

Appendix E
Transportation Analysis

ROADS ANALYSIS REPORT

(MAINTENANCE LEVEL 1 AND 2 & UNCLASSIFIED ROADS)

MANAGEMENT AREA 4.1-2

COMPARTMENTS 280-288 AND 300

ENCOMPASSING THE

NE CORNER PROJECT AREA

MAY 2003

The analysis area is approximately bounded as follows:

The Missouri Department of Conservation (MDC) State Conservation Areas (Rocky Creek and Peck Ranch) lie to the north and east, respectively. A line drawn from the Fremont Tower map location to the southwest corner of the MDC Peck Ranch approximately completes the eastern limits of this analysis. State Highway 19 north out of Winona, Missouri completes the bounds of this roads analysis area. U.S. 60 is the south boundary with some minor adjustments (See maps). There are some minor deviations from the stated boundaries above to fully consider the drainage components analyzed. See the NE Corner Roads Analysis map for specific analysis area location.

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Background

On January 12, 2001, the National Forest System Road Management rule was published in the Federal Register. The adoption of the final rule revised the regulations concerning the management, use and maintenance of the National Forest Transportation System.

The purpose of roads analysis is to ensure the forest transportation system:

- Provides safe access and meets the needs of communities and forest users;
- Facilitates the implementation of the Land and Resource Management Plan (LRMP);

- Allows for economical and efficient management within likely budget levels;
- Meets current and future resource management objectives;
- Begins to reverse adverse ecological impacts, to the extent practicable.

This document follows the roads analysis process outlined in the document “ROADS ANALYSIS: INFORMING DECISIONS ABOUT MANAGING THE NATIONAL FOREST TRANSPORTATION SYSTEM (USFS, 1999A). This analysis provides a framework to identify roads related concerns and management opportunities that can be incorporated into subsequent projects being evaluated through the NEPA process.

Scope

The NE Corner Roads Analysis area is approximately 9,530 acres in size and focuses on a sub-watershed that lies between State Highway 19 to the west, Peck Ranch State Conservation Area to the east, U.S. Highway 60 to the south, and the Rocky Creek State Conservation Area to the north. This area lies either side of Sycamore Creek. Sycamore Creek flows from the northwest corner to the south-central portion of the area where it intersects with Pike Creek. Pike Creek flows through the most southern portion of the area, entering in the southwest corner and exiting in the southeast corner. Pike and Sycamore Creek are part of the Current River watershed. The NE Corner Project is spread across 7,406 acres on the eastern 2/3 of the roads analysis area. Within this sub-watershed, the line officer has directed the interdisciplinary team to assess Level 1 and 2 roads (system and non-system [unclassified]) for the NE Corner Projects area (Compartments 280, 281, 282, 283, 284, 2185, 286, 287). The remainder of this sub-watershed (Compartments 288 and 300) will also be included..

Tiering to the January 2003 Road Analysis Report (RAP) Mark Twain National Forest – Maintenance Level 3 and 4 Roads

In May 2002, the Mark Twain National Forest (MTNF) contracted with Meramec Regional Planning Commission (MRPC) in St. James, MO, to develop a Roads Analysis Report for maintenance level 3 and 4 roads in the Mark Twain National Forest. Maintenance level 1 and 2 roads within site specific projects may be informed by a mid-level or project level roads analysis. While MRPC developed and coordinated the report, MTNF staff assisted and provided key information in their particular areas of expertise.

The analysis area varied, depending upon the issues being addressed. For evaluating the role of the Forest Service road system, the areas within the District's congressionally designated boundaries were used. For evaluating the social effects and management of the road system, the 29 counties encompassing the Ranger Districts were used

To better gauge public opinion on social and economic issues as they relate to the National Forest, MRPC conducted a survey of county commissions in all 29 counties covered by the MTNF. A survey instrument was developed in cooperation with Forest Service personnel. A test survey was conducted, adjustments were made as needed, and the remaining 28 surveys were conducted, with the assistance of Meramec Regional Planning Commission, Mid-Missouri Regional Planning Commission, South Central Ozark Council of Governments, Southeast Missouri Regional Planning and Economic Development Commission, Southwest Missouri Council of Governments and Lake of the Ozarks Council of Local Governments.

Because of budget limitations, this report was developed using existing information, primarily the Forest GIS information, with the expectations of new information provided by the survey of county commissions.

The NE Corner Roads Analysis Report tiers to and incorporates analysis, as appropriate, from the January 2003 Road Analysis Report (RAP) for the Mark Twain National Forest referencing Maintenance Level 3 and 4 Roads. The NE Corner RAP considers Maintenance Level 1 and 2 Roads within the analysis area specified under **SCOPE** (p. 3) and will be addressed separately.

Objectives

The main objectives of this roads analysis are:

1. Identify the need for changes by comparing the current road system to any proposed need to add/subtract from that identified and designated system of roads;
2. Balance the need for access with the need to minimize risks by examining important ecological, social and economic issues related to roads;
3. Furnish maps, tables, and narratives that display and describe transportation management opportunities and strategies that will better address future access needs, budgets, and environmental concerns.

Existing Road System

State Highway 19 (in Shannon County) lies to the west of the analysis area. Federal (U.S.) Highway 60 is to the south of the analysis area.. Within the analysis area boundaries are secondary state highways H and W, and Shannon county, Forest Service, and private roads. These federal, county, and Forest Service system roads provide primary access to the perimeter and interior of the analysis area. A list of National Forest System (classified) roads can be found in Table 1, page 6.

Private land dominates the southern half of the analysis area and represented in major acreages along main through routes (federal, county, and Forest Service roads).

Desired Road System Conditions

The majority of road system needed for management and public access is in place. Primary (arterial and collector) roads are in place and provide the backbone of the area's transportation system. Secondary (local) roads will be constructed or reconstructed to the lowest standard necessary for the intended use. Secondary (local) roads that serve resources are retained and managed for dispersed recreation and forest management activities. National Forest System roads receive periodic maintenance (such as additional surface material, surface blading, improving drainage features, removing brush from rights-of-way, and maintaining culverts). Existing miles of road will be reduced as non-system or unneeded roads are closed and returned to forest production. Adding or removing roads from the transportation system must be analyzed. Adding or removing a National Forest System road would require amendment to the Mark Twain Forest Plan.

Key Issues

The key issues related to road construction, reconstruction, relocation, closure and decommissioning, and other management actions are:

1. The elimination (closure and decommissioning) of roads in an area can lead to an area classification of unroaded or roadless. This may lead to a designation of wilderness. Because wilderness provides no traditional commercial uses, the area's residents may lose employment opportunities and suffer adverse economic effects.
2. Road closures discriminate against those people with disabilities that depend on motorized transportation to access the forest for recreation and spiritual renewal.
3. The construction and reconstruction of roads results in a short-term degradation of water quality due to sediment production and reduces the viability of wildlife species that depend on intact interior forest habitat.
4. The density of roads creates conflicts between users, especially between hunters during deer season and during turkey seasons that result in confrontations and unsafe discharge of firearms due to the proximity of other, yet unseen, hunters.
5. The increased illegal access and impacts from all-terrain (ATVs) vehicles on non-system roads resulting in increased soil disturbance, erosion, wildlife disturbance, and damaged or destroyed riparian areas.

