

FINAL

**NATIONAL FOREST SYSTEM
ROAD MANAGEMENT STRATEGY**

**ENVIRONMENTAL ASSESSMENT
and Civil Rights Impact Analysis**

U.S. Department of Agriculture

Forest Service
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U. S. FOREST SERVICE
NATIONAL FOREST SYSTEM
ROAD MANAGEMENT STRATEGY
ENVIRONMENTAL ASSESSMENT
and Civil Rights Impact Analysis

Summary and Finding of No Significant Impact

Background

On January 28, 1998, the U.S. Forest Service announced its intent to revise its regulations concerning the management of the National Forest Transportation System involving all acres of the National Forest System (NFS), whether roaded or unroaded. The public interest and issues surrounding the need for that proposal involved a number of road management concerns (*i.e.*, construction and reconstruction of roads in both roaded and roadless areas, decommissioning of roads, maintenance, costs, access, analysis processes, and relationships to forest planning).

Since the release of this rulemaking announcement, the Forest Service has initiated or completed other rulemaking and policy revisions. These include: (1) Final Interim Rule for the 18-month Suspension of Road Construction in Roadless Areas; (2) revisions to Title 36 of the Code of Federal Regulations (CFR), Part 219, *Planning Rule*; and (3) the Roadless Area Conservation Rule Initiative and accompanying final environmental impact statement. Although they were released separately, all are directly or indirectly related to each other and to the proposed and final road management strategies; however, they are not connected actions.

Because of the release of these other policy changes, the need and scope of the road management strategy is now more narrowly focused than the Forest Service's original proposal. It provides long-term direction for the management of the road system on the National Forests.

Purpose and Need

The Forest Service is proposing to revise its policy concerning the management of the National Forest Transportation System to address changes in how the system is developed, used, maintained, and funded. This action is necessary to ensure that the roads system meets current and future land and resource management objectives and public uses of NFS lands, provides for

safe public access and travel, allows for economical and efficient management, and, to the extent practicable, begins to reverse adverse ecological impacts.

The existing road system on NFS lands was primarily constructed over the last 50 years to develop areas for timber harvesting. In the last two decades, however, interest in other uses on the National Forests has increased. Specifically, resource uses of the National Forests have shifted substantially toward a more balanced mix of recreational activities; watershed, fisheries, and wildlife improvement; and timber harvesting and similar resource development.

The Forest Service needs to modify its existing road development policy to one that allows the agency to balance scientific information, public needs, safety and environmental protection, and funding levels when determining the size, purpose, and extent of the future road systems within NFS lands and any specific road reconstruction or construction activities. Further, in response to strong public sentiment, the Forest Service needs to manage its lands to take into account roadless area values such as scenic quality, solitude, and primitive recreational opportunities as well as values associated with resource use such as timber harvesting. The agency also needs to develop a more comprehensive inventory of its existing road system to identify unneeded roads that could be decommissioned.

After an extensive public involvement process, the Forest Service developed a proposal to revise its procedural rules and administrative policy concerning the management of the forest road system. The proposed rule and policy incorporated the Forest Service's proposed road management strategy.

During the development of the road management strategy proposal, the Forest Service also began consideration of a proposal to provide protection to the remaining roadless and unroaded areas within NFS lands and announced its intention to prepare an environmental impact statement (EIS) to examine the potential environmental impacts of that proposal (*see* Volume 64 of the Federal Register [Fed. Reg.] 56306 (1999)). The *Roadless Area Conservation Draft EIS* was issued in May 2000 and the Final EIS was issued in November 2000 (USDA Forest Service, 2000). Under the preferred alternative described in the Final EIS, the Forest Service would promulgate a rule that prohibits new road construction and reconstruction in inventoried roadless areas. Non-stewardship timber harvesting in these areas would also be prohibited. This rule is expected to be finalized in January 2001. Moreover, in accordance with the recently revised Planning Rule, additional protections for other unroaded areas (that is, areas outside of inventoried roadless areas that do not contain classified roads) would be considered in future forest plan revisions. Together, these actions have narrowed the need and scope of the road management strategy.

The Forest Service elected to prepare this environmental assessment (EA) to examine the potential environmental impacts associated with the road management strategy and to further the purposes of the National Environmental Policy Act (NEPA) (Title 42 of the United States Code [U.S.C.] 4321 *et seq.*). The Forest Service prepared a Draft EA, which was issued concurrently

with the proposed rule and administrative policy, to inform Forest Service decisionmakers and the public (65 Fed. Reg. 11680 (March 3, 2000)).

The Forest Service received more than 5,900 letters, postcards, and other correspondence on the proposed road management strategy and on the Draft EA. The thousands of comments received were collated and analyzed by the Forest Service's Content Analysis Enterprise Team, and are available to the public in a document entitled *Final Analysis of Public Comments for the Road Management Strategy*. The Forest Service has considered the comments received individually and collectively and, as a result, has made changes to both the proposed strategy and the Draft EA. The changes made to the Draft EA are reflected in this Final EA. A summary of the public comments and responses to these public comments is included in Appendix G. The final rule and administrative policy incorporate the Forest Service's final road management strategy.

Alternatives

The Forest Service examined the environmental impacts associated with the current road policy (the no action alternative), the road management strategy as originally proposed, and the final road management strategy. Under the *no action alternative*, the focus is on road development. Road development funds are allocated based on relative needs of the National Forests, existing transportation facilities, the value of timber or other resources served, relative fire danger, and comparative difficulties of construction (*see* 36 CFR 212.2(c)). Actions under the no action alternative are subject to all existing NEPA requirements.

Proposed Road Management Strategy Alternative

The proposed road management strategy alternative would allow the forest road system to better serve the current and anticipated management objectives and public uses of NFS lands. In addition, the Forest Service would:

- Develop a comprehensive inventory of classified and unclassified roads that are important to the management and use of the NFS;
- Give priority to decommissioning unneeded roads and reconstructing and maintaining the most heavily used roads;
- Add roads to the transportation system only where supported by a rigorous analysis;
- Make future decisions regarding proposed road construction, reconstruction, and decommissioning at the local level using a science-based roads analysis process that considers environmental and transportation needs and effects at multiple scales; and

- Provide analysis guidance for construction of roads and reconstruction of existing roads within roadless areas until a roads analysis had been conducted and the results integrated into the applicable forest plan, consistent with a final Roadless Area Conservation Rule.

Under the proposed road management strategy, before a comprehensive road inventory had been conducted and roads analysis processes had been completed, decisions on reconstruction and construction of roads in inventoried roadless areas and roadless areas contiguous to inventoried roadless areas (as identified in the Final Interim Rule) required a demonstration of a compelling need (such as critical resource restoration and protection; public safety; and access provided by statute, treaty, or pursuant to reserved or outstanding rights) and would be made after completion of an EIS approved by the Regional Forester.

Final Road Management Strategy Alternative (Preferred Alternative)

The final road management strategy alternative (the preferred alternative) consists of the same components as the proposed strategy, with some limited changes. Like the proposed road management strategy, the final road management strategy would become effective immediately on all NFS lands. Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan (through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis), there would be an interim requirements period during which a demonstration of a compelling need would be required to construct or reconstruct a road in either an inventoried roadless area or in a contiguous unroaded area (as defined by the Final Interim Rule).

Modifications in Response to Comments

In response to public comments and based on other considerations, the Forest Service has modified its original road management strategy proposal. This modification includes provisions regarding a phase-in period for the strategy and the time in which each forest would need to complete a roads analysis process at the forest-scale level. Specifically, within two years of the effective date of the final road management strategy, each Forest System unit must complete a forest-scale road analysis. The findings of a forest-scale analysis may be applied either to the current forest plan or at the time of a forest plan revision or amendment. Further, any future project, ecosystem assessment, or forest plan amendment or revision must be informed by a roads analysis process. However, to avoid costly disruption, any project decision, ecosystem assessment, or forest plan revision published within six months of the effective date of the final road management strategy would not require a roads analysis.

The Forest Service also modified definitions of classified road, temporary road, unclassified road, reconstruction, and maintenance and added a definition of decommissioning. The meaning of “compelling need” during the interim requirements period was also modified. In addition, the procedures required during the interim requirements period would not apply to a proposal to construct or reconstruct a road in an inventoried roadless or contiguous unroaded area if the road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property; if the road

is needed to conduct a response action under the Comprehensive Environmental Response, Compensation, and Liability Act or to conduct a natural resource restoration action; or if road construction is needed in conjunction with the issuance, continuance, extension, or renewal of a mineral lease on lands that are under lease by the Secretary of the Interior at the time the final Roadless Area Conservation Rule is issued.

The Forest Service does not believe that these modifications to the proposed road management strategy affect the anticipated environmental impacts. Therefore, the discussion of environmental consequences does not attempt to distinguish between the impacts of the proposed road management strategy and the impacts of the final road management strategy.

Environmental Consequences

Under the proposed and final road management strategy alternatives and subject to congressional funding levels, the Forest Service anticipates that (1) more miles of roads would be decommissioned and reconstructed than under the no action alternative, and (2) fewer miles of roads would be constructed than under the no action alternative. Although this could result in short-term impacts, implementation of the proposed and final road management strategy alternatives in the long term would result in greater potential for protection of watersheds and air resources; wildlife; fish; and threatened, endangered, and sensitive (TES) species than under the no action alternative. Implementation of the proposed and final road management strategy alternatives over the long term would also reduce access to some forest resources and the economic and social values associated with those resources.

For purposes of analysis for this EA, the Forest Service assumed that road construction and reconstruction planned for inventoried roadless and contiguous unroaded areas would not occur under the proposed and final road management strategy alternatives, except for roads that would be needed for critical resource protection or public safety; to ensure access provided by statute or treaty; to address an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause loss of life or property; or pursuant to reserved or outstanding rights. However, for roaded areas, the Forest Service cannot estimate the miles of roads that would be constructed or reconstructed under the proposed and final road management strategy alternatives because road construction and reconstruction in roaded areas would be dependent entirely on local conditions and decisionmaking.

Although these miles and effects cannot be quantified, it is probable that fewer roads would be constructed in roaded areas than currently planned. This conclusion stems from the Forest Service proposed and final road management strategies, which would shift road management emphasis from transportation development to managing environmentally sound access. Part of this strategy uses a science-based road analysis that would inform decision-makers of the merits and risks of building roads. It would extend the traditional transportation-planning engineering focus on technical and economic analysis to include more complete integration of environmental

considerations to better provide public access within the capability of the land. The proposed and final road management strategies would also direct agency officials to identify the minimum transportation system needed to administer and protect NFS lands using the science-based analysis. This approach reflects changes in public opinion, demand, and use of National Forest resources and a science-based analysis, with consideration of the environmental impacts of road construction which are expected to result in fewer decisions to construct roads.

Decommissioning. Roads needed for access to pre-existing rights, public safety, or forest health projects would not be decommissioned under either the no action alternative or the proposed or final road management strategy alternatives. Road decommissioning would reduce access for off-road and some high clearance vehicles, if forest plans presently allowed for such uses to occur. Additional road decommissioning under the proposed and final road management strategy alternatives would result in further reductions in this type of motorized access in some areas if such uses were already allowed by forest plans.

Reconstruction. Road reconstruction of needed roads would improve access to all forest resources and reduce the environmental damages associated with substandard roads. However, improved access could increase forest use, making some aspects of management of NFS lands more difficult. As with road decommissioning, additional road reconstruction under the proposed and final road management strategy alternatives would result in both additional benefits and adverse consequences as compared to the no action alternative.

Construction. Fewer miles of roads constructed under the proposed and final road management strategy alternatives (as compared to the no action alternative) would result in fewer environmental impacts associated with road construction and operation, including adverse impacts to hydrology; water quality; site productivity; air quality; wildlife habitat and migration; sedimentation; and fish, wildlife, and TES species. Fewer roads could also result in reduced access to timber and some minerals on NFS lands and reduced opportunities for special land uses and new recreational facilities. This could result in adverse economic impacts to communities near NFS lands that are dependent on forest resources for their economic viability.

Under the proposed and final road management strategy alternatives, until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a Land and Resource Management Plan (*i.e.*, forest plan) or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, intrinsic roadless and certain unroaded area values would be protected by limiting road reconstruction and construction in those areas to cases where a compelling need could be demonstrated. This approach could benefit environmental values such as fish, wildlife, and TES species protection and primitive recreation opportunities. It also could, depending on local conditions, reduce human-caused fires associated with timber harvesting (*e.g.*, resulting from equipment use) and other forest uses such as camping, hunting, and off-highway vehicle use. Finally, this approach could reduce access to forest resources such as timber, some minerals, and motorized recreation, and, in some areas, could reduce access for fire suppression. The effects of either the proposed or final road management strategy alternatives on roadless or contiguous

unroaded areas would be short term (*i.e.*, only until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis). The long-term effects of additional projections in inventoried roadless areas are addressed in the *Roadless Area Conservation Final EIS* (USDA Forest Service, 2000) (a final Roadless Area Conservation Rule that would implement the preferred alternative identified in the Final EIS is expected to be published in the *Federal Register* at the same time as the final road management strategy). Long-term effects on contiguous unroaded areas would be addressed in a NEPA document accompanying a forest plan revision, pursuant to the recently revised Planning Rule.

Compliance with Other Laws and Regulations

Implementation of the proposed and final road management strategy alternatives would be fully consistent with other laws and regulations applicable to the Forest Service and its management of NFS lands. These laws include the Forest Service Organic Act of 1897, the Multiple-Use Sustained-Yield Act, the National Forest Roads and Trails Act, the Forest and Rangeland Renewable Resources Planning Act, the National Forest Management Act, the General Mining Law of 1872, and the Alaska National Interest Lands Conservation Act.

Cumulative Effects

The most tangible cumulative effect is the potential for an incremental decline in timber harvesting, resulting from the implementation of the proposed or final road management strategy, added to declines in timber harvesting from NFS lands over the last 10 years. Implementation of either the proposed or final road management strategy alternative could result in a temporary decline in timber sales of as much as \$23 million annually if no timber harvesting dependent on road construction was permitted in inventoried roadless and contiguous unroaded areas during the interim requirements period. This could affect approximately 1,039 direct jobs annually. These effects are considered to be the maximum potential effects, and any longer-term effects are disclosed in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000), or will be disclosed in future NEPA documents prepared for forest plan revisions.

The potential decline in timber harvesting as a result of the proposed or final road management strategy alternative, together with timber harvesting declines associated with other Forest Service activities, could have a cumulative effect on social and economic resources. However, opportunity does exist to substitute timber from other ownerships to replace some of the reduction in National Forest timber sales in the eastern United States. In the west, substitution opportunity is limited.

Any volume that could not be substituted from other U.S. ownerships could probably be met by Canadian imports. However, there would be a loss of the payments to states from the substituted volumes. Moreover, the economic benefits of timber harvesting, including jobs, also would be moved to Canada. This would adversely affect the U.S. communities near NFS lands that have been dependent on timber harvesting. Such imports from Canada would be relatively small and thus unlikely to affect the balance of trade between the United States and her trading partners. It would, however, establish an increased reliance on foreign sources for an important natural resource.

In addition to the road management strategy, the Forest Service is undertaking or has completed several other related rulemakings and regional planning efforts. These initiatives include:

- The final Planning Rule;
- The *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000);
- The Administration's Unified Federal Policy for Ensuring a Watershed Approach to Federal Land and Resource Management;
- Report to the President on the Wildland Fires of 2000;
- The Forest Service Cohesive Fire Strategy;
- A revision to the agency's strategic plan implemented pursuant to the Government Performance and Results Act (Draft U.S. Department of Agriculture, U.S. Forest Service Strategic Plan (2000 Revision), FS-652, November 1999); and
- Regional planning initiatives.

These initiatives are complementary with the proposed and final road management strategy alternatives and, for that reason, would not impose cumulatively significant environmental, economic, or social effects when considered with the road management strategy alternatives.

Relationship between Short-Term Uses and Long-Term Productivity

Long-term productivity of the environment would improve under either the proposed or final road management strategy alternative, as compared to the no action alternative, because the proposed and final road management strategy alternatives would involve more road decommissioning and reconstruction and less road construction than the no action alternative.

Irreversible and Irretrievable Commitments of Resources

If implemented, the proposed and final road management strategy alternatives would tend to reduce irreversible and irretrievable commitments of resources by reducing the miles of roads constructed (particularly, in the short-term, in roadless or contiguous unroaded areas).

Reasons for Finding of No Significant Impact

In consideration of the analysis documented in the EA and the reasons below, the preferred alternative would not constitute a major federal action that would significantly affect the quality of the human environment. Therefore, an EIS will not be prepared. This determination is based on the following reasons:

1. The adoption of the preferred alternative will impose no on-the-ground effects, and it will not authorize any ground-disturbing activities. Implementation of the preferred alternative will be limited in geographic context (40 CFR 1508.27(a)). Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, up to a total of 184 miles of roads may not be constructed (*see* Table 5) of the 5,903 miles of roads currently planned (*see* Table 3). This represents a national reduction of only 3 percent of the permanent and temporary road construction within the NFS each year and will affect only inventoried roadless or contiguous unroaded areas. Over the long term, implementation of the preferred alternative will occur at the forest level, with appropriate NEPA analysis and documentation and public involvement undertaken at that time.
2. The Forest Service has thoroughly evaluated both the beneficial and adverse effects (40 CFR 1508.27(b)(1)) and found them to be without significant impact. The cumulative economic effects of the preferred alternative are expected to be minor (*see* Appendix E) and are primarily related to a decrease in timber harvesting.
3. The Forest Service estimates that the eventual implementation of the preferred alternative on all National Forests could result in an annual decrease in timber harvesting by as much as 170 million board feet, a decrease of 5 percent from current levels if no roads were constructed in any inventoried roadless or contiguous unroaded areas for the purpose of serving timber harvests. This represents a value of approximately \$23 million. A decrease of this magnitude could result in a loss of approximately 1,039 jobs nationwide. However, it is highly unlikely that this level of impact will be reached. At a minimum, at least some roads will be constructed to support timber harvests that serve compelling needs such as reducing fuels that may increase fire risk and combating insect and disease infestations. In addition, once forest plans are revised to incorporate the results of

forest-specific roads analyses, the requirement to illustrate compelling need to enter inventoried roadless or contiguous unroaded areas will no longer be in effect. The ability to construct roads in order to access timber in inventoried roadless or contiguous unroaded areas continues to be governed by the forest plan in effect for each forest and in accordance with the Roadless Area Conservation Rule.

Moreover, the Forest Service contemplates finalizing the Roadless Area Conservation Rule by January 2001. If, as anticipated, the final Roadless Area Conservation Rule prohibits road construction and reconstruction in inventoried roadless areas, then the road management strategy will have no further effect in these areas. The interim restrictions on road construction and reconstruction under the road management strategy would not achieve any greater effect than the Roadless Area Conservation Rule's prohibitions on road construction and reconstruction in inventoried roadless areas. Thus, upon adoption of the Roadless Area Conservation Rule, the impacts of the road management strategy would be limited to contiguous unroaded areas and other lands outside of the inventoried roadless areas.

4. The environmental effects of implementing the final road management strategy on some resources such as wildlife, fish, and TES; watershed; and air quality will be beneficial. While the impacts of the preferred alternative on fire suppression and recreation will be both beneficial and adverse, the overall impact will be beneficial. However, these beneficial impacts will not be significant due to their limited intensity.
5. The preferred alternative will not significantly affect public health or safety (40 CFR 1508.27(b)(2)). The preferred alternative does not authorize any ground-disturbing activities or direct changes to the environmental *status quo*. Instead, this alternative provides programmatic direction to be applied locally on the National Forests. Revisions to forest plans and project-specific decisions will be made at the forest level, with appropriate NEPA analysis and documentation and public involvement undertaken at that time. In addition, specific provisions for protecting public safety or to ensure access provided by statute or provided pursuant to reserved or outstanding rights have been provided (*see* Access and Public Safety).
6. The preferred alternative will not significantly affect any unique characteristics of the geographic area (40 CFR 1508.27(b)(3)). Similarly, it will not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or damage to objects listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8)). The preferred alternative specifically addresses impacts within NFS unique areas such as inventoried roadless and contiguous unroaded areas.

The EA includes a description of the impacts of the preferred alternative on cultural resources (*see* Recreation, Heritage, and Wilderness Resources). The preferred alternative will not alter the environmental protection afforded to sites of cultural or

historic value that are protected under the Preservation of American Antiquities Act of 1906 or the Archeological Resources Protection Act of 1979. Because the preferred alternative does not commit resources that would alter the unique characteristics of geographical areas, it is not significant.

7. The preferred alternative does not involve effects to the quality of the human environment that are likely to be highly controversial (40 CFR 1508.27(b)(4)). Public involvement efforts associated with publication of the proposed road management strategy ensured, nationally and locally, that interested citizens and groups received ample opportunity to provide comments on its implementation and effects. More than 5,900 letters, postcards, oral comments, and electronic mail messages on the proposed road management strategy were received during the public comment period on the Draft EA (*see* Scoping).

Public comments expressing disagreement pertained primarily to the level of economic effects from reduced timber harvest. While there is no significant controversy over the level of economic effects analysis, there is considerable controversy over whether those effects are acceptable or not. Other environmental effects are without significant disagreement. A cost-benefit analysis was performed using accepted economic principles and analysis tools (*see* Appendix E). The result of the analysis is that the national economic effects from reduced timber harvesting are minor. The analysis and results are not highly controversial.

8. The preferred alternative will not impose highly uncertain risks or involve unique or unknown risks (40 CFR 1508.27(b)(5)). The best available information provided the basis for assessing the environmental consequences (*see* Environmental Consequences). The action does not constitute any irreversible commitment of resources that are unique or any unknown risks.
9. The preferred alternative would not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)). In addition to developing an efficient, safe, environmentally sound road system, one effect of the preferred alternative is to retain resource management options in inventoried roadless and contiguous unroaded areas of NFS lands until local decisions regarding the construction and reconstruction in these areas can be assessed and made at the local level. This action does not lead to any specific changes in forest plans or require any further inventory or analysis of wilderness or roadless area management. The Forest Service customarily issues Decision Notices and Findings of No Significant Impact (FONSI) simultaneously pursuant to its NEPA procedures. However, a separate Decision Notice is not customarily prepared for a final rulemaking. The Department frequently issues FONSI simultaneously with final rulemaking as part of the necessary prerequisite to rulemaking. The notice and comment opportunities associated with rulemaking ensure that there is ample consideration of the environmental consequences of the final road management strategy as embodied in the final rule.

10. The preferred alternative is not related to other actions with individually insignificant but cumulative significant impacts (40 CFR 1508.27(b)(7)). The EA discloses the potential cumulative effects of the preferred alternative with other ongoing and completed Forest Service activities and initiatives (*see* Cumulative Effects). Although these initiatives have similar components such as road management in roadless areas, they are not connected actions. Based on this analysis, the Forest Service concludes that the effects will not be significant.
11. The preferred alternative will not adversely affect threatened or endangered species or habitats that have been determined to be critical under the Endangered Species Act (40 CFR 1508.27(b)(9)). The Forest Service consulted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service in accordance with established requirements. The EA reflects the results of these consultations (*see* Consultation section and Appendix H). Site-specific projects undertaken to further the road management strategy will be preceded by biological evaluations to review the potential effects to TES species.
12. The preferred alternative does not threaten to violate federal, state, or local laws or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)). In addition, adoption and implementation of the final road management strategy would not significantly affect the following elements specified in statutes, regulations, or Executive Orders regarding the human environment: air quality; cultural resources; farm lands (prime or unique); floodplains; American Indian religious concerns; TES species; hazardous or solid wastes; water quality; wild and scenic rivers; and wilderness. The preferred alternative ensures access provided by statute or pursuant to reserved or outstanding rights (*see* Environmental Consequences).

Determination

On the basis of the information and analysis in this EA and all other information available, as summarized above, it is my determination that adoption of the preferred alternative would not constitute a major federal action that would significantly affect the quality of the human environment. Therefore, an EIS is unnecessary.

Mike Dombeck
Chief, USDA Forest Service

Administrative review: Rulemaking by the Secretary of Agriculture is not subject to administrative appeal under 36 CFR 215.

Supporting record is available at:

USDA Forest Service, Engineering Staff
Sidney R. Yates Building
14th Street and Independence Avenue, S.W.
Washington, D.C. 20024

Purpose of and Need for Action

Purpose of Action

On January 28, 1998, the Forest Service announced its intent to revise its regulations and administrative policy concerning the management of the National Forest Transportation System (*see* Advance Notice of Proposed Rulemaking, 63 Fed. Reg. 4350 (1998)). The purpose of the revision was to better manage existing forest road resources with limited resources and in accordance with improved scientific and technological information and public demands, and to provide analysis guidance for road construction and reconstruction in inventoried roadless and contiguous unroaded areas¹ until forest plans were revised, subject to the final Roadless Area Conservation Rule.

Need for Action

The Forest Service is proposing to revise its policy concerning the management of the National Forest Transportation System to address a growing maintenance backlog on its existing road system, adverse environmental and social effects of old roads and some new roads, and public demand for improved access within the capabilities of the land. The changes in policy would be reflected in Forest Service regulations (36 CFR Parts 212 and 261) and in the Forest Service Manual, Titles 1900 (Planning) and 7700 (Transportation System) for implementation nationally, effective with the publication of the final rule. The proposed regulations and administrative policy incorporated the Forest Service's proposed road management strategy. The final regulations and policy incorporate the final road management strategy.

The existing road system on NFS lands was largely constructed over the last 50 years to develop areas for timber harvesting. Reflecting this, the current National Forest Transportation System policy focuses on development of roads into and across NFS lands.

In the last two decades, however, interest in non-extractive uses of the National Forests has increased. Specifically, resource uses of the National Forests have become more balanced among recreational activities; watershed, fisheries, and wildlife improvement; and timber harvesting and similar resource development. There has been a decrease in timber harvesting and other commodity uses and a steadily increasing growth in the amount and type of recreational uses such

¹ For purposes of this road management strategy, "contiguous unroaded areas" outside of inventoried roadless areas are: (1) NFS unroaded areas of more than 1,000 acres contiguous to RARE II areas and forest plan inventoried roadless areas, and (2) unroaded areas of 1,000 acres or more contiguous to wild components of the Wild and Scenic River System or to unroaded areas of other federal lands larger than 5,000 acres. These areas were referred to as "other unroaded areas" in the Draft EA. The designation was changed to avoid confusion with the use of the same term in the *Roadless Area Conservation EIS* (USDA Forest Service 2000).

as hiking, camping, hunting, fishing, wildlife viewing, and pleasure driving. For example, roads carry an estimated 15,000 vehicles daily that are associated with timber harvesting and other resource development. Although timber use peaked in 1990, the current level of use is similar to that of 1950, and it now accounts for only 1 percent of all forest road use. On the other hand, the agency estimates that, each summer, approximately 1.7 million vehicles are involved in recreational use of roads on NFS lands daily, an increase of over 13 times (1,300 percent) since 1950. The Forest Service is managing a road system that was built for one use -- timber harvest -- and is now being used primarily for recreation. Demands will continue to rise for both developed and dispersed recreational opportunities, and the agency's management policies need to recognize and manage this changed usage.

In addition, current funding levels are not adequate to maintain existing roads to the standards originally planned, minimize ecological impacts, and allow efficient and safe use. Given the inadequate funding levels, the agency needs to find ways to better manage the road system with limited resources.

Additional scientific information relating to the environmental impacts associated with Forest Service roads has become available. This information has increased the understanding of the environmental, economic, and social impacts of constructing roads and reconstructing and maintaining existing roads. In particular, the Forest Service has found that today's road construction technology results in fewer and less intensive adverse environmental impacts than did earlier construction methods; however, adverse environmental impacts from roads built before 1980 are more extensive than expected. The agency needs to update information regarding environmental and other impacts to adequately protect the forest environment for future generations.

Many roads on National Forest lands do not meet the current standards for safety or environmental protection that are set forth in Forest Service regulations, manuals and handbooks, and forest plans. Some roads were pioneered by early settlers; others were planned for temporary access but that access was never eliminated. Still others evolved from tracks made by off-road vehicles. Due to their haphazard nature, such roads usually have more adverse impacts on the environment than do permanent, properly planned forest roads which are well engineered and maintained. While the agency estimates that more than 60,000 miles of unauthorized, unplanned, and temporary roads exist on NFS lands, a complete inventory of these roads is needed to identify roads that should be decommissioned.

Regardless of its design or the era in which it is constructed, building a road in a roadless area can degrade the desirable characteristics of such areas. Therefore, on October 19, 1999, the Forest Service announced the preparation of an EIS to address to the long-term protection and management of these areas (*see* 64 Fed. Reg. 56306 (1999)). The Forest Service needs to continue to manage its lands to take into account roadless area values such as scenic quality, refugia, habitat connectivity, and primitive recreational opportunities as well as values associated with resource use such as timber harvesting. The Forest Service issued its *Roadless Area Conservation Draft EIS* in May 2000 (*see* 65 Fed. Reg. 31898 (May 19, 2000)), and its Final EIS

in November 2000 (USDA Forest Service, 2000). In addition, the Forest Service has issued its final Planning Rule, which requires that additional protections for other unroaded areas (that is, all areas outside of inventoried roadless areas that do not contain classified roads) be considered in forest plan revisions (65 Fed. Reg. 67514 [November 9, 2000]).

