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Forest Roads: Construction and Financing

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Summary

Forest roads provide access for using national forests, but are often opposed to prevent environmental damages, protect roadless areas, and avoid the cost of building and maintaining them. New road construction has declined by 75% in the past decade, and road reconstruction has declined by half. However, the principal purpose of most roads is still for access to timber, and many feel that granting credits to timber purchasers for construction is a subsidy; proponents argue that the current system is efficient and effective. The Administration has proposed eliminating the credit system.

Background

Forest road construction and financing have involved contentious legislative debates for many years. Roads are used for access to the national forests, especially for timber harvesting, but also for fire control, recreation, and other uses.¹ Road construction is also opposed by some, for three major reasons. First, both during and after their construction, roads can and often have caused significant environmental damages, particularly to water quality and wildlife habitat. Second, roads necessarily eliminate roadless areas that some people want to retain as pristine wilderness areas. And finally, roads are expensive to build and to maintain.

The debate has traditionally focused on the construction of new roads within the national forests — new roads are far more likely to be opposed. However, sometimes uses require that existing roads be improved, rebuilt, or moved, an activity known as reconstruction. Reconstruction is less likely to be opposed, because rebuilding roads is much less expensive (per mile) and might improve the environment (e.g., by reducing stream sedimentation) without entering roadless areas.

¹ Roads are also needed for access across the national forests to inholdings and intermingled nonfederal lands, but such roads are generally not built and funded by the federal government.

Recent debates have differed. As part of the forest health issue, inadequate road maintenance has been identified as a significant cause of watershed deterioration.² More recently, road financing, particularly granting credits to timber purchasers for required road construction, has been attacked as “corporate welfare,” and the Administration proposed terminating the use of this financing tool in its FY1998 budget request.

The Current Road System

There are 377,810 miles of roads within the National Forest System, including arterial, collector, and local roads.³ Arterial roads (about 7% of the total) are typically two-lane paved roads serving large land areas, and typically connect with public highways.⁴ Collector roads (about 19% of the total) are usually single-lane gravel roads connected to arterial roads or public highways. Local roads (about 74% of the total) typically connect use sites (e.g., campgrounds, trailheads, and logging sites) with collector roads, arterial roads, or public highways; except for those serving recreation sites, most are built for high-clearance vehicles (e.g., pickups and trucks). To protect the public and/or the environment and to reduce maintenance costs, local roads may be closed to traffic or obliterated after the principal use is completed. In addition, timber purchasers may build temporary roads to meet their needs for harvesting and removing the timber.

The mileage of new roads built in the national forests has declined over the past decade, proportional to the decline in timber sales. More than 2,000 miles of new roads were built annually in the late 1980s, but fewer than 500 miles have been built annually in the past 2 fiscal years. (See table 1.) Reconstruction has also declined, but only to about half of the late 1980s level. (Prior to FY1986, the Forest Service did not distinguish new roads from reconstruction in its reporting on the road construction program.)

Timber harvesting is the primary purpose for most new roads and reconstruction. Since the Forest Service began identifying road construction purposes in FY1990, timber has been the primary purpose for 97% of new roads and 87% of road reconstruction. The majority of road construction and reconstruction is by timber purchasers under the Purchaser Credit Program (PCP).⁵ (The Forest Service is authorized to require timber purchasers to build the roads specified in the timber sale contracts and are generally compensated for their work; the details of this program are described under road system financing, below.) Timber purchasers have accounted for 93% of new roads and 81% of reconstruction. (See table 1.) The other timber access roads and the recreation and general purpose roads are constructed *via* road construction contracts under the Forest Road Program (FRP).

² See: K. Norman Johnson, *et al.*, *Forest Health and Timber Harvest on National Forests in the Blue Mountains of Oregon: A Report to Governor Kitzhaber*. June 15, 1995.

³ U.S. Dept. of Agriculture, Forest Service. *Report of the Forest Service, Fiscal Year 1995*. Washington, DC: June 1996. P. 129.