Summary and Recommendations

Based on the **Existing Road Matrix**, analysis questions and answers, existing and desired conditions, and key issues, the analysis team recommends the list of road management actions and priorities below for the maintenance level 1 & 2 roads and unclassified roads. Please note that FR3152 (Sisco) is a Maintenance Level 3 road. Recommendations should be reviewed prior to implementation.

Table 1 - Forest Classified Road Recommendations - Existing Roads In the NE Corner Analysis Area, as defined (See Maps)

| Road Number | Road Name | Length (miles) | Surface Type | Functional Class | Maintenance Level | Improvement Needed | Limit Access | Close | Convert Use | Remarks |
|-------------|--------------------|----------------|-------------------------------------|------------------|-------------------|---|--------------|-------|-------------|---|
| 3159 | Winona Admin. Site | 0.3 | Asphalt | Local | 4 | Maintain | | | | Addressed in Forest-wide RAP |
| 3167 | Low Wassie | 4.6 | Aggregate | Collector | 3 | Maintain | | | | Addressed in Forest-wide RAP |
| 3167B | Unknown | 1.2 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |
| 3167C | Unknown | 1.2 | Native | Local | 2 | Relocate/reconstruct. | | | | Part of road is in drainage, improve for resource improvement |
| 4099 | Tucker Road | 0.9 | 0.0-0.4 Aggregate 0.4-0.9 Native | Local | 2 | 0.0-0.4 Maintain 0.4-0.9 Reconstruct | | | | Improvement for resource management |
| 4100 | Ebb Spring | 0.5 | Aggregate | Local | 2 | Maintain | | | | |
| 4263 | Unknown | 0.2 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |
| 4264 | Nordic Hollow | 1.8 | 0.0-1.0 Aggregate 1.0-1.8 Native | Local | 2 | 1.0 Maintain 1.0-1.8 Reconstruct | | | | Improvement for resource management |
| 4265 | Mill Hollow | 0.5 | Aggregate | Local | 2 | Maintain | | | | |
| 4265A | Unknown | 0.3 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |
| 4268 | Clear Water | 2.4 | 0.0-0.7 Aggregate 0.7-2.4 Native | Local | 2 | 0.0-0.7 Maintain 0.7-2.4 Reconstruct | | | | Improvement for resource management |
| 4269 | Big Hollow | 1.2 | Aggregate | Local | 2 | Maintain | | | | |
| 4273 | Unknown | 0.6 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |
| 4274 | Acorn Ridge | 1 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |
| 4296 | Unknown | 0.7 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |

| | | | | | | | | | | |
|-------|-------------|------|-----------|-------|---|---|--|--|--|---|
| 4298 | Overcup Oak | 0.7 | Aggregate | Local | 2 | Maintain | | | | |
| 4713 | Unknown | 0.9 | Native | Local | 2 | Reconstruct | | | | Improvement for resource management |
| 4713A | Unknown | 0.5 | Native | Local | 2 | Relocate/reconstruct | | | | Part of road is in drainage, improve for resource improvement |
| 4714 | Unknown | 0.9 | Native | Local | 2 | Relocate/reconstruct | | | | Part of road is in drainage, improve for resource improvement |
| 4715 | Unknown | 0.2 | Native | Local | 2 | Reconstruct | | | | |
| 4716 | Triple Pine | 0.5 | Native | Local | 2 | Reconstruct | | | | |
| TOTAL | | 21.1 | | | | Maintain 9.9 miles and Reconstruct 11.2 miles of road | | | | |

Table 2 - Non-system Segments of Forest Classified Road - Existing Roads In NE Corner Analysis Area, as defined (See Maps)

| Road Number | Road Name | Length (miles) | Surface Type | Functional Class | Maintenance Level | Improvement Needed | Limit Access | Close | Convert Use | Remarks |
|-------------|------------|----------------|--------------|------------------|-------------------|--------------------|--------------|-------|-------------|--------------------------------------|
| 4100 | Non-system | 0.5 | | | | Decommission | | | | |
| 4263 | Non-system | 0.3 | | | | Decommission | | | | |
| 4263A | Non-system | 0.3 | | | | | | | | Is a Special Use Permit needed here? |
| 4264 | Non-system | 0.3 | | | | Decommission | | | | |
| 4265 | Non-system | 0.8 | | | | | | | | Is a Special Use Permit needed here? |
| 4265A | Non-system | 0.3 | | | | | | | | Is a Special Use Permit needed here? |
| 4273 | Non-system | 0.3 | | | | Decommission | | | | |
| 4715 | Non-system | 0.4 | | | | Decommission | | | | |
| 4716 | Non-system | 0.7 | | | | Decommission | | | | |
| 4719 | Non-system | 1.0 | | | | | | | | Is a Special Use Permit needed here? |
| | | 4.90 | | | | | | | | |

Rationale considered for changing a road's management objective (other rationale may be considered, where appropriate). Not all rationale are applicable to those roads listed on pages 6-7.

Road Improvement

- Steady to increasing public use (school bus route, commodity movement, public safety) throughout the year. Improvement or realignment needed to reduce traffic hazards such as: airborne dust emissions, limited sight distance, rough driving surface or congestion.
- Primary public access to developed/dispersed recreation area(s).
- Known watershed problems (rutting, erosion, or obvious groundwater interruption, mass wasting).
- Improvements will reduce long-term maintenance costs.
- Decrease water contamination hazard.
- Recommended in an environmental document as necessary to support resource objectives and needed as a classified road.

Limited Access

- Seasonal closure to minimize wildlife harassment during breeding season.
- Vehicle weight restrictions on bridges and roads.
- Seasonal closures to minimize damage to soil, watershed, vegetation, etc.
- Road accesses critical wildlife habitat/PETS species or used to maintain wildlife structures and openings.
- Road needed in future (5-10 yrs.) to access stands needing silvicultural treatments.
- Historical fire risk is moderate to high; road is needed as potential firebreak/defensible fireline or emergency access.
- Recommended in an environmental document as necessary to support resource objective and needed as a classified road.

Close and Decommission

- Road is within riparian area, parallels close to stream(s), or has multiple stream crossings.
- Road has known problems such as erosion, rutting or obvious groundwater interruption.
- High potential for sedimentation to adversely affect water quality/quantity or impact aquatic species.
- Road is not needed for future administrative use (timber, recreation, fire, recreation law enforcement, etc.).
- Decommissioning will not change the quantity, quality, and accessibility of roaded recreation opportunities in the area.
- Decommission road to reduce road density or improve the quality of unroaded recreation experience.
- Road is having a negative effect on terrestrial species (habitat loss, fragmentation).
- Closure will reduce adverse human effects (water contamination, air pollution, introduction of exotic species, littering).
- Recommended in an environmental document as not needed to support resource objectives and should not be a classified road.

Convert To Other Uses (Trail)

- Recommended in an environmental document as necessary to support recreation or wilderness resource objectives and needed as a classified trail. Not needed as part of road transportation system.

