

Davy Crockett National Forest Roads Analysis Report Executive Summary

Introduction

A roads analysis can be conducted at various scales, ranging from the forest scale (this analysis) to smaller or project scale analyses. Since this Davy Crockett National Forest (NF) analysis is a broad forest-scale analysis, individual roads were not analyzed; however, the forest road system as a whole was reviewed. Site-specific road issues, concerns, and opportunities will be addressed during the smaller scale analysis of project proposals.

This forest-scale analysis addresses the public State, County, and Maintenance Level (ML) 3, 4, and 5 Forest Service roads. Maintenance Level 3, 4, and 5 Forest Service roads provide access for all types of public traffic from low-clearance passenger cars to large commercial vehicles. The ML-1 and ML-2 Forest Service roads and unclassified roads will be analyzed during subsequent site-specific project-scale planning. Maintenance Level 2 roads are suitable for use by only high-clearance vehicles and may be seasonally closed. Maintenance Level 1 roads are closed roads blocked to all vehicular traffic for a year or more.

A roads analysis makes no decisions nor does it allocate resources for specific purposes. It provides information for decision making by examining important issues related to roads. This analysis will help by providing information for proposed management actions that may be considered in subsequent project-scale analyses.

Key Analysis Findings

- Most of the major roads on the forest roads¹ system already existed when federal land purchases for the Davy Crockett NF began in 1935. Most of these major roads are under State or County jurisdiction and are open to public motorized traffic at all times.
- All arterial and collector roads are in place.
- The Final Environmental Impact Statement (FEIS) for the 1996 Revised Land and Resource Management Plan (the *Plan*) states (p136):
“With State, County, and Forest Service routes, a transportation system now exists that meets the need for access into most areas... The current inventory contains all arterial and collector roads needed... However, some of these roads exist at a standard lower than needed to meet safety requirements and access needs...”
- Only 41 percent of the lands within the proclaimed Davy Crockett NF boundaries are national forest lands. The national forest lands are scattered and interspersed among private lands and corporate timberlands.
- Only about one-quarter (22 percent) of the roads on the forest roads system addressed in this analysis are Forest Service roads.
- About one-third (32 percent) of the forest roads addressed in this analysis are State roads.
- About one-half (46 percent) of the forest roads addressed in this analysis are County roads.
- The County roads are important to the Forest Service. In 1974, the Forest Service first discussed road maintenance responsibilities with Houston and Trinity Counties. A cooperative agreement concerning road maintenance was proposed. In 1976, the first cooperative agreements were signed by both of the counties.

¹ “Forest Roads” as defined in Title 23, Section 101 of the United States Code (23 U.S.C. 101), are any roads wholly or partially within, or adjacent to, and serving National Forest System lands and which are necessary for the protection, administration, and utilization of National Forest System lands and the use and development of its resources. (See Appendix L *Glossary* for definitions.)

The original cooperative agreements covered 68 roads – 55 County roads and 13 Forest Service roads. The original agreements have been amended over the years and need to be updated to reflect the current road numbers, names, and lengths.

- Most of the ML-3, 4, and 5 Forest Service roads addressed in this analysis are:
 - ML-3 (suitable for low clearance passenger cars),
 - surfaced with crushed aggregate, and
 - Traffic Service Level C (slow flow).
- Roads that cross streams affect stream structure and water quality. Each stream crossing is a potential site for altering stream structure and introducing sediment and other contaminants.
- Generally, Forest Service roads are receiving inadequate road maintenance funds. The road maintenance funds available are only approximately 20 percent of the amount of the road maintenance funds needed to maintain the roads to the “objective” maintenance level standards. This indicates a big backlog of deferred road maintenance to bring ML-3, 4, and 5 Forest Service roads up to the established maintenance level standards.
- The numbers of people settling on private lands adjoining national forest lands is increasing with a corresponding increase in requests for road right-of-ways across national forest lands to access the private lands.

Forest-Scale Recommendations and Opportunities

Providing for public safety; preserving the road prism with adequate surfacing, drainage, and maintenance; and protecting resources are the first priorities for road management. The following recommendations and opportunities were developed during this process.