⁴ U.S. Dept. of Agriculture, Forest Service. *FY 1998 Budget Explanatory Notes for the Committee on Appropriations*. Washington, DC: n.d. P. 159.

⁵ Construction and reconstruction under the Purchaser Elect Program (PEP) are typically reported with the PCP, and are combined in table 1; PEP operations are described under road system financing in this report.

**Table 1. New Roads Built and Roads Reconstructed
in the National Forest System (in miles)**

Year	Total New	New PCP	FRP-sum	FRP-timber	FRP-other	Total Reconst.	Recon PCP	FRP-sum	FRP-timber	FRP-other
1986	2,485	2,033	452			3,932	3,132	800		
1987	2,593	1,973	620			5,283	3,509	1,774		
1988	2,310	2,037	273			4,772	3,693	1,079		
1989	1,823	1,650	173			3,721	3,029	692		
1990	1,966	1,830	136	97	39	4,554	3,833	721	293	428
1991	1,311	1,219	92	49	43	3,708	2,895	813	302	511
1992	1,178	1,080	89	40	58	3,259	2,506	753	171	582
1993	816	772	44	16	28	2,625	2,255	370	108	262
1994	520	500	20	4	16	1,933	1,749	184	5	180
1995	468	439	29	9	20	2,416	1,762	654	217	437
1996	435	418	17	1	16	2,901	2,314	487	219	268

Source: U.S. Dept. of Agriculture, Forest Service. *Budget Explanatory Notes for Committee on Appropriations*. Washington, DC: annual series.

Road maintenance allows continued use of roads over time. Some maintenance results from traffic use, but some (*e.g.*, clearing culverts and roadside brush, removing fallen rock, and repairing signs and bridges) results simply from the passage of time. Only 38% of the national forest road system (144,973 miles) was maintained at levels consistent with current uses in FY1996; this is a decline from 47% of the system fully maintained in FY1990. As of FY1994, 20% of the system (75,348 miles) was closed to use, of which 40% (29,888 miles) was fully maintained. The remaining roads (both open and closed) are maintained at less than necessary to provide for current uses. Although this suggests a maintenance backlog, no backlog has been identified in either the annual *Report of the Forest Service* or the agency budget requests.

Road System Financing

The principal authorities for financing forest road construction and maintenance were enacted in the 1964 National Forest Roads and Trails Act.⁶ The two primary financing mechanisms for construction activities, from §4 of the Act, are annual appropriations and requirements on timber purchasers with amortization in contracts. (For financing purposes, new road construction and road reconstruction are essentially indistinguishable, and will be combined as “construction activities” in this section.) These two mechanisms can also be used for road maintenance, although requiring deposits to a special account by timber purchasers for their share of road maintenance is authorized in §6 of the Act, and is widely used.

⁶ Act of Oct. 13, 1964; P.L. 88-657; 16 U.S.C. 532-538.

Annual Construction Appropriations. The Forest Service receives annual appropriations for road construction. This funding is used in two ways: for construction activities through direct contracts, and administering such contracts (FRP program); and for administering timber purchaser construction activities (PCP program). Total annual appropriations for road construction have declined significantly — by nearly 50% — over the past decade, as shown in table 2, but the decline in appropriations has been less than the decline in the mileage of new roads and reconstruction, shown in table 1.

Table 2. Financing for Road Construction and Maintenance in the National Forest System (in millions of dollars)