ANALYSIS QUESTIONS

The following analysis questions were answered specific to Level 1 and 2 roads, as well as unclassified roads in the NE Corner Roads Analysis area. Question responses that addressed the overall condition of the transportation system forest-wide and were also appropriate and applicable to Maintenance Level 1 and 2 roads) or watershed condition reviewed in the Mark Twain National Forest Roads Analysis Report (RAP) of Maintenance Level 3 and 4 Roads (January, 2003), per the referenced pages..

| | |
|-------------|---|
| AQ1 - AQ14: | Aquatic, Riparian Zone, and Water Quality |
| EF1 - EF5: | Ecosystem Functions and Processes |
| TW1 - TW4: | Terrestrial Wildlife |
| EC1 - EC3: | Economics |
| TM1 - TM3: | Timber Management |
| MM1: | Minerals Management |
| RM1: | Range Management |
| WP1-WP3: | Water Production |
| SP1: | Special Forest Products |
| SU1: | Special Use Permits |
| GT1-GT4: | General Public Transportation |
| AU1 - AU2: | Administrative Use |
| PT1 - PT4: | Protection |
| UR1 - UR5: | Unroaded Recreation |
| RR1 - RR5: | Roaded Recreation |
| PV1 - PV4: | Passive-Use Value |
| SI1 - SI10: | Social Issues |
| CR1: | Civil Rights and Environmental Justice |

EF1 – Forest RAP
 EF2 – Forest RAP
 EF3 – Forest RAP
 EF4 – Forest RAP
 EF5 – Forest RAP
 AQ1 – NE Corner RAP
 AQ2 – Forest RAP
 AQ3 – Forest RAP
 AQ4 – NE Corner RAP
 AQ5 – NE Corner RAP
 AQ6 – Forest RAP
 AQ7 – Forest RAP
 AQ8 – Forest RAP
 AQ9 – Forest RAP
 AQ10 – Forest RAP
 AQ11 – Forest RAP
 AQ12 – Forest RAP
 AQ13 – Forest RAP
 AQ14 – NE Corner RAP
 TW1 – NE Corner RAP

TW2 – Forest RAP
 TW3 – Forest RAP
 TW4 – Forest RAP
 EC1 – NE Corner RAP
 EC2 – NE Corner RAP
 EC3 – NE Corner RAP
 TM1 – Forest RAP
 TM2 – NE Corner RAP
 TM3 – NE Corner RAP
 MM1 – NE Corner RAP
 RM1 – Forest RAP
 WP1 – NE Corner RAP
 WP2 – NE Corner RAP
 WP3 – NE Corner RAP
 SP1 – Forest RAP
 SU1 – Pineknot RAP
 GT1 – NE Corner RAP
 GT2 – NE Corner RAP
 GT3 – NE Corner RAP
 GT4 – NE Corner RAP
 AU1 – Forest RAP
 AU2 – Forest RAP
 PT1 – NE Corner RAP
 PT2 – Forest RAP
 PT3 – NE Corner RAP
 PT4 – Forest RAP
 UR1/RR1 – Forest RAP
 UR2/RR2 – Forest RAP
 UR3/RR3 – NE Corner RAP
 RAP
 UR4/RR4 – Forest RAP
 UR5/RR5 – Forest RAP
 PV1 – Forest RAP
 PV2 – Forest RAP
 PV3 – Forest RAP
 PV4 – Forest RAP

SI1 – NE Corner RAP
 SI2 – NE Corner RAP
 SI3 – NE Corner RAP
 SI4 – NE Corner RAP
 SI5 – Forest RAP
 SI6 – NE Corner RAP
 SI7 – NE Corner RAP
 SI8 – NE Corner RAP
 SI9 – NE Corner RAP
 SI10 – NE Corner RAP
 CR1 – NE Corner RAP

ECOSYSTEM FUNCTIONS AND PROCESSES

EF(1): What ecological attributes, particularly those unique to the region, would be affected by roading of currently unroaded areas?

The answer given for EF1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 37-38)

EF(2): To what degree do the presence, type, and location of roads increase the introduction and spread of exotic plant and animal species, insects, diseases, and parasites? What are the potential effects of such introductions to plant and animal species and ecosystem function in the area?

The answer given for EF2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 38-39)

EF(3): To what degree does the presence, type, and location of roads contribute to the control of insects, disease and parasites.

The answer given for EF3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 39)

EF(4): How does the road system affect ecological disturbance regimes in the area?

The answer given for EF4 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 40)

EF(5): What are the adverse effects of noise caused by developing, using, and maintaining roads?

The answer given for EF5 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 40-41)

AQUATIC, RIPARIAN ZONE, AND WATER QUALITY (AQ)

AQ(1): How and where does the road system modify the surface and subsurface hydrology of the area?

The answer given for AQ1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 41)

Recommendation: Proposed roadwork should address disconnecting the road system from the stream channels. Work such as enhancing riparian buffers, road maintenance strategies beneficial to streams, limiting road crossings, improving the drainage structure network, and closing roads are important to accomplish the separation of road and stream networks.

Factors: roaded mileage versus stream mileage, road crossings, and roads in streamside management zones

The NE Corner Project area is not an area with a high concentration of perennial stream crossings. Roads that are in drainages and/or may cross ephemeral or intermittent streams are system roads 3167B, 4273, 7417 and non-system 4268, 4264, 4715, 6572, 9532, 9537, 9545, 9536, 9535, 9542, 9617, 9534, 9527, 9532, 9582 and county roads 203-H and 203-60A.. Closing these non-system

roads within or crossing riparian buffers are opportunities for riparian reestablishment. The vast majority of roads are found on ridges and originates off of county roads and state highways.

AQ(2): How and where does the road system generate surface erosion?

The answer given for AQ2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 42-44)

Factors: Percent severe soils, road condition, and road location.

AQ(3): How and where does the road system affect mass wasting?

The answer given for AQ3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 44)

AQ(4): How and where do road-stream crossings influence local stream channels and water quality?

See response to AQ1 that identifies those roads that run adjacent to, or cross, intermittent or ephemeral streams. Road-stream crossings increase sediment in streams by disturbing the streambed. Right-angle crossings effects are short lived. Roads that run with (in) the streambed allow the flow rate of water (velocity), to increase due to decreased resistance and meandering. This results in increased erosion of stream banks and increased damage to riparian areas during flood events.

Factors: number of crossings, crossings in conjunction with other impacts

AQ(5): How and where does the road system create potential for pollutants, such as chemical spills, oils, de-icing salts, or herbicides, to enter surface waters?

See response to AQ1 and AQ4. Herbicides do not receive wide use on forestland on the Mark Twain National Forest.

AQ(6): How and where is the road system "hydrologically connected" to the stream system? How do the connections affect water quality and quantity (such as, the delivery of sediments, chemicals, thermal increases, elevated peak flows)?

The answer given for AQ6 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 45)

AQ(7): What downstream beneficial uses of water exist in the area? What changes in uses and demand are expected over time? How are they affected or put at risk by road-derived pollutants?

The answer given for AQ7 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 45)

AQ(8): How and where does the road system affect wetlands?

The answer given for AQ8 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 45)

AQ(9): How does the road system alter physical channel dynamics, including isolation of floodplains; constraints on channel migration; and the movement of large wood, fine organic matter, and sediment?

The answer given for AQ9 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 45-46)

AQ(10): How and where does the road system restrict the migration and movement of aquatic organisms? What aquatic species are affected and to what extent?

The answer given for AQ10 in the Forest-level RAP for the Mark Twain National Forest is detailed and appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 46-47).

AQ(11): How does the road system affect shading, litter fall, and riparian plant communities?

The answer given for AQ11 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 47-48).

Factors: number of crossings

AQ(12): How and where does the road system contribute to fishing, poaching, or direct habitat loss for at-risk aquatic species?

