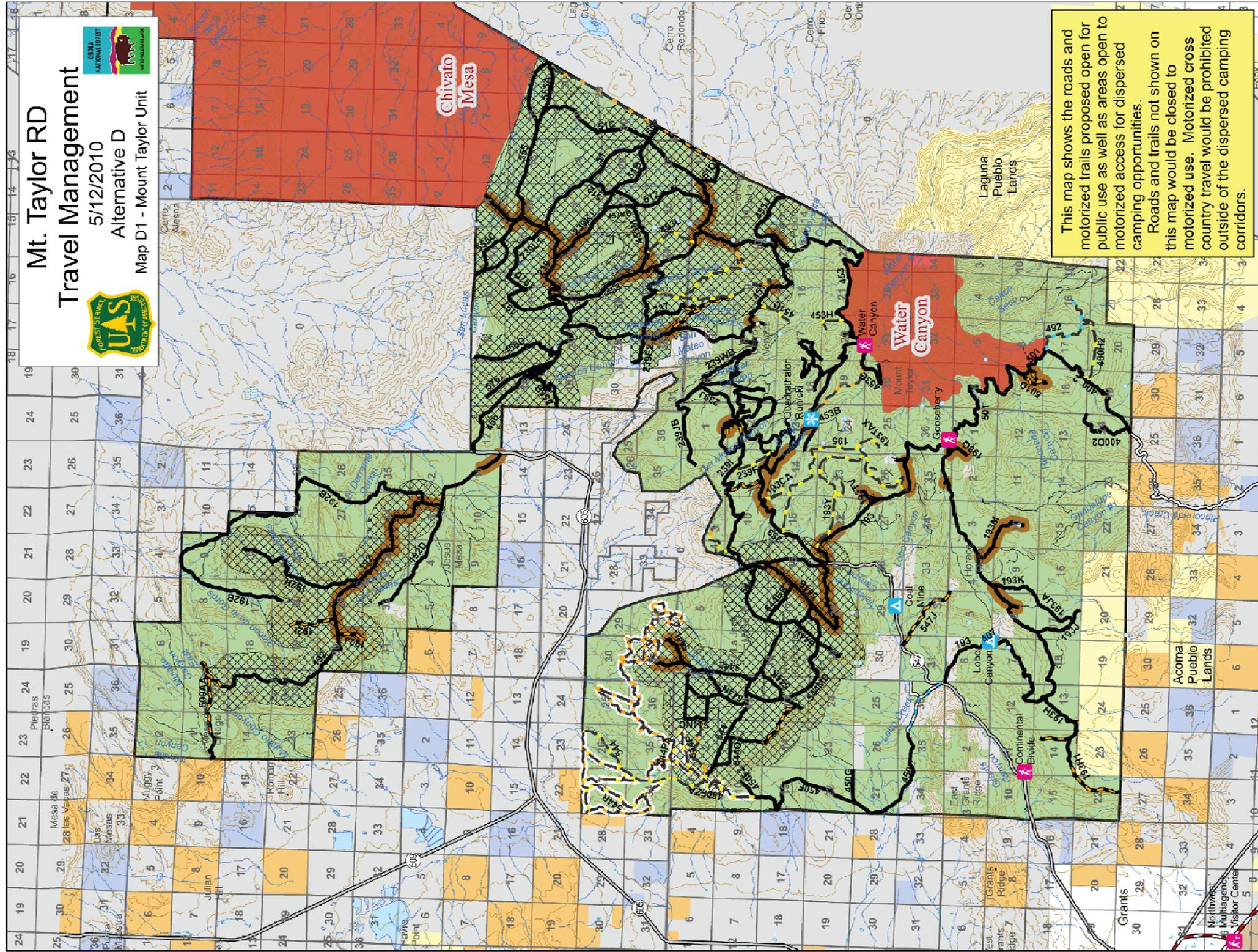
The Cibola National Forest uses the most current data available. Updates are performed as new information becomes available. No warranties are made regarding the accuracy of these data.











**Mt. Taylor RD
Travel Management**
5/12/2010
Alternative D
Map D1 - Mount Taylor Unit

U.S. FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE

CIBOLA NATIONAL FOREST

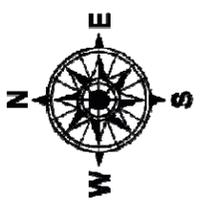
This map shows the roads and motorized trails proposed open for public use as well as areas open to motorized access for dispersed camping opportunities.
Roads and trails not shown on this map would be closed to motorized use. Motorized cross country travel would be prohibited outside of the dispersed camping corridors.