Year	Total Constr. Approp.	FRP Contracts	FRP Admin.	PCP Admin.	PCP Credits	Total Constr. Financing	Total Maint. Approp	Total Coop. Deposit
1986	179.5	44.0	40.3	95.2	(97.7)	227.2	61.9	46.4
1987	223.6	95.3	38.6	89.6	(102.6)	326.2	63.1	57.3
1988	181.4	59.6	44.6	77.1	(108.1)	289.5	83.7	58.3
1989	163.4	42.3	53.9	67.2	(84.0)	247.4	80.7	57.2
1990	159.8	48.8	53.4	57.5	(123.3)	283.0	96.4	42.8
1991	173.1	51.8	59.3	61.9	(123.5)	296.6	91.3	58.0
1992	169.0	55.3	58.6	55.1	(117.8)	286.8	85.9	56.3
1993	140.6	33.4	61.9	45.4	(119.2)	259.8	82.2	57.6
1994	97.3	15.7	55.2	26.4	(73.2)	170.5	79.2	46.4
1995	98.2	30.1	33.3	34.9	(51.1)	149.2	83.8	39.7
1996	94.9	26.4	33.9	24.6	(47.5)	142.4	81.0	42.8

Source: U.S. Dept. of Agriculture, Forest Service. *Budget Explanatory Notes for Committee on Appropriations*. Washington, DC: annual series.

The mix of funding — for construction contracts, and for administering both FRP and PCP construction — has fluctuated widely over the past decade, although the general trend has been downward. The substantial expenses for administering purchaser (PCP) construction — nearly \$15,000 per mile (for construction new roads plus reconstruction) — occur because the Forest Service plans, designs, and surveys the construction, and then inspects the purchasers' work to ensure that the standards have been met. Road planning is typically done during the integrated land and resource management planning required for the national forests by the National Forest Management Act of 1976 (NFMA).⁷ Detailed planning, designing, and surveying then occur as part of the planning and preparation of specific activities, such as a timber sale contract.⁸

⁷ Act of Oct. 22, 1976; P.L. 94-588. Actually, NFMA was primarily an amendment to the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA; Act of Aug. 10, 1974; P.L. 93-378; 16 U.S.C. 1600-1614); RPA required the plans, while NFMA provided substantial guidance on how to do the planning.

⁸ In contrast, access roads across the national forests are planned and designed by the person (continued...)

Purchaser Credit Program (PCP). The Forest Service is authorized by §4 of the 1964 Act to acquire, construct, and maintain forest roads “(2) by requirements on purchasers of national forest timber and other products, including provisions for the amortization of road costs in contracts ...”. (The extent to which this authority is used for road maintenance, if at all, is not reported by the Forest Service.) To implement this authorization, the Forest Service grants credits to timber purchasers equal to the estimated cost of building the specified roads. The purchasers can then generally use the credits to pay for the timber being harvested, although some credits may be unusable (ineffective).⁹

The use and treatment of purchaser credits has varied over time. Until 1974, there was no congressional restriction on the agency for granting road credits. Then, Congress required annual appropriations for the credits, by defining them as requiring “budget authority.”¹⁰ This requirement was altered in the FY1982 Interior Appropriations Act by deleting the reference to “budget authority” and replacing it with a direction to establish limits on the amount of credits which can be obligated in annual appropriations acts.¹¹ The authorized level for FY1982 was \$242.5 million; in recent years, the authorized level has only been \$50 million annually. As shown in table 2, purchaser road credits actually used (excluding ineffective credits) have declined by about half over the past decade.

One significant aspect of the purchaser credit program is that the credits used are now counted as revenues, for the purpose of 25% revenue-sharing. Using the credits does not result in cash revenues, however; rather, it is an exchange of timber assets for the construction of road assets. The counties argued that Forest Service decisions to give timber to purchasers for road construction was reducing timber sale revenues, without the counties’ being a party to those decisions; Congress agreed, and in 1976 (§16 of NFMA) directed that purchaser road credits be counted as timber sale revenues. Thus, revenue-sharing is actually more than 25% of cash revenues.¹²

⁸(...continued)

or organization proposing the road. The Forest Service has the authority to approve or deny the proposal, or to suggest modifications (including changes for cooperative locations and funding for mutual benefit); however, the only agency cost for such roads is the expense to review the permit.