The answer given for AQ12 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 48-49)

AQ(13): How and where does the road system facilitate the introduction of non-native aquatic species?

The answer given for AQ13 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 49)

AQ(14): To what extent does the road system overlap with areas of exceptionally high aquatic diversity, productivity, areas containing rare or unique aquatic species, or species of interest?

See response to AQ1. Roads that are in such locations are targeted for closure and revegetation.

TERRESTRIAL WILDLIFE

TW(1): What are the direct effects of the road system on terrestrial species habitat?

The answer given for TW1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 50-51). Highways that would be considered for the roads analysis area and the NE Corner Project Area indirectly are U. S. 60 (being improved to 4-lanes), and State Highways 19 and D that exist on the east and west portions of the area, respectively.

TW(2): How does the road system facilitate human activities that affect habitat?

The answer given for TW2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 51-52).

TW(3): How does the road system affect legal and illegal human activities? What are the effects on wildlife species?

The answer given for TW3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 52-53).

TW(4): How does the road system directly affect unique communities or special features in the area?

The answer given for TW4 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 53-55).

ECONOMICS (EC) See the “Please note:” on p.55 of the Forest-wide RAP.

EC(1): How does the road system affect the agency's direct costs and revenues? What, if any, changes in the road system will increase net revenue to the agency by reducing cost, increasing revenue, or both?

The answer given for EC1 in the Forest-level RAP for the Mark Twain National Forest is detailed and appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 55-56). A project-specific economic analysis will be completed as part of the individual project EA. There are currently 16.2 miles of Maintenance Level 2 roads, no Maintenance Level 1 closed roads currently identified, and 11.9 miles of non-system roads. See tables on pp. 15-16. There are also 0.3 miles of Level 4 (Administrative Site) and Level 3 (4.6 miles) roads listed.

EC(2): How does the road system affect the priced and non-priced consequences included in economic efficiency analysis used to assess net benefits to the society?

The answer given for EC2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp.56-57). A project-specific economic analysis will be completed as part of the individual project EA/EIS. The Forest Transportation system is in place.

EC(3): How does the road system affect the distribution of benefits and costs among affected people?

The answer given for EC3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 57-58).

A project-specific economic analysis will be completed as part of the individual project EA. If changes in jobs and income are identified as an issue for the project, the forest or regional economist will be consulted for the project analysis.

People most directly affected are local residents, timber purchasers, and contractors. Changes in system road standards would most directly affect gravel suppliers, road construction contractors, and timber purchasers. Changes in the system itself (more or fewer roads) would mostly affect the forest user (i.e. recreationists, hunters, and site-seers).

Table 3 - Non-System Road Recommendations - Existing Roads In the NE Corner Analysis Area (See Maps)

| Road Number | Road Name | Length (miles) | Surface Type | Functional Class | Maintenance Level | Improvement Needed | Limit Access | Close | Convert use | Remarks |
|-------------|------------|----------------|--------------|------------------|-------------------|--------------------|--------------|-------|-------------|----------------------------------|
| 9516 | Non-system | 0.5 | | | | Decommission | | | | |
| 9518 | Non-system | 0.1 | | | | | | | | Special Use Permit – Dwain Jones |
| 9522 | Non-system | 0.01 | | | | Decommission | | | | |
| 9523 | Non-system | 0.3 | | | | | | | | Is Special Use Permit Needed? |
| 9526 | Non-system | 0.2 | | | | Decommission | | | | |
| 9527 | Non-system | 1.2 | | | | Decommission | | | | |
| 9530 | Non-system | 0.2 | | | | Decommission | | | | |
| 9531 | Non-system | 0.1 | | | | Decommission | | | | |
| 9532 | Non-system | 0.2 | | | | Decommission | | | | |
| 9533 | Non-system | 0.01 | | | | Decommission | | | | |
| 9534 | Non-system | 1.1 | | | | Decommission | | | | |
| 9535 | Non-system | 1.3 | | | | Decommission | | | | |
| 9536 | Non-system | 0.8 | | | | Decommission | | | | |
| 9537 | Non-system | 1.2 | | | | Decommission | | | | |
| 9538 | Non-system | 0.2 | | | | Decommission | | | | |
| 9539 | Non-system | 0.2 | | | | Decommission | | | | |
| 9540 | Non-system | 0.9 | | | | Decommission | | | | |
| 9541 | Non-system | 0.5 | | | | Decommission | | | | |
| 9542 | Non-system | 0.6 | | | | Decommission | | | | |

Table 3 - Non-System Road Recommendations (con't) - Existing Roads In the NE Corner Analysis Area (See Maps)

| | | | | | | | | | | |
|------|------------|------|--|--|--|--------------|--|--|--|---------------------------------|
| 9543 | Non-system | 0.02 | | | | Decommission | | | | |
| 9544 | Non-system | 0.1 | | | | | | | | Is a Special Use Permit Needed? |
| 9545 | Non-system | 0.8 | | | | Decommission | | | | |
| 9582 | Non-system | 0.2 | | | | | | | | Is a Special Use Permit Needed? |
| 9587 | Non-system | 0.2 | | | | Decommission | | | | |
| 9591 | Non-system | 0.1 | | | | Decommission | | | | |
| 9592 | Non-system | 0.2 | | | | Decommission | | | | |
| 9594 | Non-system | 0.3 | | | | Decommission | | | | |
| 9617 | Non-system | 0.4 | | | | | | | | Is a Special Use Permit Needed? |
| | | | | | | | | | | |

COMMODITY PRODUCTION

TIMBER MANAGEMENT (TM)

TM(1): How does the road spacing and location affect logging system feasibility?

The answer given for TM1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 58).

TM (2) & (3): How does the road system affect managing the suitable timber base and other lands? How does the road system affect access to timber stands needing silvicultural treatment?

The answer given for TM2&3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 58-59).

Forest Plan, Amendment 22 (3/98), directs closure of all non-system roads. These are identified on Map 2 and the table on page 15-16 of this NE Corner Project RAP.

MINERALS MANAGEMENT (MM)

MM(1): How does the road system affect access to locatable, leasable, and salable minerals?

The answer given for MM1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 59).

The NE Corner Project and Roads Analysis analysis area have no existing mineral rights reserved. Mineral activities occur on less than 2 percent of the Forest's land base at any time. Therefore this was not identified as an issue.

RANGE MANAGEMENT

RM(1): How does the road system affect access to range allotments?

The answer given for RM1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 59).

WATER PRODUCTION (WP)

WP(1): How does the road system affect access, constructing, maintaining, monitoring, and operating water diversions?

This was not identified as an issue. There are no proposed or existing operating water diversion or impoundments within the analysis area or within the near vicinity that will be affected nor are any anticipated in the foreseeable future. In addition, the answer given for WP1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 59-60).

WP(2): How does road development and use affect water quality in municipal watersheds?

No known municipal watersheds are within the analysis area. In addition, the answer given for WP2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 60).

WP(3): How does the road system affect access to hydroelectric power generation?

The answer given for WP3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 60). There are currently neither hydroelectric power plants nor are any anticipated in or around the project area. Therefore this issue will not be addressed further.

SPECIAL FOREST PRODUCTS (SP)

SP(1): How does the road system affect access for collecting special forest products?

The answer given for SP1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 60).

SPECIAL-USE PERMITS (SU)

SU(1): How does the road system affect managing special-use permit sites (concessionaires, communication sites, utility corridors, etc.)