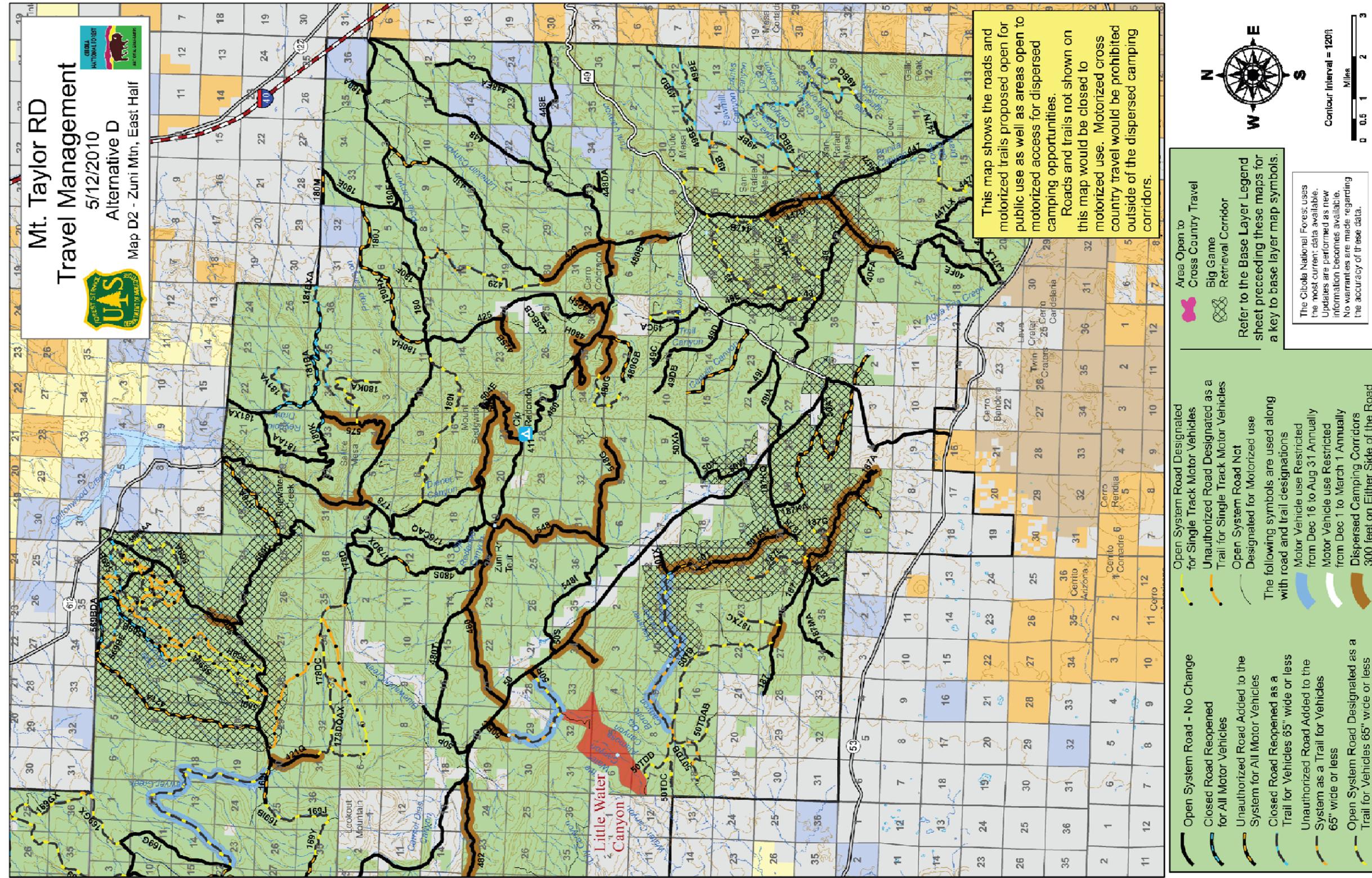
Area Open to
Cross Country Travel
Big Game
Retrieval Corridor

