

Appendix B

Economic Analysis

Eldorado National Forest

Travel Analysis Process

Table of Contents

| | |
|--|----|
| Authorization, Objective, and Purpose | 1 |
| Road Maintenance Levels..... | 1 |
| Road Maintenance Frequency..... | 3 |
| Road Maintenance Costs..... | 4 |
| Funding Resources for Accomplishing Maintenance Activities | 5 |
| Federal Funds..... | 8 |
| Purchaser Maintenance | 9 |
| Agreements and Permits | 10 |
| Cooperative Agreements..... | 10 |
| Investment Sharing and Cost Recovery Agreements..... | 10 |
| Non-Federal Property Owners | 11 |
| Cost Reduction Strategies | 11 |
| Decrease miles of roads | 11 |
| Transfer responsibility to other appropriate jurisdictions..... | 11 |
| Upgrade to sustainable designs | 12 |
| Decrease maintenance levels of roads | 12 |
| Permittee Maintenance or Collections | 13 |
| Conclusion | 13 |

List of Tables

| | |
|---|---|
| Table 1. Estimated Road Maintenance Cost..... | 5 |
| Table 2 – Road Maintenance Funding FY 2010 to FY 2015..... | 6 |
| Table 3. ARRA Projects on the ENF..... | 7 |
| Table 4. Estimated Annual Funds Available for Road Maintenance..... | 8 |

Authorization, Objective, and Purpose

The Eldorado National Forest (ENF) is authorized to acquire, construct, and maintain roads to permit the maximum economy in meeting requirements for management of the National Forest. Financing of these roads is accomplished through:

- Expenditure of appropriated funds.
- Contractual requirements with purchasers of forest products.
- Cooperative financing with other public agencies, private entities, or individuals.

The ENF objective for roads is to operate and maintain each road in a manner that meets the road management objective (RMO) and provide:

- Safe and efficient travel.
- Access for the administration, utilization, and protection of public land.
- Protection of the environment, adjacent resources, and public investment.
- Stewardship of the capital investment in the road.

The frequency and type of maintenance work accomplished is subject to the availability of funding and obligations under agreements. The intent is to maintain roads to standard with efficient use of available funds.

The ENF road system serves the following purposes:

- Administration of Forest Service lands.
- Public use by visitors to the forest.
- Noncommercial uses and activities related to ownership or occupancy of isolated parcels of private land within the forest.
- Commercial use which is either subject to cost recovery or not subject to cost recovery.

Road Maintenance Levels

Maintenance levels are defined by the Forest Service Handbook (FSH) 7709.62 as the level of service provided by, and maintenance required for, a specific road. Maintenance levels must be consistent with RMO and maintenance criteria. The maintenance level is determined by considering the purpose and need for the road, forest plan objectives, funding, and many other factors. A road may be constructed to serve at a maintenance level which fulfills an immediate need (operational maintenance level), but planned to be modified and converted to another maintenance level to fulfill a future need (objective maintenance level).

There are five maintenance levels classified in the FSH. Maintenance Levels 3, 4, and 5 are subject to the Federal Highway Safety Act and standards in the Manual of Uniform Traffic Control Devices (MUTCD). The levels are described as follows:

Maintenance Level 5 – roads that provide a high degree of user comfort and convenience. These roads are normally double-lane, paved facilities; some may be aggregate surfaced with dust abatement. These roads have the following characteristics:

- Highest traffic volume and speeds.
- Typically connect to State and county roads.
- Usually arterial and collector roads.
- Usually asphalt or concrete surface.
- Drainage addressed by the use of culverts.

Maintenance Level 4 – roads that provide a moderate degree of user comfort and convenience at moderate speeds. Most are double lane and aggregate surfaced with the following characteristics:

- Moderate traffic volume and speeds.
- May connect to county roads.
- Usually collector roads.
- Usually chip seal surface.
- Drainage addressed by the use of culverts.