As described above, the road management strategy should be one that allows the agency to balance scientific information, public needs, safety and environmental protection, and funding levels when determining the size, purpose, and extent of the future National Forest Transportation System and any specific road reconstruction or construction activities. A complete inventory of the Forest Service's existing road system would be conducted and each forest would consider the intrinsic value of inventoried roadless and contiguous unroaded areas in road construction and reconstruction decisions (the Roadless Area Conservation Rule addresses long-term management for inventoried roadless areas). In addition, in accordance with the strong public sentiment expressed in comments to the Forest Service in response to its Advance Notice of Proposed Rulemaking, in open houses at the National Forests, and at focus group meetings convened by the agency, the Forest Service would continue to rely on local forest planning processes that involve the public and state, local, and tribal governments in planning decisions.

Scoping

The Forest Service announced its intent to revise regulations concerning the management of the National Forest Transportation System in January 1998 (*see* Advance Notice of Proposed Rulemaking, 63 Fed. Reg. 4350 (1998)). Simultaneously, the agency published a proposed interim rule to temporarily suspend temporary and permanent road construction and reconstruction in certain unroaded areas of NFS lands.² The purpose of the proposed rule was to take a “timeout” for 18 months while the Forest Service developed a new long-term road management strategy and new analytical tools to provide a more ecological approach to analyzing existing and future road needs. The Forest Service encouraged comments on both the proposed rulemaking and on the proposed interim suspension rule.

Over 53,000 letters, postcards, oral comments, and electronic mail messages containing over 164,000 comments were received. In addition, public meetings were held in 31 communities nationwide in February and March, 1998. Total attendance was approximately 2,300 people. Sessions were conducted in an open-house format to provide maximum opportunity for informal discussion between Forest Service representatives and the public.

The Forest Service analyzed the comments received regarding the proposed rulemaking and the proposed interim suspension rule in separate reports issued in August 1998 (*see Proposed Rulemaking on Administration of the Forest Service Development Transportation System, Analysis of Public Comments: Final Scoping Report* [August 20, 1998] and *Proposed Interim Rule Suspending Road Construction in Roadless Areas, Analysis of Public Comments: Final Report* [August 20, 1998]). In general, the scoping comments focused on the management and use of roadless areas rather than on the proposed implementation of the road management strategy and roads analysis process. After considering all public comments, the Forest Service issued a final interim rule temporarily suspending road construction and reconstruction in unroaded areas for 18 months or until a new rule is promulgated, whichever comes first (64 Fed. Reg. 7290 (1999)).

Following the issuance of the final interim rule, the Forest Service convened nine focus groups around the United States with external stakeholders representing recreation, conservation, and industry/commercial interests. Three additional sessions were conducted with Forest Service employees. A total of 111 individuals participated in all of the focus group sessions. The purpose of these focus groups was to examine issues associated with a long-term road management policy and to better understand the views of the public, including specific interest groups, regarding

² For purposes of the proposed interim rule, “unroaded areas” included (1) remaining unroaded portions of RARE II and land and resource management planning inventoried roadless areas, (2) NFS unroaded areas of more than 1,000 acres contiguous to RARE II areas and forest plan inventoried roadless areas, and (3) unroaded areas of 1,000 acres or more contiguous to wild components of the Wild and Scenic River System or to unroaded areas of other federal lands larger than 5,000 acres (*see* 64 Fed. Reg. 7290, 7303 (1999)). This is the same definition used in the proposed and final road management strategies for “contiguous unroaded areas.”

roads and transportation on public lands. A summary report of the focus groups was prepared for the Forest Service by an outside consulting firm that had organized and facilitated the focus group meetings (BBC Research & Consulting, 1999).

The comments received in response to the Advance Notice of Proposed Rulemaking and the results of the focus group discussions raised the following issues and concerns, among others:

- Good forest management decisions will result only from a process that includes local agency decisionmakers and the public. Development of a national policy would supercede land management efforts and the National Forest and regional level, undoing local plans built on extensive and lengthy public involvement and collaborative interagency planning.
- The Forest Service does not have an accurate inventory of existing roads.
- Science and technology should be used to help make or guide specific road policy decisions.
- Decisions to build roads should be based on need.
- The Forest Service is not adequately maintaining much of its existing road system.
- Disagreement exists between groups who oppose aggressive road development and maintenance and those who want the Forest Service to build and maintain roads as needed.

Using the information from the comments received and the focus group discussions, the Forest Service developed a proposed road management strategy and sought public comment on this proposal through notices in the Federal Register and by other means (*see* 65 Fed. Reg. 11680 (March 3, 2000)).

During the development of the road management strategy proposal, the Forest Service also began consideration of a proposal to provide protection to the remaining roadless and unroaded areas within NFS lands and announced its intention to prepare an EIS to examine the potential environmental impacts of that proposal (*see* 64 Fed. Reg. 56306 (1999)). The *Roadless Area Conservation Draft EIS* was issued in May 2000 and the Final EIS was issued in November 2000 (USDA Forest Service, 2000). Under preferred alternative described in the Final EIS, the Forest Service would promulgate a rule that prohibits new road construction and reconstruction in inventoried roadless areas. Non-stewardship timber harvesting in these areas would also be prohibited. This rule is expected to be finalized in January 2001. Moreover, in accordance with the recently revised Planning Rule, additional protections for other unroaded areas (that is, areas outside of inventoried roadless areas that do not contain classified roads) would be considered in future forest plan revisions. Together, these actions have narrowed the need and scope of the road management strategy.

The Forest Service prepared a Draft EA to examine the potential environmental impacts associated with the proposed road management strategy and to further the purposes of NEPA. The Draft EA was issued concurrently with the proposed rulemaking to inform Forest Service decisionmakers and the public.

The Forest Service received more than 5,900 letters, postcards, and other correspondence on the proposed road management strategy and on the Draft EA from people and organizations in all 50 states. Approximately 64 percent of this correspondence came from commenters in the Western and Mountain states, primarily California, Oregon, Washington, and Colorado. The thousands of comments contained in this correspondence were collated and analyzed by the Forest Service's Content Analysis Enterprise Team, and are available to the public in a document entitled *Final Analysis of Public Comments for the Road Management Strategy*. The Forest Service has considered the comments received individually and collectively and, as a result, has made changes to both the proposed road management strategy and to the Draft EA. The final rule and administrative policy incorporate the Forest Service's final road management strategy.

The changes made to the Draft EA are reflected in this Final EA. In particular, additional information was added regarding access to manage outbreaks of fire, insects, or disease; the effect of roads on wildlife; social and economic impacts; and the cumulative impact of several ongoing Forest Service rulemakings and regional planning efforts. The data was updated to be consistent with that used in the development of the *Roadless Area Conservation Final EIS* (USDA Forest Service, 2000), and many editorial changes were made. Appendix G includes a summary of the comments received on the Draft EA and the Forest Service's response to those comments.

Like the Draft EA, this Final EA quantitatively characterizes the range of miles of roads and areas that could be affected by the proposed and final road management strategy alternatives and the current transportation program (the no action alternative), and qualitatively identifies the kinds of impacts that could occur. Specifically, this EA estimates the miles of roads that would be decommissioned, reconstructed, and constructed on an annual basis on all NFS lands and on inventoried roadless or contiguous unroaded areas under the current program and compares that to the miles of roads that would be decommissioned, reconstructed, and constructed on those lands under the road management strategy as currently envisioned. This estimate is based on past trends and on current forest plans and is intended for comparison purposes only. For purposes of analysis in this EA, impacts of these roads are generally a factor of the miles of roads that would be decommissioned, reconstructed, or constructed, and whether the roads would be within inventoried roadless, contiguous unroaded, or roaded areas. The effects to inventoried roadless areas are anticipated to be short-term, and the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000) addresses the long-term effects. Any long-term effects on contiguous unroaded areas would be addressed in NEPA documentation prepared for a forest plan revision, in accordance with the recently revised Planning Rule.

Alternatives

National Forest Road System

On NFS lands, there currently exist approximately 463,000 miles of classified roads, including public roads (54,600 miles), private roads (22,400 miles), and National Forest System roads (386,000 miles). In addition, the Forest Service estimates that there are at least 60,000 miles of unclassified roads, although the number could be substantially higher. The proposed and final road management strategy would apply only to forest management roads and not to private, state, or local roads that cross NFS lands. However, the existence of these roads would be considered in a roads analysis process conducted in a specific area.

In general, the Forest Service constructs or reconstructs only classified roads. The agency may construct temporary roads to facilitate activities, including fire suppression, watershed protection, vegetation management, and fish and wildlife enhancement. Such roads are intended to be closed and access eliminated when the particular activity ceases. Other temporary roads may be constructed by forest users such as timber harvesters and mineral explorers and developers, as authorized by the Forest Service, typically with the contractual obligation to obliterate those roads when the use ceases.

Road: A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified, or temporary.

Classified roads: Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for motor vehicle access, such as state roads, county roads, privately owned roads, National Forest System roads, and roads authorized by the Forest Service that are intended for long-term use.

Unclassified roads: Roads on National Forest System lands that are not managed as part of the Forest Transportation System (such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail) and those temporary roads no longer under permit or authorization.

Temporary roads: Roads authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be a part of the Forest Transportation System and are not necessary for long-term resource management.

Table 1 describes the NFS transportation system by miles in each category by region.

TABLE 1: Existing National Forest System Roads (in miles)

Existing NFS Roads	Total	R1	R2	R3	R4	R5	R6	R8	R9	R10
Classified and Temporary Roads	462,572	65,200	44,594	56,029	43,883	48,969	101,425	45,908	52,664	3,973
Public (non-system roads)	54,600	6,750	8,050	1,540	4,350	2,790	5,720	8,690	16,500	269
Private (non-system roads)	22,400	5,280	5,410	210	1,670	1,650	2,470	369	5,270	85
Forest development (system roads)	385,572	53,170	31,134	54,279	37,863	44,529	93,235	36,849	30,894	3,619
Unclassified (non-system roads)	60,000	2,160	14,400	3,990	11,700	7,560	4,450	25	15,000	1,160

R1: Region 1 (Northern) includes National Forests in Idaho, Montana, North Dakota, and South Dakota.

R2: Region 2 (Rocky Mountain) includes National Forests in Colorado, Wyoming, South Dakota, Kansas, and Nebraska.

R3: Region 3 (Southwestern) includes National Forests in Arizona, New Mexico, and Texas.

R4: Region 4 (Intermountain) includes National Forests in Idaho, Nevada, Utah, and Wyoming.

R5: Region 5 (Pacific Southwest) includes National Forests in California.

R6: Region 6 (Pacific Northwest) includes National Forests in Washington and Oregon.

R8: Region 8 (Southern) includes National Forests in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Texas, and Virginia.

R9: Region 9 (Eastern) includes National Forests in Minnesota, Wisconsin, Missouri, Illinois, Michigan, Indiana, Ohio, West Virginia, Pennsylvania, New York, Vermont, and New Hampshire.

R10: Region 10 (Alaska) includes National Forests in Alaska.

Note: Region 7 no longer exists, having been incorporated into Regions 8 and 9 in 1965.

Numbers may not total due to rounding.

To convert miles to kilometers, multiply by 1.609.

Source: *Fiscal Year 1999 Road Accomplishment Report* (USDA Forest Service, 1999a).

No Action Alternative

The existing road system on NFS lands was largely funded and constructed to develop areas for timber harvesting and the development of other resources. The Forest Service road policy currently focuses on road development. This program, articulated in 36 CFR Part 212, allocates road development funds based on relative needs of the National Forests, existing transportation facilities, the value of timber or other resources served, relative fire danger, and comparative difficulties of construction (*see* 36 CFR 212.2(c)).

The current road development policy would continue under the no action alternative. As needs dictated and as funds allowed, the Forest Service would decommission unneeded roads, reconstruct substandard roads, and construct roads in roaded and in inventoried roadless and contiguous unroaded areas to access timber or other resources. These actions are and would remain subject to NEPA analysis requirements.

The impacts of the no action alternative are used as the baseline against which the impacts of the alternatives can be measured. For purposes of analysis of the no action alternative (current program), the Forest Service assumes that road decommissioning would follow recent experience. Table 2 identifies the number of miles of forest management roads that were decommissioned in 1996 - 1999.

This EA assumes that the information regarding planned road reconstruction and construction on all NFS lands gathered in preparation of the *Interim Rule EA* (USDA Forest Service, 1999b) provides a reasonable estimate of the road reconstruction and construction that would occur annually under the no action alternative. Specifically, Alternative 1 in the *Interim Rule EA* represents current management. The number of affected road miles reflects the total amount of estimated classified road reconstruction and construction and temporary road construction on all NFS lands. For the miles of roads to be reconstructed or constructed in inventoried roadless and contiguous unroaded areas, however, the EA uses a combination of data derived for the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000) (inventoried roadless areas) and data derived for the *Interim Rule EA* (contiguous unroaded areas).

Using data from the *Interim Rule EA* (USDA Forest Service, 1999b), Table 3 describes the miles and types of roads that the Forest Service assumes would be reconstructed and constructed annually under the current program (the no action alternative). Figure 1 graphically depicts the natural resource purposes for planned road reconstruction and construction. Although roads may be constructed for one purpose, they are sometimes used by many different types of forest users. For example, a road originally constructed for timber harvesting may be used by motorized recreation vehicles. The Forest Service does not maintain data on how forest roads are used.

TABLE 2: Number of Miles of Forest Management Roads Decommissioned in 1996 - 1999

	Total	R1	R2	R3	R4	R5	R6	R8	R9	R10
Decommissioned										
Classified and Temporary										
1999	1,842	413	118	451	36	153	426	103	110	33
1998	1,467	366	7	147	94	50	690	103	8	2
1997	1,343	228	41	392	48	25	551	44	11	3
1996	849	207	35	140	60	41	325	32	5	4
Unclassified										
1999	1,065	200	245	77	124	106	36	165	108	3
1998	634	110	111	15	178	34	13	82	56	35
1997	444	30	122	78	56	7	42	81	28	0
1996	593	55	197	60	98	61	5	71	45	1
Total										
1999	2,907	573	363	528	160	259	462	273	218	36
1998	2,101	476	118	162	272	84	703	185	64	37
1997	1,787	258	163	470	104	32	593	125	39	3
1996	1,442	262	232	200	158	102	330	103	50	5

- R1: Region 1 (Northern) includes National Forests in Idaho, Montana, North Dakota, and South Dakota.
- R2: Region 2 (Rocky Mountain) includes National Forests in Colorado, Wyoming, South Dakota, Kansas, and Nebraska.
- R3: Region 3 (Southwestern) includes National Forests in Arizona, New Mexico, and Texas.
- R4: Region 4 (Intermountain) includes National Forests in Idaho, Nevada, Utah, and Wyoming.
- R5: Region 5 (Pacific Southwest) includes National Forests in California.
- R6: Region 6 (Pacific Northwest) includes National Forests in Washington and Oregon.
- R8: Region 8 (Southern) includes National Forests in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Texas, and Virginia.
- R9: Region 9 (Eastern) includes National Forests in Minnesota, Wisconsin, Missouri, Illinois, Michigan, Indiana, Ohio, West Virginia, Pennsylvania, New York, Vermont, and New Hampshire.
- R10: Region 10 (Alaska) includes National Forests in Alaska.

Note: Region 7 no longer exists, having been incorporated into Regions 8 and 9 in 1965.
Numbers may not total due to rounding.
To convert miles to kilometers, multiply by 1.609.

Source: *Background data for USDA Report of the Forest Service for Fiscal Years 1996, 1997, 1998, and 1999.*

TABLE 3: Current Program/No Action Alternative -- Planned Number of Miles and Types of Forest Management Roads Constructed and Reconstructed Annually^a

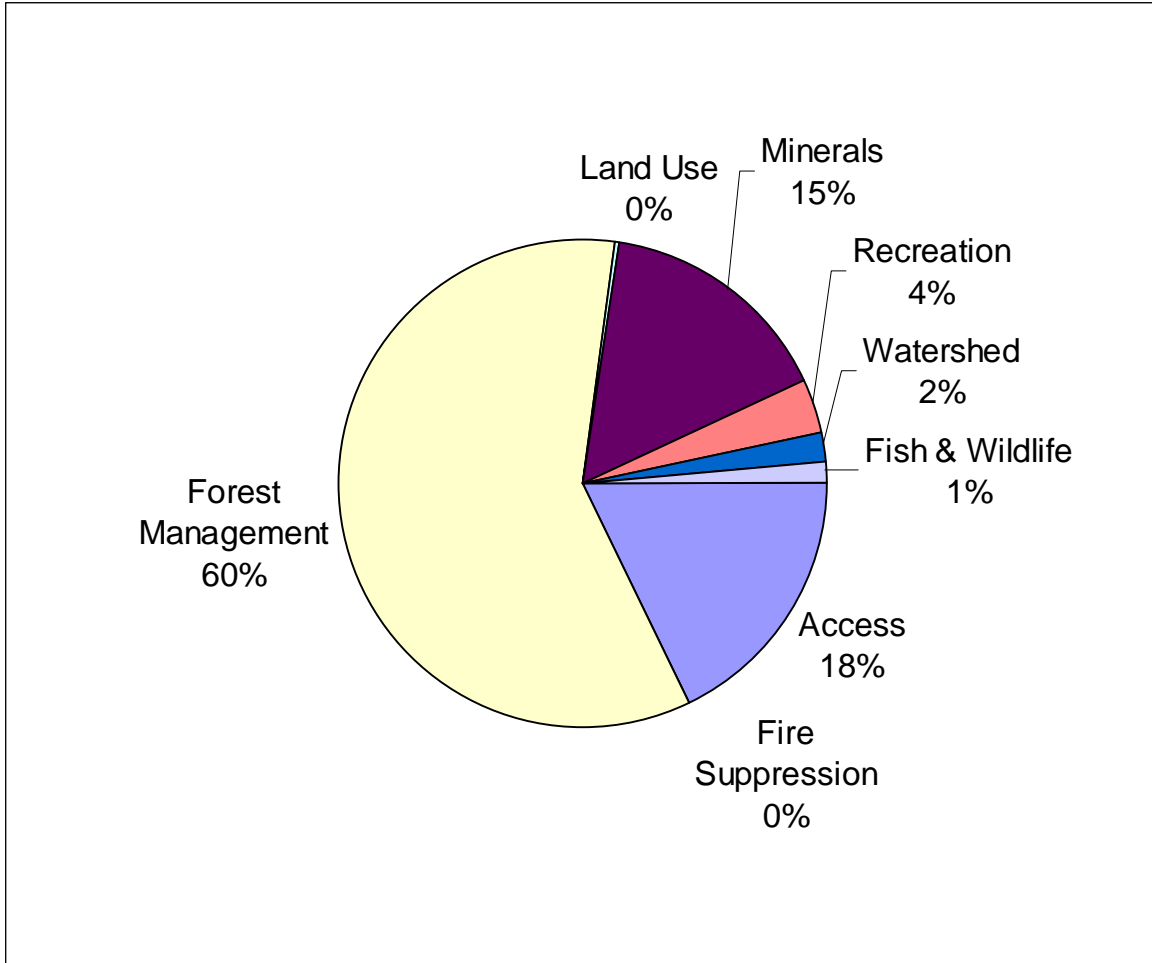
	Total	Access/ Public Safety	Fire Suppression	Forest Management	Land Uses	Minerals	Recreation	Watershed	Fish and Wildlife
Reconstructed									
Classified	4,125 (53)	606 (14)	0 (0)	2,434 (29)	220 (0)	54 (0)	250 (4)	526 (6)	36 (1)
Constructed									
Classified	630 (172)	54 (38)	0 (0)	390 (79)	68 (1)	87 (43)	20 (7)	5 (0)	4 (3)
Temporary	1,148 (67)	1 (0)	9 (0)	1,076 (66)	16 (0)	36 (2)	2 (0)	1 (0)	7 (0)
Subtotal – constructed	1,778 (239)	55 (38)	9 (0)	1,466 (145)	84 (1)	123 (45)	22 (7)	6 (0)	11 (3)
Total	5,903 (292)	661 (52)	9 (0)	3,900 (174)	304 (1)	177 (45)	272 (11)	532 (6)	47 (4)

a. The Forest Service does not reconstruct or construct unclassified roads. Temporary roads are constructed to facilitate particular short-term activities and later closed; they are not reconstructed. Not all roads are constructed by the Forest Service.

Note: The numbers in parentheses are a subset of the total miles and represent the miles of roads in inventoried roadless or contiguous unroaded areas. Numbers may not total due to rounding.
To convert miles to kilometers, multiply by 1.609.

Source: Data derived for the *Interim Rule EA* (USDA Forest Service, 1999b; Alternative 1, annualized), the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000), and other data provided by the regions.

FIGURE 1: Current Program/No Action Alternative -- Planned Road Construction and Reconstruction on National Forest System Lands by Natural Resource Purpose



Proposed Road Management Strategy Alternative

As originally proposed, the road management strategy would become effective immediately, although some aspects would be implemented through forest plan revisions over the next 10 to 15 years. Revisions to forest plans would involve the preparation of additional NEPA analysis and documentation and Regional Forester approval.

In the 10- to 15-year period before the findings of a forest-scale roads analysis process were incorporated into applicable forest plans, the proposed road management strategy alternative would require a demonstration of a compelling need to propose reconstruction or construction of roads in inventoried roadless and contiguous unroaded areas. Implementation of the proposed road management strategy during this time could include application of the road reconstruction/construction limitation to inventoried roadless areas only or to both inventoried roadless and contiguous unroaded areas.

The proposed road management strategy alternative consists of the following components:

- Determine and provide the forest road system to best serve the current and anticipated management objectives and public uses of NFS lands.
- Weigh the access benefits and the costs of road-associated effects on ecosystem values.
- Develop a comprehensive inventory of classified and unclassified roads that are important to the management and use of the NFS or to the development and use of resources on which communities within or adjacent to the National Forests are dependent.
- Give priority to decommissioning unneeded roads and reconstructing and maintaining the most heavily used roads.

Decommissioning: Activity that results in the stabilization and restoration of unneeded roads to a more natural state.

Reconstruction: Activity that results in improvement or realignment of an existing classified road as defined below:

Road improvement – Activity that results in an increase of an existing road's traffic service level, expands its capacity, or changes its original design function.

Road realignment – Activity that results in a new location for an existing road or portions of an existing road, including treatment of the old roadway.

New Road Construction: Activity that results in the addition of forest classified or temporary road miles.

Maintenance: The ongoing upkeep of a road necessary to retain or restore the road to the

- Add roads to the transportation system only where supported by a rigorous roads analysis process.
- Make future decisions regarding proposed road construction, reconstruction, and decommissioning at the local level using a science-based roads analysis process that considers environmental and transportation needs and effects at multiple scales.
- Until a comprehensive road inventory and roads analysis process had been conducted and integrated into the applicable forest plan or the responsible official determines that an amendment or revision is not required, the following directions would apply:
 - ▶ Decisions on construction of roads and reconstruction of existing roads in inventoried roadless areas and contiguous unroaded areas would require a demonstration of a compelling need (such as critical resource restoration and protection; public safety; and access provided by statute, treaty, or pursuant to reserved or outstanding rights) and would be made after completion of a roads analysis process and an EIS approved at the Regional Forester level.³
 - ▶ Decisions on construction of roads in roaded areas would be made using the roads analysis process as appropriate and through the NEPA process.

Table 4 describes the components of the proposed road management strategy in inventoried roadless, unroaded, and roaded areas.

As a result of the proposed road management strategy, a science-based roads analysis process would be used to objectively evaluate the environmental, social, and economic impacts of proposed road construction, reconstruction, and decommissioning. The roads analysis process would be an integrated environmental, social, and economic tool for transportation planning that addressed both existing and future roads.

This roads analysis process tool would be used in deciding when and if roads were needed and should be constructed, in deciding which roads should be reconstructed, in deciding which roads were unneeded (taking into account future needs), and in establishing priorities for decommissioning and ecological restoration of unneeded roads. The Forest Service anticipates that such an approach would result in fewer miles of roads being constructed than have been in the past. This approach would also result in more miles of roads being reconstructed and decommissioned than have been in the past, subject to congressional funding levels.

³ Under current Forest Service NEPA procedures (Forest Service Handbook 1909.15), an EIS is usually -- as a matter of practice but not always -- prepared for proposed road construction or reconstruction in roadless or contiguous unroaded areas.

TABLE 4: Road Management Strategy Components

	Decommissioning Existing Roads	Reconstructing Existing Roads	Constructing Roads
Inventoried Roadless Area	<ul style="list-style-type: none"> • Decision based on science-based roads analysis process • If no longer needed • Priority given to decommissioning roads that are causing excessive damage 	<ul style="list-style-type: none"> • Decision based on science-based roads analysis process • Until comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan, must demonstrate compelling need and typically would require an EIS and Regional Forester decision 	<ul style="list-style-type: none"> • Decision based on science-based roads analysis process • Until comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan, must demonstrate compelling need and typically would require an EIS and Regional Forester decision
<p>Contiguous Unroaded and Roded Areas</p> <p>Contiguous Unroaded Areas</p> <p>Roded Areas</p>	<ul style="list-style-type: none"> • Decision based on science-based roads analysis process • Priority given to decommissioning roads that are causing excessive damage <ul style="list-style-type: none"> • Decision based on science-based roads analysis process • Priority given to decommissioning roads that are causing excessive damage 	<ul style="list-style-type: none"> • Decision based on science-based roads analysis process • Until comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan, must demonstrate compelling need and typically would require an EIS and Regional Forester decision <ul style="list-style-type: none"> • Decision based on science-based roads analysis process • As needed and as funding allows 	<ul style="list-style-type: none"> • Decision based on science-based roads analysis process • Until comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan, must demonstrate compelling need and typically would require an EIS and Regional Forester decision <ul style="list-style-type: none"> • Decision based on science-based roads analysis process recognizing NFS resource management objectives and use

Final Road Management Strategy Alternative (Preferred Alternative)

In general, the final road management strategy consists of the same components as the proposed strategy (*see* Table 4). Like the proposed road management strategy, the final road management strategy would become effective immediately on all NFS lands. Until comprehensive road inventory and forest-scale road analysis had been completed and incorporated into a forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, there would be a period during which a demonstration of a compelling need would be required to construct or reconstruct a road in either an inventoried roadless area or in a contiguous unroaded area (referred to as the interim requirements period).

However, in response to public comments and based on other considerations, the Forest Service has modified its original road management strategy proposal. Specifically, any forest plan revisions signed after the effective date of the rule would require a roads analysis process. Within two years of the effective date of the rule, all forests would be required to complete a roads analysis process at the forest level. The implementation of the roads analysis process on each forest could result in a forest plan amendment, a forest plan revision, or a written determination by the Forest Supervisor that no changes to the forest plan were required. Revisions to forest plans would involve the preparation of additional NEPA analysis and documentation and Regional Forester approval. Depending on the circumstances, individual road construction, reconstruction, or decommissioning projects that were approved within six months after the effective date of the final road management strategy could, but would not be required to, undergo a roads analysis process prior to approval. All such proposals after that time would be the subject of either a roads analysis process or appropriate documentation explaining why information from a higher-level roads analysis (a forest- or watershed-level roads analysis) was not needed to inform this project-level decision. The Forest Service also has modified definitions of classified road, temporary road, unclassified road, reconstruction, and maintenance and included a definition of decommissioning.

Further, the meaning of compelling need would be modified to include critical resource restoration and protection; realignment needed to prevent resource damage by an existing road that is deemed essential for public or private access, management, or public health and safety, and where such damage cannot be corrected by maintenance; access needed to carry out a statute or treaty or pursuant to reserved or outstanding rights including access to locatable and leasable minerals; and restoration of wildlife habitat. To the extent consistent with the Tongass National Forest Land and Resource Management Plan and all applicable laws, the Regional Forester for Region 10 has the specific authority to determine that a compelling need exists to provide for the multiple-use and sustained-yield of all renewable resources of the Tongass National Forest, including seeking to meet market demand for timber.

The final road management strategy also includes an emergency exemption. Specifically, the procedures required during the interim requirements period would not apply to a proposal to construct or reconstruct a road in an inventoried roadless or contiguous unroaded area if the road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property or if the road is needed to conduct a response action under the Comprehensive Environmental Response, Compensation, and Liability Act or to conduct a natural resource restoration action.

The Forest Service does not believe that these modifications to the proposed road management strategy affect the anticipated environmental impacts. Therefore, the discussion of environmental consequences that follows in the next section does not attempt to distinguish between the impacts of the proposed road management strategy and the impacts of the final road management strategy.

For purposes of analysis, the Forest Service assumes that data developed for the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000) for inventoried roadless areas and data used in the *Interim Rule EA* (USDA Forest Service, 1999b) for contiguous unroaded areas provides a reasonable estimate of the road construction and reconstruction that would not occur in these areas under either the proposed or the final road management strategy alternative.⁴ The data developed for the *Roadless Area Conservation Rule Final EIS* and the *Interim Rule EA* used historic trends and data collected from Forest Service Field units regarding existing miles of roads and future program activities. In addition, Forest Service personnel preparing these documents contacted Forest Service Field units to validate and update information.

The Forest Service believes that the data developed for the *Roadless Area Conservation Rule Final EIS* and the *Interim Rule EA* are a close approximation of the miles of roads that would not be reconstructed and constructed under both the proposed and final road management strategy alternatives. Because road construction and reconstruction in roaded areas would be dependent entirely on site-specific issues and conditions and on local decisions, the Forest Service cannot directly estimate the miles of roads that might be constructed or reconstructed in roaded areas under either the proposed or final road management strategy alternative.

⁴ Alternative 4 in the *Interim Rule EA* (USDA Forest Service, 1999b) would have temporarily suspended all permanent and temporary road construction and reconstruction in inventoried roadless and unroaded areas, except for roads that would be needed for public safety; to ensure access provided by statute or treaty; to address an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause loss of life or property; or pursuant to reserved or outstanding rights (*Interim Rule EA* at 5-6). Alternative 5 in the *Interim Rule EA* would have temporarily suspended permanent and temporary road construction and reconstruction in all remaining unroaded portions of RARE II inventoried roadless areas within the NFS and all remaining unroaded areas identified in forest plans (*Interim Rule EA* at 6). Thus, to derive the miles of roads that would not be reconstructed or constructed in contiguous unroaded areas, the Forest Service subtracted the data for Alternative 5 from Alternative 4.