1. Review and establish standard road construction designs, drawings, and specifications to implement the *Plan* Forest Wide (FW) 053 Standard, “Design and construct roads... to minimize siltation and maintain to provide surface drainage away from streams and into vegetated buffer strips or other filtering system.”
 - Consider establishing silt fencing specifications to protect streams from siltation during ground disturbing activities.
2. Road wingditches concentrate water flows. The run-off from one wingditch can combine with the run-off from other wingditches to further concentrate water flows in natural drainages. On-the-ground inspections reveal that the run-off from road wingditches can start and increase erosion where the run-off reaches stream banks. Review and establish standard road construction designs, drawings, and specifications to implement the *Plan* FW-053 Standard, “to provide surface water drainage away from streams and into vegetated buffer strips or other filtering system”. To reduce water flows and run-off from wingditches, consider,
 - spacing wingditches closer together,
 - reducing the run-off from wingditches by constructing a “J” hook at the outlet end of wingditches to slow water flow and provide for percolation in a settling basin, and
 - other actions as necessary.
3. Road plans and specifications designed to implement the *Plan* FW-053 Standard, “to provide surface water drainage away from streams and into vegetated buffer strips or other filtering system”, should be reviewed during pre-work conferences with contractors to ensure everyone is aware of the requirements.

4. Review and establish standard road construction designs, drawings, and specifications to implement the *Plan* FW-055 Standard, "Provide road... design and construction that allows unrestricted fish passage", for appropriate streams. Culverts should be designed and installed to,
 - o provide for a natural stream bed substrate,
 - o not increase stream flow velocity to the extent that turbulence creates a cavity at the end of the culvert, and
 - o not spread low stream flows to the point that the streams are no longer navigable by fish.

Consider partially burying oversized culverts.

5. Periodically review the cooperative road maintenance program and the existing cooperative agreements for County roads with County Commissioners. County Commissioners are not always aware of the existing agreements.
6. Periodically inspect existing special use roads to ensure that road construction and maintenance practices protect forest resources and provide for public safety.
7. There are roads on the Davy Crockett NF that,
 - o our records indicate are under County jurisdiction, but
 - o are no longer claimed as County roads by the County.These roads usually provide access across national forest lands to adjoining private lands. Many of these roads are under special use permit to the County, but provide access for the landowner(s). The special use permittee should be responsible for the road maintenance. If the permittee is the County, the road should be open to public use.
8. Review proposed special use road locations on-the-ground with interdisciplinary specialists as necessary to get recommendations on road location, construction, and maintenance requirements before approving special use permit. Implement the *Plan* MA-10b-38 Standard, "Authorize only one private access road per private tract, regardless of multiple ownership. Avoid committing national forest land as access to substitute for lack of internal access to private land due to poor sub-division planning or uncooperative neighbors..."
9. Road maintenance funding is not always sufficient to maintain roads to desired standards. Review and establish road maintenance practices to effectively and efficiently use limited road maintenance funds and to protect resources from road maintenance impacts, such as,
 - o road maintenance practices to prevent undue disturbance of ditches.
10. Establish guidelines to better manage the motor-grader blading of road surfaces and ditches to prevent the unnecessary disturbance of stabilized soils. Review and establish road maintenance practices to better prevent sedimentation of streams.
11. Provide cost-effective temporary bridge options to cross streams to isolated tracts.
12. Collect and establish a reference library of information on road maintenance and construction pertaining to mitigating impacts on resources.
13. Provide training on road maintenance and construction practices that mitigate impacts on resources.

Project-Scale Recommendations and Opportunities

Although sub-forest scale issues are not addressed in detail in this report, the following list of issues should be reviewed during the site-specific analyses of proposed projects. This is not a complete list; generally other issues pertaining to individual roads may arise during the site-specific analyses of project proposals.

General

1. The forest roads stream crossings should be inventoried during site-specific project-scale analyses to identify stream sedimentation and fish passage problems. This includes State, County, and Forest Service road stream crossings on the forest roads system.