Maintenance Level 3 – roads that are open and maintained for travel by prudent drivers in standard passenger cars. User comfort and convenience are low priorities. These roads are typically low speed, single lane with turnouts, and spot surfacing. They have the following characteristics:

- Low traffic volume and speed.
- Typically local roads.
- Typically connect to arterial and collector roads or are collector roads.
- Usually gravel surface.
- Drainage addressed by a combination of culverts and grade dips.
- Potholing or wash boarding may occur.

Maintenance Level 2 – roads that are open for use by high-clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. The roads have the following characteristics:

- Low traffic volume and speed.
- Typically local roads.
- Typically connect collector and other local roads.
- Usually native surface.
- Drainage addressed by grading such as dips or sloped surfaces.
- Surface smoothness is not a consideration.
- Not subject to Highway Safety Act or MUTCD.

Maintenance Level 1 – roads that are closed to vehicular traffic for periods exceeding one year. Basic custodial maintenance is performed to protect adjacent resources and enable the road to facilitate future management activities. Planned road deterioration may occur at this level, but the road could be open and suitable for non-motorized uses such as a trail for hikers, equestrians, and bicyclists. Roads in this category may be of any class or construction standard and may be managed at any other maintenance level during the time they are open for traffic. They have the following characteristics:

- Vehicular traffic is eliminated, including administrative traffic.
- Entrance is physically blocked or otherwise disguised.
- No maintenance other than a condition survey may be required as long as no potential for resource damage exists.
- Not subject to Highway Safety Act or MUTCD when closed.

Road Maintenance Frequency

The ENF had goals to inspect every road on a 5-year cycle and schedule maintenance based on those inventories. However, funding and staffing levels have not been adequate to achieve that goal. Therefore, the engineering staff relies on their observations when traveling to projects and on other employees working in the field to observe the performance of the road system and locate road maintenance needs. This has been an effective method. At the present time, there is not a road engineer on the ENF, but vacant positions will be filled.

The highest priority roads for maintenance are those with cost share agreements which require the ENF to fund or perform a portion of the maintenance in cooperation with a private company which is responsible to fund or perform their portion. These agreements are binding financial commitments to maintain the road system. All of these roads are also used by the public. Once those cost share commitments are met, priority is given to the Maintenance Level 3, 4, and 5 roads that were not maintained by cost share agreements as they carry traffic at high volume and speed. Due to the low funding levels, the ENF does not schedule maintenance for Maintenance Level 2 roads on a routine basis. Their lower speeds and use restriction require less maintenance to accommodate planned use. Most of the Maintenance Level 2 roads are maintained by timber

purchasers. Maintenance Level 1 roads are closed to all traffic and would only receive maintenance if there is an important resource issue such as erosion causing damage to a riparian area.

The ENF has a force account crew with the equipment and skills to perform road maintenance. This crew performs scheduled maintenance and works on immediate problems and emergency conditions. The crew also performs road maintenance on adjacent forests as part of their annual work program because funding is not adequate to support the crew full time on the ENF.

Road maintenance work is also performed by timber purchasers and commensurate-use partners as part of their road use requirements. The two sources contribute to maintenance of all levels of road.

The ENF uses Forest Service, State, and local Best Management Practices to construct Maintenance Level 2 roads that require minimal annual maintenance if the roads are not used when soil conditions are susceptible to damage of the road surface. Less maintenance of native surface roads means less surface disturbance which allows establishment of vegetation to reduce erosion and sediment transport. Less surface disturbance also reduces the risk for spread of invasive plant species.

Road Maintenance Costs

Road maintenance costs per mile vary widely depending on the maintenance level of the road. Roads that carry high speed traffic have hardened driving surfaces which require periodic sealing or addition of wear surfaces, plus there are more warning signs, guard rails, and other safety features. These roads require specialized equipment and processes to maintain the road surface and the safety features of the road are expensive to maintain or replace. On the other end of the scale are the native surface roads limited to high clearance vehicles and low travel speeds. These roads are typically maintained using a motor grader or dozer and have very few, if any, signs, guard rails, or other safety features that require maintenance.