Implementation of either the proposed or final road management strategy alternative would result in an acceleration in the pace of road decommissioning or conversion of roads to more environmentally benign and less expensive uses. Key roads needed for recreation, rural access, and the sustainable flow of goods and services also would be restored and improved through road reconstruction efforts.

Using data from the *Interim Rule EA* (USDA Forest Service 1999b) and the *Roadless Area Conservation Final EIS* (USDA Forest Service, 2000), Table 5 lists the miles and types of roads that the Forest Service assumes would not be reconstructed and constructed annually under the proposed and the final road management strategy alternatives. Although fewer miles of roads would be reconstructed in inventoried roadless or contiguous unroaded areas under either strategy than under the no action alternative, more roads would be reconstructed on all NFS lands under the proposed and final strategy alternatives than under the no action

alternative. However, the Forest Service has no basis on which to estimate the miles of roads that would be reconstructed in roaded areas; thus, the table makes it appear – incorrectly – that fewer miles of roads would be reconstructed under the proposed and final road management strategy alternatives than under the no action alternative. It is probable, however, that fewer roads would be constructed in roaded areas under the proposed and final strategy alternatives than under the no action alternative.

Figure 2 shows the natural resource purposes that would be affected by the proposed and final road management strategy alternatives. This figure shows the miles of roads that would not be reconstructed or constructed in inventoried roadless or contiguous unroaded areas for various resource purposes.

For purposes of analysis, this EA examines the potential environmental impacts associated with the proposed and final road management strategy alternatives during both the interim requirements period and over the long term for roaded areas. With respect to impacts in inventoried roadless or contiguous unroaded areas, the effects would occur until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. The impacts of the proposed and final road management strategy alternatives would vary for each forest. Thus, in order to fully understand and disclose the

Assumptions

As compared to the no action alternative, implementation of the proposed or final road management strategy would result in

- *More* miles of roads decommissioned,
- *More* miles of roads reconstructed, and
- *Fewer* miles of roads constructed, especially in inventoried roadless and contiguous unroaded areas until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the forest plan.

potential environmental impacts associated with this strategy on the national level, the EA recognizes that there would be a range of possible impacts associated with varying levels of miles of decommissioned roads, reconstructed roads, and roads in inventoried roadless, contiguous unroaded, and roaded areas. For purposes of analysis in this EA, impacts are generally a factor of miles of road.

TABLE 5: Proposed and Final Road Management Strategy Alternatives -- Estimated Annual Reduction in Miles of Reconstruction and Construction in Roadless and Unroaded Areas as Compared to the No Action Alternative

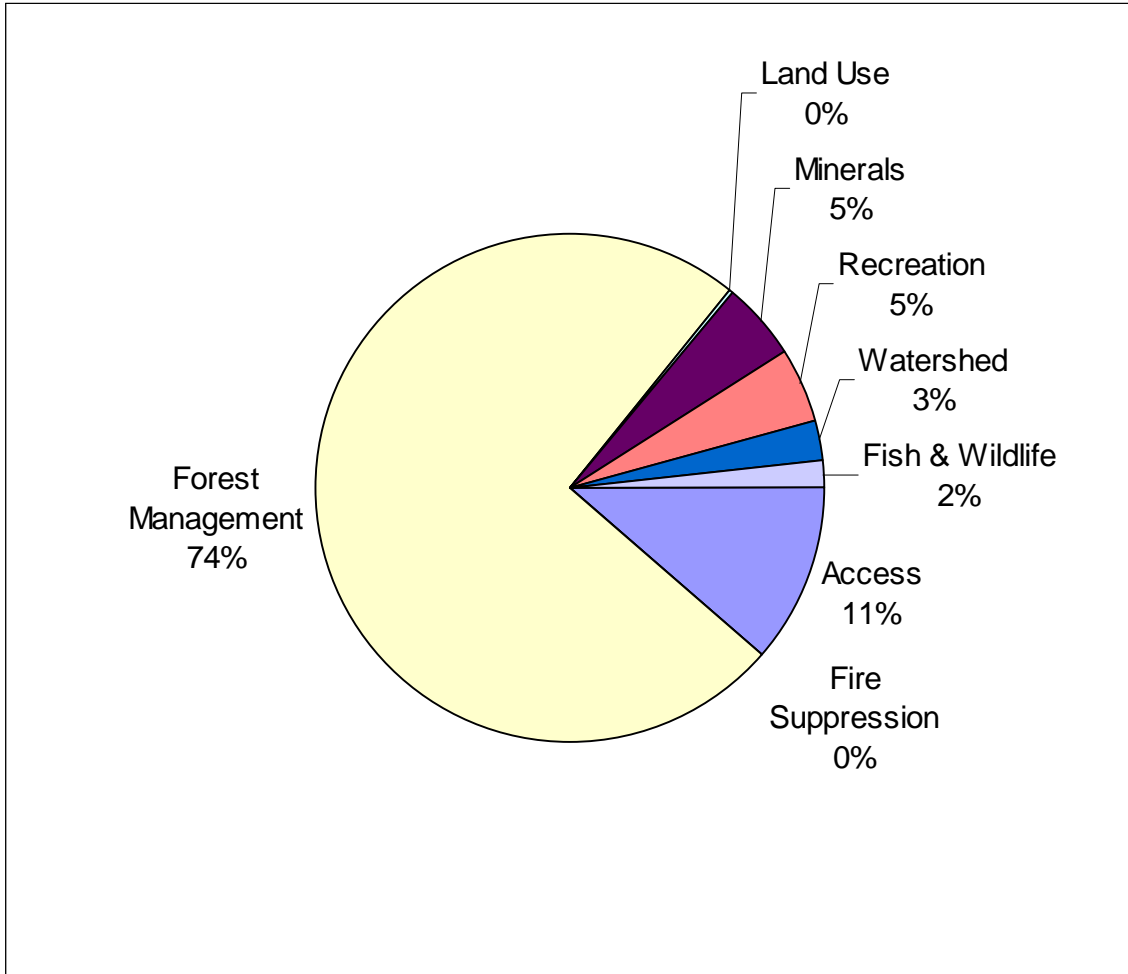
	Total	Access/ Public Safety	Fire Suppression	Forest Management	Land Uses	Minerals	Recreation	Watershed	Fish and Wildlife
Reconstructed									
Classified	[49]	[10]	[0]	[29]	[0]	[0]	[4]	[6]	[1]
Constructed									
Classified	[119]	[17]	[0]	[79]	[1]	[12]	[7]	[0]	[3]
Temporary	[66]	[0]	[0]	[66]	[0]	[0]	[0]	[0]	[0]
<i>Subtotal – constructed</i>	<i>[184]</i>	<i>[17]</i>	<i>[0]</i>	<i>[145]</i>	<i>[1]</i>	<i>[12]</i>	<i>[7]</i>	<i>[0]</i>	<i>[3]</i>
Total	[233]	[27]	[0]	[174]	[1]	[12]	[11]	[6]	[4]

a. The Forest Service does not reconstruct or construct unclassified roads. Temporary roads are constructed to facilitate particular short-term activities and later closed; they are not reconstructed. Not all roads are constructed by the Forest Service.

Note: Numbers may not total due to rounding.
To convert miles to kilometers, multiply by 1.609.

Source: Data derived for the *Interim Rule EA* (USDA Forest Service, 1999b; Alternatives 4 and 5, annualized), data derived for the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000), and other data provided by the regions.

FIGURE 2: Reduction in Road Construction and Reconstruction on National Forest System Lands Under the Proposed and Final Road Management Strategy Alternatives by Natural Resource Purpose



Alternatives Considered but not Analyzed in Detail

In the development of the range of alternatives, the Forest Service considered the 53,000 responses and comments from 2,300 people at public scoping meetings. In general, these comments focused on the management and use of roadless areas rather than on the road management strategy or roads analysis process.

The Forest Service also considered the issues and related information associated with the transportation policy change and the changes to the 36 CFR 219 Planning Rule and the Roadless Area Conservation Rule (as described in the *Roadless Area Conservation Rule Final EIS* [USDA Forest Service, 2000]). Many of the responses related to those policy changes are being addressed in environmental analyses associated with those procedures, thus narrowing the scope of this proposal and analysis.

All of the issues raised during scoping for the road management strategy were originally addressed within the proposed road management strategy and no action alternative, or did not meet the agency's purpose and need in proposing a revision to the road management policy. No other reasonable alternatives were identified that could meet the purpose and need.

In addition, the Forest Service considered the comments received on the Draft EA. Some comments concerned the range of alternatives analyzed by the Forest Service and offered other alternatives for analysis. With respect to the other alternatives, the Forest Service believes that (1) they are either already included within the alternatives analyzed (for example, full implementation of current forest plans is the no action alternative); (2) are being considered by the Forest Service in other rulemaking proceedings (for example, a prohibition on road construction and commercial logging in roadless areas is addressed in the *Roadless Area Conservation Rule Final EIS* [USDA Forest Service, 2000]); or (3) would not meet the purpose and need to ensure that the roads system meets current and future management objectives and public uses of NFS lands, provides for safe public use, allows for economical and efficient management, and causes minimum adverse environmental impacts.

The Forest Service did amend its original proposal and has included the final road management strategy as a third alternative in this Final EA. No other reasonable alternatives have been identified, and no other alternatives were considered in detail.

The Forest Service considered but did not analyze the following policy alternatives.

Continued or permanent suspension of road construction in inventoried roadless and contiguous unroaded areas. The Forest Service believes that continuing or permanently suspending road construction in inventoried roadless and contiguous unroaded areas is beyond the scope of the road management strategy and is better analyzed in the context of the *Roadless Area*

Conservation Rule Final EIS (USDA Forest Service, 2000) and the Roadless Area Conservation Rule that will be issued at the same time as the final road management strategy.

Implementation of a road management policy with exemptions. The road management strategy is a broad plan or course of action designed to influence and determine decisions and actions for application nationwide. Exemptions at the national policy level are not needed because decisions to construct, reconstruct, or decommission roads would be based on site-specific conditions. No individual actions would be precluded nationally. Since no National Forest has completed an adequate science-based road analysis, forest-wide exemptions are not appropriate.

Access management. This alternative would affect access to all NFS lands, including off-highway vehicle areas and various types of equipment and vehicles (*e.g.*, off-highway vehicles, snowmobiles, bicycles, etc.) The road management strategy deals with roads but not all forms of access. For this reason, the larger issue of access management was determined to be outside the scope of this EA.

Environmental Consequences

Assumptions

This is a programmatic EA designed to look at the overall impacts of the Forest Service's policy changes. The EA identifies a range of potential impacts of the proposed and final road management strategy alternatives on a nationwide scale, but it does not attempt to analyze specific impacts on particular forests. It will not be used as a decision-making document to support specific changes at the forest level; however, it is intended to support a policy change.

Using past trends and current planning as a baseline, the EA quantitatively characterizes the anticipated range of miles of roads or some areas that could be affected by the proposed and final road management strategy alternatives and the no action alternative, and it qualitatively identifies the kinds of impacts that could occur. For purposes of analysis of the no action alternative, the Forest Service assumes that regional information gathered for the 18-month suspension period in the *Interim Rule EA* (USDA Forest Service, 1999b) is representative of the national trends for road reconstruction and construction activities in the future.

Decommissioning

Unneeded classified roads and unclassified roads would be decommissioned under all alternatives. Classified roads are unneeded when the resource management objectives of a Forest Service unit have changed and the roads within the unit do not support the new objectives now or in the future. Classified roads that were found to be causing excessive damage to soil, water, or wildlife would be reconstructed or decommissioned if unneeded. Roads needed to protect and administer NFS lands, provide for safe and efficient travel, and minimize environmental impacts would not be decommissioned. Under all alternatives, temporary roads would be closed when the purpose for which they were constructed was completed (*e.g.*, a timber harvest).

In general, the Forest Service assumes that more roads would be decommissioned under the proposed and final road management strategy alternatives than under the no action alternative, subject to congressional funding levels. Further, under the proposed and final road management strategy alternatives, roads that pose the greatest risk of causing environmental damage would be given decommissioning priority. The Forest Service assumes that primarily unclassified roads would be decommissioned under the proposed and final road management strategy alternatives. Under the proposed and final road management strategy alternatives, decisions regarding decommissioning would occur only after completion of a science-based roads analysis process that considered environmental and transportation needs and effects.

In 1999, 1,842 miles of classified roads and 1,065 miles of unclassified roads were decommissioned (*see* Table 2).

Reconstruction

Road reconstruction would also occur under all alternatives. Reconstruction involves the improvement or realignment of classified roads to enhance safety, service, and environmental standards. Unclassified roads are not reconstructed; however, in some situations, unclassified roads may be redesignated as classified and then reconstructed to meet management and resource objectives.

In general, because the proposed and final road management strategy alternatives would emphasize road reconstruction, the Forest Service assumes that more roads would be reconstructed under those alternatives than under the no action alternative (although fewer miles of roads would be reconstructed in inventoried roadless and contiguous unroaded areas under the proposed and final road management strategy alternatives than under the no action alternative). Only classified roads would be reconstructed. Further, under the proposed and final road management strategy alternatives, road reconstruction would occur only after completion of a science-based roads analysis process that considered environmental and transportation needs and effects. Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, road reconstruction in inventoried roadless and contiguous unroaded areas would be conducted only after a showing of compelling need.

The Forest Service anticipates that approximately 4,125 miles of classified roads would be reconstructed annually under the current program (*see* Table 3).

Construction

Road construction involves clearing and excavating land, constructing bridges, and installing culverts for drainage. Native soils and rocks are used. Classified roads are surfaced with soil and gravel or may occasionally be paved with asphalt. Temporary roads are seldom paved.

Under the no action alternative, roads would be constructed as needed to meet Forest Service objectives. Under the proposed and final road management strategy alternatives, however, roads would be constructed only after completion of a science-based roads analysis process that considered environmental and transportation needs and effects. Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect

the findings of the roads analysis, roads would be constructed in inventoried roadless areas and contiguous unroaded areas after a showing of compelling need. For these reasons, the Forest Service anticipates that fewer roads would be constructed under the proposed and final road management strategy alternatives than under the no action alternative.

The Forest Service expects that approximately 630 miles of classified roads and 1,148 miles of temporary roads would be constructed annually under the current program (*see* Table 3).

National Forest System Lands

NFS lands comprise 192 million acres. Of these, approximately 35 million acres (18 percent) are congressionally designated wilderness areas. Road construction within these areas is not permitted under the current program and would not be permitted under either the proposed or final road management strategy alternatives.

Approximately 58.5 million acres of NFS lands (31 percent) are roadless areas inventoried in the RARE II conducted in the mid-1970s or identified in existing land and resource management plans (forest plans). On these 58.5 million acres, road construction is currently prohibited on approximately 24.2 million acres; road construction is permitted on approximately 34.3 million acres. Although designated as “roadless,” an estimated 2.8 million acres of these areas have already been roaded and developed to varying degrees.

Inventoried roadless areas: Areas identified in a set of inventoried roadless area maps, contained in *Forest Service Roadless Area Conservation, Draft Environmental Impact Statement*, Volume 2, dated May 2000, which are held at the National headquarters office of the Forest Service, or any update or revision of those maps.

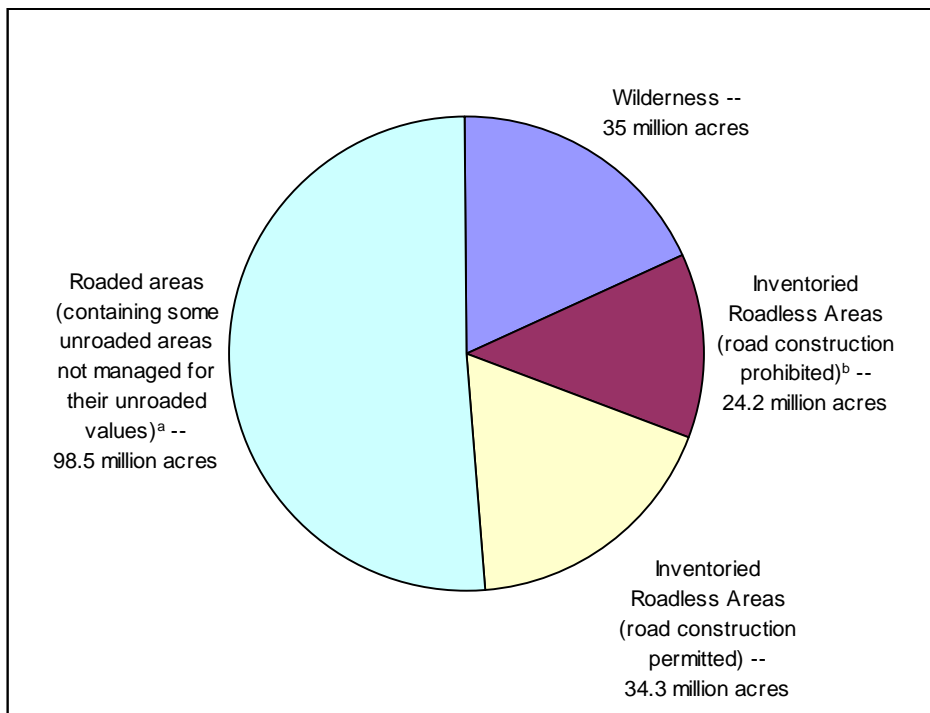
The remaining 98.5 million acres of NFS lands (51 percent) are roaded (developed) and unroaded areas. Under the proposed and final road management strategy alternatives, contiguous unroaded areas are defined as 1,000 acres or more that are contiguous to: (1) remaining unroaded portions of RARE II inventoried roadless areas, (2) roadless areas inventoried in land and resource management plans, (3) congressionally designated wilderness areas or federally-administered components of National Wild and Scenic River System classified as Wild, or (4) unroaded areas of 5,000 acres or more on other federal lands.⁵ These areas of 1,000 acres or more have a common boundary of considerable length, are at least one-quarter mile wide, and provide

⁵ This definition was used in the interim rule and is currently used in the proposed and final road management strategy alternatives for the interim requirements period. Long-term protection for inventoried roadless areas is addressed in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000). Long-term criteria for the management of other unroaded areas (including contiguous unroaded areas) will be addressed in future forest plan revisions in accordance with the recently revised Planning Rule.

important corridors for wildlife movement or extend a unique ecological value of the established inventoried area. While the Forest Service knows that these areas exist and reviewed them for suspension of road construction during the 18-month interim rule period, no inventory has been conducted to specifically identify these contiguous unroaded areas on NFS lands or to designate them on maps. Contiguous unroaded areas are a subset of unroaded areas, which are defined in the road management strategy as "any area without the presence of a classified road, that is of a size and configuration sufficient to protect the inherent characteristics associated with its roadless condition."

Figure 3 shows how NFS lands are allocated.

FIGURE 3: National Forest Service Land Allocations



^a Contains some unroaded areas which are not managed for their unroaded values. These areas will be addressed in forest plan revisions in accordance with the Planning Rule (65 Fed. Reg. 67514 [November 9, 2000]).

^b Inventoried roadless areas and the total acres affected are identified in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000).

As noted above, no roads would be constructed in wilderness areas. This EA focuses on road decommissioning, reconstruction, and construction of roads in inventoried roadless areas and other roaded and unroaded areas.

Scope of Impact Analyses

The following discussion addresses the potential impacts of decommissioning, reconstruction, and road construction under the no action alternative and the proposed and final road management strategy alternatives. The impacts would occur in roaded areas into the future, while the impacts to inventoried roadless and contiguous unroaded areas would occur only until a Roadless Area Conservation Rule was issued or forest plans are revised. This EA examines the potential impacts on several different aspects of forest use: access and public safety; fire, insects, and disease; forest management (timber); land uses (non-recreational); law enforcement; minerals; noxious weeds and nonnative invasive species; recreation, heritage, and wilderness resources; watershed and air; wildlife, fish, and TES species; and economic and social effects.

Access and Public Safety

Access refers to the opportunity to enter NFS lands for personal use and reasonable use of other lands and rights within NFS lands. It includes access for landowners in and adjacent to NFS lands. Public safety refers to activities undertaken by the Forest Service for the protection of life and property within the NFS. Approximately 386,000 miles of Forest Service roads serve passenger vehicle use (22 percent), are maintained for high-clearance (4-wheel drive) vehicle use (55 percent), or are closed to highway vehicle use by the public (23 percent).

An estimated 1.7 million vehicles associated with recreational activities use the National Forest Transportation System each day in the summer. Approximately 15,000 commercial vehicles associated with Forest Service timber harvesting and the development of other resources use the system daily. In addition, an estimated 9,000 Forest Service administrative vehicles travel Forest Service roads each day for special-use administration, habitat improvement projects, maintenance and operation of recreation facilities, law enforcement, and fire suppression.

No Action Alternative

In 1999, the Forest Service decommissioned 2,907 miles of roads (*see* Table 2). This level of road decommissioning is likely to continue or increase under the no action alternative. Although motorized vehicle access is reduced when roads are decommissioned, roads needed for access to pre-existing rights or for public safety would not be decommissioned under the no action alternative.

In addition, the Forest Service estimates that 661 miles of classified and temporary roads would be constructed or reconstructed annually for the purpose of maintaining access to NFS lands and rights within NFS lands and public safety (*see* Table 3). Of those, approximately 52 miles would be located in inventoried roadless or contiguous unroaded areas. Road reconstruction would improve existing roads used for all purposes, including access and public safety.

Proposed and Final Road Management Strategy Alternatives

The impacts of the proposed and final road management strategy alternatives would be similar to those for the no action alternative. Additional road decommissioning could further reduce motorized vehicle access, but roads needed for access to pre-existing rights such as for landowners within or adjacent to NFS lands or for public safety would not be decommissioned under the proposed and final road management strategy alternatives.

The Forest Service expects that up to a maximum of 27 miles of roads would not be reconstructed or constructed in inventoried roadless or contiguous unroaded areas under the proposed and final road management strategy alternatives (*see* Table 5), although overall the Forest Service anticipates that more roads would be reconstructed under the proposed and final road management strategy alternatives than under the no action alternative. Road reconstruction would improve existing roads. Roads needed for access to pre-existing rights or for public safety also would be constructed under the proposed and final road management strategy alternatives.

Fire, Insects, and Disease

This activity involves forest health projects such as thinning, salvage, or regeneration to restore forests affected by fire, disease, and insects. It also includes disease and insect control, fuels management, and fire suppression.

Forest health. Approximately one-third (747 million acres) of the total land area of the United States is covered by forest vegetation. The perceived condition or health of these forests is based on age, structure, composition, function, vigor, unusual levels of insects or disease, and resilience to disturbance, including wildland fire. Concerns about wildland fire and insects and disease are addressed together under the heading of forest health because these issues overlap on approximately 716,000 acres of NFS lands. These areas are extremely important because expected tree mortality over the next 15 years will heighten the current high risk of catastrophic fire. These combined at-risk acres have a critical need for forest health treatments such as thinning and fuels reduction.

Tree mortality caused by insects or disease heightens the risk of catastrophic fire. A catastrophic fire is a wildland fire that may kill most of the trees, extensively alter habitat, adversely affect water and/or air quality, or damage the soil. Removal of land cover as the result of fire can increase erosion from raindrop impact and overland flow. Combustion of vegetation and soil litter can mobilize nutrients that can enter stream waters. Loss of living vegetation can reduce transpiration and increase water available as streamflow. This additional flow can, in the most severe fires, increase flood peaks and flow volumes, which would destabilize and erode stream banks and beds. In some areas, fire can cause soils to become hydrophobic, repelling water rather than letting it flow into the soil slowly. These severe situations can endanger lives, property, and resources on-site and downstream. Severely burned watersheds usually require immediate and

often expensive treatment to mitigate these potential impacts. Approximately 48 million acres of all NFS lands (25 percent) are at high risk for catastrophic fire.

The risk of catastrophic fire is highest in the Intermountain West and California (Regions 4 and 5). Conifer forests of Idaho, Colorado, eastern Oregon, and the Sierra Nevadas often juxtapose severe fire risk with residential development in wildlands (referred to as the wildland/urban interface). The risk of wildland/urban interface related to fire is also present in many areas of the eastern and southern United States where federal and private ownership is very intermingled.

Disease and insect control. Many forestlands across the country are at risk of serious insect attack and disease infection. Gypsy moth, root diseases in the West, mountain pine beetle, and southern pine beetle account for most of the tree mortality. About 24 million acres of NFS lands (12 percent) are at risk of excessive tree mortality as a result of insects or disease. At the local level, the short-term risk of insect epidemics is highest in the South (Region 8), where southern pine beetle populations are building to epidemic levels across the Coastal Plain and Piedmont. Road access can facilitate treatment of insect and disease infestations.

Fuels management. The Forest Service uses fuel management (the practice of evaluating, planning, and executing the treatment of wildland fuels to make future wildfires easier to control and to improve forest health) to reduce the risk from catastrophic fires, but there is a greater need for treatment than can be accomplished across NFS lands each year due to funding constraints. Timber harvest is also used to accomplish forest health improvement objectives such as suppressing insect infestations, thinning to improve stand vigor, or reducing available fuel.

Prescribed burns (fires ignited by management actions to meet specific objectives) rarely involve road construction or reconstruction. Use of natural features and short-term fire break construction is often more effective and less costly than alternatives requiring roads. In 1998, 1.2 million acres of hazardous fuels were treated, and this effort is estimated to increase to an average of 3 million acres per year on a continuous, rotational basis. All of these acres can be treated without the construction or reconstruction of roads.

Fire suppression. Thousands of wildfires ignited by both humans and lightning start yearly on NFS lands, and burn between 600,000 to 800,000 acres. About 96 percent of this burned acreage occurs in the West. Nearly 1,500 of those fires (14 percent) start in inventoried roadless areas and burn about 160,000 acres annually. A relatively small number (7 to 16) of those 1,500 fires are classified as large (more than 1,000 acres), but they account for 93 percent of the burned acreage in inventoried roadless areas. The suppression of these wildfires requires large fire organizations and the expenditure of millions of dollars. Loss of life can also occur as firefighters are sometimes killed working to control these wildfires.

In fighting wildfires, the highest priority is given to protecting human life, firefighter safety, and private property when designing fire suppression strategies. Other major objectives include

protection of municipal watersheds and habitat for threatened and endangered species. Wildland fires burning near populated areas along national forest boundaries are always carefully managed.

In general, timber harvesting in an area at high risk from catastrophic forest fires, coupled with effective fuel treatment, could have the effect of lowering the fire hazard for that area. Some wildland fires just starting could be more easily controlled. Generally, there would be fewer fires escaping initial attack and becoming catastrophic.

After World War II, roads were rarely constructed before a wildfire occurred to prevent a forest fire or to provide easy access to a potential area where a catastrophic fire might occur. Roads built for other purposes (*e.g.*, timber harvesting or mining) have been used for fire access.

Roads provide access for fire suppression forces and equipment as well as for the increased potential for human-caused fires. Road development often increases the risk of human-caused fires by increasing exposure of fuels to human activities. Although human-caused fires occur frequently in areas served by roads, these fires may be more easily suppressed because of road access. Lack of road access to wildfires caused by natural sources such as lightning can hamper suppression efforts.

No Action Alternative

Under the no action alternative, the Forest Service would decommission an estimated 2,907 miles of classified and unclassified roads each year (*see* Table 2). Only roads that were not needed for forest resource management objectives would be decommissioned. Thus, roads decommissioned under the no action alternative would not affect forest health projects.

Decommissioning unneeded roads could reduce the frequency of human-caused fires in the areas served by the roads. However, roads can facilitate fire suppression when fires do occur, and alternative firefighting strategies that do not require motorized access (such as the use of aerially delivered firefighters) may not be as effective. Overall, however, road decommissioning is not expected to affect the Forest Service's ability to suppress fires.

In addition, the Forest Service would construct an estimated 9 miles of temporary roads annually for fire suppression purposes with none of them in inventoried roadless or contiguous unroaded areas (*see* Table 3). Entry into NFS lands provided by this alternative would allow gradual access for forest managers to treat high-risk fuels and could reduce the likelihood of large and damaging wildland fires in some portions of the wildland-urban interface in the Western regions.

Proposed and Final Road Management Strategy Alternatives

The impacts of the proposed and final road management strategy alternatives would be similar to those associated with the no action alternative. Although more roads would be decommissioned under the proposed and final road management strategy alternatives than under the no action

alternative, only roads that were not needed for forest resource management objectives would be decommissioned, and roads decommissioned under the proposed and final road management strategy alternatives would not be expected to affect forest health projects.

Decommissioning a larger number of unneeded roads would further reduce the frequency of human-caused fires in the areas served by those roads. However, this could also reduce access for fire suppression. The same alternative firefighting strategies would be used to suppress fires in the absence of roads allowing motorized access. For this reason, road decommissioning under the proposed and final road management strategy alternatives is not expected to greatly affect the Forest Service's ability to suppress fires.

It is expected that as many miles of roads would be constructed for fire suppression purposes under the proposed and final road management strategy alternatives as under the no action alternative (*see* Table 5). Under the proposed and final road management strategy alternatives, roads could be constructed in inventoried roadless or contiguous unroaded areas after a showing of compelling need, including a need to protect or restore critical resources (*e.g.*, for disease or insect control or for fire suppression purposes). An overall reduction in road construction for all purposes could curtail opportunities to treat hazardous fuels, particularly in Regions 1, 4, 5, and 6. This could slightly increase the risk of large and damaging wildfires in some areas, with their associated effects on water, soil, and air resources. As with increased decommissioning, decreased road construction would result in limiting access, which would reduce the probability of human-caused ignitions in those areas.