⁹ The credits cannot be used when the cash payments for the timber would be below the cash minimum (the “base rates”) for the timber. (Unusable credits are called ineffective.) This situation is complicated by another Forest Service program, known as stumpage rate adjustment, under which the agency adjusts timber prices in existing contracts based on changes in lumber prices. If lumber prices fall, some credits may become ineffective on relatively low-priced sales (including credits which have already been used, thus requiring additional cash payments); on the other hand, if lumber prices rise, previously ineffective credits might become effective.

¹⁰ This was done in §10 of RPA (P.L. 93-378) by reference to the Act of July 12, 1974 (the Congressional Budget and Impoundment Control Act of 1974; P.L. 93-344).

¹¹ Act of Dec. 23, 1981 (Dept. of the Interior Appropriations, FY1982); P.L. 97-100; 95 Stat. 1391.

¹² Under the Act of May 23, 1908, the Forest Service is required to return 25% of revenues to the states for use on roads and schools in the counties where the national forests are located. This payment was intended to substitute for property taxes for the tax-exempt national forests. NFMA expanded the definition of receipts to include purchaser road credits and deposits to the Knutson-Vandenberg (K-V) Fund; deposits to the Salvage Sale Fund were added later. Because
(continued...)

Purchaser Elect Program (PEP). This program was created in 1976 (§14(i) of NFMA) to allow small business (except in Alaska) to elect to have the Forest Service build the roads specified in the timber sale contracts. In such cases, the purchasers' payment for the timber includes cash payments equal to the credits; these funds are deposited in a special account which the Forest Service can use (without further appropriation) for contracting the road construction. The program has typically accounted for about 10% of purchaser credits, and the accomplishments are usually reported with purchaser credit work; in table 2, PEP funding is included in PCP funding.

Annual Maintenance Appropriations. The Forest Service receives annual appropriations for road maintenance. This funding has been stable for the past several years, but is more than 15% below the peak appropriations of \$96.4 million in FY1990. Because cooperative deposits have declined by a greater percentage, annual appropriations have become relatively more important, accounting for nearly 2/3 of road maintenance financing in the past 3 years. In addition, the proportion of the road system that is fully maintained has been declining. Although the road system grew 4% between FY1990 and FY1995, the fully-maintained mileage declined by 16%, from 47% of the system in FY1990 to only 38% of the system in FY1995.

Cooperative Deposits. Under §6 of the 1964 National Forest Roads and Trails Act, the Forest Service is authorized to require purchasers to make deposits to a special account that is used for road maintenance after the timber sale is completed.¹³ As shown in table 2, the use of cooperative deposits over the past 3 years is substantially below the average use in the late 1980s and early 1990s; this is probably related to the decline in timber sales, although the timber sale decline began earlier. Unless timber sales increase, it seems likely that cooperative deposits by purchasers for road maintenance will either stabilize or continue to decline.

Road Closure and Obliteration. In addition to road construction and maintenance, the Forest Service closes some roads to vehicular traffic (seasonally, temporarily, or even permanently), usually for environmental or resource protection (*e.g.*, to protect wildlife habitat). The Forest Service also obliterates some roads after the relevant use has been completed. Obliteration not only returns the area to resource production (*e.g.*, timber growth), it also eliminates the need for further maintenance. Obliterating roads is expensive, however, apparently costing about as much (per mile) as road reconstruction; data on the extent and cost of road obliteration are not reported.

¹²(...continued)

revenue-sharing payments are based on non-cash "revenues" (road credits) and on unavailable cash revenues (K-V and Salvage Fund deposits), the payments often exceed the available cash on some national forests (effectively requiring transfers from other forests with sufficient cash revenues). See: U.S. General Accounting Office. *Forest Service: Distribution of Timber Sales Receipts Fiscal Years 1992-94*. GAO/RCED-95-237FS. Washington, DC: Sept. 1995.

¹³ Under various other authorities, dating back to 1913, cooperative deposits can be used for a variety of purposes, including timber scaling, fire protection on non-national forest lands, and other purposes. However, road maintenance deposits by timber purchasers are the principal source and use of cooperative deposits.