The answer given for SU1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 61).

In addition, special-use permits exist for 1 high-tension power line SE of Winona, Missouri located on an east/west corridor within the analysis area belonging to Missouri and Arkansas Power Company Electric Cooperative and 1 permit each to Century Telephone and Howell-Oregon Electric Cooperative that parallel existing road locations within the analysis area. Utility corridors in most cases parallel the state, county, and main forest development roads providing services to private lands. There is also a Missouri State Highway Patrol communication tower east of Highway 19, just opposite Lewis Lake. There are no road access permits to private residences. No existing special use permit will be affected by proposed actions in NE Corner.

GT1: How does the road system connect to public roads and provide primary access to communities?

The answer given for GT1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 61-63).

Missouri State Highways 19 and 60 form the western and southern boundaries of the analysis area. Within the analysis area boundaries are secondary state highways H and W, and Shannon county, Forest Service, and private roads. The above-mentioned state highways, along with Shannon county roads 60A, 559, and 565, and Forest Service road 3167 provide primary access to the analysis area. Roads that stem off these arterial and collector roads provide access to adjacent federal land. Communities within or nearby the analysis area include Low Wassie and Winona. These communities depend on these State highways and county roads for their access and transportation needs. National Forest System roads provide primary access into the Mark Twain National Forest for recreation, administration, and commodity production.

Privately-owned land within the analysis area is located adjacent to state and county roads. Forest roads access a small number of in-holdings. Forest Service non-system roads may be used to access private property with a special use permit.

GT(2): How does the road system connect large blocks of land in other ownership to public roads?

State highways 19, 60, H, and W, along with Shannon County Roads 60A, 559, 563, 564, 564A, 565, 568, 568A, 568B, and 570 provide access to private property.

Just to the north and east of the analysis area is land managed by the Missouri Department of Conservation. State highways 19 and H, along with National Forest System roads 4273, 4296, and 4298 access these state managed lands.

GT(3): How does the road system affect managing roads with shared ownership or with limited jurisdiction (RS2477, cost share, prescriptive rights, FLPMA easements, FRTA easements, DOT easements)

No roads in the analysis area have shared ownership. State highways are maintained by the state of Missouri. Roads under the jurisdiction of Shannon County are maintained by Shannon County. National Forest System roads are maintained by the Forest Service. All other roads in the analysis area are under private jurisdiction with the individual landowner being responsible for maintenance. Roads located on Missouri Department of Conservation lands, adjacent to the analysis area, are maintained by the Missouri Department of Conservation. National Forest System roads 4273 and 4298 are accessed through Missouri Department of Conservation lands.

GT(4): How does the road system address the safety of road users?

National Forest System roads in the analysis area are located on ridge tops, maintained and signed in accordance with their maintenance level and functional class, and are considered adequate for use under normal operating conditions. Any management activity, which increases use or considerably alters normal traffic patterns, may be mitigated with appropriate warning and precautionary signing. Additional road maintenance may be required to safely accommodate heavier volumes of traffic and to reduce damage to surrounding resources.

ADMINISTRATIVE USE (AU)

AU(1): How does the road system affect access needed for research, inventory, and monitoring?

The answer given for AU1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 66-67).

AU(2): How does the road system affect investigative or enforcement activities?

The answer given for AU2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 67-68).

PROTECTION

PT(1): How does the road system affect fuels management?

The answer given for PT1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 68). The oak decline problem is not, however as evident on the Doniphan/Eleven Point Ranger District as it is on other districts of the Mark Twain National Forest, such as Salem and Potosi districts.

Roads are regularly used as fireline for prescribed burns. Utilization of existing roads greatly reduces the amount of constructed fireline needed to implement prescribed burn. This reduces environmental effects associated with bladed fireline construction.

The type, amount and arrangement of vegetation available for burning have a significant effect on fire behavior. If vegetation is suitably modified, such as in pine woodland restoration, a wildland fire can be slowed down, flame length reduced and the amount of heat decreased, all of which contribute to successful suppression probability.

PT(2): How does the road system affect risk to fire fighters and to public safety?

The answer given for PT2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 69).

PT(3): How does the road system affect the capacity of the Forest Service and cooperators to suppress wildfires?

Good access is critical to firefighters and the public, providing easier access for fire equipment involved in suppression of wildfires, while at the same time allowing for evacuation if needed. There may be some instances where existing roads would be beneficial as fire breaks. Better access may increase the risk of human-caused fires (arson). The existing road system is adequate to meet the needs of Forest Service and cooperator fire suppression efforts.

PT4: How does the road system contribute to airborne dust emissions resulting in reduced visibility and human health concerns?

The answer given for PT4 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 69).

UNROADED RECREATION (UR) and ROADED RECREATION (RR)

(Recreation questions [UR & RR] were addressed together. County commissions survey input was included in responses)

UR(1) & RR(1): Is there now or will there be in the future excess supply or excess demand for unroaded recreation opportunities?

The answer given for UR1 & RR1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 70).

UR(2) & RR(2): Is developing new roads into unroaded areas, decommissioning of existing roads or changing the maintenance of existing roads causing substantial changes in the quantity, quality, or type of unroaded recreation opportunities?

The answer given for UR2 & RR2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 70-71).

UR(3) & RR(3): What are the adverse effects of noise and other disturbances caused by developing, using, and maintaining roads, on the quantity, quality, and type of unroaded recreation opportunities?

The answer given for UR3 & RR3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 71). Due to the low population density in the area and the dispersed nature of the recreation in the NE Corner area, there is a limited amount of regularly travel roads. No adverse effects of noise are anticipated. This was not identified as an issue during scoping for this project.

UR(4) & RR(4): Who participates in unroaded recreation in the areas affected by constructing, maintaining, and decommissioning roads?

The answer given for UR4 & RR4 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 71-72).

UR(5) & RR(5): What are these participants' attachments to the area, how strong are their feelings, and are alternative opportunities and locations available?

The answer given for UR5 & RR5 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 72).

PASSIVE-USE VALUE (PV)

PV(1): Do areas planned for road constructing, closure, or decommissioning have unique physical or biological characteristics, such as unique natural features and threatened or endangered species?

The answer given for PV1 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 72).

PV(2) & (3): Do areas planned for road construction, closure, or decommissioning have unique cultural, traditional, symbolic, sacred, spiritual, or religious significance? What if any, groups of people (ethnic groups, subcultures, and so on) hold cultural, symbolic, spiritual, traditional, or religious values for areas planned for road entry or road closure?

The answer given for PV2 & PV3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 72). There are roads in the NE Corner Project where the need for these roads has not been decided. Cultural resource work on these roads is pending a determination of need.

PV(4): Will constructing, closing, or decommissioning roads substantially affect passive-use values?

The answer given for PV4 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 73).

SOCIAL ISSUES

SI (1) & (2): What are people's perceived needs and values for roads and access? How does road management affect people's dependence on, need for, and desire for roads and access?

The answer given for SI 1 & 2 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 73).

The social demand for roads (state, county, and Forest Service) in the analysis area are for hunting, camping along roads, forest-product gathering, and recreational travel including 4x4s, pickup trucks, passenger cars, school and commercial buses, all-terrain vehicles (ATVs), and horseback riding.