Besides the physical performance of maintenance related work, all road systems have fixed costs associated with management of the system. Management includes:

- Oversight of the road system and decision making.
- Establishing and maintaining road management systems required by law (e.g., pavement management, bridge management, safety management, and congestion management).
- Collecting and maintaining data about the road system (e.g., conducting road condition surveys, gathering traffic count and vehicle accident information).
- Providing information services (e.g., maps, road condition reporting).

- Future year project planning (e.g., specialist surveys, engineering, reports).
- Office support (e.g., computer systems, software, supplies).

Road condition surveys are conducted on a random road sample annually to determine the maintenance and associated funding needed to maintain roads to the required safety standards and assigned maintenance levels. These surveys describe the features of the roads (e.g., surfacing, ditches, drainage dips, and culverts) and their conditions. The maintenance costs of those roads and features are estimated from the surveys using a standard cost guide. The random sample is not statistically large enough to assure an accurate estimate of the future costs of the ENF road system. The annual cost of the ENF road system can be calculated using life cycle estimates to develop multi-year costs per mile. Table 1 shows the estimated costs per mile and estimated annual cost of maintaining the ENF road system to required standards.

Table 1. Estimated Road Maintenance Cost.

| Maintenance Level | Annual Cost per Mile | Miles | Percent of Miles | Annual Cost |
|-------------------|----------------------|-------|------------------|-------------|
| 1 | \$100 | 759 | 28 | \$75,900 |
| 2 | \$590 | 1,492 | 55 | \$880,280 |
| 3 | \$2,360 | 302 | 11 | \$712,720 |
| 4 | \$9,080 | 123 | 5 | \$1,116,840 |
| 5 | \$9,080 | 28 | 1 | \$254,240 |
| Total | N/A | 2704 | 100 | \$3,039,980 |

Funding Resources for Accomplishing Maintenance Activities

The ENF has three primary funding sources available for maintenance on system roads:

- Federal appropriated funds authorized for road maintenance.
- Purchaser deposits and maintenance required in timber sale and stewardship contracts.
- Agreements and Permits which collect funds or require maintenance from commercial road use permits, landowners, and commensurate use agreements.

The first five columns in Table 2 summarize maintenance funding from these sources from 2010 to 2014 and include a projection for 2015. The last column shows funding that was available from the American Recovery and Reinvestment Act (ARRA). The ARRA funding is an example of other funding such as Capital Improvement Funds, Grants, Legacy Roads, Emergency Relief for Federally Owned Roads (ERFO), and Fire Rehabilitation that are periodically available for specific needs. The ENF submits applications for these funds as opportunities arise. These funds

are not considered in the maintenance program because the funds are not predictable in amount or timing. Table 2 includes only the additional funds the ENF received in the past 6 years.

Table 2 – Road Maintenance Funding FY 2010 to FY 2015.

| Year | Annual CMRD | Annual PCRA | Annual CWFS | Total Annual Maintenance Funds | Special Programs ARRA |
|---------|-------------|-------------|-------------|--------------------------------|-----------------------|
| 2010 | \$241,600 | \$260,000 | \$451,968 | \$953,568 | \$1,725,000 |
| 2011 | \$168,200 | \$260,000 | \$412,678 | \$840,878 | \$2,425,000 |
| 2012 | \$277,000 | \$260,000 | \$482,383 | \$1,019,383 | 0 |
| 2013 | \$278,600 | \$260,000 | \$469,763 | \$1,008,363 | 0 |
| 2014 | \$314,400 | \$260,000 | \$470,502 | \$1,044,902 | 0 |
| 2015 | \$255,960 | \$260,000 | \$450,000 | \$965,960 | 0 |
| Totals | \$1,535,760 | \$1,560,000 | \$2,737,294 | 5,833,054 | \$4,150,000 |
| Average | | | | \$972,176 | |