Fewer acres of inventoried roadless and contiguous unroaded areas would be treated for fuel management objectives by timber harvesting under the proposed and final road management strategy alternatives than under the no action alternative. Since the acres affected would be a very small percentage of the NFS lands that might need fuel treatment to lessen the risk of catastrophic fires, the overall effect of the proposed and final road management strategy alternatives to the fuel management program would be very slight.

Forest Management (Timber)

Timber sales are used to achieve vegetation management objectives, including providing a sustainable yield of forest products to meet the nation's demands for wood fiber and restoring, improving, and maintaining forest ecosystem health. Timber sales are often used as a least-cost method to manage vegetation for improving wildlife habitats, reduce fuels that may increase fire risk, recover value from natural disasters, combat insect and disease infestations, and improve tree growth.

Roads are generally required for timber harvest, although some timber sales can be harvested using helicopters or cable-yarding systems from existing roads. Each timber sale contract specifies the harvesting and logging method and any permanent or temporary road construction

and reconstruction required. The timber industry pays the construction cost for all logging roads and, if requested by the Forest Service, for the cost of road obliteration or decommissioning after a timber harvest is completed. Timber purchasers are also required to complete needed road reconstruction to ensure public safety and to protect the environment from logging traffic. Roads that the Forest Service determines are needed for future use are constructed to meet road specifications and retained for future use after the timber sale. Temporary roads are constructed only for the duration of the timber harvest and are intended to be eliminated after their use.

Each fiscal year, the Forest Service estimates the amount of timber to be offered for sale at a given budget level. A timber sale generally requires several years of preparation, beginning with identification of the need until final sale offering. All decisions that include timber sales must meet all legal requirements, including those mandated by the National Forest Management Act (16 U.S.C. 1600 *et seq.*) and NEPA.

Timber volumes offered for sale have decreased from annual volumes of approximately 12 billion board feet in 1987 to less than 4 billion board feet in 1998. The volume of timber harvested follows the trend of volume sold but generally lags 1 to 2 years behind the sale volume. Most of the timber harvested in a particular year is from timber sales that were sold in previous years. Usually 2 to 3 years is required from the time the timber is sold until all the timber is harvested. The volume harvested is a result of site-specific planned actions that address forest plan goals and objectives and the desired future conditions for specific management areas within each National Forest. The estimated volume of timber offered for sale and timber sold was used to determine effects on jobs and revenue in the Economic and Social Effects section.

No Action Alternative

Under the no action alternative, approximately 2,907 miles of roads would be decommissioned annually (*see* Table 2). None of these roads would be needed to access timber sales under existing contracts. Road decommissioning is not expected to affect timber sales or harvesting.

Approximately 2,434 miles of classified roads used for forest management purposes would be reconstructed annually, with an estimated 29 miles of those roads located within inventoried roadless or contiguous unroaded areas (*see* Table 3). Reconstruction of existing roads could improve roads used for this purpose.

Approximately 1,466 miles of classified and temporary roads would be constructed annually to facilitate timber harvesting on NFS lands (*see* Table 3). Of these, an estimated 145 miles would be in inventoried roadless or contiguous unroaded areas. The Forest Service estimates that approximately 3.6 billion board feet of timber would be offered for sale annually on all NFS lands; of that, approximately 250 million board feet would be from timber in inventoried roadless

or contiguous unroaded areas.⁶ Of the 3.6 billion board feet offered for sale, the Forest Service estimates that approximately 3.3 billion board feet would be harvested (*see* Table E5 in Appendix E).

Old Growth. While data is unavailable regarding the amount of road activity in old growth forests that would occur under the no action alternative, it is assumed that some timber sales and harvesting would occur in those areas.

Special Forest Products. Special forest products include house logs, posts, poles, Christmas trees, mushrooms, beargrass, pinyon nuts, berries, and ferns. There is a continuing public demand for these products for cottage industries and personal use. Generally, roads are not constructed or reconstructed for the removal of special forest products. Current access is adequate to meet current demand for special forest products, and implementation of the no action alternative would not affect current access to these resources.

Proposed and Final Road Management Strategy Alternatives

As with the no action alternative, decommissioning of unneeded roads under the proposed and final road management strategy alternatives is not expected to affect timber sales or harvesting. Although a larger number of roads would be decommissioned under the proposed and final road management strategy alternatives than under the no action alternative, none of these roads would be needed to access timber sales under existing contracts.

Reconstruction of existing roads could improve roads used for timber harvesting. However, up to a maximum of 29 miles of roads would not be reconstructed in inventoried roadless and contiguous unroaded areas under the proposed and final road management strategy alternatives (*see* Table 5), although the Forest Service expects that on all NFS lands more roads will be reconstructed under the proposed and final road management strategy alternatives than under the no action alternative.

Under the proposed and final road management strategy alternatives, road construction would be expected to be reduced as compared to the no action alternative. Further, until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, road construction in inventoried roadless and contiguous unroaded areas would be permitted only upon a showing of compelling need. Under

⁶ In the *Interim Rule EA* (USDA Forest Service, 1999b), the Forest Service estimated that 5.44 billion board feet of timber would be offered for sale in a typical 18-month period. Annualized, this figure is 3.63 billion board feet of timber. The Forest Service also estimated that 375 million board feet of timber from inventoried roadless or contiguous unroaded areas would be offered for sale over an 18-month period under the current program (Alternative 1); annualized, this figure is 250 million board feet of timber.

the proposed and final road management strategy alternatives, up to a maximum of 145 miles of roads would not be constructed for forest management purposes on inventoried roadless or contiguous unroaded areas (*see* Table 5). This would be an anticipated maximum decrease of approximately 10 percent.

Timber harvesting requiring construction of roads in inventoried roadless or contiguous unroaded areas that was proposed during the interim requirements period would need to demonstrate that the harvesting was needed for a compelling reason such as to reduce fire risk, combat insect or disease infestation, or improve wildlife habitat or tree growth. Although timber sales and timber harvesting could still occur in these areas using alternative harvesting methods (by helicopter or cable-yarding), the amount of timber sold would be expected to decrease by up to a maximum of 170 million board feet annually (up to a 5 percent decrease)⁷ and the cost of harvesting would be expected to increase.

These numbers assume that, during the interim requirements period, no roads would be constructed in inventoried roadless or contiguous unroaded areas to accommodate timber harvesting. With respect to the Tongass National Forest, the Forest Service estimates that approximately 58 miles of classified and temporary roads would be constructed each year in inventoried roadless areas for timber harvesting purposes under the no action alternative. These miles of roads would accommodate harvesting of approximately 70 million board feet of timber (*see* Table 2-1, *Roadless Area Conservation Rule Final EIS* [USDA Forest Service, 2000]). Because the Regional Forester for Region 10 has the specific authority to determine that a compelling need exists to provide for the multiple-use and sustained-yield of all renewable resources on the Tongass National Forest, as many as 58 miles could be constructed on the Tongass to support timber harvesting in inventoried roadless areas if such construction were consistent with a roads analysis. In this case, impacts to timber harvesting in the Tongass National Forest would be negligible.

A reduction in National Forest timber volume available could be offset by increases in Canadian imports and private land harvesting. In the eastern United States, there would be opportunity to substitute timber from other lands to replace most of the reduction in National Forest timber sales because the contribution of NFS harvest is extremely small in those areas (*i.e.*, Regions 8 (Southern) and 9 (Eastern)). In the west, substitution opportunity is limited. There would be some potential for substitution in Regions 1 (Northern), 4 (Intermountain), 5 (Pacific Southwest), and 6 (Pacific Northwest). Little substitute volume is likely to exist in Regions 2 (Rocky Mountain), 3 (Southwestern), and 10 (Alaska). Any volume that could not be substituted from other lands could probably be met by Canadian imports.

Although U.S. demand for timber could be met by timber harvesting on other U.S. (federal or non-federal) or Canadian lands, the environmental impacts of timber harvesting would not be

⁷ *See* the Cost-Benefit Analysis in Appendix E.

reduced; rather, it would be moved to those other lands. Further, the economic benefits of timber harvesting, including jobs, would also be moved to the communities near to those other lands, either in the United States or in Canada. Increasing Canadian imports would adversely affect the U.S. communities near NFS lands that have been dependent on timber harvesting. Although such imports would be relatively small and would not likely affect the balance of trade between the United States and her trading partners, these imports would establish an increased reliance on foreign sources for an important natural resource.

Old Growth. To the extent that old growth forests are located within inventoried roadless and contiguous unroaded areas, the proposed and final road management strategy alternatives would provide additional protection from road construction and timber harvesting as compared to the no action alternative.

Special Forest Products. A decrease in the number of roads, due to either increased decommissioning or decreased road construction, could reduce existing and future opportunities to access special forest products.

Land Uses (non-recreational)

Non-recreational land use refers to use of NFS land for communication sites, public and private roads, and energy-related transmission rights-of-way (*i.e.*, linear special uses such as pipelines and electric transmission lines). More than 47,000 active, non-recreational special use authorizations exist on NFS lands. These authorizations involve more than 80 types of uses on 26 million acres of land (almost 14 percent of NFS lands) and resulted in almost \$9 million in fees to the U.S. Treasury in 1998. The Forest Service estimates that 8,000 applications for new non-recreational special use permits or renewals of existing permits were filed in the 2-year period between 1998 and 1999.

No Action Alternative

Under the no action alternative, approximately 2,907 miles of roads would be decommissioned annually by the Forest Service, permittees, or others (*see* Table 2). None of these roads would be needed to access existing special forest uses such as private access, transportation or utility corridors, rights-of-way, and easements. Road decommissioning is not expected to affect existing non-recreational land uses.

Approximately 250 miles of classified roads used to facilitate non-recreational uses of NFS lands would be reconstructed annually, with 4 of those road miles located within inventoried roadless or contiguous unroaded areas (*see* Table 3). Reconstruction of existing roads could improve roads used for this purpose.

Approximately 84 miles of classified and temporary roads would be constructed annually to facilitate special land uses on National Forests (*see* Table 3). Of these, only 1 mile would be in inventoried roadless or contiguous unroaded areas.

Proposed and Final Road Management Strategy Alternatives

As with the no action alternative, decommissioning of unneeded roads under the proposed and final road management strategy alternatives is not expected to affect non-recreational land uses on NFS lands. Although a greater number of roads could be decommissioned under the proposed and final road management strategy alternatives than under the no action alternative, only unneeded roads would be decommissioned, and none would be needed to accommodate existing private access, transportation or utility corridors, rights-of-way, and easements.

Reconstruction of existing roads could improve roads involved in special land uses. There would be no difference in the miles of roads reconstructed under the proposed and final road management strategy alternatives and under the no action alternative (*see* Table 5).

Under the proposed and final road management strategy alternatives, road construction could be reduced as compared to the no action alternative. Until a comprehensive road inventory and forest-scale road analysis had been completed and the applicable forest plan had been amended or revised or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision, road construction in inventoried roadless and contiguous unroaded areas would be permitted only upon a showing of compelling need.

In particular, while roads could be constructed in inventoried roadless and contiguous unroaded areas to allow access to private property (including rights-of-way under the *Alaska National Interest Lands Conservation Act* [ANILCA], 16 U.S.C. §§410hh-3233), roads to facilitate new communications sites, transmission lines, pipelines, or other commercial enterprises might not be approved for construction in inventoried roadless or contiguous unroaded areas until a comprehensive road inventory and forest-scale road analysis had been completed and integrated into the applicable forest plan. The Forest Service estimates that only 1 mile of road would not be constructed for land use purposes under the proposed and final road management strategy alternatives until a comprehensive road inventory and forest-scale road analysis had been completed and integrated into the applicable forest plan. Possible long-term effects to land uses caused by the elimination of road construction and reconstruction in inventoried roadless areas are addressed in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000). Long-term effects in contiguous unroaded areas would be addressed in NEPA documentation prepared for forest plan revisions.

Options for implementation of the proposed road management strategy alternative included requiring a showing of compelling need only in inventoried roadless areas or in both inventoried roadless and contiguous unroaded areas. Under the final road management strategy alternative,

the showing of compelling need would be required in both inventoried roadless and contiguous unroaded areas.

Law Enforcement

Roads provide access for law enforcement patrols to control criminal activity. The proposed and final road management strategy alternatives would not affect law enforcement activities. Road construction and reconstruction needed for the immediate protection of public safety would be conducted under both the no action alternative and the proposed and final road management strategy alternatives.

Minerals

On NFS lands, minerals are classified according to the authority under which they are appropriated and how they are managed. The classifications are locatable, leasable, and salable. The Forest Service must permit reasonable access to privately owned minerals located on Forest Service administered land, access to explore or file claims in accordance with the mining laws, and access to existing mining claims, leases, licenses, permits, and contracts on NFS lands. As with the timber industry, the minerals industry pays the construction cost for all mineral activity and, if required by the Forest Service, for the cost of road obliteration or decommissioning after energy and mineral exploration or development is completed.

No Action Alternative

Under the no action alternative, an estimated 2,907 miles of roads would be decommissioned annually (*see* Table 2). Because only unnecessary roads would be decommissioned, none of these roads would be needed to access privately owned minerals under NFS lands, to explore or file claims in

Mineral Classifications

Locatable minerals: metallic and nonmetallic minerals, such as gold, silver, copper, lead, zinc, barite, gypsum, and certain varieties of limestone, which are subject to appropriation under the General Mining Law of 1872. This law provides U.S. citizens a right to prospect or explore for, claim, and develop these minerals on certain federal lands and implies access to conduct these activities. The Forest Service cannot prohibit activities associated with the exploration and development of locatable minerals on NFS land, although the Forest Service can regulate surface disturbance caused by these activities.

Leasable minerals: energy resources such as oil, gas, coal, gilsonite, and geothermal and non-energy minerals such as phosphate and minerals important for their sodium, potassium, or sulfur content that can be appropriated under one of several mineral leasing acts. Exploration and development of leasable mineral resources are discretionary activities. The Bureau of Land Management has the authority to dispose of leasable minerals on NFS lands. While some leasable minerals on NFS lands may only be leased subject to Forest Service concurrence, phosphate, potassium, sodium, sulphur, gilsonite, and oil shale may be leased without Forest Service concurrence.

Salable minerals: common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay. Disposal of salable minerals are at the sole discretion of the Forest Service.

accordance with the mining laws, or to access existing mining claims, leases, licenses, permits, or contracts. Road decommissioning is not expected to affect existing mineral exploration or development, and it would not have an economic impact on the mineral industry since reasonable access would continue.

Approximately 54 miles of classified roads used to facilitate mining on NFS lands would be reconstructed annually, none of them located within inventoried roadless or contiguous unroaded areas (*see* Table 3). Reconstruction of existing roads could improve roads used for minerals exploration and development.

Approximately 123 miles of classified and temporary roads would be constructed annually to facilitate mining on National Forests (*see* Table 3). Of these, an estimated 45 miles would be in inventoried roadless or contiguous unroaded areas.

Proposed and Final Road Management Strategy Alternatives

As with the no action alternative, decommissioning of unneeded roads under the proposed and final road management strategy alternatives is not expected to affect mining on NFS lands. Although more miles of roads could be decommissioned under the proposed and final road management strategy alternatives than under the no action alternative, only unnecessary roads would be decommissioned, and none of these roads would be needed to accommodate mining claims, leases, licenses, permits, or contracts.

Reconstruction of existing roads could improve roads used for mining. There would be as many mining roads reconstructed in inventoried or contiguous unroaded areas under the proposed and final road management strategy alternatives as under the no action alternative (*see* Table 5), although the Forest Service expects that on all NFS lands more road reconstruction will occur under the proposed and final road management strategy alternatives than under the no action alternative.

Under the proposed and final road management strategy alternatives, road construction could be reduced as compared to the no action alternative. Until a comprehensive road inventory and forest-scale road analysis had been completed and integrated into the applicable forest plan, road construction in inventoried roadless and contiguous unroaded areas would be permitted only upon a showing of compelling need such as access needed to carry out a statute or treaty or pursuant to reserved or outstanding rights including access to locatable and leasable minerals.

Up to a maximum of 12 miles of roads would not be constructed in inventoried roadless or contiguous unroaded areas under the proposed and final road management strategy alternatives (an 10 percent decrease) (*see* Table 5). Mineral exploration and development could still occur in these areas using existing roads or methods that did not require motorized access, although the number of minerals exploration or development projects in inventoried roadless and contiguous unroaded areas and the amount of materials extracted from those areas would be expected to

decrease slightly, and the cost of extraction could increase. Figures are not available regarding the type, amount, or value of materials that could not be extracted as a result of the limitation on road construction in inventoried roadless or contiguous unroaded areas.

The effects of the proposed and final road management strategy alternatives would be limited to the interim requirements period. Promulgation of the Roadless Area Conservation Rule would have more permanent impacts on access to leasable minerals within inventoried roadless areas, as described in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000). Therefore, the incremental effect of the road management strategy would be to affect exploration and development within contiguous unroaded areas. No estimate of those effects are available.

Options for implementation of the proposed road management strategy alternative included requiring a showing of compelling need only in inventoried roadless areas or in both inventoried roadless and contiguous unroaded areas. Under the final road management strategy alternative, the showing of compelling need would be required in both inventoried roadless and contiguous unroaded areas.

Noxious Weeds and Nonnative Invasive Plants

Road construction and reconstruction present the greatest opportunity for infestations of noxious weeds and invasive plants to spread. Because road construction and reconstruction are ground-disturbing activities, they are easy points of entry and infestation. Other ground-disturbing activities such as timber harvesting, mining, trail building, grazing, and recreational activities also contribute to infestations.

On the other hand, roads are used to access weed infestations quickly and easily and to access infestations in unroaded or roadless areas of NFS lands. Lack of vehicle access could increase the cost of treatment by requiring aerial or hand spraying. Generally, the greatest possibility for infestation is in roaded areas.

No Action Alternative

Under the no action alternative, the Forest Service would decommission approximately 2,907 miles of classified and unclassified roads each year (*see* Table 2). Decommissioning these roads would decrease the likelihood of noxious weed and nonnative plant introduction, although to a lesser extent than the proposed and final road management strategy alternatives.

The Forest Service would reconstruct approximately 4,125 miles of classified roads (*see* Table 3). As noted above, road reconstruction is a ground-disturbing activity and can increase points of entry and infestation and the risk of noxious weed and nonnative plant introduction.

The Forest Service would construct approximately 1,778 miles of classified and temporary roads annually (*see* Table 3). Because of the larger amount of road construction (as compared to the proposed and final road management strategy alternatives), this alternative would provide for the greater possibility of noxious weed and nonnative plant introduction. The potential, although not necessarily the actual, amount of infestation would be equal to the total amount of land that would be disturbed under this alternative.

Proposed and Final Road Management Strategy Alternatives

Under the proposed and final road management strategy alternatives, more roads are likely to be decommissioned than under the no action alternative. For this reason, it is likely that NFS lands, particularly inventoried roadless and unroaded areas, would face a reduced risk of noxious weed and nonnative plant introduction. A larger number of decommissioned miles would result in a larger reduction in risk. A smaller number of roads available for motorized access, however, could also reduce the Forest Service's ability to respond to outbreaks in the future.

Fewer roads are likely to be reconstructed in inventoried roadless and contiguous unroaded areas under the proposed and final road management strategy alternatives than under the no action alternative, although overall the miles of roads to be reconstructed are expected to be greater under the proposed and final road management strategy alternatives than under the no action alternative. Because of this larger amount of ground-disturbing activity, the risk of noxious weed and nonnative plant introduction could increase as a result of this component of the proposed and final road management strategy alternatives. However, it is also likely that fewer roads would be constructed. This would reduce the risk of infestation, although it would also reduce the Forest Service's ability to respond to outbreaks using motorized vehicles. Overall, the proposed and final road management strategy alternatives would tend to reduce the ability of weeds and nonnative invasive plants to spread and reduce infestations as compared to the no action alternative.

Recreation, Heritage, and Wilderness Resources

Roads provide opportunities to view scenic vistas; use motorized vehicles; access campgrounds, picnic areas, marinas, resorts, ski areas, and other facilities; and access less-developed settings over roads to a trailhead. Few roads have been built on NFS lands for the sole purpose of recreation, but most are available for recreational use. In fact, driving for pleasure is the single largest recreational use of NFS lands, constituting almost 36 percent of all recreation in 1996 (most recent available data). While roads provide access for recreationists, they can decrease the quality of recreation experiences if not well managed. Increased access can provide people with opportunities to enjoy unique and sensitive areas, but it can also make protection of these areas difficult.

The following activities could be affected by changes in road access:

1. Government-owned developed recreational facilities
2. Scenic quality (the visual combination of natural and cultural attributes that provide landscape identity, sense of place, and scenic integrity)
3. Winter sports sites and other recreational resort developments primarily owned and operated by private, commercial entities under special use permits
4. Recreational settings (primitive, semi-primitive, non-motorized, semi-primitive motorized, roaded natural, rural, and urban) and dispersed recreations such as backpacking and hiking
5. Cultural resources (sites of cultural and historic value)

No Action Alternative

Under the no action alternative, the Forest Service would decommission approximately 2,907 miles of classified and unclassified roads each year (*see* Table 2). Because only unnecessary roads would be decommissioned, access to the 12,600 recreational sites developed by the Forest Service, commercial winter sports and other resort developments, and cultural and historic sites would not be affected. Decommissioning unneeded roads can increase both scenic quality and the quality of the experience in dispersed recreation settings. Decommissioning roads can, however, also affect access to dispersed recreation and decrease off-road vehicle recreational use.

Approximately 250 miles of classified roads used for recreation purposes would be reconstructed annually, with an estimated 4 miles of roads located within inventoried roadless or contiguous unroaded areas (*see* Table 3). Reconstruction of existing roads could improve roads used for recreation.

Approximately 22 miles of classified and temporary roads would be constructed annually to facilitate recreation on NFS lands (*see* Table 3). Of these, an estimated 7 miles would be in inventoried roadless or contiguous unroaded areas. As noted above, these roads would facilitate access to recreational facilities, but the existence of such roads could adversely affect scenic quality and dispersed recreation. The effects on cultural resources could range from increased site protection and enhanced interpretation to degradation due to increased access by looters and vandals.

The no action alternative would also result in the construction of an estimated 630 miles of classified roads and 1,148 miles of temporary roads for all purposes on NFS lands annually, with an estimated 239 miles in inventoried roadless or contiguous unroaded areas (*see* Table 3). These roads would have an effect on scenic quality and solitude, but they could also increase access to Forest Service and commercial recreational facilities and increase opportunities for off-road vehicle recreation.

Proposed and Final Road Management Strategy Alternatives

A larger number of roads would be decommissioned under the proposed and final road management strategy alternatives than under the no action alternative, although only unnecessary roads would be decommissioned, and none of these roads would be needed to access developed recreational facilities. Roads that were important to recreational users would not likely be decommissioned. Additional road decommissioning, as compared to the no action alternative, could result in a reduction of the miles of roads available for off-road vehicle use on NFS lands and access for dispersed recreation activities. Thus, while off-road vehicle use and dispersed recreation may remain at current levels or grow, there would be an increase in the density of use on existing roads. These impacts would increase as the number of decommissioned road miles increased.

More roads would be reconstructed on all NFS lands under the proposed and final road management strategy alternatives than under the no action alternative. Reconstruction of existing roads could improve roads used for recreational access. However, improved access could also increase use, making management of recreational facilities and protection of cultural resources more difficult.

Under the proposed and final road management strategy alternatives, road construction could be reduced as compared to the no action alternative. Until a comprehensive road inventory and forest-scale road analysis had been completed and integrated into the applicable forest plan, road construction in inventoried roadless and contiguous unroaded areas would be permitted only upon a showing of compelling need. Up to a maximum of 7 miles of roads would not be constructed on inventoried roadless or contiguous unroaded areas under the proposed and final road management strategy alternatives (a decrease of 32 percent) (*see* Table 5).

The inability to construct roads in these areas during the interim requirements period would reduce the ability to travel through NFS lands by motorized vehicle and could prevent the development of new Forest Service recreational facilities and commercial winter sports sites and other resort developments. As compared to the no action alternative, reduced road construction in inventoried roadless and contiguous unroaded areas could enhance scenic quality and dispersed recreational opportunities.

Options for implementation of the proposed road management strategy alternative included requiring a showing of compelling need only in inventoried roadless areas or in both inventoried roadless and contiguous unroaded areas. Under the final road management strategy alternative, the showing of compelling need would be required in both inventoried roadless and contiguous unroaded areas.

Up to a maximum of 184 miles would not be constructed under the proposed and final road management strategy alternatives (*see* Table 5), a 10 percent decrease. The absence of the roads that would have been constructed under the no action alternative would have a beneficial impact

on scenic quality and some forms of dispersed recreation. Fewer roads overall could also decrease access to Forest Service and commercial recreational facilities and decrease opportunities for off-road vehicle recreation.

Watershed and Air

Many land management activities affect water, soil, and air resources to varying degrees and intensity. The most common direct and indirect effects of road construction and reconstruction on watershed and air resources are loss of ground cover vegetation; soil compaction; reduced transpiration (the passage of water vapor from a living body through a membrane or pores); loss of productive soils; and increased water runoff, soil erosion, and dust levels. Proper design, construction, and maintenance can minimize these effects but cannot completely eliminate them.

Most impacts occur during initial road construction, followed by decreasing impacts as roadside vegetation and surfacing mature. Periodic maintenance activities usually cause brief, temporary increases in impacts, particularly on the road surface and associated ditches. Temporary road construction has many of the same effects as permanent road construction, but it generally occurs for a shorter duration and to a lesser extent physically. Long-term effects can occur if temporary roads receive extended use and are not decommissioned as planned.

Sedimentation. Roads affect surface erosion, landslides, and sedimentation. General surface erosion produces mostly fine sediment, while landslides produce sediment of all sizes. Classified and temporary road construction and reconstruction causes some increased surface erosion and landslide risk, but this varies widely and depends on local site characteristics.

Hydrology. Roads affect hydrology by intercepting, concentrating, and diverting runoff. They also increase the density of streams on the landscape. For example, a road can intercept rainfall and groundwater and promote the concentration and movement of runoff to the stream channel. Interception of groundwater by a road can reduce the flow of a spring or may cause a spring to become a flowing stream. Roads also indirectly affect hydrology because they replace trees that use water through evapotranspiration (loss of water from the soil through evaporation and from plants through transpiration). Water otherwise used by trees becomes available for runoff rather than returned to the atmosphere, which may increase streamflow and possibly flood peaks. Some increased flood frequency and higher flood levels occur due to existing roads.

Water quality. Roads cause some measurable reduction in water quality. Most water quality concerns, other than sediment, relate to the possible introduction of toxic chemicals or nutrients such as nitrogen and phosphorous from timber harvest activities. These pollutants may result from road construction and maintenance equipment or be brought into the watershed through public road use. Roads can also cause water temperature to change where groundwater is intercepted and brought to the surface or where loss of tree cover in riparian areas reduces shading.

Site productivity. Classified and temporary road construction and reconstruction causes a direct loss of site productivity on the acres occupied by the road. This is more important with roads near or encroaching on wetland or riparian areas, although Forest Service policy is to avoid or minimize the effects to these areas. Although not irreversible, land occupied by roads is essentially lost to long-term productive vegetative use.

Air quality. Classified and temporary road construction and reconstruction causes dust and increased exhaust emissions. Although this increased level of exhaust is usually insignificant in dispersed rural areas, it can affect visibility. Dust and visibility are problems when National Parks and National Forest Wilderness Areas are classified as, or are near, Class I and II areas (as designated under the Clean Air Act).

The number of classified and temporary road miles constructed and reconstructed provides the best estimate of effects from sedimentation and impacts to hydrology, water quality, site productivity, and air quality.

No Action Alternative

Under the no action alternative, the Forest Service would decommission approximately 2,907 miles of classified and unclassified roads each year (*see* Table 2). Decommissioning involves blocking the entrance to a road, revegetating, water barring, removing fills and culverts, reestablishing drainage-ways, removing unstable road shoulders, or full obliteration by recontouring and restoring natural slopes. Such activities can increase sedimentation and dust and vehicle exhaust emissions. These impacts are of a short duration, lasting only as long as the decommissioning activity. Over the long term, decommissioning roads can return an area to its more natural hydrologic condition, improve water quality, and promote site productivity. Based on past experience, Regions 1 (Northern) and 6 (Pacific Northwest) would decommission the most miles of classified and unclassified roads, and Region 10 (Alaska) would decommission the fewest miles (*see* Table 2).

The Forest Service would also construct approximately 1,778 miles of classified roads and reconstruct approximately 4,125 miles of classified roads annually (*see* Table 3). As described above, roads can cause increased sedimentation during both construction or reconstruction and operation. Air quality and visibility can also be affected during construction or reconstruction, although such impacts are generally short-term. Operation and maintenance of native surfaced roads may also have both short- and long-term effects. The existence of roads alters natural hydrology and can increase streamflow (causing more erosion and sedimentation) and possibly peak floods. Roads also affect water quality through deposition of pollutants on roads that wash into streams or groundwater and through temperature changes.

In addition, the Forest Service would expect to construct an estimated 6 miles and reconstruct an estimated 526 miles of roads annually for the purpose of protecting watersheds (*see* Table 3). Of

those reconstructed, an estimated 6 miles would be located in inventoried roadless or contiguous unroaded areas.

Proposed and Final Road Management Strategy Alternatives

Under the proposed and final road management strategy alternatives, a larger number of road miles would be decommissioned than under the no action alternative. As compared to the no action alternative, short-term water quality impacts due to temporary increases in sedimentation and air quality impacts would be greater. Long-term benefits of improved hydrologic conditions, water quality, and site productivity would also be greater than under the no action alternative, and they would increase as the number of road miles decommissioned increased.