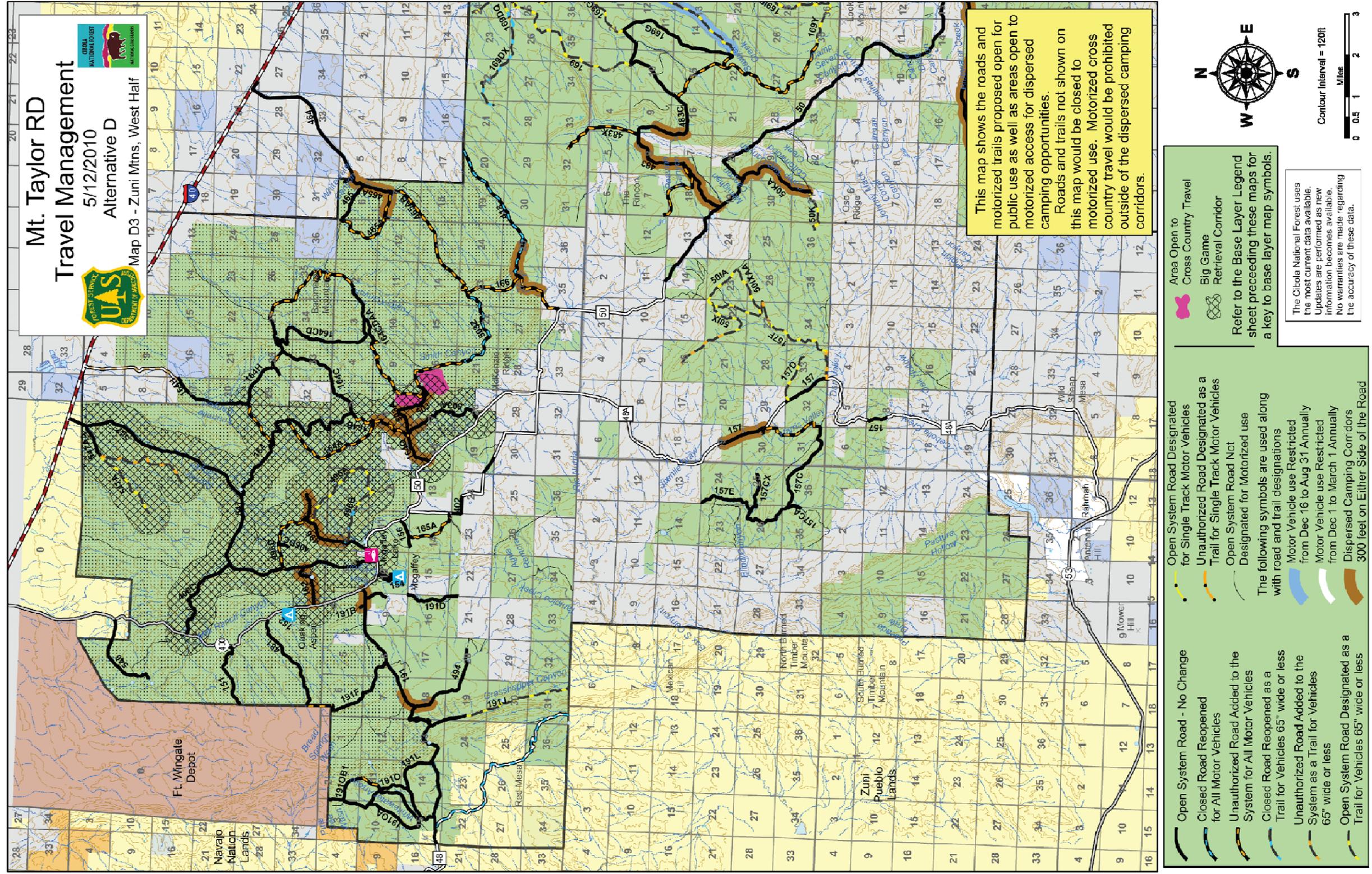
Refer to the Base Layer Legend sheet preceding these maps for a key to base layer map symbols.