2. Identify forest roads that,
 - need resurfacing, reconstruction, or relocation to provide for public safety, protect forest resources, or provide for anticipated traffic associated with project proposals,
 - consistently contribute sediment to streams at stream crossings, and
 - have stream crossing structures that prohibit fish passage.
3. Cooperate with Counties,
 - to maintain, resurface, or reconstruct County roads to provide for public safety, protect forest resources, or provide for anticipated traffic associated with project proposals,
 - to construct and maintain drainage ditches to minimize stream sedimentation and to provide surface drainage away from streams and into settling basins, vegetated buffer strips, or other filtering systems,
 - to repair or reconstruct stream crossings that prohibit fish passage,
 - to assist counties in maintenance, resurfacing, or reconstruction of roads through cost-share agreements, and
 - to seek funds such as Capital Improvement or Road and Trail Deposit Funds to assist counties in road maintenance, resurfacing, and reconstruction.
4. Identify roads under Forest Service jurisdiction that provide access for rural communities, residences, or private inholdings; serve as school bus or mail routes; or have other features that require regular and emergency maintenance. The roads may be more appropriately managed under State or County jurisdiction by public agencies with adequate road maintenance expertise, personnel, and equipment.
 - Consider transferring the roads to the County or State.
5. Road maintenance funding is not always adequate to maintain roads to desired standards. Identify ways to reduce road maintenance costs, such as,
 - Are there roads appropriate for transfer to the County or the State?
 - Are there roads where the maintenance level can be reduced?
 - Are there roads which are no longer needed and can be decommissioned?
6. Review Road Management Objectives (RMOs) for Forest Service roads.
 - Are road maintenance levels appropriate for current and anticipated traffic?
 - Are special resource considerations appropriate?
7. Review the GIS location and INFRA data for ML-1 and ML-2 Forest Service roads.
 - Are roads needed for current and future access?
 - Are roads no longer needed for public use or to manage forest resources?
 - Plan to decommission and obliterate such Forest Service roads.
8. Locate and assess unclassified roads.
 - Are unclassified roads needed for current and future access?
 - Are unclassified roads no longer needed for public use or to manage forest resources?
 - Plan to decommission and obliterate such roads.
9. Identify road right-of-ways needed to access national forest lands.
 - Pursue the acquisition of permanent right-of-ways.
 - Pursue the acquisition of temporary right-of-ways where,
 - access will not be needed again in the future, and
 - a permanent right-of-way can not be acquired.
12. Inventory and evaluate Forest Service road signs.
 - Install signs that provide for public safety and meet established standards.
13. Due to the initiative to name or number roads to respond to emergency calls, check the current County road names, numbers, and lengths against,
 - current cooperative agreements, and
 - GIS and INFRA road data.
 Update cooperative agreements as necessary.

Specific

14. An assessment of road stream crossings (October 29, 2000 2600 memo) identified the following problems on the Davy Crockett NF (see Appendix J):
- Road: FS 357 Location: Compartment 46
Problem: Construct wingditches and repair stream banks.
 - Road: HST 4740 Location: Compartments 50 & 54 Brushy Creek
Problem: Replace railroad car culvert and construct drainage structures.
 - Road: FS 507 Location: Compartment 81 northwest of Mossy Creek
Problem: Replace twin 5' culverts
 - Road: FS 524B Location: Compartment 7 Johnson Branch (east of FS 524)
Problem: Renovate eroding road ditches
 - Road: FS 524 Location: Compartments 6 & 7 Johnson Branch (north of FS 524A)
Problem: Stabilize roadside embankments
 - Road: FS 524 Location: Compartments 5 & 7 Johnson Branch
Problem: Renovate road ditches
 - Road: FS 524 Location: Compartment 5 Pine Spring Creek (east of TX 21)
Problem: Renovate road ditches and wingditches
 - Road: FS 526 Location: Compartments 7 & 8 Branch of Pine Spring Creek
Problem: Renovate culverts and ditch
 - Road: FS 527 Location: Compartments 51 & 78 East Branch of Armstrong Creek
Problem: Renovate road ditches and install wingditches
 - Road: FS 527 Location: Compartments 52 & 78 Garrison Creek
Problem: Renovate road ditches and install hay bales or gravel buffers.
 - Road: FM 358 Location: Compartment 75 Branch of Piney Creek
Problem: High outlet drop-off from double 6 x 6 box culverts prevents fish passage.
15. Data indicates the following roads under Forest Service jurisdiction are maintained by the County.
- Consider transferring these roads to the County.

Table 1. Roads to Consider Transferring to the County.

ROAD NUMBER	ROAD NAME	LENGTH (Miles)	COUNTY	ML
505	Brushy	0.4	Houston	3
505D		0.2	Houston	3
509L		0.3	Trinity	3
510F	Tom Z	1.6	Trinity	3
511	River	2.9	Trinity	3
5264		0.4	Trinity	3
5264A		0.1	Trinity	3
527P		0.2	Trinity	2
528A	West Piney	0.4	Trinity	3
5281		0.4	Trinity	3
5387		0.7	Trinity	3
540	Work Center	1.2	Trinity	3
540A	Horn	0.3	Trinity	3
5401	Oil	0.3	Trinity	3
5401A		0.2	Trinity	3
567	Dwight Smith	0.6	Trinity	3

Additional issues, as discussed in the report, were identified and should be addressed during the National Environmental Policy Act (NEPA) analysis for proposed projects as necessary.

The goal of this project was to update the Davy Crockett NF Transportation Atlas and develop information that provides a broad framework for managing the forest road system. The recommendations and opportunities will provide a guide for future site-specific analyses of project proposals.