Miles of road reconstruction in inventoried roadless and contiguous unroaded areas would be less under the proposed and final road management strategy alternatives than under the no action alternative, although overall the Forest Service anticipates that more miles of road would be reconstructed under the proposed and final road management strategy alternatives than under the no action alternative. Road reconstruction of needed roads could cause short-term water quality (sedimentation) and air quality (dust and construction vehicle emissions) impacts. However, road reconstruction could also reduce the amount of environmental damage caused by a substandard road. Reconstructed roads could also reduce erosion and landslides, protect riparian and wetland habitat, and enhance fish and wildlife passages.

Implementation of the proposed and final road management strategy alternatives would be expected to reduce the number of roads constructed, as compared to the no action alternative. Fewer miles of roads would avoid sedimentation, hydrologic changes, and impacts to air and water quality, and would promote site productivity.

Until a comprehensive road inventory and forest-scale road analysis had been completed and integrated into the applicable forest plan, road construction in inventoried roadless and contiguous unroaded areas would be permitted upon a showing of compelling need. Under the proposed and final road management strategy alternatives, up to a maximum of 184 miles of roads would not be constructed on all NFS lands for all purposes, an anticipated maximum decrease of 10 percent) (*see* Table 5).

Up to a maximum of 6 miles of roads would not be reconstructed in inventoried roadless and contiguous unroaded areas annually for the purpose of protecting watersheds under the proposed and final road management strategy alternatives (*see* Table 5).

Wildlife, Fish, and Threatened, Endangered, and Sensitive Species

Scientists have identified several ecological effects of roads, including:

- Mortality related to construction
- Mortality from being hit by vehicles
- Behavioral modifications
- Changes in the physical environment
- Changes in the chemical environment
- Introduction and establishment of non-native species, and
- Increased human use of roaded areas

Although all species and ecosystems are not affected to the same degree by roads, in general, the presence of roads in an area is associated with negative effects for both terrestrial and aquatic ecosystems. These effects include changes in species composition and population size. It should be noted, however, that active restoration of wildlife habitat may not occur without management access by road.

Wildlife. Roads and associated access activities cause a wide variety of impacts on wildlife populations, including migration disruption, increased physical stress, direct habitat loss, and habitat fragmentation. Roads into forest interiors can create corridors for predator introduction and human access that can affect wildlife populations by increasing opportunities for illegal harvesting of wildlife species.

Roads create environmental edges whose effects may extend well beyond the actual road. Loss of canopy associated with roads may result in greater temperature extremes, more exposure to winds, more direct sunlight within adjacent zones, and changes in relative humidity. The distance that this effect may extend is highly variable. The zone of disturbance related to road noise is estimated to be as great as one-half mile in forested areas. Although forest edges may benefit some species such as deer and bobwhite quail, they also provide access to interior forest patches for opportunistic species such as the brown-headed cowbird, which has been implicated in the decline in certain songbirds in the Sierra Nevada region.

Habitat Fragmentation

Fragmentation generally refers to the breaking up of forest by human activities into many smaller tracts separated by different landscape elements. As fragmentation increases, the amount of unaltered central or core habitat decreases and ecosystems are increasingly subject to adverse edge effects from human activity, changes in microclimate, increases in human-caused fires, and invasion of nonnative species. Habitat in roadless areas is generally less fragmented and better-connected than in roaded areas of similar size. Roads are a major contributor to forest fragmentation because they divide large landscapes into smaller patches and convert interior forest habitat into edge habitat.

For some mammals, open road density (miles of road per square mile) has been shown to be indicative of habitat suitability, with increases in road density related to declines in habitat effectiveness and population viability. Black bear and grizzly bear populations, for example, have been found to be negatively associated with road density.

Because most National Forest roads are not designed for high-speed travel, direct mortality of wildlife species on these roads is not usually an important factor for large mammals. Direct mortality may be of greater consequence to small, slow-moving species such as amphibians that have highly restricted home ranges and engage in persistent migratory behavior.

Inventoried roadless and contiguous unroaded areas offer a range of habitat types and provide large, relatively undisturbed blocks of important habitat for terrestrial animal species and communities. These areas function as biological strongholds for many species, including wide-ranging carnivores and very localized species. Some of these areas may now and in the future play a much greater role in supporting species viability and biological diversity (referring to the variety and abundance of species, their genetic composition, and their communities).

Fish. Road design, location, maintenance, and use are also important factors affecting the health of aquatic ecosystems. The effects of roads on aquatic habitats include physical alterations in stream channel morphology and substrate composition, increased sediment loading, stream bank destabilization, changes in riparian conditions, woody debris recruitment, modification of streamflow and temperature regimes, alteration of watershed hydrologic response, isolation of streams and floodplains, and habitat fragmentation. Increased fishing access from roads may also provide greater opportunity for illegal introduction and harvest of fish or aquatic species.

Effect of Roads on Aquatic Ecosystems

Roads can cause direct and indirect effects to important habitat factors for fish and other species. They contribute more sediment to streams than any other land management activity. The majority of sediment from timber harvest is related to road construction and use. Roads also increase the potential for erosion and slope failure in many areas, which can increase sedimentation of aquatic systems, adversely affecting aquatic communities. Sediment entering stream channels can clog streambed gravels, reducing oxygen concentrations critical to incubating eggs, young fish, and macroinvertebrates; fill deep pools; and change channel shape and form.

Strong fish populations are often associated with areas of low road density. For example, increasing road densities and their attendant effects were associated with declines in the status of bull trout, westslope cutthroat trout, yellowstone cutthroat trout, and redband trout.

Construction and use of roads can potentially affect fish during all life stages. For example, poorly placed culverts and changes in stream

channels caused by roads can impede migration of adults to spawning areas and cause mortality of eggs and fry through increased sedimentation in stream gravels. Although inventoried roadless and contiguous unroaded areas are more likely to support strong fish populations than roaded areas, strong fish populations are not excluded from watersheds with roads. However, road entry

into inventoried roadless or contiguous unroaded areas presents short- and long-term risks to aquatic ecosystems.

Inventoried roadless and contiguous unroaded areas support a diversity of aquatic habitats and communities. Waters within inventoried roadless areas have been shown to function as biological strongholds and refuges for many fishes. Some of these waters may now play a relatively much greater role in supporting aquatic species viability and biological diversity than in the past due to cumulative degradation and loss of other, potentially more biologically rich habitat within associated drainages.

Threatened, endangered, and sensitive species. Roads can affect TES species⁸ through fragmentation, degradation, or loss of habitat; introduction of exotic species; interspecific interactions such as disease, predation, and competition; increased human disturbance; and illegal hunting. Roads in riparian areas, major wildlife corridors, areas with unique habitat, or habitats with rare species have greater effects than roads in other areas.

A species endangerment study showed that habitat loss associated with land use intensification was the most important factor. Interspecific interactions, human overuse, grazing, predation, forest management, and environmental contaminants and pollutants were other factors affecting species endangerment. Many of these factors are directly linked to roads and activities associated with road access.

Because of the high occurrence of TES species in inventoried roadless and contiguous unroaded areas, Forest Service management practices in these areas of NFS lands and their subsequent effects on aquatic and terrestrial ecosystems are of greater consequence to TES species than non-TES species. Table 6 shows the number of federally threatened, endangered, or proposed threatened or endangered species on NFS lands by species and by region. Regions 5 (Pacific Southwest) and 8 (Southern) have the largest number of TES species on NFS lands; Region 6 (Pacific Northwest) has the largest percentage of TES species on inventoried roadless land in the NFS.

⁸ Threatened or endangered species are those that have been placed on the threatened or endangered species lists by the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act (16 U.S.C. 1521 *et seq.*). Sensitive species are species identified by the Forest Service through a process set out in Forest Service Manual 2670.

TABLE 6: Federally Threatened, Endangered, or Proposed Threatened or Endangered Species on National Forest System Lands (by species and by region)

	Birds	Mammals	Reptiles/ Amphibians	Fish	Invertebrates	Insects	Plants	Total	Percent in RARE II Areas
Region 1	5 (3)	5 (5)	0 (0)	5 (5)	0 (0)	0 (0)	3 (2)	18 (15)	83%
Region 2	9 (6)	6 (5)	2 (1)	10 (2)	0 (0)	2 (2)	9 (3)	38 (19)	50%
Region 3	15 (7)	10 (9)	5 (3)	18 (6)	0 (0)	0 (0)	5 (5)	53 (30)	57%
Region 4	5 (4)	6 (3)	1 (0)	12 (5)	0 (0)	0 (0)	9 (6)	33 (18)	55%
Region 5	12 (9)	8 (3)	5 (4)	22 (3)	6 (1)	5 (2)	42 (16)	100 (30)	30%
Region 6	7 (4)	3 (3)	0 (0)	28 (28)	0 (0)	1 (1)	3 (3)	42 (39)	93%
Region 8	15 (4)	11 (2)	9 (4)	22 (1)	45 (11)	0 (0)	60 (12)	162 (34)	21%
Region 9	5 (5)	6 (6)	2 (2)	2 (1)	7 (6)	2 (2)	16 (7)	40 (29)	73%
Region 10	2 (2)	2 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (2)	50%

Region 1 (Northern) includes National Forests in Idaho, Montana, North Dakota, and South Dakota.

Region 2 (Rocky Mountain) includes National Forests in Colorado, Wyoming, South Dakota, Kansas, and Nebraska.

Region 3 (Southwestern) includes National Forests in Arizona, New Mexico, and Texas.

Region 4 (Intermountain) includes National Forests in Idaho, Nevada, Utah, and Wyoming.

Region 5 (Pacific Southwest) includes National Forests in California.

Region 6 (Pacific Northwest) includes National Forests in Washington and Oregon.

Region 8 (Southern) includes National Forests in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Texas, and Virginia.

Region 9 (Eastern) includes National Forests in Minnesota, Wisconsin, Missouri, Illinois, Michigan, Indiana, Ohio, West Virginia, Pennsylvania, New York, Vermont, and New Hampshire.

Region 10 (Alaska) includes National Forests in Alaska.

Notes: Number of species in inventoried roadless areas is shown in parentheses.

Region 7 no longer exists, having been incorporated into Regions 8 and 9 in 1965.

Source: *Interim Rule EA* (USDA Forest Service, 1999b; page 32).

Roads affect wildlife, fish, and TES species both adversely and beneficially. Adverse impacts are those associated with road construction and reconstruction (*e.g.*, sedimentation) and operation (*e.g.*, habitat fragmentation, roadkill). Beneficial impacts are those associated with access to projects with a primary wildlife, fish, or TES species protection purpose. Inventoried roadless and contiguous unroaded areas are particularly important for species such as grizzly bears, which require large home ranges and are sensitive to human disturbance. Further, these areas are often located in headwater areas that provide habitat for TES fish species such as steelhead and bull trout.

No Action Alternative

Under the no action alternative, the Forest Service would decommission approximately 2,907 miles of classified and unclassified roads each year (*see* Table 2). Roads needed for wildlife, fish, or TES species protection would not be decommissioned. Although decommissioning can cause short-term impacts to wildlife, fish, and TES species through human presence, habitat disturbance, and sedimentation, long-term impacts of road decommissioning would be beneficial. Elimination of unneeded roads would protect habitat and avoid migration disruption, habitat fragmentation, introduction of exotic species, interspecific interactions, illegal hunting associated with roads, erosion and associated sedimentation in streams, and pollutants deposited on roads. Based on past experience, Regions 1 (Northern) and 6 (Pacific Northwest) would decommission the most miles of road, and Region 10 (Alaska) would decommission the fewest miles (*see* Table 2).

The Forest Service would also reconstruct approximately 4,125 miles of classified roads and construct approximately 1,778 miles of classified and temporary roads annually (*see* Table 3). As described above, roads can cause habitat loss, fragmentation, migration disruption, sedimentation, and direct mortality of wildlife species. Road reconstruction of needed roads could cause short-term impacts due to human activity, habitat disturbance, and sedimentation. However, such road reconstruction could also reduce the amount of environmental damage caused by a substandard road. Reconstructed roads could reduce erosion and landslides, protect riparian and wetland habitat, and enhance fish and wildlife passages. Road reconstruction could also improve human access, which can put additional stresses on wildlife, fish, and TES species.

In addition, the Forest Service would expect to reconstruct an estimated 36 miles of roads and construct an estimated 11 miles annually for the purpose of protecting fish and wildlife resources (*see* Table 3). Of those, an estimated 4 miles would be located in inventoried roadless or contiguous unroaded areas.

Proposed and Final Road Management Strategy Alternatives

Under the proposed and final road management strategy alternatives, a larger number of road miles would be decommissioned than under the no action alternative. As compared to the no action alternative, short-term impacts due to temporary human activity and habitat disruption and increases in sedimentation would be greater. Long-term benefits of improved wildlife habitat and

aquatic ecosystem conditions would also be greater than under the no action alternative, and they would increase as the number of road miles decommissioned increased.

Miles of road reconstruction would be less in inventoried roadless and contiguous unroaded areas under the proposed and final road management strategy alternatives than under the no action alternative, although on all NFS lands road reconstruction is expected to be greater under the proposed and final road management strategy alternatives than under the no action alternative. Road reconstruction of needed roads could cause short-term impacts due to human activity, habitat disturbance, and sedimentation. However, such road reconstruction could also reduce the amount of environmental damage caused by a substandard road.

Implementation of the proposed and final road management strategy alternatives would be expected to reduce the number of roads constructed. This would protect habitat and avoid migration disruption, habitat fragmentation, introduction of exotic species, interspecific interactions, and illegal hunting associated with roads on NFS lands. In addition, fewer miles of roads would provide the greatest assurance that rare habitats, large natural patches of vegetation, riparian areas, and major wildlife dispersion corridors would be retained.

Until a comprehensive road inventory and forest-scale road analysis had been completed and integrated into the applicable forest plan, road construction in inventoried roadless and contiguous unroaded areas would be permitted upon a showing of compelling need. Up to a maximum of 184 miles of roads would not be constructed in inventoried roadless or contiguous unroaded areas under the proposed and final road management strategy alternatives, an anticipated maximum decrease of 10 percent (*see* Table 5).

Economic and Social Effects

Economic impacts refer to the effects on the economic values related to forest outputs and services and on jobs and revenues. Social impacts refer to the effects on social and cultural values that are ascribed to natural areas such as environmental protection, solitude, clean water, diversity of wildlife and fish, scenic quality, and availability of forest products for human use.

Demand for natural resources such as recreational opportunities of varying types, wood products, and special forest products such as wild food plants and medicinal plants and fungi has steadily increased. NFS lands also provide opportunities for recreational, subsistence, and commercial hunting and fishing and livestock grazing. Forest development roads are used to provide access to these resources and for movement and distribution of people. Concurrent with the demand for more natural resource products is the growing public recognition that NFS lands contain unique resources and opportunities that may be adversely affected by roads.

Community capacity is a community's ability to sustain itself over time based primarily on the community's economic health measures and the quality of social interactions and institutions. The more diverse a community's economy, the more resilient and adaptable it is to changing circumstances.

Economic effects. Road decommissioning, reconstruction, and construction can affect both the economic values that focus on the changes in forest outputs and services valued by society and jobs and revenue. Some economic values are enhanced by increasing access (*e.g.*, timber harvesting), while others are enhanced by limiting access (*e.g.*, primitive non-motorized recreation experiences). Jobs and revenue can also be affected by timber harvests and by tourism, both of which require access to roads. The Forest Service considered both economic efficiency (the potential change in the flow of goods and services valued by society) and the effect of the no action alternative and the proposed and final road management strategy alternatives on economic activity (jobs and payments to states) in a Cost-Benefit Analysis. The Cost-Benefit Analysis is contained in Appendix E.

In particular, the harvest of timber from NFS lands continues to generate jobs and income for both the local and national economy, although the contribution of NFS harvest to total forestry

Wildland Values

Wildland values reflect an appreciation for many of the characteristics of inventoried roadless and contiguous unroaded areas and generally lead to the belief that these characteristics should be protected. These values include: a belief in maintaining ecosystem health, a desire to conserve air and water quality, valuing scenic quality, the desire to experience solitude and personal renewal in wild areas, feeling a sense of place attachment to a forested area, believing natural areas are important for research and teaching, wanting to know that natural areas exist for their own sake, and the desire to leave a legacy of natural areas for future generations. Some people believe that wildland values are compatible with the multiple use management of NFS lands, including road building and extractive uses.

services and wood product manufacturing jobs has declined to 3 percent (in 1996). The receipts generated from harvests are partially distributed to the states and counties.

Energy and non-energy minerals are also produced from NFS lands (*see* earlier discussion of Minerals). For some of these commodities, output from NFS lands accounts for a large share of total U.S. mine production (*e.g.*, almost 50 percent of lead and almost 100 percent of platinum and palladium is produced from NFS lands). Even where NFS' share of total U.S. supplies is small, NFS production can be very important to local markets. In some areas, the only sources of sand and gravel or crushed stone within a reasonable shipping distance may be on NFS lands. Mineral activities on NFS lands generated over \$100 million in receipts to the U.S. Treasury in 1998, most of which is attributable to royalty payments on leasable minerals production. A portion of the U.S. Treasury receipts is returned to states and counties to be used for schools and roads.

Road construction, reconstruction, maintenance, and decommissioning activities also generate jobs. Road construction and reconstruction activities generate about 20 jobs per \$1 million expended on roads. The cost of road construction varies widely, depending on the type of road, intended use, environmental conditions, and other factors. Roads to access timber sales are likely to be local roads. Average costs to construct local roads range from \$50,000 to \$60,000 per mile, while average reconstruction costs vary from \$8,000 to \$16,000 per mile. Temporary road construction costs vary between \$5,000 and \$10,000 per mile.

Social effects. Environmental values may be heightened or reduced by perceived scenic quality, place attachment, and social well-being that people derive from a site. These perceptions are affected by the presence or absence of roads. Roads allow human access to many types of scenic areas. However, if roads interfere with a view or permit a level of human density that reduces the quality of the view, they diminish the scenic quality.

There are also social effects related to reduced job opportunities as a result of variations in timber harvesting. For some people, logging has been a way of life that has been passed down from generation to generation. These individuals have a strong sense of personal identity that revolves around being a logger, their social networks are based in the logging community, they participate in a common logging culture, and they have a strong attachment to their occupation. For these individuals, the loss of timber jobs not only means the loss of a source of income; it means the losses of both a way of life and a sense of individual and cultural identity. While mill workers tend to have a less well-developed sense of occupational identity than loggers, they do not wish to lose their jobs any more than loggers do and are reluctant to relocate, particularly to urban areas. Regardless of the level of personal investment in the timber industry, individuals employed there can all be expected to experience the negative psychological effects of uncertainty regarding forest management and how it could affect their lives and livelihoods.

As noted above, social costs and benefits are addressed in the Cost-Benefit Analysis in Appendix E.

Community capacity. In towns adjacent to NFS lands, community well-being may be affected by economic and social factors related to NFS land management. Road construction and reconstruction contribute to the health of a community by providing expanded employment, trade, and communication opportunities. Market goods such as timber, special forest products, livestock grazing, mineral leases, and commercial recreation generate income for local economies. However, unique ecosystems and habitats, outdoor recreation, scenic quality, and a sense of place are attributes and activities valued primarily for their social, psychological, and cultural significance. These less tangible values are often adversely affected by roads.

The Forest Service contributes to community capacity as a community member, government-to-government partner, and neighbor. Interactions between the Forest Service and communities are maintained through formal and informal contact primarily surrounding natural resource interests (*i.e.*, planning processes), exchange of goods and services (*e.g.*, permits, contracts, payment-in-lieu of taxes, law enforcement, fire protection, *etc.*), and other trust-building activities. To the extent that the proposed and final road management strategy alternatives respond to demands for change, relationships and trust levels with community interests that oppose road construction may be improved. To the extent that the proposed or final road management strategy limits access to NFS lands, relationships and trust levels with community interests that support forest development and road construction may be reduced.

No Action Alternative

Under the no action alternative, the Forest Service would decommission approximately 2,907 miles of classified and unclassified roads each year (*see* Table 2). Only roads that were not needed for forest resource management objectives would be decommissioned. Road decommissioning would not be expected to adversely affect timber sales or harvesting, or minerals exploration and development, and would be expected to increase scenic values and wildlife, fish, and TES species protection. For this reason, road decommissioning would not impose economic or social impacts and would not affect community capacity under the no action alternative.

The Forest Service would also reconstruct approximately 4,125 miles of classified roads and construct approximately 1,778 miles of classified and temporary roads annually (*see* Table 3). As described above, roads provide access to forest resources but can also impose adverse environmental impacts to water quality and wildlife, fish, and TES species.

The Forest Service expects that, under the current transportation policy, approximately 3.3 billion board feet of timber would be derived from timber sales on all NFS lands annually. Of that, approximately 250 million board feet annually would be derived from timber sales in inventoried roadless or contiguous unroaded areas. The economic value of timber sales on all NFS lands annually, based on data derived for the *Interim Rule EA* (USDA Forest Service, 1999b) or the *Roadless Area Conservation Final EIS* (USDA Forest Service, 2000), is listed in Table 7. As listed in Table 7, a timber volume of 3.3 billion board feet of timber from all NFS lands would result annually in receipts of \$540 million and 26,957 direct jobs. Regions 6

(Pacific Northwest) and 8 (Southern) have the highest planned annual yield and, correspondingly, the highest total projected receipts and highest number of total direct jobs. Regions 3 (Southwestern) and 10 (Alaska) have the lowest total projected receipts and number of direct jobs.

In addition, payments to states would be 25 percent of total receipts or, under the recently enacted Secure Rural Schools and Community Self-Determination Act of 2000, based on historic payment levels. Under the no action alternative, such payments would equal at least \$135 million.

Proposed and Final Road Management Strategy Alternatives

Similar to the no action alternative, impacts of road decommissioning under the proposed and final road management strategy alternatives would not be expected to have significant economic or social impacts. To the extent that road decommissioning provided benefits to scenic views and wildlife, fish, and TES species habitat, decommissioning more miles of roads under the proposed and final road management strategy alternatives would increase social values as compared to the no action alternative. In addition, reducing additional miles of unneeded roads would make available additional funds for other forest initiatives, including road reconstruction and new roads where needed. However, to the extent that the reduction in the miles of roads on NFS lands reduced off-road vehicle use on those lands, social values of those who enjoy off-road vehicle use would be adversely affected.

More roads would be reconstructed under the proposed and final road management strategy alternatives than under the no action alternative. Reconstruction would improve existing roads, increasing public access to and appreciation of forest values. Road reconstruction would also help reduce environmental degradation of existing roads, increasing social value associated with environmental protection and enhancement.

Under the proposed and final road management strategy alternatives, road construction would be reduced as compared to the no action alternative. Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, road construction in inventoried roadless and contiguous unroaded areas would be permitted only upon a showing of compelling need. For the National Forest, the Regional Forester for Region 10 has the specific authority to determine that a compelling need exists to provide for the multiple-use and sustained-yield of all renewable resources on the Tongass. Up to a maximum of 184 miles of roads would not be constructed in inventoried roadless and contiguous unroaded areas on all National Forest lands under the proposed and final road management strategy alternatives, an anticipated maximum decrease of 10 percent (*see* Table 5).

TABLE 7: Anticipated Maximum Economic Impacts of Planned Program of Timber Volume (by region)

	Annual Planned Program of Timber Volume ^a (million board feet)	Projected Receipts per thousand board feet ^b (\$)	Direct Jobs Supported per million board feet	Total Projected Receipts (\$million)	Total Direct Jobs
Region 1	320	192	10	61,369	3,196
Region 2	143	164	6	23,524	861
Region 3	77	65	9	4,982	690
Region 4	199	146	9	29,105	1,794
Region 5	492	219	7	107,678	3,442
Region 6	694	203	8	140,847	5,551
Region 8	663	152	10	100,727	6,627
Region 9	596	102	7	60,795	4,172
Region 10	125	88	5	10,995	625
TOTAL	3,308			540,022	26,957

a. Planned program of timber volume offered for sale for an 18-month period (annualized) based on 75 percent of the sum of fiscal year 1998 planned program and fiscal year 1999 budget request.

b. Timber receipt projections based on fiscal year 1997 timber sold values.

Region 1 (Northern) includes National Forests in Idaho, Montana, North Dakota, and South Dakota.

Region 2 (Rocky Mountain) includes National Forests in Colorado, Wyoming, South Dakota, Kansas, and Nebraska.

Region 3 (Southwestern) includes National Forests in Arizona, New Mexico, and Texas.

Region 4 (Intermountain) includes National Forests in Idaho, Nevada, Utah, and Wyoming.

Region 5 (Pacific Southwest) includes National Forests in California.

Region 6 (Pacific Northwest) includes National Forests in Washington and Oregon.

Region 8 (Southern) includes National Forests in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Texas, and Virginia.

Region 9 (Eastern) includes National Forests in Minnesota, Wisconsin, Missouri, Illinois, Michigan, Indiana, Ohio, West Virginia, Pennsylvania, New York, Vermont, and New Hampshire.

Region 10 (Alaska) includes National Forests in Alaska.

Region 7 no longer exists, having been incorporated into Regions 8 and 9 in 1965.

Source: *Interim Rule EA* (USDA Forest Service, 1999b; Appendix D) and Cost-Benefit Analysis in Appendix E.

The limited ability to construct roads in these areas during the interim requirements period would be likely to reduce timber sales and timber harvesting, reduce some mineral exploration and development, reduce the number of commercial enterprises allowed to use the National Forests, and reduce the number of Forest Service and commercial recreational facilities on NFS lands.⁹ These reductions in forest uses would have adverse economic and social effects and would decrease a community's ability to sustain itself, particularly for small, rural communities near National Forests that are dependent on forest resources for their economic viability. These communities may be disproportionately affected economically, although human health or environmental risks would not increase in these communities.

As discussed above, the Forest Service estimates that approximately 3.3 billion board feet of timber would be offered for sale annually on all NFS lands under the no action alternative. Under the proposed and final road management strategy alternatives, the Forest Service estimates that 170 million board feet of timber (approximately 5 percent of the total annual yield) would not be available for sale as a result of limitations on road construction in inventoried roadless or contiguous unroaded areas.¹⁰ Based on data from Table 7 and as shown in Table 8, a volume of 170 million board feet would result in sales of \$23 million annually and would affect 1,039 direct jobs. In addition, payments to states are estimated to be 25 percent of total receipts. Under the proposed and final road management strategy alternatives, such payments would equal \$129 million, a decrease of \$6 million as compared to the no action alternative. Two initiatives (the Roadless Area Conservation Rule and the recently enacted Secure Rural Schools and Community Self-Determination Act of 2000) would affect the economic impacts of the proposals. The provisions of the Secure Rural Schools and Community Self-Determination Act would offset any decreases in payments, while the Roadless Area Conservation Rule would address the long-term effects of any elimination of road construction or reconstruction in inventoried roadless areas. This road management strategy analysis only discloses the maximum effects anticipated for the interim requirements period.

While reduced timber harvesting and minerals exploration and development would have adverse economic and social impacts to some interests, a reduction in forest development would increase social values that promote environmental protection, including water quality and wildlife protection and enhancement.

Limiting road development would also limit the potential for new motorized recreation access, which would have an adverse effect on potential recreational benefits. Other types of recreation such as primitive non-motorized recreation would be positively affected.

⁹ Impacts of the implementation of the road management strategy in inventoried roadless areas would be superceded by implementation of the Roadless Area Conservation Rule, which is expected to be issued at the same time as the final road management strategy rule. Thus, the primary impact of the road management strategy would be on contiguous unroaded areas during the interim requirements period.

¹⁰ See the Cost-Benefit Analysis contained in Appendix E, Table E5.

Options for implementation of the proposed road management strategy alternative included requiring a showing of compelling need only in inventoried roadless areas or in both inventoried roadless and contiguous unroaded areas. Under the final road management strategy alternative, the showing of compelling need would be required in both inventoried roadless and contiguous unroaded areas.

TABLE 8: Comparison of Maximum Timber Volume, Receipts, and Direct Jobs under the No Action Alternative and the Proposed and Final Road Management Strategy Alternatives

	Timber Volume (annual) (in million board feet)^a	Timber Receipts (annual) (in \$ millions)^b	Direct Jobs
No Action Alternative	3,308	540	26,957
Proposed and Final Road Management Strategy Alternatives	3,138	517	25,918 ^c
Difference	(170)	(23)	(1,039)

^a This number represents timber volume offered for sale. Timber volume sold and later harvested is typically less than timber volume offered for sale.

^b This number represents timber volume sold.

^c This number reflects a decrease in jobs as a result of reduced timber harvesting on inventoried roadless and contiguous unroaded areas.

Source: Cost-Benefit Analysis, Appendix E, Tables E6 and E7.

Civil Rights Impacts Analysis

In accordance with Departmental Regulations on Civil Rights and Equal Opportunity and, in particular, Departmental Regulation 4300-4 (Civil Rights Impact Analysis), the Forest Service examined the potential impact of the proposed and final policies on civil rights. Further, Executive Order 12898, *Federal Actions to Address Environmental Justice in*

Environmental Justice

Environmental justice refers to the right of all Americans to enjoy "safe, healthful, productive, and aesthetically and culturally pleasing surroundings" (NEPA, Section 101). For this reason, Executive Order No. 12898 and subsequent guidance issued by the Council on Environmental Quality calls upon all federal agencies to actively seek input from minority and low-income populations that may be affected by a proposed action and to consider specifically the impacts of proposed federal actions on these communities.

Minority Populations and Low-Income Populations, requires that all federal agencies identify and address disproportionately high and adverse human health and environmental effects on minority and low-income populations.