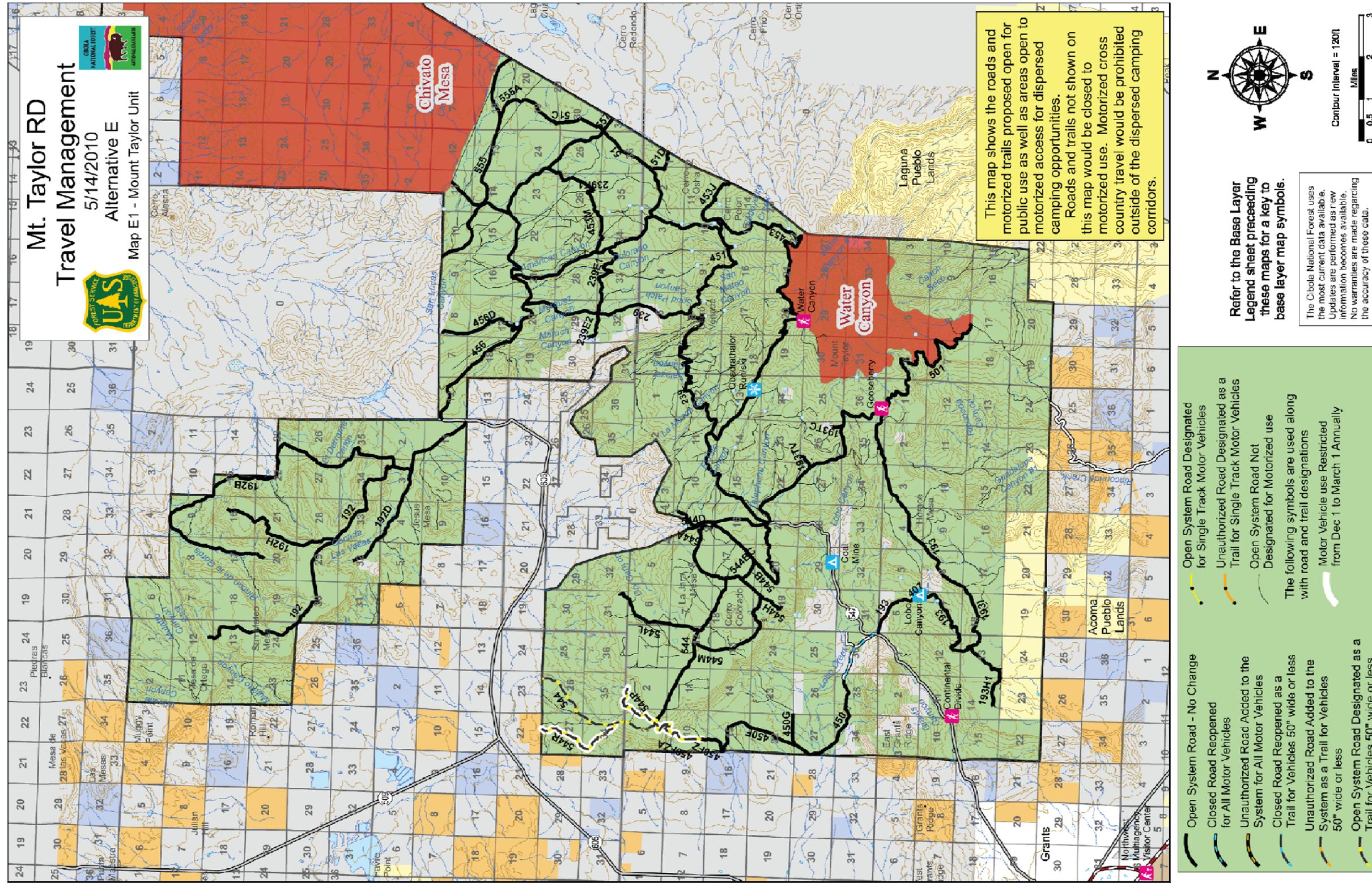
The Cibola National Forest uses the most current data available. Updates are performed as new information becomes available. No warranties are made regarding the accuracy of these data.