The road system also utilized by private landowners. These people require services and products to be delivered to their businesses, farms, and homes just as do those who do not live near National Forest lands. Mail, utility, medical, law enforcement and delivery services use the road system daily to meet the needs of their customers.

For those areas in which road construction or reconstruction are planned and in which archaeological sites are located, roads will be routed so as to avoid the archaeological sites. It is expected, therefore, that road reconstruction/construction will not adversely affect archaeological sites.

There are no groups of people [ethnic groups, subcultures, and so on] who hold cultural, symbolic, spiritual, traditional, or religious values for areas planned for road entry or road closure.

SI(3): How does the road system affect access to paleontological, archaeological, and historic sites?

The answer given for SI3 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 73-74).

In addition, there are archaeological sites along many of the roads in the NE Corner Projects area, but monitoring of these sites indicates that the sites are not adversely affected by such access. The proposed changes in the road system in the NE Corner Projects area will not change access conditions to the archaeological sites. With application of appropriate mitigation measures [principally with site avoidance], it is not expected that the proposed project activities will increase visitor use and access to those areas in which significant archaeological sites are located. There are no cultural and traditional uses such as plant gathering in any of the NE Corner project area.

SA(4): How does the road system affect cultural and traditional uses (such as plant gathering and access to traditional and cultural sites) and the American Indian Treaty rights?

The answer given for SI4 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 74).

There are archaeological sites along many of the roads in the NE Corner Projects area, but monitoring of these sites indicates that the sites are not adversely affected by such access. The proposed changes in the road system in the NE Corner Projects area will not change access conditions to the archaeological sites. With application of appropriate mitigation measures [principally with site avoidance], it is not expected that the proposed project activities will increase visitor use and access to those areas in which significant archaeological sites are located.

There are no cultural and traditional uses such as plant gathering in any of the NE Corner project area.

SI(5): How are roads that are historic sites affected by road management?

None of the NE Corner Projects area roads or those in the roads analysis area (as defined) are considered to be an historic road.

SI(6): How is community social and economic health affected by road management?

The answer given for SI6 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, pp. 74-75).

A popular form of social interaction is the recreational driving of unclassified roads (currently illegal) in high-clearance 4x4s and ATVs. Current restrictions and enforcement of those restrictions (citations) on these roads has a negative effect on participants.

The construction of more roads would have a positive benefit to those who recreate on them but would have no appreciable impact on the economic health of the area. Reconstruction or relocation of some higher level roads would improve the transportation of goods and services and would have a positive but small economic health impact on the area.

SI(7): What is the perceived social and economic dependency of a community on an unroaded area versus the value of that unroaded area for its intrinsic existence and symbolic values?

The answer given for SI7 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 75).

The project area does not contain an unroaded area. There is a perception that unroaded areas lead to wilderness and wilderness provides no traditional commercial uses which leads to no jobs for the area's residents.

SI(8): How does road management affect wilderness attributes, including natural integrity, natural appearance, opportunities for solitude, and opportunities for primitive recreation?

The answer given for SI8 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 75).

The project area does not contain a wilderness area, research natural area, or a special interest area but the opportunity for solitude can be experienced year-round with some interruptions during heavy use seasons such as hunting. Road management activities would not impact these opportunities either way.

SI(9): What are the traditional uses of animal and plant species within the area of analysis?

The answer given for SI9 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 76).

Big and small game hunting is the main traditional use. The Doniphan/Eleven Point Ranger District manages permanently and seasonally closed roads to provide good habitat for game and non-game species. Road management decisions can have significant impacts on hunter access, hunting success, and wildlife populations, as well as plant species that are gathered for fuelwood, food, and construction materials. Road management decisions involving plants usually involve a permit system and therefore the access impacts are minimal.

SI(10): How does road management affect people's sense of place?

The answer given for SI10 in the Forest-level RAP for the Mark Twain National Forest is appropriate here and is incorporated by reference (MTNF, January 2002 RAP, p. 76).

Road management is a key to this area's sense of place. The people make their living off the land and recreate on the land. Access to these recreational pursuits is significant to their sense of place and the current road management policies meet those needs.

This area is heavily roaded and is traditionally heavily used by motorized vehicles. Any restrictions on the recreational road activities will upset the traditional users. People seeking non-motorized activities usually seek other areas of the forest.

The road system is used by all groups of people. Changes in road management including closing or decommissioning of any of the roads would have the same effect on all groups of people including minorities and different cultures.

CIVIL RIGHTS AND ENVIRONMENTAL JUSTICE

CR (1): How does the road system or its management affect certain groups of people (minority, ethnic, cultural, racial, disabled, and low-income groups).

The road system is used by all groups of people. Changes in road management, including closing or decommissioning of any of the roads, are for resource protection, wildlife habitat protection, threatened and endangered species protection, and to eliminate duplicate access provided by other roads. Road management decisions are not made to exclude a group of people. The decision to close a road to motorized use may in fact limit the access to an area to those people with disabilities who cannot walk. This is not a reason for the closure but may be a factual result of the closure. The woodland experience may be found in developed recreation facilities that are accessible to people with disabilities or in dispersed, undeveloped recreation sites accessed by main arterial roads, such as county roads, that are maintained to a higher standard than most forest roads.

Bibliography:

Road Analysis Report – Mark Twain National Forest – Maintenance Level 3 and 4 Roads

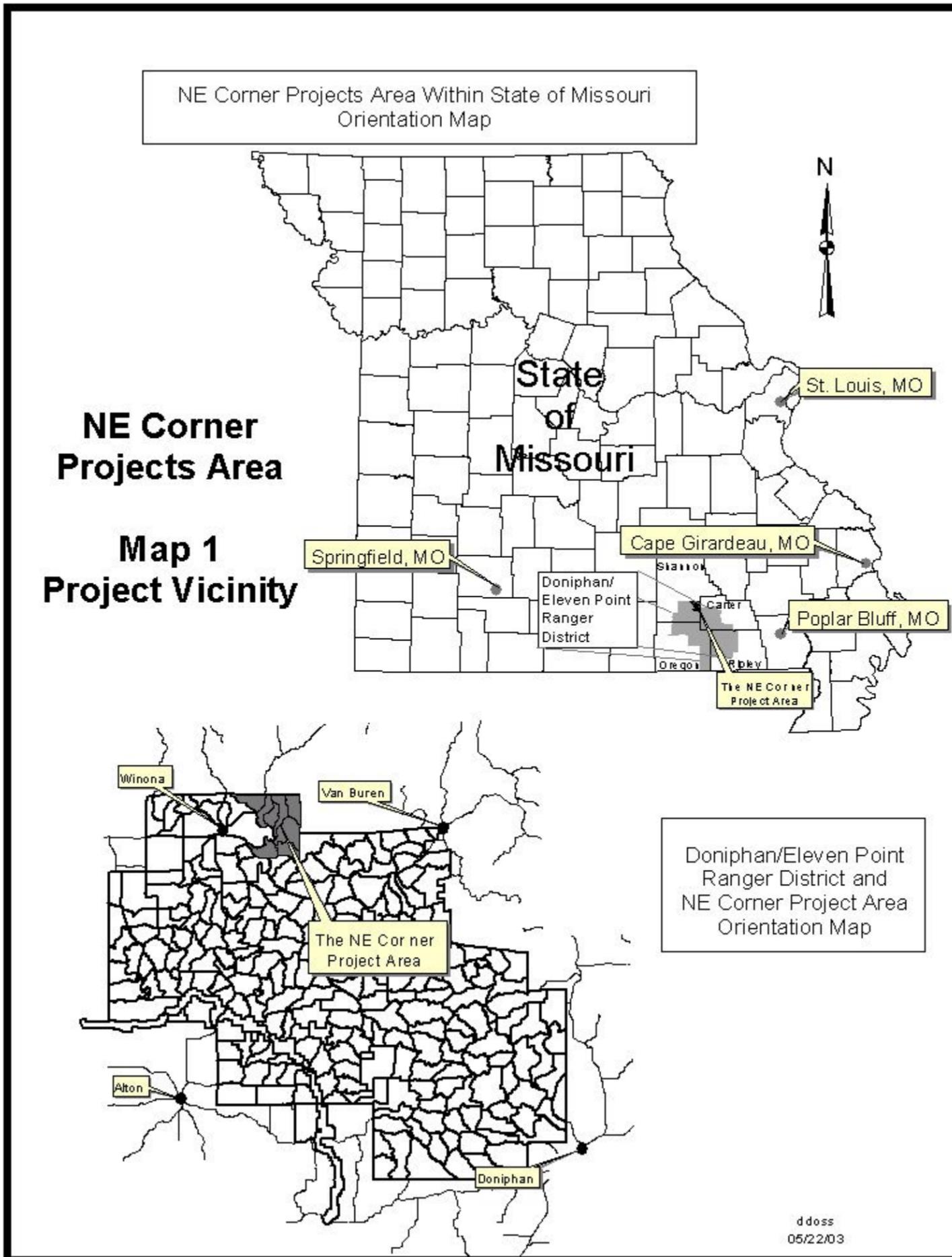
Mark Twain National Forest Land and Resource Management Plan (Forest Plan)