Notes: CMRD – Capital Improvement and Maintenance Roads; Funds included in CMRD allocation directed to Force Account work
 PCRA – Permittees and Cost Recovery Agreements (average)
 CWFS – Payments and maintenance work required of Timber Sale Purchasers
 ARRA – American Recovery and Reinvestment Act (not considered annual maintenance funds)

Tables 1 and 2 show that the ENF can maintain less than one-third of the existing road system with the funds available from all annual sources. To maintain the road system to standard, there is a need to increase funding or reduce costs.

Because funding from the three annual categories in Table 2 is not adequate to meet all of the maintenance needs, there is an accumulation of deferred maintenance costs. Deferred maintenance is defined as maintenance that was not performed when it should have been or when it was scheduled. The ENF is unlikely ever to have enough funding to maintain the entire road network to the required standard. However, with few exceptions, the entire road network is necessary for multipurpose management of the forest; consequently, the ENF must find additional funding and methods to maintain the road system. The deferred maintenance list provides projects for some of the special program funding discussed in the next paragraph. Both deferred and future maintenance costs can be reduced when a road is reconstructed with improved location, design, and Best management Practices using these special program funds.

The funds from ARRA fall into a special program category that requires submitting an application to the funding authority with a project description and beneficial outcome that meet the criteria objectives established to qualify for the funds. These opportunities can include Forest

Service funds (Major Projects, Deferred Maintenance, Legacy Roads, Bridge Replacement, Safety of Dams, etc.), Federal funds from other agencies (roads, recreation, watershed protection), State funds (motorized vehicle recreation, watershed protection), and many others including private funding sources. The ENF has mined these opportunities for funding by maintaining an adequate supply of shovel-ready projects that provide benefit to the public and resource protection. This approach has accomplished specific needs for road improvement or maintenance purposes. The latest example is the ARRA funding of projects is shown in Table 3.

Table 3. ARRA Projects on the ENF (1,000 dollars)

| 2010 Projects | Cost | 2011 Projects | Cost |
|-----------------------------|-------|--------------------------------|-------|
| Brush Creek Bridge Repair | \$109 | South Fork Silver Creek Bridge | \$649 |
| Decommissioning | \$120 | | |
| Hey Joe Road Reconstruction | \$319 | Bryant/Fir Bridge | \$257 |
| Road Stormproofing | \$750 | Road Stormproofing | \$120 |
| | | Slab Creek Bridge | \$104 |
| Chip Seal Hey Joe Road | \$315 | Lyons Creek Bridge | \$480 |
| Pavement Maintenance | \$112 | Roadside Brushing | \$500 |

A discussion of deferred maintenance is included in the Facilities section of Chapter 3 of the Final EIS for Travel Management (2008). That discussion recognizes the existence of deferred maintenance and refers to a 2005 statistical sample of paved roads that predicted the pavements on ENF roads were nearing the end of useful life, stated the rate of deterioration would be increasing, and called for an annual expenditure of \$2.2 million for the Maintenance Level 5 asphalt. The study indicated a current (2005) backlog of \$3.4 million that could increase to \$11.5 million by 2010 if the ENF only spent \$100,000 annually on pavement maintenance. This study did not determine what had been spent on pavements since 2008, but the ENF pavements continue to be a large deferred maintenance issue.

Projecting the annual costs and sources of funding allows the ENF to prioritize use of funds to maintain critical sections of the road system to standard and determine which roads will accumulate deferred maintenance. Table 4 estimates the annual funding consistently available for road maintenance. It includes a \$10,000 amount that represents the special program funding sources which occasionally contribute large amounts of money for correction of deferred maintenance projects which benefit the public and protect resources.