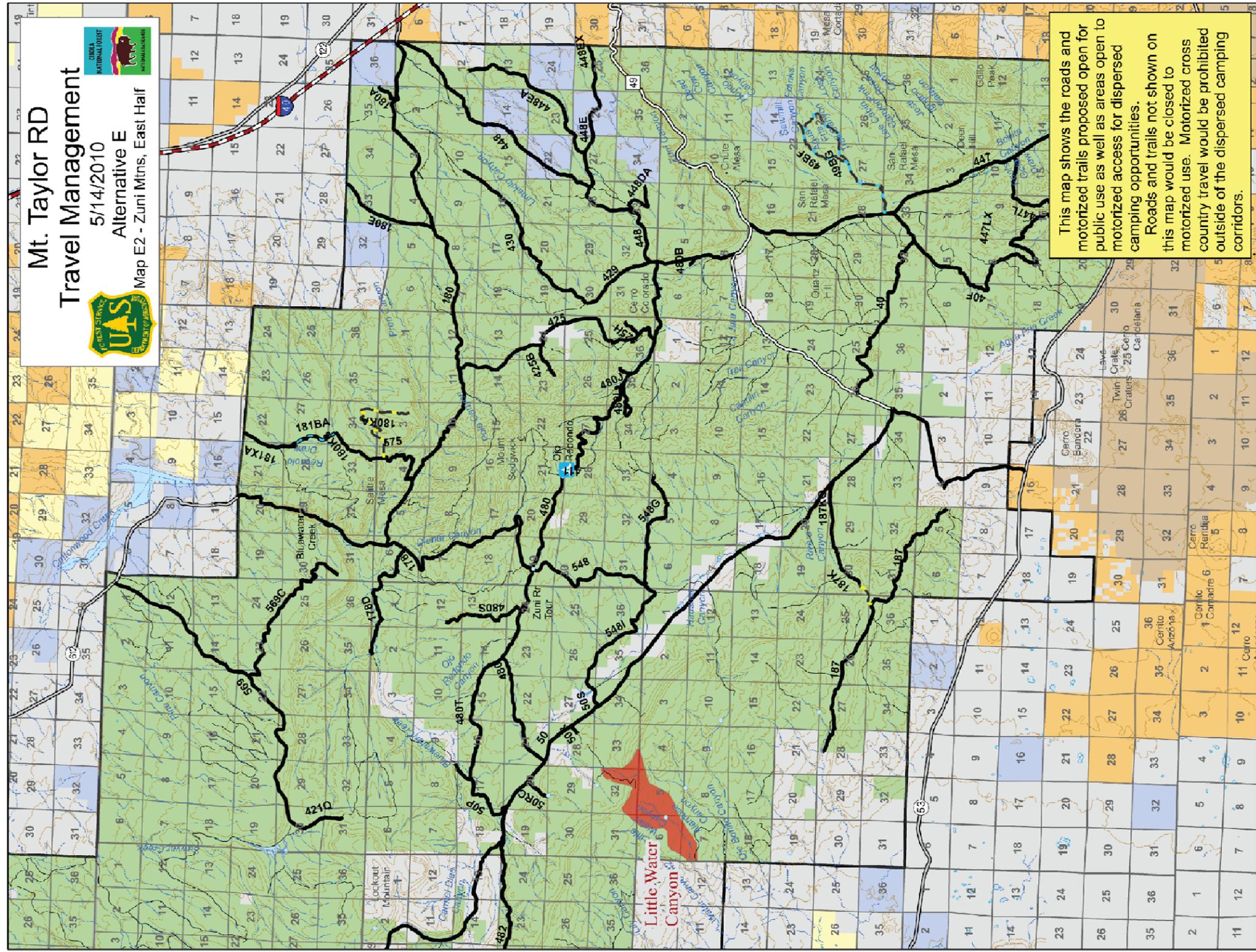
- Open System Road - No Change
- Closed Road Reopened for All Motor Vehicles
- Unauthorized Road Added to the System for All Motor Vehicles
- Closed Road Reopened as a Trail for Vehicles 65" wide or less
- Unauthorized Road Added to the System as a Trail for Vehicles 65" wide or less
- Open System Road Designated as a Trail for Vehicles 65" wide or less
- Open System Road Designated for Single Track Motor Vehicles
- Unauthorized Road Designated as a Trail for Single Track Motor Vehicles
- Open System Road Not Designated for Motorized use
- The following symbols are used along with road and trail designations
 - Motor Vehicle use Restricted from Dec 16 to Aug 31 Annually
 - Motor Vehicle use Restricted from Dec 1 to March 1 Annually
 - Dispersed Camping Corridors
 - 300 feet on Either Side of the Road