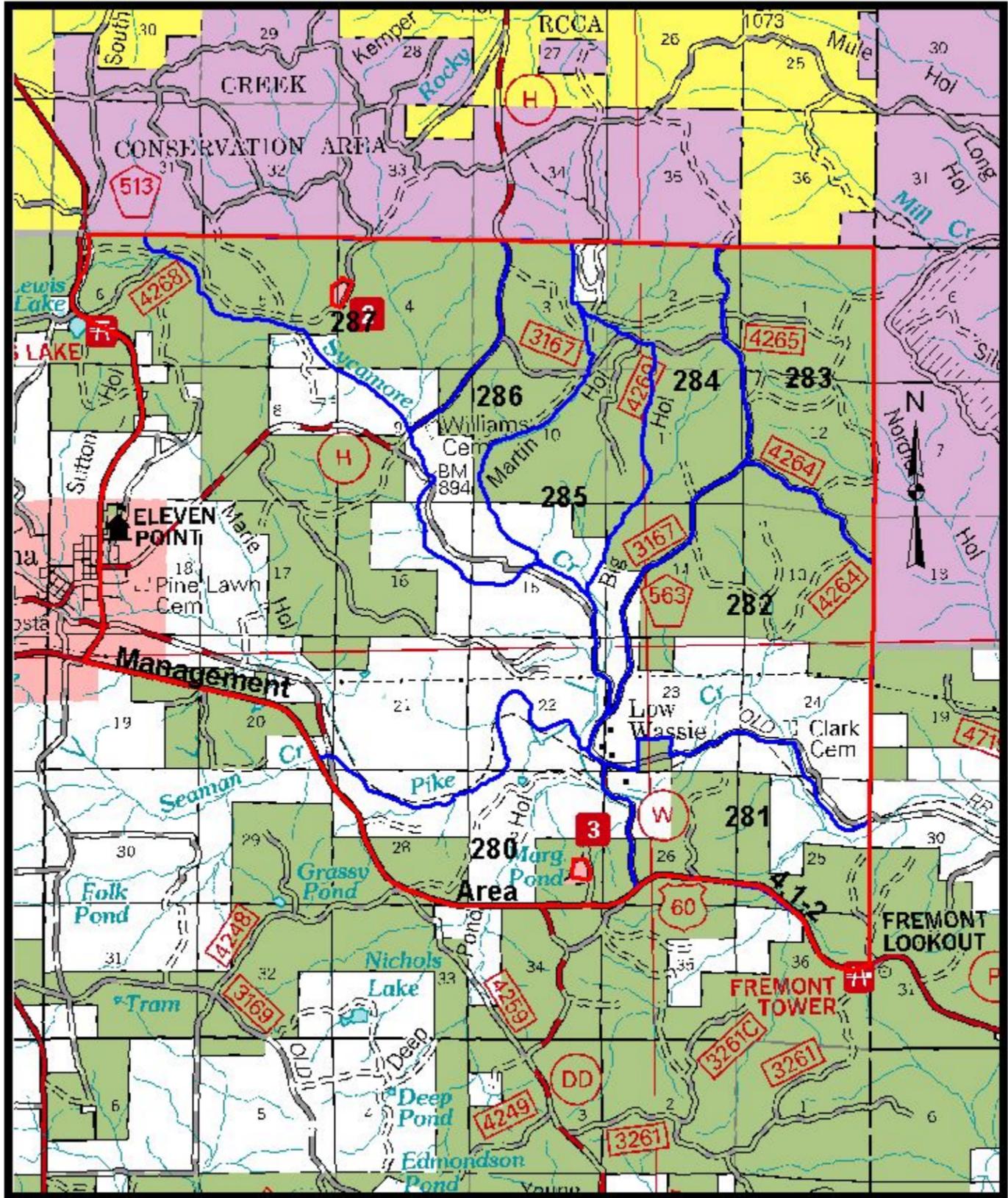
Mark Twain National Forest Forest Plan Final Environmental Impact Statement

Roads Analysis Interdisciplinary Team:

| Team Member | Discipline | Responsibilities |
|---------------|----------------------------------|---|
| David Doss | Integrated Resource Analyst/NEPA | Roads Analysis Report (Integrating specialist input, providing analysis, and producing GIS products) |
| Tom Oldham | Timber Management | Road needs per forest product removal and uses. |
| Ken Haberl | Special Uses | Special Use Permits as they pertain to roads. |
| Cynthia Price | Archaeologist | Social and cultural attributes and impacts of the road system |
| John Depuy | Soil/Water | Road influences on soil/water resources and movement of these resources. |
| Amy Sullivan | Forest Transportation Planner | Road system need assessment (maintenance, reconstruction, closure, etc./road type/surface type and length, and maintenance level) |