Table 4. Estimated Annual Funds Available for Road Maintenance.

| Fund Source | Amount |
|---|---------------|
| Collected Trust Funds (KV and Agreements) (CWKV, CWK2, CWFS, CWF2) | \$57,300 |
| Timber Sale Purchaser (PEPE, PEP2 - typically improvement) | 0 |
| Stewardship Integrated Resource Contracts (SSCC) | \$130,000 |
| Maintenance done by Timber Purchasers | \$270,000 |
| Integrated Resource Restoration (NFRR, currently CMLG in R5) | 0 |
| Other FS Appropriated Funds | \$10,000 |
| Other - Non FS (Grants, Partnerships, Commensurate Use, Agreements) | \$260,000 |
| CMRD FY10-FY15 Average | \$651,667 |
| CMRD Allocation available for Road Maintenance = 39.3% | \$256,100 |
| Estimated Total Funds Available for Road Maintenance from All Sources | \$983,400 |
| Estimated Total Annual Road Maintenance Cost from Table 1 | \$3,039,980 |
| Estimated Fund Surplus or (Shortage) for Road Maintenance to Standard | (\$2,056,580) |
| Available Funds will Support only this Percent of the Road System | 32% |

Not all roads qualify for all sources of funding. Timber sale work is performed on roads used by the sales and most of the work that is accomplished on Maintenance Level 2 roads is done through timber sales. Collections are primarily made from commercial users of paved roads and the funds collected are used to maintain those Maintenance Level 4 and 5 roads. Maintenance Level 1 roads do not qualify for emergency road funding in the event of storm damage. As Maintenance Level 3 through 5 roads are subject to the Highway Safety Act, they are a high priority for allocation of appropriated Federal funds.

Federal Funds

Appropriations of CMRD funds for road operation and maintenance work on the ENF have ranged from \$513,000 to \$719,000 per year over the last 6 years with an average of \$651,667. An average of 39% of CMRD funds is used directly for road maintenance. Road maintenance funds are used to perform maintenance on system roads to maintain them for uses intended by the Forest Service. When the road is used exclusively by the ENF, these funds account for 100 percent of the maintenance. The ENF uses two methods to accomplish maintenance work.

- The Forest Service maintenance crew is specifically trained for projects that require more complex, non-standard work. These crews have an understanding of Forest Service requirements and methods so they require less oversight than contractor forces. They offer maximum flexibility to changing conditions because they consult closely with Forest Service engineers and specialists to adapt to changes, understand critical resource protection requirements, and are accustomed to remote areas.
- Private contractors perform work specified by the ENF on roads that require routine maintenance, well-defined specifications with little risk for major changes, and standard construction practices. Contractors provide cost effective means to change program scale as maintenance budgets change or large construction projects are funded. They also provide crews with skills for bridges, pavement, and other specialized work.

The ENF has little influence over the amount of funds it receives. Maintenance work that is not accomplished becomes deferred maintenance and will only be accomplished if it becomes a critical safety issue. Special funding for these deferred maintenance items may be possible, but it is not considered a source for maintaining the road system to standard.

Purchaser Maintenance

Purchasers of Federal timber and other forest products are required to maintain roads affected by the traffic generated to remove the products. Since many roads are constructed and maintained to provide primary access to the forest for product removal, all contracts for product removal include requirements to either deposit funds to be used by the Forest Service to maintain roads or requirements and specifications for the purchaser's performance of maintenance on specific roads. Sometimes these two options are used concurrently.

When purchasers are required to deposit funds, the Forest Service is responsible for road maintenance. Road maintenance is accomplished by Forest Service crews or by contract. In general, purchaser collections are required for multipurpose roads which have a substantial amount of traffic from uses other than forest product removal. Collections can also be the best choice on roads where multiple purchasers are operating, to ease coordination of road maintenance.

Purchasers can be required to perform road maintenance on Forest System roads as specified in the contract. In this case, the Forest Service monitors the contract to verify that the purchaser is meeting the road maintenance specifications. This option is used when the purchaser generates all or almost all of the traffic that leads to the need for maintenance.