The road management strategy provides national guidance for roads analysis and planning. It sets in motion the use of a science-based roads analysis process that will be implemented at the local level. The roads analysis process is an integrated ecological, social, and economic approach to transportation planning. It is intended to complement and integrate existing law, policy, and practice into the analysis and management of roads on the National Forests and Grasslands.

The road management strategy would involve the development of an inventory and description of classified and unclassified roads that are important to the management and use of NFS lands; the decommissioning of unneeded roads; reconstruction of critical classified roads; and the use of a science-based roads analysis process in future road construction decisions. Further, until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, road construction or road reconstruction in inventoried roadless and contiguous unroaded areas would need to demonstrate a compelling need and the preparation of an environmental impact statement to disclose the environmental effects. In contrast to the road management strategy itself, which is programmatic, these subsequent road construction decisions will continue to be made at the local level and will reflect incorporation and analysis of civil rights and other and economic social impacts.

As local Forest Service officials implement the roads policy using the roads analysis process and subsequent NEPA processes, they will consider the specific social and economic factors, including civil rights impacts, related to revising the management of the local transportation system. These considerations include such matters as the impact of decommissioning roads on protected populations or on access to traditional cultural sites, such as Native American religious sites.

The roads analysis process expressly directs that a number of social issues be considered at the local level, including the needs and values people have for road access, access to paleontological, archeological, and historical sites, the effects of the road system on cultural and traditional uses and American Indian Treaty Rights, civil rights, and environmental justice. It specifically asks how “the road system, or its management, affects certain groups of people (minority, ethnic, cultural, racial, disabled, and low-income groups).” See Appendix C.

Similarly, while the agency is currently working on a substantial overhaul and expansion of its civil rights program direction, the existing direction in Forest Service Manual Title 1701 directs Forest Service officials to consider civil rights implications in their decisions on road management. Additionally, the agency’s NEPA procedures in Forest Service Handbook (FSH) 1909.15, Chapter 10 expressly require consideration of “consumers, civil rights, minority groups, and women and cross references Forest Service Manual 1730.” Also, the agency provides planners

with a list of social factors that may need to be considered during any NEPA analysis, including “population characteristics and dynamics, composition, geographic mobility, displacement, civil rights, and historical and cultural resources (Forest Service Handbook 1909.15, Chapter 60.)”

After public and agency comment on the proposed road management strategy, the Forest Service developed a final road management strategy for adoption by the agency. However, it is useful and appropriate to identify any possible adverse impacts on civil rights or possible disproportionately high or adverse effects on human health and the environment of minority and low-income populations that could occur as a result of implementing the proposed or final road management strategy alternatives and to consider steps that can be taken to avoid or mitigate those effects.

Current Forest Service NEPA procedures would permit the use of a categorical exclusion from environmental documentation for the agency decision to revise its road management policy. Nevertheless, the Forest Service decided to prepare this EA to examine the potential environmental impacts associated with the proposed and final road management strategies and to further the purposes of NEPA. An EA is useful in addressing potential environmental impacts, including impacts on the social environment and, in particular, possible civil rights impacts and environmental justice issues. Because the Council on Environmental Quality regulations implementing NEPA encourage agencies to combine NEPA documents with any other agency document to reduce duplication and paperwork (see 40 CFR 1506.4), the civil rights impact analysis is being combined with the EA.

In considering whether the proposed and final road management strategy alternatives would have a civil rights impact, the Forest Service reviewed various Departmental Regulations governing the preparation of Civil Rights Impact Analyses, draft guidance of the U.S. Department of Agriculture Office of Civil Rights (which lists key factors that prompt a Civil Rights Impact Analysis), and Departmental Regulation 5600-2 (Environmental Justice). An analysis of the civil rights implications of the proposed and final road management strategy follows.

Factor 1: Whether the policy, action, program, or activity is newly devised or subject to substantial modifications or revisions.

The proposed and final road management strategies are a substantial modification of the existing road management policy codified at 36 CFR Part 212 and FSM Chapters 7700 and 7710. As noted previously, the existing road system on NFS lands was largely constructed to provide access for timber harvesting, to allow development of other resources for commodity purposes, such as mineral extraction, and to provide access for and development of forest recreation opportunities. Reflecting this history, the current transportation system policy focuses on road development of new roads.

In the last two decades, however, interest in alternative uses of the National Forests has increased. Specifically, resource uses on the National Forests have shifted substantially toward recreational

activities and away from timber harvesting and similar resource development. In addition, current funding levels are not adequate to maintain existing roads to the standards originally planned, assure minimum ecological impacts, and ensure efficient and safe use. Thus, the agency needs to find ways to better manage the road system with limited resources, while ensuring continued access to the National Forests and Grasslands for all Americans.

Further, the Forest Service has developed scientific information relating to the environmental impacts associated with Forest Service roads. This information has increased the understanding of the environmental, economic, and social impacts of constructing roads and reconstructing and maintaining existing roads. The agency needs to take into account this information regarding environmental and other impacts in order to adequately protect the forest environment for future generations.

The proposed and final road management strategies provide for a science-based roads analysis process in determining future road construction needs on particular forests. This strategy is consistent with the strong public sentiment expressed in comments to the Forest Service in response to its Advance Notice of Proposed Rulemaking, in open houses at the National Forests, and at other public group meetings convened by the agency. In accordance with these expressed preferences, the Forest Service would continue to rely on local forest planning processes that involve the public and State, local, and tribal governments, as well as diverse communities, in planning decisions.

Factor 2: The scope (i.e., goals and objectives) of the decision or the intended program outcomes and outputs.

The proposed and final road management strategies recognize that the existing road system in the National Forests is essentially complete and proposes that construction of roads should be limited to those necessary for NFS resource management and use. The Forest Service proposes to use a science-based roads analysis process that is driven by the involvement and dialogue of diverse public interests and concerns about NFS natural resources management. The intended program outcomes are first and foremost, a decided shift in assumptions on which the road system is managed. Additionally, the road management strategy should result in aggressive decommissioning of roads and in an improved capacity to manage the existing road network. As noted earlier, these potential outcomes and their scope will have to be analyzed at the local level.

Factor 3: Data and information indicating that, historically, one or more identifiable groups have not been included among the beneficiary or participant population.

The proposed and final road management strategies would enhance the ability of people to work together, build their capacity for stewardship, and achieve ecological, economic, and social sustainability. Based on U.S. Department of Agriculture Civil Rights Action and Implementation Team Reports, there are portions of the U.S. population that are underserved and that require

additional outreach activities to improve their potential to participate in forest planning activities. Appendix C contains demographic data.

Protected populations in the United States include women, minorities, and the disabled. Fifty-one percent of the U.S. population are women, 12 percent are black; 1 percent are American Indian, Eskimo, or Aleut; 3 percent are Asian or Pacific Islander; 9 percent are Hispanic (any origin); and 4 percent are of another race other than white. Seven percent of the U.S. population also has some form of disability. Two percent have a mobility limitation only; 3 percent have self-care limitations only; two percent have both a mobility and a self-care limitation. Many people in the United States also do not speak English. Under the roads analysis process, efforts would be made to broaden the scope and scale of participation of all groups in NFS transportation analysis and planning (see Appendix C).

In particular, the roads analysis process would recognize the government-to-government relationship that the Forest Service, as an arm of the U.S. government, has with American Indian tribes and Alaska Natives. It would require the recognition of treaty rights, treaty-protected resources, and other tribal concerns during the planning process. Responsible local officials would reach out to coordinate with American Indian tribes and Alaska Natives to actively seek participation in the process and consider tribal data and resource knowledge provided by tribal and village representatives in the roads analysis process.

Further, the roads analysis process would be conducted within the overall framework of NFS land and resource management planning (36 CFR Part 219; FSM 1920; FSH 1909.12). One goal of NFS planning and management, as reflected in the agency's final Planning Rule (65 Fed. Reg. 67514 (November 9, 2000)), is to enhance the capacity of diverse communities and people to work together with the agency and, in so doing, facilitate their ability to constructively contribute to National Forest management. The roads analysis process and the road management strategy would facilitate community building by providing the opportunity and incentives for people to come together to resolve community issues related to Forest Service road management.

The proposed and final road management strategies would highlight the Forest Service's responsibility to be a good neighbor and to consider the overall context in which the National Forests exist. Nothing in the road management strategy should be interpreted as the desire to infringe upon or limit private property rights. Rather, the responsible official would consider the pattern and distribution of land ownership in the area and the conditions and activities on adjacent lands and in potentially affected communities in evaluating the effects of road decommissioning, reconstruction, and construction decisions. The roads analysis process would require the responsible official to actively seek the involvement of individuals who control or have authority over lands near or adjacent to National Forests.

Demographic shifts are recognized by Forest Service employees and partners as they actively work with underserved communities and understand their values and goals. Residents and visitors

are treated equitably and are valued. Agency programs, goods, services, and technical and financial assistance are equally available and accessible to all.

Factor 4: Pre-decisional research indicating that one or more identifiable groups will be disproportionately under- or over-represented in the beneficiary or participant population with an interest or stake in the program, policy, or decision.

Pre-decisional research indicates that no identifiable groups will be under- or over-represented as a result of this road management strategy. The Forest Service announced its intent to revise regulations concerning the management of the National Forest Transportation System in January 1998 (see Advance Notice of Proposed Rulemaking, 63 Fed. Reg. 4350 (1998)). Over 53,000 letters, postcards, oral comments, and electronic mail messages were received in response to this notice. In addition, public meetings were held in 31 communities nationwide in February and March 1998. Total attendance was approximately 2,300 people. Sessions were conducted in an open house format to provide maximum opportunity for informal discussion between Forest Service representatives and the public. The Forest Service also convened groups of external stakeholders and Forest Service employees to examine issues associated with a long-term road management policy. The purpose of the groups was to better understand the views of diverse interest groups regarding roads and transportation on public lands. Every effort was made to ensure appropriate representation of a broad spectrum of individuals and entities to gain information. In addition, the Forest Service published a proposed road management strategy and Draft EA for public comment, and considered those comments in developing the final road management strategy and the Final EA. The comments received on the Draft EA are summarized in Appendix G to the Final EA, along with Forest Service responses to those comments.

Factor 5: The geographic location in which the decision, action, program, or activity will have the greatest or least impact.

The proposed and final road management strategies would affect road management for the 192-million-acre National Forest System, including 155 National Forests, 20 Grasslands, and other lands located in 42 states, the Virgin Islands, and Puerto Rico. The greatest proportion of these lands is west of the Mississippi River. Appendix C displays the demographic composition of the United States and groups potentially affected by implementing the proposed or final road management strategies.

Factor 6: The composition of the population within the target geographic location.

Planning within the National Forest System, including road management planning, takes place on the National Forests and grasslands in 42 states, the Virgin Islands, and Puerto Rico (see map in Appendix D). The potentially affected populations in any area would be those who live within or near NFS lands, both rural and urban communities; those who depend on NFS lands for their livelihood regardless of location; and those who have other interests in or are otherwise

potentially affected by the management and use of NFS lands in both rural and urban communities throughout the nation (see Appendix C).

Factor 7: The economic impact for the population/geographic location and other related economic factors associated with the beneficiary or participant population.

The proposed and final road management strategies are not targeted at a specific, identifiable geographic location and, therefore, should not have an economic impact on a specific population. However, when implemented, the road management strategy will promote an improved understanding of the long-term social and economic sustainability of people who may be associated with NFS lands. Prosperous communities and economies may remain healthy and vibrant if their foundation is ecologically sustainable. Although the Forest Service cannot solely sustain existing communities, NFS lands do contribute many values, services, outputs, and uses that help enable economies and communities to persist, prosper, and evolve. The management of NFS lands, including the road system within those lands, promotes economic and social sustainability through involvement of interested and/or potentially affected people, development and consideration of relevant social and economic information, and providing a range of products, services, and values (36 CFR Part 219 and 64 Fed. Reg. 54075, Part II (1999)).

The Forest Service has prepared a Cost-Benefit Analysis (Appendix E) that addresses social and economic costs and benefits. Social and economic analyses are important in gaining an understanding of the relationships among ecological, social, and economic sustainability. These are conducted during planning to inform decision policy analysis during monitoring and evaluation of implemented projects. Social analyses address the existence and interactions of human lifestyles; attitudes; beliefs; values, including civil rights impacts and concerns; demographic characteristics; and land use patterns of human communities and their capacity to adapt to changing conditions. Economic analyses identify and evaluate an area's economy, including the rate and contribution of minority populations, low-income populations, and other identifiable segments of the general population. In conducting broad-scale assessments or local analyses, the responsible official should refer to the best available information when considering a variety of social and economic factors and options, including the distribution of benefits among various segments of the interested and affected populations and the extent to which segments of the affected population are under- or over-represented in the economy. An appropriate social analysis may rely on quantitative, qualitative, and participatory methods for gathering and analyzing data. Social analyses are often undertaken at varying spatial scales to improve understanding and the description of the potential consequences to communities and regions from changes in land management. Social analyses may include a regional analysis, a risk and vulnerability analysis, or other appropriate analyses. Local analyses should provide refinement of larger-scale analyses and of regional data and information related to the area under consideration. A local analysis may also provide a context for other analyses and prove useful in evaluating a proposed action or monitoring results.

The proposed and final road management strategies would establish interaction with, and involvement of, the public, State, local, and tribal governments as a management objective of transportation analysis. The proposed and final road management strategies also specifically assign to the Forest Supervisor the responsibility to actively seek this involvement. Decisions regarding social and economic sustainability will be made at the appropriate planning level, and decisions made at subsequent levels must be consistent with higher-level decisions. Monitoring and evaluation of social and economic sustainability, as required by the agency's Planning Rule at 36 CFR Part 219, would include periodic review of national, regional, and local supply and demand for products, services, and values. In addition, in the course of agency business, program compliance reviews (Title VI and related programs) are conducted. Special consideration must be given to those products, services, and values that the Forest Service is uniquely poised to provide. Monitoring should improve the understanding of the NFS contributions to human wants and values and to social and economic sustainability. The final Planning Rule also will strengthen monitoring and evaluation.

Factor 8: The extent to which identifiable group members will directly participate in or influence the decisions, policies, programs, and activities or be limited in their opportunity to participate, coupled with information to indicate the quality or characteristics of participation.

It is not possible to quantify the extent to which the adoption of this road management strategy would result in identifiable group members' participation in NFS planning. However, the road management strategy and roads analysis process will result in improved knowledge of affected populations and communities. Moreover, given the road management strategy's focus on collaboration with all who are interested in NFS management, the infrastructure of Departmental policies, and the commitment of the Chief of the Forest Service to ensure environmental justice and to reach out to protected populations, including women, minority, disabled, low-income, and other potentially under-represented populations, it is realistic to assume that their participation in future planning efforts should increase. Moreover, the Departmental Environmental Justice Coordinator is now in place and will help provide both a focus and helpful guidance on how to effectively engage protected populations in those planning matters that affect their lives and livelihoods. The agency also has completed a Strategic Outreach Plan to address collaboration with underserved minority and low-income populations.

Factor 9: Efforts to notify and provide outreach to potential beneficiary and participant populations.

The Forest Service used two levels of outreach activities for the road management strategy, both of which reached out to protected populations. On the first level, the Forest Service provided multiple opportunities to comment on the proposed roads management strategy. Through extensive use of media, public forums, the Internet, and newsletters, any individual who cared to be involved had ample opportunities to have his or her viewpoint known. The Forest Service communication plan includes a list of types of groups that were contacted and involved in the rulemaking process, and specifically identifies tribal governments and traditionally

under-represented groups, such as the physically handicapped and urban populations. The Forest Service held a series of public meetings across the country. As a matter of routine agency business, protected populations were invited to these meetings. Where indicated, the agency, in conformance with Departmental Regulation 4300-4, made special efforts to reach out to these groups and populations.

On the second level, the Forest Service will reach out to the public, including protected populations, as the strategy is actually implemented through local level roads analysis processes and NEPA processes. As a matter of business, individual national forests and grasslands will invite protected populations to participate in the process and make a good faith effort to actively seek the views and concerns of protected populations in the roads analysis process, planning, and decisionmaking processes.

The Forest Service is responding to the changes in the demographic characteristics of the American people when planning and managing its transportation system. The variety of uses, values, products, and services derived from properly managed sustainable ecosystems are equitably and fairly distributed. Inclusion of historically and currently underserved people and communities is an integral part of maintaining the transportation system. Demographic information about the population at large and the population we actually serve is readily available. We have an effective process to adjust our road programs to the changing needs of the public. Through collaborative relationships with community-based organizations and other agencies, we are addressing the priorities of the underserved and utilizing customized delivery systems. Underserved communities benefit when environmental justice is served and investment in all our communities promotes economic and ecosystem health and a well managed transportation system.

Participation and outcomes related to the transportation system reflect a mix of social, cultural, and scientific perspectives. The interdependency of communities and the environment is recognized in transportation management. There is a strong connection between roads and issues and needs of the diverse communities the Forest Service serves. Outreach efforts with underserved communities are proactive and fully supported by Forest Service leadership. Participation by underserved communities is facilitated with appropriate approaches, information, and resources. Roads issues and needs of diverse communities are valued, addressed, and incorporated within the decisionmaking process.

The Forest Service integrates scientific and technical assistance including roads and transportation planning to communities in a manner that is responsive to community needs and priorities, especially those of the underserved. Through coordinated approaches, the priorities of communities will be included in agency efforts to manage the transportation system. Information, including that from Forest Service research and other sources, is essential to serving the public. Social science research is conducted to further understanding of underserved communities, their priorities and their relationships to the Forest Service transportation system.

Having considered the foregoing factors and having analyzed the potential effects of the proposed and final road management strategies, the agency concludes that there are no adverse impacts on civil rights, or disproportionately high and adverse effects on minority or low income populations.

Costs

Implementation of the no action alternative would be expected to result in the reconstruction of approximately 1,417 miles of roads annually.¹¹ Based on past experience, the Forest Service estimates that the cost of road reconstruction is between approximately \$8,000 (for high-clearance roads) and \$50,000 (for arterial or collector roads) per mile. Thus, annual road reconstruction under the no action alternative would result in annual expenditures of approximately \$11 to \$71 million. Because implementation of the proposed or final road management strategy alternatives is likely to result in the reconstruction of more miles of roads, costs associated with road reconstruction under the proposed and final road management strategy alternatives would be expected to be higher. See Appendix E for a cost-benefit analysis.

Similarly, the no action alternative would result in the construction of an estimated 88 miles of classified roads.¹² Based on past experience, the Forest Service estimates that the cost of road construction is approximately \$50,000 (for high-clearance roads) to \$210,000 (for arterial or collector roads) per mile. Thus, annual road construction under the no action alternative would result in expenditures of approximately \$4.4 million to \$18.5 million. Because implementation of either the proposed or the final road management strategy is likely to result in the construction of fewer miles of roads, costs associated with road construction under the proposed and final road management strategy alternatives would be expected to be lower.

For example, under the proposed and final road management strategy alternatives, up to a maximum of 40 miles of classified roads currently planned for inventoried roadless or contiguous unroaded areas would not be constructed.¹³ Road construction costs saved under this scenario would be expected to be approximately \$2 million to \$8 million.

¹¹ The Forest Service estimates that approximately 4,125 miles of roads would be reconstructed annually under the no action alternative (see Table 3). However, the Forest Service itself would reconstruct approximately 1,417 miles, with the remaining road miles being reconstructed by owners of private land holdings, mineral rights, and ski areas. Only the road reconstruction cost to the Forest Service is calculated here.

¹² As with road reconstruction, the Forest Service would not incur the cost of classified roads constructed for private land holdings, mineral rights, or ski areas. The Forest Service estimates that, of the 630 miles of classified roads that are planned for construction under the no action alternative (see Table 3), the agency would construct approximately 88 miles. Of the 172 miles that are planned for construction in inventoried roadless or unroaded areas, 40 would be constructed by the Forest Service.

¹³ Of the 119 miles of classified roads that would not be constructed under the proposed and final road management strategy alternatives (see Table 5), the Forest Service estimates that 89 of those miles (25 percent) would be ones that the agency would have constructed under the no action alternative.

Table 9 summarizes and compares costs associated with the no action alternative and the proposed and final road management strategy alternatives.

TABLE 9: Estimated Road Reconstruction and Construction Costs ^a

	No Action Alternative	Proposed and Final Road Management Strategy Alternatives
Reconstruction	\$11 to \$71 million	> \$11 to \$71 million
Construction	\$4.4 to \$18.5 million	\$2.4 to \$10.5 million

^a Costs are for classified roads only.

Summary Table of Potential Impacts

Table 10 provides a summary of the potential impacts associated with the components of the no action alternative and the proposed and final road management strategy alternatives.

TABLE 10: Summary of Potential Impacts

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Access and Public Safety	<ul style="list-style-type: none"> • No effect on access to pre-existing rights or public safety • Motorized vehicle access reduced 	<ul style="list-style-type: none"> • Would improve condition of 606 miles of roads needed for access and public safety 	<ul style="list-style-type: none"> • Approximately 55 miles of roads could be constructed for access and public safety purposes 	<ul style="list-style-type: none"> • No effect on access to pre-existing rights or public safety • Motorized vehicle access reduced to a greater extent 	<ul style="list-style-type: none"> • Would improve condition of roads needed for access and public safety 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 27 miles of roads used for access would not be constructed • No effect on roads needed for access to pre-existing rights or for public safety
Fire, Insects, and Disease	<ul style="list-style-type: none"> • No effect on forest health projects • Could reduce frequency of human-caused fires 	<ul style="list-style-type: none"> • Would improve condition roads used for forest health projects 	<ul style="list-style-type: none"> • Roads could be constructed for forest health purposes 	<ul style="list-style-type: none"> • No effect on forest health projects • could further reduce frequency of human-caused fires 	<ul style="list-style-type: none"> • Would improve condition of roads needed for forest health projects 	<ul style="list-style-type: none"> • Same as no action

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Forest Management (Timber)	<ul style="list-style-type: none"> • No effect on roads needed to access existing contracts 	<ul style="list-style-type: none"> • Would improve condition of 2,434 miles of roads used for timber harvesting 	<ul style="list-style-type: none"> • Approximately 1,466 miles of roads could be constructed to facilitate timber harvesting • An estimated 3.3 billion board feet of timber could be harvested annually 	<ul style="list-style-type: none"> • No effect on roads needed to access existing contracts 	<ul style="list-style-type: none"> • Would improve condition of more than 2,434 miles of roads used for timber harvesting, although 29 miles of roads in inventoried roadless and contiguous unroaded areas would not be reconstructed 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 145 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • An estimated 3.1 billion board feet of timber could be harvested annually

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Land Uses (non-recreational)	<ul style="list-style-type: none"> • No effect on roads needed to access land uses 	<ul style="list-style-type: none"> • Would improve condition of 220 miles of roads used to access land uses 	<ul style="list-style-type: none"> • Approximately 84 miles of roads could be constructed for land uses 	<ul style="list-style-type: none"> • No effect on roads needed to access land uses 	<ul style="list-style-type: none"> • Would improve condition of more than 220 miles of roads used to access land uses 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 1 mile of road would not be constructed • Fewer miles of roads would be constructed overall • Access to already developed areas would not be affected
Law Enforcement	<ul style="list-style-type: none"> • No effect 	<ul style="list-style-type: none"> • No effect 	<ul style="list-style-type: none"> • No effect 	<ul style="list-style-type: none"> • No effect 	<ul style="list-style-type: none"> • No effect 	<ul style="list-style-type: none"> • No effect

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Minerals	<ul style="list-style-type: none"> • No effect on roads needed to access existing contracts 	<ul style="list-style-type: none"> • Would improve condition of 54 miles of roads used for minerals exploration and extraction 	<ul style="list-style-type: none"> • Approximately 123 miles of roads could be constructed to facilitate minerals exploration and development 	<ul style="list-style-type: none"> • No effect on roads needed to access existing contracts 	<ul style="list-style-type: none"> • Would improve condition of more than 54 miles of roads used for timber harvesting 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 12 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • Could decrease amount of mineral exploration and extraction on NFS lands and/or make it more expensive

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Noxious Weeds and Nonnative Invasive Plants	<ul style="list-style-type: none"> • Decrease likelihood of introduction 	<ul style="list-style-type: none"> • Could increase points of entry and infestation 	<ul style="list-style-type: none"> • Approximately 1,778 miles of roads, increasing points of entry and infestation 	<ul style="list-style-type: none"> • Additional decrease in likelihood of introduction 	<ul style="list-style-type: none"> • Additional increase in points of entry and infestation 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 184 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • Reduced opportunity for infestation

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Recreation, Heritage, and Wilderness Resources	<ul style="list-style-type: none"> • No effect on access to recreational facilities • Reduction in off-road vehicle use • Improvements in scenic quality and dispersed recreation 	<ul style="list-style-type: none"> • Would improve 250 miles of roads used for recreation • Improved access could increase use 	<ul style="list-style-type: none"> • Approximately 22 miles of roads could be constructed for recreation, heritage, and wilderness resource purposes 	<ul style="list-style-type: none"> • No effect on access to recreational facilities • Additional reduction in off-road vehicle use • Additional improvements in scenic quality and dispersed recreation 	<ul style="list-style-type: none"> • Would improve more than 250 miles of roads used for recreation, although 4 fewer miles of road would be reconstructed in inventoried roadless and contiguous unroaded areas • Improved access could increase use 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 7 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • Would reduce ability to travel through NFS lands by motorized vehicle • Could prevent development of new recreational facilities

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Watershed and Air	<ul style="list-style-type: none"> • Could improve hydrologic conditions and water quality • Could promote site productivity 	<ul style="list-style-type: none"> • Could reduce amount of environmental damage caused by substandard roads 	<ul style="list-style-type: none"> • Would construct approximately 1,778 miles of roads, 6 of which would be for watershed improvement projects • Could adversely affect hydrology, water quality, site productivity, and air quality 	<ul style="list-style-type: none"> • Could further improve hydrologic conditions, water quality • Could promote site productivity 	<ul style="list-style-type: none"> • Could further reduce amount of environmental damage caused by substandard roads 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 184 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • Fewer adverse affects to hydrology, water quality, site productivity, and air quality

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Wildlife, Fish, and Threatened, Endangered, and Sensitive Species	<ul style="list-style-type: none"> • No effect on wildlife, fish, or TES species protection projects • Could improve habitat conditions 	<ul style="list-style-type: none"> • Short-term impacts through human presence, habitat disturbance, sedimentation • Could reduce environmental degradation caused by substandard roads 	<ul style="list-style-type: none"> • Would construct approximately 1,778 miles of roads, 11 of which would be for fish or wildlife improvement projects • Could cause habitat loss, fragmentation, migration disruption, sedimentation, and direct mortality 	<ul style="list-style-type: none"> • No effect on wildlife, fish, or TES species protection projects • Could further improve habitat conditions 	<ul style="list-style-type: none"> • Additional short-term impacts through human presence, habitat disturbance, and sedimentation 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 184 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • Fewer adverse affects due to habitat loss, fragmentation, migration disruption, sedimentation, and direct mortality

	NO ACTION ALTERNATIVE			PROPOSED AND FINAL ROAD MANAGEMENT STRATEGY ALTERNATIVES		
	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>	<i>Decommissioning</i>	<i>Reconstruction</i>	<i>Construction</i>
Economic and Social Effects (including civil rights impact analysis, environmental justice, and costs)	<ul style="list-style-type: none"> • No effect to access, timber sales, minerals exploration or development • Increase social values associated with environmental protection 	<ul style="list-style-type: none"> • Increase access to forest resources • Reduce environmental degradation caused by substandard roads • Annual cost could be between \$11 and \$71 million, depending on the type of road being reconstructed 	<ul style="list-style-type: none"> • Would construct approximately 1,778 miles of roads • Decrease environmental protection • Timber harvesting facilitated by roads could result in annual receipts of \$540 million and 26,957 jobs • Annual cost could be \$4.4 to \$18.5 million, depending on type of road being constructed 	<ul style="list-style-type: none"> • No affect to access, timber sales, minerals exploration or development • Additional increase for social values associated with environmental protection 	<ul style="list-style-type: none"> • Further increase access to forest resources • Additional reduction in environmental degradation caused by substandard roads • Annual cost would be higher than the no action alternative 	<ul style="list-style-type: none"> • Until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan, up to 184 miles of roads would not be constructed • Fewer miles of roads would be constructed overall • \$23 million in timber sales annually and 1,039 direct jobs could be affected if timber harvesting did not occur in roadless or contiguous unroaded areas • Reductions in forest uses could have adverse economic and social effects and decrease community ability to sustain itself • Small communities near NFS lands could be disproportionately affected economically

Compliance with Other Laws and Regulations

Implementation of either the proposed or final road management strategy alternative would be fully consistent with other laws and regulations applicable to the Forest Service and its management of NFS lands. Relevant statutory and regulatory provisions are described below.

The Forest Service *Organic Act* of 1897 established that national forests were to be administered primarily for timber harvesting and watershed protection. In 1960, Congress enacted the *Multiple-Use Sustained-Yield Act*, 16 U.S.C. §§ 528-531, which broadened the purposes of the National Forests to include recreation, range, timber, watershed, and wildlife and fish purposes.

In 1964, Congress enacted the *National Forest Roads and Trails Act*, 16 U.S.C. §§ 532-538, declaring that the construction and maintenance of an adequate system of roads and trails within and near the National Forests is essential to meet increasing demands for timber, recreation, and other uses of such lands. This act authorized the Forest Service to grant easements for road rights-of-way and to construct and maintain roads to permit maximum economy in harvesting timber while meeting requirements for protection, development, and management of the National Forest lands.