Maps





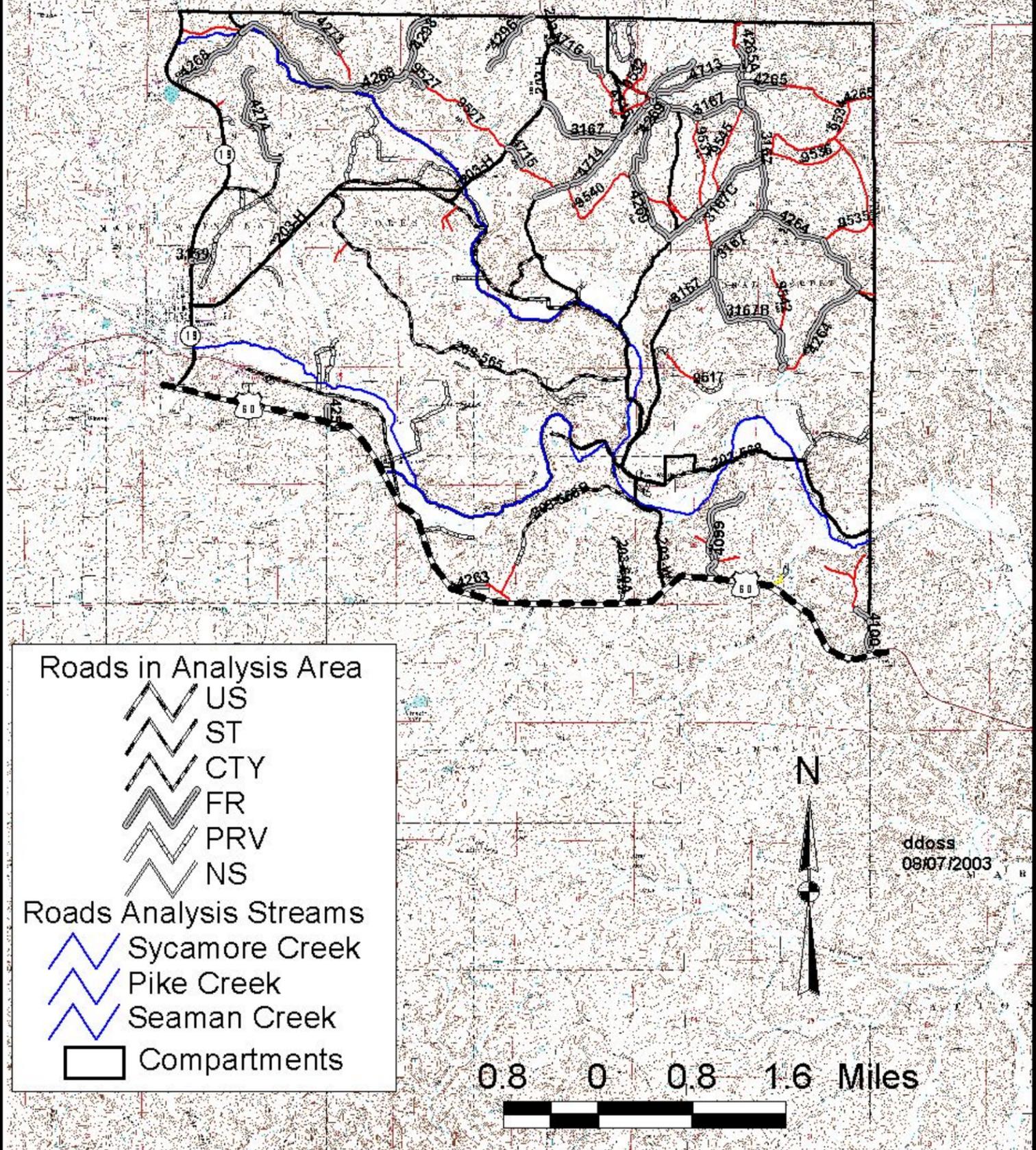
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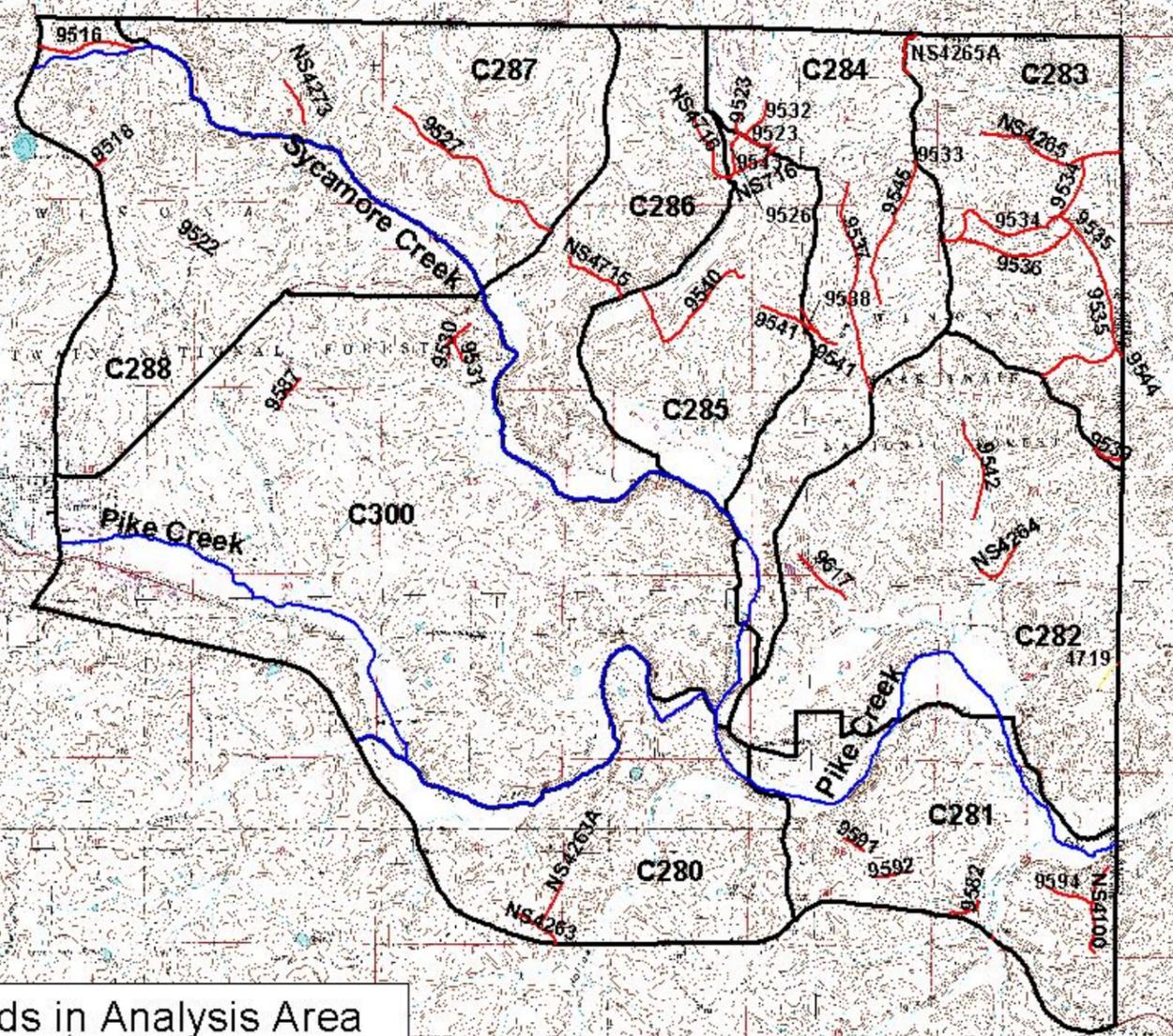
- Management Area 4.1-2
- NE Corner Projects Compartments

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05/22/03

NE Corner Roads Analysis Pike and Sycamore Creeks Compartments 280-288 and 300



NE Corner Roads Analysis Pike and Sycamore Creeks Compartments 280-288 and 300 Non-System Roads



Roads in Analysis Area

-  US
-  ST
-  CTY
-  FR
-  PRV
-  NS

 Sycamore Creek

 Pike Creek

 Seaman Creek

 Compartments