In addition to traditional forest product purchase contracts, the Forest Service has authority to enter stewardship contracts that allow exchange of goods for services. Under this authority, road maintenance requirements may be included. The contractor maintains roads in accordance with specifications in the contract that are monitored for compliance.

Agreements and Permits

Authorities sanction several types of agreements and permits for sharing road costs with private or corporate road users. The ENF uses several of these agreements which allow using Forest Service roads for access to private residences or commercial enterprises.

Cooperative Agreements

Cooperative agreements with counties or other road jurisdictions provide for maintenance sharing as described in Forest Service Handbook 7709.59 and 1509.11 Section 31.2, Section 39.3, and Section 39.4. These agreements are used to deal with roads crossing National Forest Land that serve non-Federal land or access both Federal and non-Federal lands. Jurisdiction can be assigned to the authority with the primary use and both the Forest Service and local authority can cooperate in funding maintenance of the roads for mutual benefit. The agreements allow flexibility to share costs of maintenance and improvements.

Road Use Permits

The ENF issues commercial road use permits authorize the use of roads for purposes of commercial hauling or as an exception to restrictions. The permits can be used to authorize use of a road that is otherwise closed to access non-federal property, except restrictions of road use orders, or allow use on roads not included on the motorized vehicle use map. The use is restricted to the terms of the permit and a commensurate share of maintenance costs is required by either performing maintenance or depositing funds. These are uses such as private timber companies or water bottling companies or companies extracting minerals that use the forest roads to transport products from either private or public lands.

Investment Sharing

The ENF uses investment sharing principles of Forest Service Manual 7731.3 to assure that commercial users contribute their commensurate share of initial investment and maintenance for a road. Sierra Pacific Industries (SPI) is a co-owner of part of the road system through the Road Right-of-Way Construction and Use Agreement (also known as the Cost Share Program). As SPI uses the co-owned roads to haul timber, they perform maintenance commensurate with their use. They also make deposits or perform maintenance on roads they use where they are not co-owners.

FERC Permits

The Federal Energy Regulatory Commission (FERC) permittees operate hydroelectric facilities inside the ENF. The permits for Eldorado Irrigation District and Sacramento Municipal Utility District require them to meet commensurate use requirements when using the ENF road system to access their facilities.

Non-Federal Property Owners

Access to owners of non-Federal property can be authorized as provided in Forest Service Manual 7731.14, which includes provisions for those owners to fund maintenance and repair damages to the road caused by their use. Forest Service use of the road is allowed and the Forest Service is responsible for its share of maintenance. Roads where the principal use is access to private land and are only incidentally used by the Forest Service are not required to be system roads. Forest Service Manual 7732.25 allows maintenance by Homeowners Associations or Road Users Associations when non-Federal owners want a higher standard of maintenance than the Forest Service requires, but a county or other public road agency is not willing to take jurisdiction of a road.

Cost Reduction Strategies

Some possibilities to align the road system with the current and projected maintenance funding are:

- Decrease miles of roads.
 - Decommission roads.
 - Convert roads to trails for either motorized or non-motorized use.
- Transfer responsibility to other appropriate jurisdictions.
- Upgrade roads through sustainable design to reduce long-term maintenance.
- Decrease maintenance levels of roads.
- Collect fees from permittees where authorized.

Decrease miles of roads

The ENF has worked to decrease the number of miles of road by decommissioning roads that are not needed for management of the forest. This has been a continuing effort which has resulted in conversion of some roads to motorized trails and decommissioning of roads that were determined to be unneeded.

Transfer responsibility to other appropriate jurisdictions

The ENF cooperates with other public road jurisdictions including State, county and municipal authorities to coordinate an effective road system for access to the forest and private lands within the forest. Entities that are possible partners in jurisdiction changes are counties, municipalities, general improvement districts, and homeowners groups. These entities all have limited budgets and are reluctant to accept roads that are not of high value to them. Road that several organizations need for access are good candidates for partnerships.