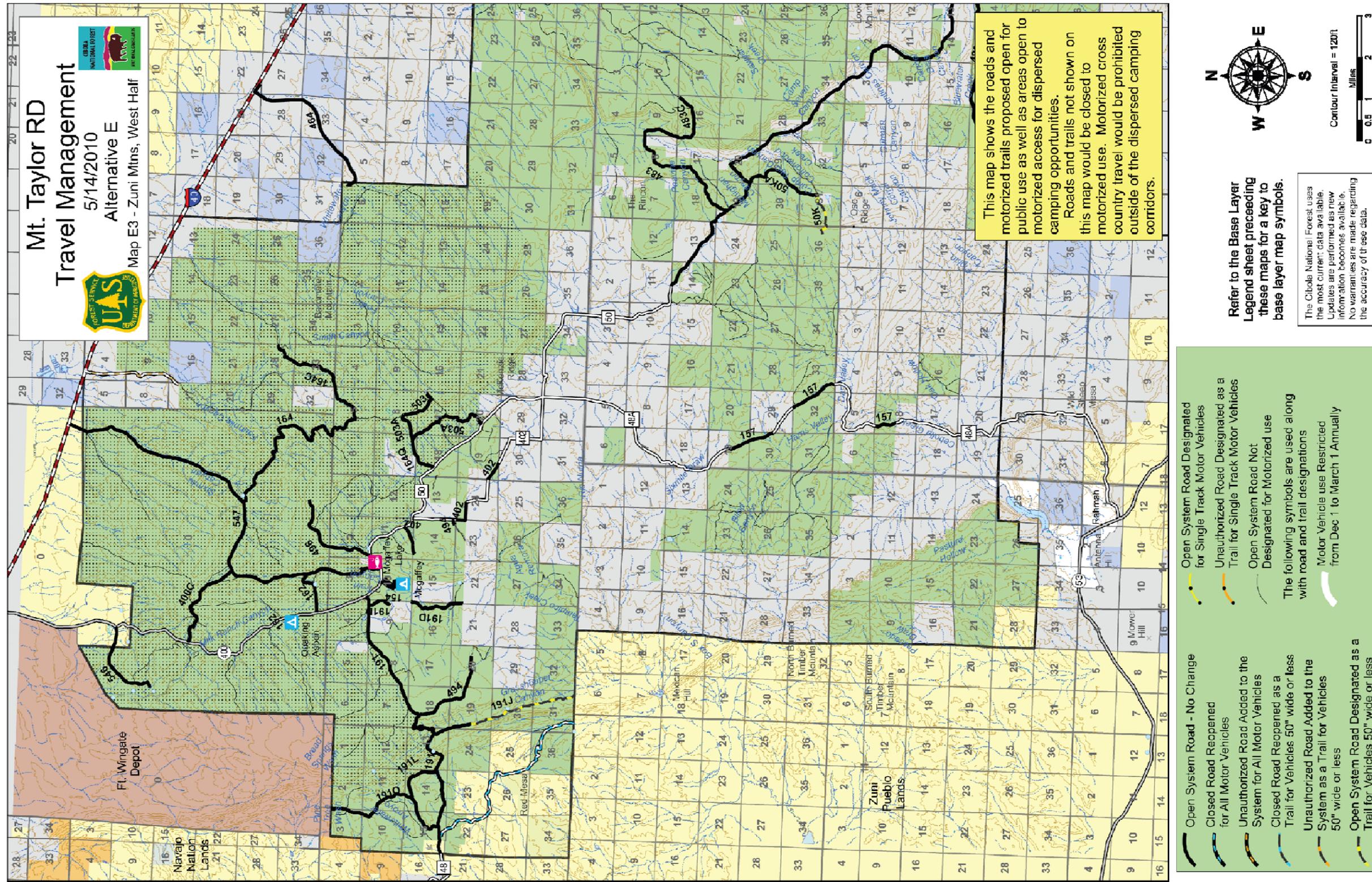


	Open System Road - No Change		Open System Road Designated for Single Track Motor Vehicles
	Closed Road Reopened for All Motor Vehicles		Unauthorized Road Designated as a Trail for Single Track Motor Vehicles
	Unauthorized Road Added to the System for All Motor Vehicles		Open System Road Not Designated for Motorized use
	Closed Road Reopened as a Trail for Vehicles 50" wide or less		The following symbols are used along with road and trail designations
	Unauthorized Road Added to the System as a Trail for Vehicles 50" wide or less		Motor Vehicle use Restricted from Dec 1 to March 1 Annually
	Open System Road Designated as a Trail for Vehicles 50" wide or less		

Refer to the Base Layer Legend sheet preceding these maps for a key to base layer map symbols.

The Cibola National Forest uses the most current data available. Updates are performed as new information becomes available. No warranties are made regarding the accuracy of these data.

Contour Interval = 120ft



Appendix B - Proposed Cibola National Forest Land and Resource Management Plan (Forest Plan) Amendment

Forest Plan Direction

The interdisciplinary team compared the proposed action to the guidance in the forest plan to determine if the actions are consistent with the forest plan. The proposed action is not consistent with some of the forest plan’s guidance for road density. The forest plan addresses road density in two places, forestwide guidance and in the transportation/travel guidance for each of the management areas that make up the district. The forestwide guidance (page 61-1 of the forest plan) provides for a maximum road density of 1.9 miles per square mile of forest land. The management area guidance on road density varies and is given for analysis areas, which are subdivisions of the management areas. The analysis area road density guidelines range from 0.1 to 1.6 miles per square mile.

Table 31 summarizes the road density guidance in the forest plan and compares that guidance to the open road density of the existing transportation system, the minimum road system, and the proposed action.