In the 1970s, Congress enacted two statutes reforming National Forest management. The *Forest and Rangeland Renewable Resources Planning Act*, 16 U.S.C. §§1601-1613, established a national planning system for the National Forests. It directs the Forest Service to prepare a long-range assessment of renewable forest and rangeland resources every 10 years. This assessment is to project future supply and demand for those resources and result in a program to guide Forest Service activities. The *National Forest Management Act*, 16 U.S.C. §§1600 et seq., enacted in 1976, requires the Forest Service to prepare land and resource management plans (referred to as forest plans) for each of the National Forests and Grasslands within the 192-million-acre NFS.

In addition, there are laws which grant rights to public lands, including those managed by the Forest Service. These include the *General Mining Law of 1872* (17 Stat. 91) and the ANILCA (16 U.S.C. §§410hh-3233). Under the General Mining Law, U.S. citizens have the right to prospect for, claim, and develop locatable minerals (metallic and nonmetallic minerals such as gold, silver, copper, barite, gypsum, etc.) on public domain and certain other federal lands. These lands are open to the location of mining claims under the General Mining Law unless otherwise withdrawn. The Forest Service cannot prohibit the claiming or development of valuable deposits of these mineral resources, although the agency can regulate surface disturbance caused by these activities.

ANILCA ensures access to private land in-holdings within NFS lands, although landowner access need not be the most direct, economical, or convenient route for the landowner. Under applicable regulations, the Forest Service will authorize access deemed adequate to secure landowners the reasonable use and enjoyment of their land. Adequate access may not be road access in all cases,

and alternative modes of access may be considered. If a landowner has an alternative mode of access, the Forest Service is not obligated to permit access. Reasonable access is determined on a case-by-case basis.

Cumulative Effects

The Council on Environmental Quality regulations implementing the procedural provisions of NEPA define a cumulative effect as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects (or impacts) can result from individually minor but collectively important actions taking place over a period of time. An evaluation of cumulative impacts can aid in understanding the environmental implications of a proposed action.

The implementation of either the proposed or final road management strategy would not, by itself, result in the imposition of adverse environmental effects or the award of environmental benefits. Rather, such effects or benefits would only be realized when the strategy was applied on National Forests. Because application of either the proposed or final road management strategy would vary among the forests, it is not possible, from the programmatic viewpoint of this EA, to determine the cumulative effect of the proposed or final road management strategy with other past, present, and reasonably foreseeable future actions that may take place on each forest.

Nationally, the effect of either the proposed or final road management strategy on physical and biological resources would be beneficial. Such resources include wildlife, fisheries, TES species, and their habitats; solitude; and watershed and air resources. Adverse recreational and social and economic impacts would occur as a result of decreased motorized recreational opportunities and decreased timber harvesting and minerals extraction.

The most tangible social and economic cumulative effect is the potential for an incremental decline in timber harvesting resulting from the proposed or final road management strategy added to declines in timber harvesting from NFS lands over the last 10 years. Implementation of either the proposed or final road management strategy alternative would result in a decline in timber sales of up to approximately \$23 million annually until the results of a roads analysis were incorporated into a forest plan, if no timber harvesting were permitted in inventoried roadless or contiguous unroaded areas during that time. This would affect as many as 1,039 direct jobs.

Other ongoing actions also have an effect on timber sales. Specifically, the Forest Service examined the impacts associated with the Interior Columbia River Basin, the forests in the Sierra Nevada affected by the California spotted owl, the Sierra Nevada Ecosystem Project, the Southwestern Region EIS, and the Northwest Forest Plan.

Timber harvest in the Interior Columbia River Basin accounts for 10 percent of the total U.S. harvest. The harvest in the area has declined by 7 percent since 1986 and is expected to decline another 5 percent by the end of the decade. In recent years, the number of timber jobs in Idaho and Montana has declined due to technological improvements; no such trend exists for eastern Oregon and Washington.

In the Sierra Nevada, the timber volume decreased from 1987 to 1995, reflecting the shift toward less intensive management practices on NFS lands in the area affected by California spotted owl habitat concerns. Similarly, jobs and income associated with the Region 3 (Southwestern) timber harvest program declined sharply between 1989 and 1994.

Historically, restricted timber harvests in the range of the northern spotted owl resulted in substantial social and economic costs. Timber-based employment has declined under the Northwest Forest Plan as a result of reduced timber harvests.

The potential decline in timber harvesting as a result of the proposed and final road management strategy alternatives, together with timber harvesting declines associated with other Forest Service activities, would have a cumulative effect on social and economic resources. However, opportunity does exist to substitute timber from other ownerships to replace most of the reduction in National Forest timber sales in the eastern United States. In the West, substitution opportunity is limited. Any volume that could not be substituted from other U.S. ownerships would probably be met by Canadian imports.

As noted earlier, the environmental impacts of timber harvesting would not be reduced but rather would be moved to those other lands. Further, the economic benefits of timber harvesting, including jobs, would also be moved to the communities near to those other lands, either in the United States or in Canada. This would adversely affect not only the U.S. communities near NFS lands that have been dependent on timber harvesting but also the balance of trade between the United States and her trading partners. It would also establish an increased reliance on foreign sources for an important natural resource.

In addition to the road management strategy, the Forest Service is undertaking several other related rulemakings and regional planning efforts. Commenters on the Draft EA asked the Forest Service to address the interrelationship of these other initiatives. These initiatives include:

- The final Planning Rule;
- The *Roadless Area Conservation Rule Final EIS*;
- The Administration's Unified Federal Policy for Ensuring a Watershed Approach to Federal Land and Resource Management;
- Report to the President on the Wildland Fires of 2000;
- The Forest Service Cohesive Fire Strategy;
- A revision to the agency's strategic plan implemented pursuant to the Government Performance and Results Act (Draft U.S. Department of Agriculture, U.S. Forest Service Strategic Plan (2000 Revision), FS-652, November 1999); and

- Regional planning initiatives.

National Forest Management Act Planning Rule. The proposed Planning Rule was published in the Federal Register on October 5, 1999 (64 Fed. Reg. 54074). This rule has been finalized (65 Fed. Reg. 67514 [November 9, 2000]). These regulations guide land management planning for the National Forest System and describe the required planning process for and content of land and resource management plans. Three key elements are emphasized in the Planning Rule: 1) collaboration with interested and affected parties; 2) ecological, social, and economic sustainability; 3) science based assessments and planning. Key provisions include new requirements for integrating the contributions of science into the planning process through evaluations and advisory boards; collaboration and adaptive management planning with government, tribal, and other interested groups; and a management priority to maintain and restore ecological sustainability.

In the final Planning Rule, roadless areas and unroaded areas are recognized as possible special designations. The rule intends that direction for these areas would be integrated into land management plans to the extent possible. The rule does not specify criteria or characteristics for roadless area delineation or management. However, the rule does state that all undeveloped areas that are of sufficient size as to make practicable their preservation and use in an unimpaired condition will be evaluated for wilderness designation during the plan revision process (36 CFR 219.29). These are typically unroaded areas exceeding 5,000 acres.

Roadless Area Conservation Rule Final EIS and Roadless Area Conservation Rule. As described in the preferred alternative in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000), the Forest Service expects to finalize a rule restricting road construction and reconstruction in inventoried roadless areas. In addition, timber harvesting in these areas would be prohibited except for stewardship purposes. If a final rule is promulgated that contains these prohibitions, then the road management strategy's interim restrictions on road construction and reconstruction in inventoried roadless would not achieve any greater effect than the Roadless Area Conservation Rule's prohibitions on road construction and reconstruction in these areas. Thus, upon adoption of a final Roadless Area Conservation Rule, the impacts of the road management strategy would be limited to contiguous unroaded areas and other lands outside of inventoried roadless areas.

Unified Federal Policy. On February 22, 2000, the Secretary of Agriculture and Secretary of Interior proposed a Unified Federal Policy (UFP) for watershed management in response to the President's Clean Water Action Plan (65 Fed. Reg. 8834). The UFP was finalized and signed by eight departments and agencies in October 2000 (65 Fed. Reg. 62566 [October 18, 2000]). The Clean Water Action Plan is a blueprint for cleaning up America's rivers, lakes, and coastal waters. The Plan contains 111 action items, many of which are already underway. The UFP is one of the action items. The purpose of the UFP is to develop a consistent approach to watershed management among Federal agencies, States, Tribes, and interested stakeholders. The foundations

of the policy are the "watershed approach" to Federal land and resource management and an emphasis on collaboration to identify and solve watershed problems. A key task of the UFP is identification of priority watersheds through watershed assessments. Agencies agree to work more collaboratively and cooperatively with Federal, State, Tribal and local governments; monitor water quality and management activities; and share training, information, and resources. The policy would be implemented only to the extent possible within existing planning programs.

There are no provisions within the UFP that address the management or role of inventoried roadless or contiguous unroaded areas in fulfilling its goals and objectives. The UFP is consistent with the prohibitions on road construction and reconstruction in inventoried roadless and contiguous unroaded areas in the road management strategy and the anticipated Roadless Rule. The roads analysis process required by the road management strategy can become a component part of watershed analyses required by the UFP. These watershed analyses are also consistent with the requirements of the Planning Rule.

Report to the President on the Wildland Fires of 2000. On August 8, 2000, President Clinton asked Secretaries Babbitt and Glickman to prepare a report that recommended how best to respond to the severe fires of 2000, reduce the impacts of wildland on rural communities, and ensure sufficient firefighting resources for the future. This report, titled "Managing the Impacts of Wildland Fires on Communities and the Environment: A Report to the President in Response to Wildfires of 2000," was completed on September 8, 2000. The report recommended a large budget adjustment of \$2.8 billion for fiscal year 2001 for the Departments of Agriculture and Interior appropriations to be used to increase cooperative programs in support of local communities, treat fuels, and restore burned areas. The report emphasizes a continuing priority on firefighting resources throughout the remaining 2000 fire season, restoring landscapes and communities, investing in projects to reduce future fire risks, working directly with communities, and being accountable.

All of the action items called for by the Report to the President are compatible with the proposed and final road management strategy alternatives. The alternatives will have little direct effect on prioritization of fuel treatment since most high priority treatment areas (the wildland-urban interface, municipal watershed, and threatened and endangered species) occur outside inventoried roadless and contiguous unroaded areas.

During the interim requirements period, the road management strategy could limit road construction and reconstruction for burned area restoration in inventoried roadless and contiguous unroaded areas. Seldom has road construction or reconstruction been necessary for emergency fire rehabilitation and recovery projects in the past. Therefore, the potential limitation of the road management strategy would not be a significant impediment for implementing the restoration and recovery components outlined in the Report to the President.

The restoration of damaged landscapes could require removal of small diameter trees and brush. Under the road management strategy, restoration work involving removal of trees in inventoried

roadless and contiguous unroaded areas would be limited without road construction or reconstruction during the interim requirements period. Implementation of the road management strategy is not expected to limit the long-term full attainment of the goals outlined in the Report to the President.

Cohesive Strategy. A national programmatic strategy to restore and maintain ecosystem health in fire-adapted ecosystems was published by the Chief of the Forest Service on November 9, 2000. The strategy, *Protecting People and Sustaining Resources in Fire-Adapted Ecosystems - A Cohesive Strategy*, is based on the premise that sustainable resources are predicated on healthy, resilient ecosystems. In fire-adapted ecosystems, some measure of fire use - at appropriate intensity, frequency, and time of year - should be included in management strategies intended to protect and sustain watersheds, species, and other natural resources over the long term. The *Cohesive Strategy* is also based on the premise that, within fire-adapted ecosystems, fire-maintained forests and grasslands are inherently safer for firefighters and the public than ecosystems in which fire is excluded.

The *Cohesive Strategy* establishes a framework to restore and maintain ecosystem health in fire-adapted ecosystems for the interior West. Priorities for restoration include:

- Wildland urban interface areas,
- Readily accessible municipal watersheds,
- Threatened and endangered species habitat, and
- Maintenance of existing low risk condition class 1 areas.

In Title IV of the fiscal year 2001 Appropriations Act for the Department of Interior and Related Agencies, Congress directed the Forest Service to publish in the Federal Register the *Cohesive Strategy* and to explain any differences between the *Cohesive Strategy* and certain rulemakings and planning efforts prepared pursuant to NEPA.

The *Cohesive Strategy* was published in the *Federal Register* in November, 2000. The discussion below explains how the *Cohesive Strategy* was integrated into the analytical framework of the Forest Service Road Management Strategy EA and the accompanying rulemaking and policy. There are no differences or inconsistencies between the *Cohesive Strategy* and the no action alternative and the proposed and final road management strategy alternatives described in this EA.

The proposed and final road management strategy alternatives described in this EA set forth various methods of ensuring that local communities and managers have the resources and analytical tools necessary to make more informed decisions about the management of the forest road system. For example, the proposed and final road management strategy alternatives require that a roads analysis be performed before new roads are constructed or old roads are decommissioned. They also require that local people participate in an open public process before such decisions are made. Consistent with the *Cohesive Strategy*, these requirements help to

ensure that considerations for hazardous fuels reduction and for suppression are evaluated as part of road management considerations.

It is essential to remember that very little fire hazard reduction work has occurred in inventoried roadless or contiguous unroaded areas in the past and very little is anticipated in the future. For example, the *Cohesive Strategy* directs resource managers to focus their restoration efforts on priority areas: wildland urban interface areas, readily accessible watersheds, threatened and endangered species habitat, and maintenance of low risk areas. By definition, very few accessible municipal watersheds are found within inventoried roadless and contiguous unroaded areas. Similarly, very few inventoried roadless or contiguous unroaded areas are found adjacent to wildland urban interface areas. Finally, none of the alternatives would prohibit or prevent work needed to recover threatened and endangered species.

Unless an imminent threat to public safety, private property, water quality, or threatened or endangered species exists, inventoried roadless and contiguous unroaded areas would be a low priority for fuels treatment for the next 20 years, because higher priority areas are more common outside roadless and unroaded areas. Both the proposed and final road management strategy alternatives and the no action alternative in the Road Management Strategy EA allow for entry into inventoried roadless or contiguous unroaded areas during the interim protection period in order to protect or restore critical resources. Further, road construction needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic events that without intervention would cause the loss of life or property is allowed under all the alternatives. *Forest Service Strategic Plan.* The Forest Service Draft Strategic Plan became final in October 2000. This plan contains four broad strategic goals for the Agency: 1) ecosystem health, 2) multiple benefits to people, 3) science and technical assistance, and 4) effective public service. The Natural Resource Agenda, which is tied directly to the Strategic Plan, identifies road management as a key issue that needs to be addressed by the Agency. The road management strategy and the anticipated Roadless Rule are intended to initiate a change in road management emphasis.

The Strategic Plan is a framework strategy under which the road management strategy fits. There are no direct cumulative effects in connection with the Strategic Plan and the road management strategy since the Strategic Plan does not lead to any direct action on the ground or compel any policy development or implementation. The road management strategy and the anticipated Roadless Rule, with their emphasis on road management, would complement the Strategic Plan.

Regional Planning Initiatives

The Sierra Nevada Framework will amend 11 land management plans in the Sierra Nevada Range. The key issues being addressed are old-forest ecosystems, riparian ecosystems, fire and fuels, noxious weeds, and lower west-side hardwoods. Resolution of these issues is not dependent on the construction or reconstruction of roads in inventoried roadless and contiguous unroaded areas. The Draft EIS of the Sierra Nevada Framework was made available to the public in April

2000. The analysis in the Draft EIS addressed effects that would result from the anticipated Roadless Rule and road management strategy. The Draft EIS states that all alternatives are consistent with the proposed changes to the Roads Policy and the proposed Planning Rule. Moreover, the final road management strategy would exempt the Sierra Nevada Framework from the road analysis requirements.

The Interior Columbia Basin Ecosystem Management Project (ICBEMP) will provide a context for Forest Service and Bureau of Land Management managers within the Columbia River Basin to make sound local decisions while considering effects, particularly cumulative effects, at a scale larger than individual administrative units. The preferred alternative of the March 2000 Draft ICBEMP Supplemental EIS, anticipated only minimal entry into inventoried roadless areas. The ICBEMP plan recognizes the importance of inventoried roadless areas to provide critical wildlife habitat and serve as key watersheds for supply of high quality water. The proposed ICBEMP is consistent with the purpose and need for the road management strategy. Further, the final road management strategy would exempt the ICBEMP from the road analysis requirements.

In response to the uncertain status of Canada lynx populations and habitat, an interagency lynx coordination effort was initiated in March 1998. The U.S. Fish and Wildlife Service, Forest Service, Bureau of Land Management, and National Park Service have participated in this effort. In July 8, 1998, the U.S. Fish and Wildlife Service proposed a rule to list the lynx as a threatened species and, effective April 24, 2000 (65 Fed. Reg. 16051), the U.S. Fish and Wildlife Service listed the Canada lynx as threatened for the contiguous United States, pursuant to the Endangered Species Act of 1973, as amended.

Three products important to the conservation of the lynx on federally managed lands have been produced through the interagency effort the: 1) Scientific Basis for Lynx Conservation, 2) Lynx Conservation Assessment and Strategy, and 3) a Lynx Conservation Agreement. These products were developed to provide a consistent and effective approach to conserve the Canada lynx on Federal lands in the contiguous United States.

The Lynx Conservation Assessment and Strategy identifies a number of conservation measures to address lynx risk factors. One large-scale risk factor is fragmentation and degradation of lynx habitat affecting mortality and movement. The Strategy does not identify specific habitat areas, but rather generally identifies habitat conservation as an element in a long-term conservation strategy for lynx (and other large carnivores). The road management strategy would conserve inventoried roadless and contiguous unroaded areas that contain significant amounts of habitat for species like the lynx. These areas occur throughout the range of the lynx in the contiguous United States and therefore, the road management strategy would cumulatively contribute to conservation of the lynx and other T&E species occupying similar habitats.

With more than 400 TEP species habitats on NFS lands, it is likely that more conservation strategies similar to the one for lynx will be implemented, especially for wide-ranging furbearers, and where groups of species are combined under one strategy. In a few cases, these strategies

may require manipulation of vegetation for the benefit of a specific species. However, it is anticipated that the road management strategy would meet the need for management of future listed species.

Forest Planning. The agency also has 36 forests and grasslands that have published notices in the Federal Register of their intent to revise or establish their land and resource management plans. At this time, four expect finalization during calendar year 2001. Only a few anticipate that they will publish a draft EIS this year. Of the initiatives described above, only the promulgation of the anticipated Roadless Rule is expected to cause a delay in these land management revision processes.

Combined Effects

Included in the analysis are discussions of the implications and consistency with the Forest Service Strategic Plan, the Unified Federal Policy, and other related initiatives.

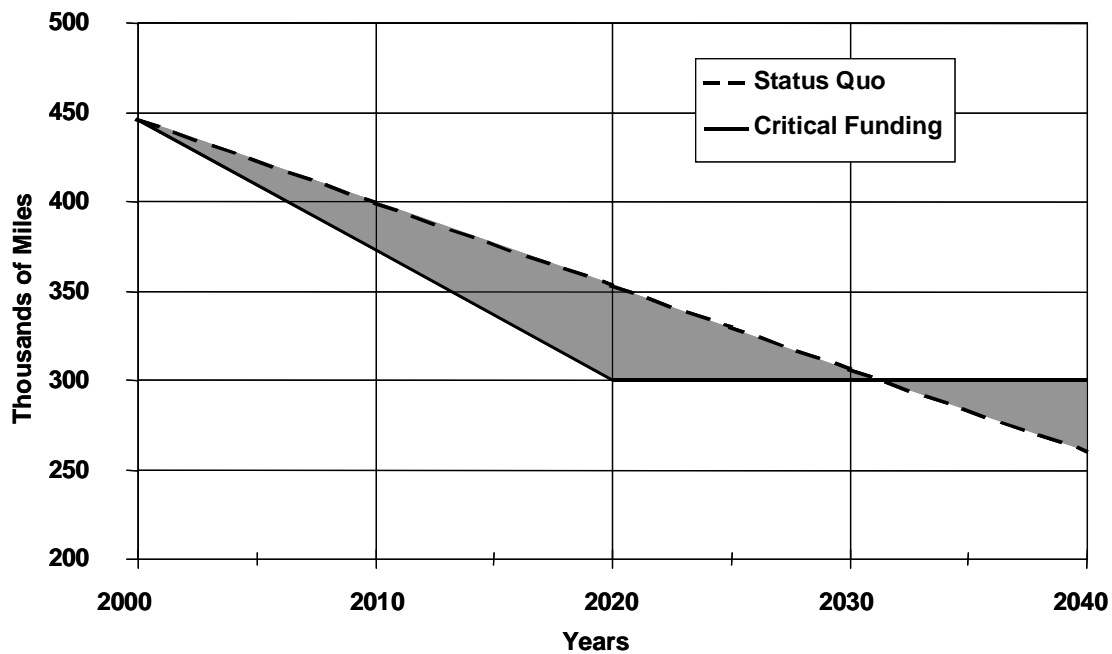
The initiatives being proposed by the Forest Service, when taken in combination, would result in more informed decisions about conservation management and use of NFS lands. The revision of the Planning Rule sets the planning framework for considering the road network necessary for sustainable multiple-use management. A roads analysis process at the land management plan level would be required by the proposed and final road management strategy alternatives and would change the current policy emphasis from road development to road maintenance. This analysis, required by the road management strategy, would examine NFS roads using public involvement and the best available science while considering effects on social, economic, and environmental sustainability.

The forest-wide roads analysis process required by the road management strategy would also be important for its influence on future road-management decisions. Decisions on individual road construction and reconstruction projects in unroaded areas would be informed by roads analysis as influenced by the analysis of unroaded areas required at the time of land management plan revision. The road management strategy outlines a consistent process that each forest and grassland would follow to determine what roads are needed, including unclassified roads, for the long-term management of NFS lands. Road management decisions, made at the local level, must comply with existing laws such as the Clean Water Act, the Endangered Species Act, Highway Safety Act, and be consistent with land management plans.

It is not possible to predict the outcome to NFS roads on individual national forests and grasslands from decisions that will be made at the land management plan and project level from the combined implementation of the road management strategy, the Planning Rule, and the alternatives considered in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000). Other initiatives, such as the Unified Federal Policy, the draft Strategic Plan, and the *Cohesive Strategy* should have minimal effects on NFS roads. Under the *Cohesive Strategy*, there would likely be a bias toward maintaining and increasing access for fuel treatment in priority

areas. The Unified Federal Policy establishes watershed assessments that are expected to be combined with the road management strategy analysis guidelines to help identify needed and unneeded roads. Additionally, Regional initiatives, specifically the Interior Columbia Basin and Sierra Nevada Framework projects, could also have compounding effects of reducing the miles of classified and unclassified roads, which is consistent with the downward trends projected in Figure 4. Although the alternatives in the Sierra Nevada Framework Project DEIS do not show any decline in NFS road miles as a direct result of the decisions to be made, the DEIS for the Interior Columbia Basin does project declines.

FIGURE 4. Range of possible National Forest System road miles based on funding.



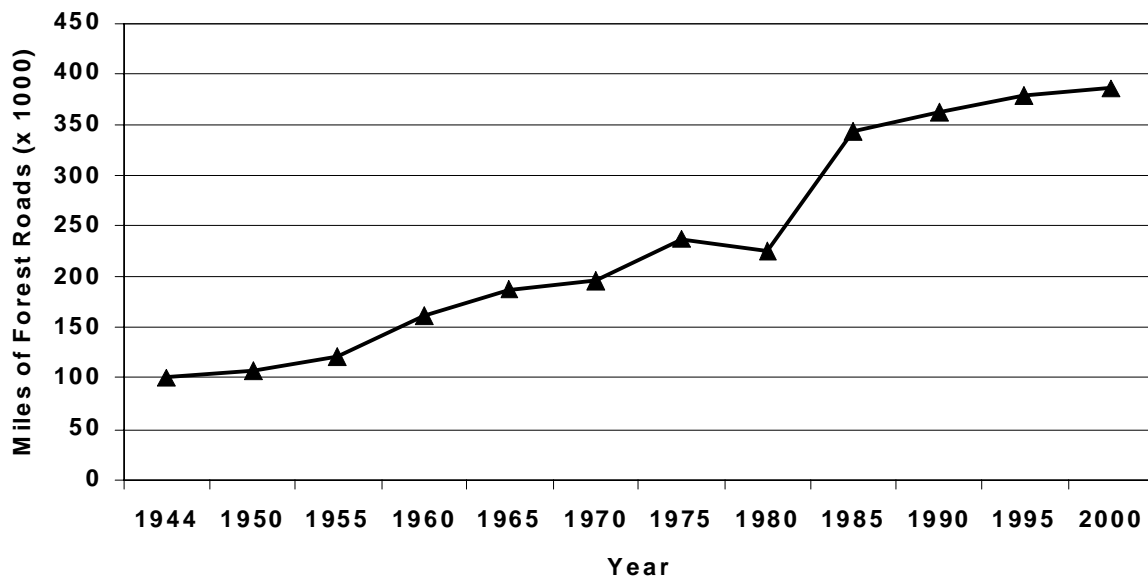
386,000 miles of classified roads plus 60,000 miles of unclassified roads equals 446,000 miles of roads

Status Quo: 260,000 miles of roads after 40 years

Critical Funding: 300,000 miles of roads after 20 years

It is possible to estimate reasonably foreseeable trends describing the future amount and condition of roads under Forest Service jurisdiction. It is anticipated that the majority of the existing roads will continue to be needed for management since the road network has continued to grow (see Figure 5). The Forest Service estimates that between 260,000 miles and 300,000 miles of NFS roads will exist after implementation of these policies. Decisions about whether a road is needed will be driven by the Forest Service's ability to meet land management plan objectives within the funding received, along with safety and environmental protection standards. The actual amount of NFS roads closed, decommissioned, open to public travel, the standard maintained, and the time to reach a minimum amount of roads needed to best serve current and anticipated management objectives and public uses is dependent on many factors including budgets, environmental risks, capabilities of the land, and use. Management of NFS roads will comply with applicable law, regulation, and policy.

Figure 5. Miles of Forest Roads Development (1944-2000).



The two scenarios discussed below estimate different foreseeable future scenarios based on projections for access needs, budget, and an assumed rate at which unneeded roads would be identified and removed from the National Forest System Transportation System. The space between these two scenarios represents a range of possible outcomes (*see* Figure 4).

Scenario 1: Current Budget Levels - Under this scenario the current appropriated road construction and maintenance budget of 200 million dollars a year would continue and would keep pace with inflation, which reflects the current trend of a 5% to 10% increase each year. Land management plan revisions guided by the new Planning Rule may identify unroaded areas where road construction could be prohibited. The roads analysis process would be completed on NFS lands and, through land management planning, decisions would be made about which roads are needed. As budgets allow, roads would be maintained at standards that would seek to balance the need for access with environmental protection. Because current funding levels would not achieve all road management objectives, it is likely that NFS roads would continue to deteriorate. Roads would become impassable, decisions to close roads would likely increase, and the level to which the roads are maintained would be lower than is necessary to meet all land management plan goals and objectives. In general, Agency resources would be focused on the 60,000 to 80,000 miles of road that carry the majority of NFS visitors, and on correcting negative environmental effects on the remaining NFS roads. Under this scenario, NFS roads would reach a stable size in approximately 40 years.

Scenario 2: Critical Funding Needs Are Met - The Forest Service's Natural Resource Agenda sets clear priorities in accordance with the Forest Service Strategic Plan and within the guidelines of the Government Performance and Results Act of 1993. One of the four elements of the Forest Service Natural Resource Agenda is roads, and one of the objectives of the road management strategy is to seek funding at a level that will allow the Agency to maintain the roads for NFS lands access to acceptable environmental and public safety standards. To do this, the Agency works with Congress and other Federal agencies to establish sustained funding for NFS roads at a \$900 million annual level.

At this funding level, which will meet critical needs, the Forest Service would be able to move methodically to reduce its estimated 8.4 billion dollar capital improvement and deferred maintenance backlog over the next 20 years. Roads analysis process would be completed and NFS roads would be assessed over the next 10 years to determine which roads are needed and which are unneeded for management. These determinations would be made at the appropriate level through environmental analysis. In general, roads would be maintained at standards that would accommodate the appropriate balance between projected demand for access to NFS lands and environmental protection. Decommissioning of unneeded roads would progress at an accelerated pace compared to current trends.

Generally, no roads would be impassable due to lack of maintenance once the crucial deferred maintenance needs are eliminated. Under this scenario, NFS roads would reach equilibrium approximately 20 years from when the Agency starts to receive funding for its critical needs.

Road management decisions and the Forest Service's ability to implement them will be influenced by Agency budget levels, and the availability of Forest Service and community resources.

Creation of Unroaded Areas

The combined effect of implementing the road management strategy, anticipated Roadless Rule, and individual land management plans all within the planning framework established in the Planning Rule would likely be reductions in road densities and possibly the creation of unroaded areas. The prohibitions on road construction and reconstruction identified in the *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000) would not apply to these newly created unroaded areas.

It is impossible to predict how many local land management plan and project level decisions would result in road density reductions and in turn how much and where unroaded areas would be created or enlarged. Land management plan goals, such as reducing road densities for big game or recreation management, eliminating failing roads in riparian areas, or reducing fragmentation of a particular wildlife habitat, may result in road decommissioning projects. Consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service during project-level planning may result in road decommissioning to meet conservation strategy or recovery goals or to implement measures in biological opinions. The following two examples illustrate how road decommissioning could affect the amount of unroaded area acres.

In the first example, the land management-plan objective may be to reduce road density (measured as miles of road per square mile). Through planning, consultation, and local collaboration, it could be determined that the road density is too high and should be reduced to meet resource management goals. In this case, elimination of roads, even a large number of individual roads or miles of roads, may not create or enlarge unroaded areas as road density is reduced and roaded access is maintained. This particular management scenario is quite common throughout Agency-managed lands in the West. Eliminating roads to reduce road density and not creating unroaded areas is likely to be the most common decommissioning scenario accounting for perhaps 90% or more of road decommissioning decisions.