Roads shared with State, county, and municipal public road authorities should have Cooperative Forest Road Agreements with Schedule A attachments specifying responsibility for maintenance of each road. An example of the Forest Road Agreement is located in Forest Service Handbook 1509.11 Section 39.3 with Schedule A. This agreement and the accompanying Project Agreement (1509.11 Section 39.4) allows cost sharing for road maintenance among the road authorities.

Roads used to access non-Federal property such as residences or businesses should also be evaluated for transfer if not needed by ENF for resource management access. These roads could become private roads maintained by the users.

Roads that cannot be transferred from ENF jurisdiction should be evaluated for partnerships with other users for sharing maintenance costs.

Upgrade to sustainable designs

The ENF has been upgrading roads to meet current design and Best Management Practice requirements. By improving design and incorporating Best Management Practice standards, the road system will be more sustainable in the future and result in reduced impact to resources. This work should continue and these projects would be an excellent candidate for special program funding discussed above.

Decrease maintenance levels of roads

Road maintenance costs vary greatly by maintenance level as shown in Table 1. The more user comfort, higher speed, and amount of use the road sustains, the more the road will cost to maintain. The ENF has 28 miles of Maintenance Level 5 roads and 123 miles of Maintenance Level 4 roads which are the most expensive to maintain and may be the most difficult to reduce maintenance level. These roads provide high levels of user comfort and carry high volumes of traffic safely. It is unlikely the maintenance level can be changed on these roads, unless there has been a change in numbers of vehicle and speeds due to evolving use patterns. The analysis of maintenance level needs will have to take into account the traffic volume, speed, user expectation, purpose of the road, and other factors identified for each road. The most feasible roads to convert to lower maintenance levels will be the least used roads.

Low benefit roads that are Maintenance Level 2 and 3 may be assigned to Maintenance Level 1 status to eliminate traffic for periods exceeding one year. Where it is possible to eliminate traffic for extended periods, changing maintenance levels may result in lower maintenance costs over several years. If funding does not allow adequate road maintenance, it may be necessary to identify groups of roads and the number of years they could be closed. If several groups could be identified, rotating access to areas by closing one or more groups for one or more years and then

opening use while closing another group of roads may be possible. This strategy could be effective for periods of low funding or periods when funds need to be directed to higher priority roads for reasons such as improvements or emergency repairs.

Permittee Maintenance or Collections

Roads that access private land or single purpose facilities such as a resort or ski area have special use permits that include requirements to pay a commensurate share of the road maintenance costs. This can range from a small share of cost to the entire cost as determined by the use of a specific road. The ENF either collects fees for commensurate use or has principal users of the road perform maintenance. Where use is exclusive to the permit, some roads are closed to the public and the ENF shares none of the maintenance cost.

Conclusion

The ENF has developed a road system to effectively manage access to the forest for multipurpose use. That road system has evolved to meet many new needs over the forest's history. Changes in resource needs, use patterns, and funding continue to require the road system to evolve to serve the current and future needs. Because of the emphasis placed on road system construction and maintenance in the past, the majority of the forest is accessible by vehicle.

Although budget levels have been stable over the past 5 years, the appropriated funds available to the ENF have been reduced by 50 percent over the past 10 years. When combined with reduced value of timber products and increasing maintenance costs, the current funding levels for road maintenance cannot support maintenance of the entire existing road system to reasonable standards. Funding reductions result in reduced levels of maintenance and increased incentive for a smaller road system. Some roads will be in poor condition and fewer roads may be available for use.

The ENF has a history of adapting to changing conditions and must continue to adapt to find new funding sources, partners, and processes to manage the existing road system. Innovating and taking advantage of all opportunities will be necessary to determine the correct size of the road system, the right mix of maintenance level designations, the roads available for recreation, and to find the resources to manage and maintain the road system.