Table 31. Summary of forest plan road density guidance and comparison to the existing condition, the minimum road system, and the proposed action

Forest Plan Area	Existing Forest Plan Direction for Road Density (miles per square mile)		Existing District Transportation System Open Road Density (miles per square mile)	Minimum Road System Road Density (miles per square mile)	Proposed Action Open Road Density (miles per square mile)
Forestwide	1.90		1.48	1.32	0.85
MA-8	Analysis Area - 7, 8	1.3			
	Analysis Area - 9	0.9			
MA-9	Analysis Area - 11	1.6			
	Analysis Area - 12	0.3			
MA-10	Analysis Area - 13	0.5			
MA-13	Analysis Area - 18	0.14			
MA-14	Analysis Area - 19, 20	0.5			
	Analysis Area - 21	1.3			
	Analysis Area - 22	0.3			
MA-18	Analysis Area - 10	0.8			

The forest plan contains a map of the management areas but only describes analysis areas and does not map them. Many of the analysis areas were defined according to the seral stage¹¹ of the vegetation type or range condition. Analysis areas based on vegetation structure change over time and shift across the landscape; shifts are caused by management activities and natural disturbances. Road locations generally do not change over time. Because the exact location of the analysis area boundaries is unclear and the conditions used to define them have changed, it is no longer meaningful to define road densities by analysis area. Because analysis areas cannot be mapped consistently over time, there is no way to determine if the proposed action road network exceeds the forest plan guidance. There is, therefore, a need to amend the road density guidance in the forest plan. We propose to eliminate road density guidance for each management area and use amended forestwide guidance as described in table 32.

Since the 1985 plan permits motorized cross-country travel across 444,148 acres on the district, and does not incorporate the MVUM as the enforcement tool for motorized travel designation, there is a need to amend the forest plan to implement the MVUM provisions of the Travel Management Rule for the district.

To provide for consistency between the forest plan and the Travel Management Rule, we propose deleting or changing standards/guidelines listed below, which refer to off-highway vehicle (OHV) area closures and restrictions, signing of closed areas (no longer appropriate), or specific acreages of OHV closed areas (no longer necessary as all areas outside the designated system would be closed). This amendment would be specific to the district.

Table 32. Forest plan language change proposal

Management Area and/or Page	Current Forest Plan Direction	Change to Forest Plan Direction
Pg. 61-1	I Water, (1) Quality, (a) Maximum road density of 1.9 miles of road per square mile.	Text added – Open system road densities will increase temporarily to 2 to 3 miles per square mile in active vegetation management areas.
Pg. 76	Update the Transportation Information System annually.	Text added – Motor vehicle use off the designated system of roads, trails, and areas is prohibited, except as identified on the motor vehicle use map (MVUM).
Pg. 120	Restrict ORV use on 565 acres of the Zuni Mountains where State Habitat Protection Act and ORV restriction is in effect from December 15 through March 31 (Order 03-32, Fort Wingate Road and Off-Road Motor vehicle Restriction dated January 13, 1983). Maintain 1,198 acres closed to ORV use: 316 acres closed to protect sensitive soils and 882 acres potential RNA (Little Water Canyon). Expand the off-road vehicle closure along Bluewater Creek to include an additional	Text deleted – OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.

¹¹ Seral stage is a temporal and intermediate state in the process of succession. Succession is the gradual replacement of one community of plants by another in a given area over time.

Appendix B – Proposed Cibola National Forest Land and Resource Management Plan (Forest Plan) Amendment

Management Area and/or Page	Current Forest Plan Direction	Change to Forest Plan Direction
	110 acres between the bridge on NFSR 178 and Andrews Cabin.	
Pg. 128	Maintain 1,684 acres closed to ORV use to protect sensitive soils.	Text deleted – OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 135	Maintain 757 acres closed to ORV use to protect sensitive soils.	Text deleted – OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 159	Maintain 5,495 acres on the district closed to ORV use to protect sensitive soils.	Text deleted – OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 167	Evaluate and, if warranted, maintain 11,976 acres closed to ORV use. Restrict ORV use in that portion of Zuni Mountains where State Habitation Protection Act and ORV restriction is in effect from December 15 through March 31 (Order 03- 32, Fort Wingate Road and Off-Road Motor Vehicle Restriction dated January 13, 1983. Manage 28 acres closed to ORV as part of potential RNA (Little Water Canyon).	Text deleted – OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
Pg. 196	Maintain 100 acres closed to ORV use as part of potential RNA (Bluewater Creek).	Text deleted – OHV area closures and restrictions, signing of closed areas, or specific acreages of OHV closed areas are no longer necessary as motorized use off of the designated system will be prohibited.
8 (pg. 125)	Manage the following average road densities: 1.30 miles of road average road density (Applicable Analysis Areas 7 and 8) 0.90 miles of road average road density (Applicable Analysis Area 9) Road densities will increase temporarily to 2 to 3 miles per square mile in active timber harvest areas.	Text deleted – Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
9 (pg. 132)	Manage the average road densities indicated below: 1.60 miles of road per square mile (Applicable Analysis Area 11) 0.30 miles of road per square mile (Applicable Analysis Area 12)	Text deleted – Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.

Appendix B – Proposed Cibola National Forest Land and Resource Management Plan (Forest Plan) Amendment

Management Area and/or Page	Current Forest Plan Direction	Change to Forest Plan Direction
	Road density will increase temporarily to 2 to 3 miles per square mile in active timber harvest areas.	
10 (pg. 139)	Manage an average road density of 0.50 mile of road per square mile. Road density in active timber harvest areas will be temporarily increased to 2 to 3 miles per square mile. (Applicable Analysis Area 13)	Text deleted – Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
13 (pg. 161)	Manage an average road density of 0.14 miles of road per square mile. (Applicable Analysis Area 18)	Text deleted – Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
14 (pg. 173)	Manage the road system for an average road densities indicated below: 0.50 mile of road per square mile (Applicable Analysis Areas 19 and 20) 1.30 miles of road per square mile (Applicable Analysis Area 21) 0.30 mile of road per square mile (Applicable Analysis Area 22)	Text deleted – Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.
18 (pg. 198)	Manage an average road density of 0.80 mile of road per square mile. (Applicable Analysis Area 10)	Text deleted – Current road density threshold by analysis areas allowed under the forest plan is no longer meaningful because the exact location of analysis area boundaries is unclear and the conditions used to define them have changed.

Appendix C - Road Maintenance Level Definitions

Maintenance Level 1

Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level.

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are generally closed to vehicular traffic but may be available and suitable as motorized trails or for non-motorized uses.

Maintenance Level 2

Assigned to roads open for use by high-clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level.

Maintenance Level 3

Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material.

Maintenance Level 4

Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.

Maintenance Level 5

There are no ML 5 roads in the analysis area.

Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated.

Appendix D - Past, Present, and Reasonable Foreseeable Future Actions

Past Actions

Project	Implementation Date	Proponent/Project Information
Forest Plan Closure	5/1985	Wilson/Reidy
La Jara Fire	5/1999	Pacheco
Checkerboard TMP	6/2000	Wilson
Garley Fire	5/2006	Pacheco
Sedgwick Fire	6/2006	Pacheco
Bluewater Upland Meadow Restoration	6/2007	Wyant
Salazar Rx Burn	6/2007	Pacheco/Wyant
CDT	3/2008	Wilson
CDE Coop Electric Line	9/2008	Hall
Pole Canyon Allotment	9/2008	Duran
Wildlife Conservation Association – Road Easement	10/2008	Hall
Universal Telephone Company of SW	11/2008	Hall
City of Gallup Electric Utility Line	12/2008	Hall
Hollie Nielson Water Conveyance	12/2008	Hall
Oso Ridge Corporation Road Easement	1/2009	Hall
Rio Grande Resources Corp. – Water Line	2/2009	Hall
Mt. Taylor Quad Permit	2/2009	Wilson
Little Bear Spring Drinker	5/2009	Duran
Les Gaines Water Line	5/2009	Hall
Southern Cross Land Acquisition	10/2009	Byers
Bluewater PJ Push Maintenance	5/2010	Wyant
BW WUI PJ Thinning	5/2010	Wyant

Present Actions

Project	Implementation Date	Proponent/Project Information
San Mateo Mesa PJ Patch Cutting	10/2009 - In Progress	Wyant
Monighan – Northeast	11/2009 - In Progress	Wyant
Sky Mountain Ranch Subdivision	5/2006 - In Progress	Reidy

Future Actions

Project	Decision or Implementation Date	Proponent/Project Information
Redondo – Office	8/2010	Wyant
Rinconada Communication Site	8/2010	Hall
Monighan – South	9/2010	Wyant
Forest Road 191D Subdivision Access Road	10/2010	Hall/Zamora
Laramide Resources Mine	11/2010	Tofoya
Redondo – Diener	2011	Wyant
Agua Media-Copperton RX Burn	2011	Pacheco
Salitre Mesa Allotment	2011	Range
Roca Honda LLC – Exploration	2011	Tofoya
Uranium Energy Corporation – Exploration	2011	Tofoya
Urex Resouces – Exploration	2011	Tofoya
Western Energy – Exploration	2011	Tofoya
Redondo White Pine Forest Health Thinning	2012	Wyant
Spruce Beetle Sanitation	2012	Wyant
Monighan – Peavine	2012	Wyant
Aspen Restoration	2012	Wyant
Agua Media – Sawyer	2012	Wyant
Redondo – Redondo Canyon	2013	Wyant
Monighan – Northwest	2013	Wyant