The second example is the purposeful creation of unroaded acres as a by-product of implementing land management plan objectives. For example, a watershed could have originally been roaded to provide access for timber management activities. Under new land management-plan direction, the same area could now be managed for other values or under a different land allocation. To reduce erosion, rehabilitate drainage patterns, increase water quality, stabilize vegetation, enhance the scenic quality, reduce landslide potential, enhance fish and wildlife habitat, and create a more secure domestic water supply, all roads could be decommissioned and the watershed restored to a more natural condition. Examples of this can be found in the portions of the Pacific Northwest that are covered by the Northwest Forest Plan where the Aquatic Conservation Strategy has placed an emphasis on road decommissioning and watershed restoration.

Restoration of large portions of watersheds where management objectives no longer require roaded access, while expected to remain uncommon, are likely to be more frequent as the Forest Service manages for sustainability of forest ecosystems. The Agency estimates that unroaded area acres are likely to increase 5% to 10% by the time NFS roads stabilize at 260,000 miles to 300,000 miles nationally.

In both of these examples it is less likely that unroaded areas would be expanded in the East due to the way these national forests were reserved, their tendency to contain more roads not under Forest Service jurisdiction, the differences in habitat and habitat needs for protected species and the differences in geology, hydrology, and topography.

The Planning Rule would require the responsible official, at the time of plan revision, to identify and evaluate the important social and ecological characteristics of unroaded areas and inventoried roadless areas, and make a determination if they should receive any additional protection. This would take place in the context of the collaboration, sustainability, and science requirements of the Planning Rule.

The road management strategy would require that each forest and grassland undertake a roads analysis process at the national forest level. The findings of this analysis may inform a revision or an amendment of land management plans. The roads analysis process would ensure local public and private collaboration in informing road management decisions. Classified, unclassified, and temporary roads would be inventoried, mapped and a determination made by responsible officials as to whether a road is needed and, if so, where it would be located. The Forest Service estimates that, at a minimum, approximately 2,900 roads would be decommissioned annually under the proposed or final road management strategy. In some cases, roads may be converted to and managed as designated trails. It is during this assessment and decision-making process that the effects of road decommissioning, including unroaded area creation, would be disclosed.

There would not be any additional unroaded areas created because of selecting and implementing the alternatives analyzed in *Roadless Area Conservation Rule Final EIS* (USDA Forest Service, 2000).

Relationship between Short-Term Uses and Long-Term Productivity

Both the no action alternative and the proposed and final road management strategy alternatives would involve short-term uses of the environment. Road decommissioning and reconstruction serve to reduce environmental impacts, particularly those that would occur as a result of poor location or maintenance or are unneeded to meet current uses. Road construction can cause adverse environmental impacts such as sedimentation and habitat disturbance or loss. Road construction can also facilitate use of forest resources that can be important for social and economic well-being of communities near NFS lands. Because the proposed and final road management strategy alternatives would involve more road decommissioning and reconstruction and less road construction than the no action alternative, long-term productivity of the environment would improve under either the proposed or final road management strategy alternative as compared to the no action alternative.

Irreversible and Irretrievable Commitments of Resources

The promulgation of either the proposed or final road management strategy alternative would not, by itself, result in the irreversible and irretrievable commitment of resources. Rather, the commitment of resources would occur only if either the proposed or final road management strategy were applied in the context of a particular road management project on a National Forest. If implemented, either strategy would tend to reduce the irreversible and irretrievable commitments of resources by reducing the miles of roads constructed, particularly in roadless or contiguous unroaded areas until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis.

Consultation

The Forest Service consulted with several federal agencies for the preparation of this EA, including the Council on Environmental Quality, the Office of Management and Budget, the Council on Economic Advisors, the Bureau of Land Management, and the U.S. Environmental Protection Agency. In addition, the Forest Service consulted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, resulting in the preparation of a Biological Evaluation of the road management strategy. Copies of their letters concurring with the Biological Evaluation are included in Appendix H of this Final EA.

In addition, the Forest Service considered the comments received as a result of its issuance of the Advance Notice of Proposed Rulemaking to revise its regulations concerning the management of the National Forest transportation system (63 Fed. Reg. 4351 (1998)) and the comments received in response to the issuance of the proposed interim rule to temporarily suspend road construction in certain unroaded areas of NFS lands (63 Fed. Reg. 4351 (1998)) in the development of this EA. The Forest Service also considered comments of external stakeholders and Forest Service employees provided in focus group sessions convened by the Forest Service in 1999 to examine long-term road management policy issues.

The Forest Service prepared a Draft EA, which was circulated for public comment (65 Fed. Reg. 11680 (March 3, 2000)). The Forest Service considered all of the comments it received. After modifying its proposal, the Forest Service revised the Draft EA and prepared this Final EA.

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Appendix A

Glossary

- Arterial roads:** Authorized roads that provide service to large land areas that are usually developed and operated for long-term land and resource management purposes and constant service.
- Classified roads:** Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for motor vehicle access, such as state roads, county roads, privately owned roads, National Forest System roads, and roads authorized by the Forest Service that are intended for long-term use.
- Collector roads:** Authorized roads, serving smaller land areas than arterial roads, that collect traffic from local roads and usually connect to forest arterial roads or State and county highways. They are operated for either constant or intermittent service depending on land use and resource management objectives.
- Contiguous areas:** For purposes of implementing the road management strategy, these are areas of 1,000 acres or more with a common boundary of considerable length that provide important corridors for wildlife movement or extend a unique ecological value of the established inventoried area.
- Decommissioning:** Activity that results in the stabilization and restoration of unneeded roads to a more natural state.
- Forest development road:** A road wholly or partially within or adjacent to a National Forest System boundary that the Forest Service has authorized and maintains jurisdiction over and that is necessary for the protection, administration, and use of lands under the agency's jurisdiction.
- Improvement:** Activity that results in an increase of an existing road's traffic service level, expands its capacity, or changes its original design function.
- Invasive plant species:** Plants that have been introduced into an environment in which they did not evolve and thus usually have no natural enemies to limit their reproduction, which allows them to spread.

Inventoried roadless areas:	Areas identified in a set of inventoried roadless area maps, contained in <i>Forest Service Roadless Area Conservation, Draft Environmental Impact Statement, Volume 2</i> , dated May 2000, which are held at the National headquarters office of the Forest Service, or any update or revision of those maps.
Local roads:	Roads that connect terminal activities (<i>e.g.</i> , trail head, log landing, camping site, <i>etc.</i>) to collector and arterial roads. They are constructed to meet the access requirements of a specific resource activity rather than travel efficiency. When not being used for the activity for which they were constructed, they may be used for other purposes. They are often gated to restrict motor vehicle use. The construction standards for these roads are determined by the requirements necessary for the specific activity.
Maintenance:	The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective.
New Road Construction:	Activity that results in the addition of forest classified or temporary road miles.
Noxious weeds:	Those plant species designated as noxious weeds by the Secretary of Agriculture or by a responsible State official. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being native or new to or not common to the United States or parts thereof.
Private road:	A road under private ownership authorized by an easement to a private party, or a road that provides access pursuant to a reserved or private right.
Public road:	As defined in 23 U.S.C. 101(a), a road or street under the jurisdiction of and maintained by a public authority (<i>e.g.</i> , States, counties, or local governments) and open to public travel.
Realignment:	Activity that results in a new location for an existing road or portions of an existing road, including treatment of the old roadway.
Reconstruction:	Activity that results in improvement or realignment of an existing classified road.
Restoration:	Activity required to restore a road to its approved traffic service level.

- Road: A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified, or temporary.
- Temporary roads: Roads authorized by contract, permit, lease, or emergency operation, not intended to be a part of the forest transportation system and not necessary for long-term resource management.
- Unclassified roads: Roads on National Forest System lands that are not managed as part of the forest transportation system (such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail) and those roads no longer under permit or authorization.

Appendix B

List of Acronyms

ANILCA	Alaska National Interest Lands Conservation Act
CFR	Code of Federal Regulations
EA	environmental assessment
EIS	environmental impact statement
Fed. Reg.	<i>Federal Register</i>
FONSI	Finding of No Significant Impact
NEPA	National Environmental Policy Act
NFS	National Forest System
RARE II	Roadless Area Review and Evaluation (second phase)
TES	threatened, endangered, and sensitive (species)
U.S.C.	United States Code
USDA	United States Department of Agriculture

Appendix C

Demographic Data

United States Population Potentially Affected by the Proposed Road Management Strategy
(Based on the 1990 U.S. Census)

By Total U.S. Population	248,709,873	(100%)
Urban population	187,051,543	(75%)
Rural population	61,658,330	(25%)
Rural farm population	3,871,583	(2%)
Rural nonfarm population	57,786,747	(23%)

By Average Age - 35.3

By Sex

Male	121,172,379	(49%)
Female	127,537,494	(51%)

By Race

White	199,827,064	(80%)
Black	29,930,524	(12%)
American Indian, Eskimo, or Aleut	2,015,143	(1%)
Asian or Pacific Islander	7,226,986	(3%)
Other Race	9,710,156	(4%)
Hispanic Origin (any race)	21,900,089	(9%)

By Disability

Total persons with disabilities	13,158,203	(7%)
Mobility limitation only	4,250,180	(2%)
Self-care limitation only	5,093,652	(3%)
Mobility and self-care limitation	3,814,371	(2%)

By Ancestry

Single ancestry	148,836,940	(60%)
Multiple ancestry	73,771,307	(30%)
Unclassified or not reported	26,101,626	(10%)

By Citizenship

Native born	228,942,557	(92%)
Foreign born	19,767,316	(8%)
Naturalized citizen	7,996,998	(3%)

Foreign born by year of entry to United States

1980-1990	8,663,627	(3%)
1970-1979	4,869,415	(2%)
1960-1969	2,792,565	(1%)
Before 1960	3,441,709	(1%)

By ability to speak English

Speak only English	198,600,798	(86%)
Speak English "very well"	17,862,477	(8%)
Speak English "well"	7,310,301	(3%)

Speak no English or “not well” 6,672,201 (3%)

By Non-English Home Language

Spanish 17,345,064 (8%)

Asian or Pacific Islander 4,471,621 (2%)

Other 10,028,294 (4%)

Appendix D

Map

U.S. Map of National Forests and Grasslands

least one-quarter mile, and provide important corridors for wildlife movement or extend a unique ecological value of the established inventoried area. Contiguous unroaded areas are a subset of unroaded areas, which are defined in the road management strategy as "any area without the presence of a classified road, that is of a size and configuration sufficient to protect the inherent characteristics associated with its roadless condition."

There are approximately 463,000 miles of classified roads on NFS lands, of which 386,000 miles are roads managed by the Forest Service. Other public and private roads are not affected by the final road management strategy. About 20 percent of classified Forest Service roads are main access roads that serve all users (arterial and collector roads), 57 percent are local roads typically passable by high-clearance vehicles, and 23 percent provide intermittent access for administration, protection, and non-highway vehicle use, but are restricted from highway-vehicle access by gates or other methods. The Forest Service estimates that at least 60,000 miles of unclassified roads occur on NFS, although the number could be substantially higher. Unclassified roads are not needed for and are not managed as part of the National Forest Transportation System.

Currently, about 1 percent of forest roads are used for logging purposes. About 15,000 vehicles associated with timber harvest and other resource development use Forest Service roads each day, about the same level of use as 1950. The current usage reflects the decline in timber harvest from about 12 billion board feet in 1987 to 2.9 billion board feet in 1999. Road use has also declined from non-roaded harvesting techniques, such as helicopter logging. About 9,000 Forest Service vehicles travel Forest Service roads each day for management purposes.

In contrast to road use for timber harvest, recreation road use has increased dramatically since 1950 and is expected to continue to increase. An estimated 1.7 million vehicles associated with recreation activities travel Forest Service roads daily during the summer. Most of this use occurs on a small proportion of the road system, including state and county highways that are not affected by the rule.

Recent trends in road construction, reconstruction, and decommissioning are shown in Table E2. Road construction has been steadily declining, while trends in reconstruction and decommissioning have varied over the same time period.

Framework for the Economic Analysis

The final road management strategy provides policy guidance for the purpose of land and resource management planning on the National Forests and Grasslands. It does not dictate resource outcomes at the local level. Although it is not possible to quantify the impacts at the National Forest and Grassland level, it is possible to describe a potential range of effects by comparing the no action alternative (current program) with the final road management strategy.

Comparison of alternatives

The no action alternative is a continuation of management actions described in current land and resource management plans. Table E3 lists the total miles of road development planned annually under the no action alternative. The number of miles of planned development that would occur in inventoried roadless or contiguous unroaded areas is also shown in the Table E3.

The final road management strategy differs from the current policy in several ways. The final strategy switches the emphasis from road development to providing the minimum transportation system needed to meet management objectives. Any proposal to construct, reconstruct, maintain, or decommission roads would need to better account for effects on ecosystem values. Priority would be given to decommissioning unneeded roads and maintaining the most heavily used roads. Finally, until a comprehensive road inventory and road analysis process had been conducted and incorporated as appropriate into revisions of land and resource management plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, any road construction or reconstruction proposals for inventoried roadless and contiguous unroaded areas must demonstrate a compelling need, must be the subject of a science-based roads analysis, and would require an environmental impact statement approved by the Regional Forester.

The final road management strategy alternative was designed to provide an estimate of maximum potential effects in comparison to the no action alternative. The final road management strategy alternative assumes that, until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into a forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, no road construction or reconstruction would occur in inventoried roadless or contiguous unroaded areas, except to meet a compelling need such as critical resource restoration or protection; resource damage prevention; access provided by statute, or as provided pursuant to reserved and outstanding rights, including access to locatable and leasable minerals; and wildlife habitat restoration. Total road development activity under the final road management strategy alternative is shown in Table E3. The final road management strategy would not prohibit road construction, but the interim requirements could reduce road reconstruction or construction activity in the relevant areas until (1) the results of a forest-scale roads analysis were incorporated as appropriate into a forest plan through a forest plan amendment or revision or (2) the Forest Supervisor had made a written determination that the forest plan did not require amendment or revision to reflect the findings of the forest-scale roads analysis. For this reason, it is reasonable to describe the maximum potential impacts by assuming no additional roads are reconstructed or constructed.

Generally, it was assumed that road development activity on roaded areas of the NFS would be similar under the no action alternative and the final road management strategy. The main difference is the greater emphasis on reconstruction and decommissioning. If funds were available, more miles of reconstruction and decommissioning would occur in roaded areas than under the no action alternative. The final road management strategy is

also likely to result in roads that have fewer negative environmental impacts and are more responsive to current user and management needs.

Relationship of Effects of the Road Management Strategy and the Roadless Area Conservation Rule

The analysis of effects of the road management strategy includes impacts in inventoried roadless areas and other contiguous unroaded areas for the duration of the interim requirements period. The Roadless Area Conservation Rule would provide more permanent protection to inventoried roadless areas. Since the two rules are expected to be issued at or near the same time, it is reasonable to assign the economic effects that would occur in inventoried roadless areas to the Roadless Area Conservation Rule to avoid double-counting these effects. Effects in contiguous unroaded areas during the interim requirements period are attributed to the road management strategy, since no protection is provided to these areas by the Roadless Area Conservation Rule.

Economic effects

Two forms of economic analysis and the resulting effects are considered when comparing the no action alternative to the final road management strategy alternative: economic efficiency and economic impacts. The economic efficiency analysis focuses on the potential change in the flow of goods and services valued by society. Ideally, the effects on economic values would be captured in a benefit-cost framework and feature quantitative values. However, the final road management strategy alternative does not dictate site level effects, and so it was not possible to estimate specific effects numerically. The exception was the potential for reduced timber harvest in inventoried roadless areas and contiguous unroaded areas during the interim requirements period.. The expected effects on other resources are qualitatively described.

In addition to balancing the benefits and costs to the public, the Forest Service considers the impacts of its policies on economic activity, measured by the effects on jobs and payments to states. Activities on NFS lands generate jobs in local communities and revenue to States. Jobs are created by commodity extraction, recreation use, and special uses. Payments to states are from receipts generated through a variety of programs. As with the efficiency analysis, effects could only be quantified for potential reductions in timber harvest.

Timeframe for the analysis

The effects described in this analysis would occur until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. Under the final road management strategy, a forest-scale road analysis must be completed within two years. At the completion of this road analysis process, the forest plan could be revised or amended, or there could be a written determination that no changes to the forest plan were needed. Therefore, the economic effects of the final road management strategy would occur primarily in the first two years. However, although the revision cycle varies across management units, forest plans must be revised at least once every 15 years. As a result, some economic effects could occur as long as 15 years after the effective date of the final road management strategy.

Impacts of the final road management strategy in inventoried roadless areas would be superseded by promulgation of the Roadless Area Conservation Rule, which is expected to be issued at the same time as this rule.

The maximum potential economic effects are estimated on an annual basis. Revised land and resource management plans would incorporate the revised road policy, which includes consideration of the full range of benefits and costs associated with management options for inventoried roadless and contiguous unroaded areas. As plans are revised, the effects of the final road management strategy would be replaced by the direction in the revised plan. Therefore, the maximum effects are only likely to occur in the first two to five years of the interim requirements period, when few plans have completed the revision process. Those effects would occur primarily on contiguous unroaded areas, since the Roadless Area Conservation Rule would take precedence in the management of inventoried roadless areas.

Economic Effects

Agency Road Management Costs

The road management costs of the final road management strategy are not expected to vary significantly from the road management costs of the no action alternative, particularly in the short term. The primary change is to direct more funds toward those activities featured in the final road management strategy alternative and fewer funds toward those activities featured in the no action alternative.

Management of arterial and collector roads is expected to be similar under both alternatives. These roads, which account for 20 percent of Forest Service road miles, carry over 80 percent of the traffic on the NFS. These roads need to be brought up to safety and environmental standards, and are not targeted for decommissioning. Although accounting for less than a quarter of total road miles, the cost of construction, reconstruction, and maintenance is higher on these roads than on local roads.

The final road management strategy alternative shifts the emphasis of road management on NFS lands, but not necessarily the total costs of road management or total miles of activity. Road construction is expected to decline, while reconstruction and decommissioning is expected to increase. Road construction is generally more expensive than reconstruction and decommissioning, although the range of costs for all of these activities varies widely. Overall, the net effect on costs is difficult to assess because of the wide variability in costs.

The cost of road construction has been estimated to range from \$50,000 (for high-clearance vehicles) to \$210,000 per mile (for arterial or collector roads). Under the no action alternative, approximately 630 miles of new road would be built (*see* EA Table 3). However, the Forest Service would incur costs for constructing only about 88 of these miles of new roads, at a cost between \$4.4 and \$18.5 million. The cost of constructing the remaining 542 miles would be incurred by timber sale purchasers, private landowners, ski area operators, or mining interests.

Under the final road management strategy preferred alternative, approximately 40 miles

of currently planned roads would not be built by the Forest Service (of the approximately 119 miles of roads that would not be constructed, only 40 miles would be funded by the Forest Service, with the other 79 miles of roads being funded by timber harvesters), for a total cost savings ranging from \$2 million to \$8 million. Overall, road construction costs are expected to be lower under the final road management strategy alternative.

The cost of reconstruction also varies widely, ranging from \$8,000 (for high-clearance roads) to \$50,000 (for arterial or collector roads) per mile. Under the no action alternative, the Forest Service would incur costs for 1,417 miles of reconstructing of the 4,125 total miles of road that would be reconstructed on all NFS lands, at a cost ranging from \$11 million to \$71 million. Reconstruction miles under the final road management strategy alternative are less than under the no action because data were only available to estimate the miles of road reconstruction that would not occur in inventoried roadless or contiguous unroaded areas. In fact, because the final road management strategy preferred alternative places more emphasis on reconstruction of existing roads than on construction of new roads, it is assumed that more reconstruction would occur. Therefore, total costs for reconstruction activities should be higher under the final road management strategy alternative. The Forest Service already has a significant backlog of deferred maintenance and road improvement needs identified. The potentially lower construction costs would be balanced against reconstruction needs within available funding constraints.

A related cost issue is the effect of the procedural requirements under the final road management strategy alternative for building roads in inventoried roadless or contiguous unroaded areas. If a road were proposed into an inventoried roadless area, a compelling need, a science-based roads analysis, and an EIS would be required. However, current practice is to conduct an EIS for any proposed timber sale or other action that enters a roadless area, so the procedural costs are not affected. To the extent that roads do get built in roadless areas, the cost per mile tends to be higher than for roaded areas. The no action alternative includes road construction into roadless areas, which implies those construction costs would be higher than those under the final road management strategy alternative.

A final agency cost consideration is the effect of requiring a complete inventory of roads on the National Forest System, which would be compiled in a transportation atlas. The requirement for a complete inventory has always existed, and is being emphasized to address real property accounting requirements. No additional costs are associated with the transportation atlas.

The Forest Service has 36 forests and grasslands that have published notices in the *Federal Register* of their intent to revise, or in the case of new units establish, their land management plans. Six units anticipate completion of their plans in 2001, seven anticipate completion in 2002, and nine in 2003. The Forest Service does not expect any additional costs to these forests as a result of completing forest-scale roads analyses as part of their ongoing plan revision processes. For purposes of establishing increased costs incurred by the remaining 90 forests that would complete stand-alone forest-scale roads analyses, the Forest Service estimate that a stand-alone roads analysis would cost in the range of \$40,000 to \$50,000 each, based on agency experience with similar

assessments such as watershed, access and travel management, and other landscape level assessments. Therefore, it is estimated that the costs for these 90 forests would be in the range of \$3.6 to \$4.5 million and would be spread over the next two years.

The miles of road development estimated for the no action alternative and final road management strategy alternative are based on existing land and resource management plans. These plans do not necessarily reflect budget constraints on road development. As a result, the estimated miles in Table E3 are significantly higher than miles of construction and reconstruction accomplished in recent years (as shown in Table E2).

Forest Service budget allocations for road management have not been sufficient to meet planned goals in recent years. The Forest Service budgets for road management activities in fiscal years 1998, 1999, 2000, and 2001 are shown in Table E4. The Forest Service has estimated that current funding provides only 20 percent of funds necessary to fully maintain Forest Service roads to intended safety, service, and environmental standards. The backlog of deferred road maintenance and capital improvement needs on Forest Service roads has been estimated at \$8.4 billion. Based on a Forest Service report to Congress¹, the Forest Service estimates annual maintenance needs to be \$568 million. Addressing only immediate threats to health and safety, resource protection, access, and basic operation would require \$197 million per year, about double current funding levels.

In the short-term, under current budget constraints, the Forest Service would be allocating scarce funds across competing priorities in road management. The main difference between the no action alternative and the final road management strategy alternative is the guidance for establishing priorities. There is no basis for any major change in agency budget requests for road management. In the long-term, the Forest Service expects to realize some management efficiencies from the final road management strategy. Completing the road inventory would improve the information available for identifying priorities for road priorities. The revision of land and resource management plans would also provide new information about road management needs. The emphasis on the minimum required transportation system to serve management objectives would result in fewer total road miles than originally planned. Therefore, the agency would be able to improve the use of the limited funds to maximize the benefits associated with road activities.

Access and public safety

No roads needed for access to pre-existing rights or for public safety would be decommissioned under the no action alternative or the final road management strategy alternative. Plans for construction and reconstruction are also assumed to be the same for both alternatives. Therefore, the net effect on public benefits would be zero.

Fire, Insects, and Disease

¹ USDA Forest Service. Supporting Documentation on Maintenance and Improvement Needs. Submitted in the Fiscal Year 2000 Budget Justification.

Roads are needed for access to fight fires, and provide treatments for insects and disease, but access also provides increased opportunity for human-caused fire and spread of insects. There are numerous treatment methods that do not require roaded access, such as prescribed burns. Treatment needs for fire, insects and disease on NFS lands are far greater than can be accomplished in any year. As a result, treatments requiring roaded access to inventoried roadless and contiguous unroaded areas could be replaced by treatments on other areas of equal priority.

Although more roads would be decommissioned under the final road management strategy alternative than under the no action alternative, only roads that were not needed for forest resource management objectives would be decommissioned, and roads decommissioned under the final road management strategy alternative would not be expected to affect forest health projects.

Decommissioning unneeded roads could reduce the frequency of human-caused fires in the areas served by the roads. However, roads can facilitate fire suppression when fires do occur, and alternative firefighting strategies that do not require motorized access (such as the use of aerially delivered firefighters) may not be as effective. Overall, however, road decommissioning is not expected to affect the Forest Service's ability to suppress fires.

It is expected that as many miles of roads would be constructed for fire suppression purposes under the final road management strategy alternative as under the no action alternative. Under the final road management strategy alternative, roads could be constructed in inventoried roadless or contiguous unroaded areas after a showing of compelling need, including a need to protect or restore critical resources (e.g., for disease or insect control or for fire suppression purposes). In addition, the final road management strategy preferred alternative provides an emergency exemption when a road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property.

An overall reduction in road construction for all purposes could curtail opportunities to treat hazardous fuels, particularly in Regions 1, 4, 5, and 6. This could slightly increase the risk of large and damaging wildfires in some areas, with their associated effects on water, soil, and air resources. As with increased decommissioning, decreased road construction would result in limiting access, which would reduce the probability of human-caused ignitions in those areas.

A national programmatic strategy to restore and maintain ecosystem health in fire-adapted ecosystems was published by the Chief of the Forest Service on November 9, 2000. The strategy, *Protecting People and Sustaining Resources in Fire-Adapted Ecosystems -- A Cohesive Strategy*, is based on the premise that sustainable resources are predicated on healthy, resilient ecosystems. In fire-adapted ecosystems, some measure of fire use -- at appropriate intensity, frequency, and time of year -- should be included in management strategies intended to protect and sustain watersheds, species, and other natural resources over the long term. The *Cohesive Strategy* is also based on the premise that, within fire-adapted ecosystems, fire-maintained forests and grasslands are inherently

safer for firefighters and the public than ecosystems in which fire is excluded.

The final road management strategy preferred alternative sets forth various methods of ensuring that local communities and managers have the resources and analytical tools necessary to make more informed decisions about the management of the forest road system. For example, the final road management strategy alternative requires that a roads analysis be performed before new roads are constructed or old roads are decommissioned. It also requires that local people participate in an open public process before such decisions are made. Consistent with the *Cohesive Strategy*, these requirements help to ensure that considerations for hazardous fuels reduction and for suppression are evaluated as part of road management considerations.

It is essential to remember that very little fire hazard reduction work has occurred in inventoried roadless or contiguous unroaded areas in the past and very little is anticipated in the future. For example, the *Cohesive Strategy* directs resource managers to focus their restoration efforts on priority areas: wildland urban interface areas, readily accessible watersheds, threatened and endangered species habitat, and maintenance of low risk areas. By definition, very few accessible municipal watersheds are found within inventoried roadless and contiguous unroaded areas. Similarly, very few inventoried roadless or contiguous unroaded areas are found adjacent to wildland urban interface areas.

Unless an imminent threat to public safety, private property, water quality, or threatened or endangered species exists, inventoried roadless and contiguous unroaded areas would be a low priority for fuels treatment for the next 20 years, because higher priority areas are more common outside roadless and unroaded areas. The final road management strategy alternative allows for entry into inventoried roadless or contiguous unroaded areas during the interim protection period in order to protect or restore critical resources. Further, road construction needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic events that without intervention would cause the loss of life or property is allowed the final road management strategy alternative.

Fewer acres of inventoried roadless and contiguous unroaded areas would be treated for fuel management objectives by timber harvesting under the final road management strategy alternative than under the no action alternative. Since the acres affected would be a very small percentage of the NFS lands that might need fuel treatment to lessen the risk of catastrophic fires, the overall effect of the final road management strategy alternative to the fuel management program would be very slight.

Since alternative treatment opportunities exist, and the agency's ability to fight fires and provide treatment for insects and disease would be almost the same under both scenarios, the only likely effect is a net benefit from reduced access.

Forest Management (Timber)

Timber sales are often used to achieve vegetation management objectives. Timber sales may be the least cost method to manage vegetation for improving wildlife habitat, reducing fuels, recovering values from natural disasters, combating insect and disease infestations, and improving tree growth. Timber sales include timber commodity purpose sales made primarily to supply timber for wood demand, as well as for personal use made primarily to supply firewood, Christmas trees, and other forest products to individuals for their own consumption. Roads are generally required for timber harvest, although some timber in roadless and contiguous unroaded areas can be harvested using helicopters or cable-yarding systems from existing roads.

The primary effect of the final road management strategy alternative is a reduction in timber harvest in inventoried roadless and contiguous unroaded areas, particularly until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. To estimate the maximum potential effect, the final road management strategy alternative assumes that no road construction for timber harvesting purposes would be allowed in these areas during the interim requirements period. Table E5 displays the estimated annual harvest on NFS lands under the no action alternative based on the average annual harvest data from 1996 to 1999 (by Forest Service region), the estimated average annual harvest on NFS lands under the final road management strategy alternative, and the maximum potential harvest loss by not harvesting in inventoried roadless and contiguous unroaded areas.

For purposes of analysis, the Forest Service assumed that data developed for the *Roadless Area Conservation Rule Final EIS* for inventoried roadless areas and data used in the *Interim Rule EA* for contiguous unroaded areas provides a reasonable estimate of the road construction and reconstruction that could occur in these areas under the final road management strategy alternative. The Forest Service believes that the data developed for the *Roadless Area Conservation Final EIS* and the *Interim Rule EA* are a close approximation of the potential effects on timber harvest in inventoried roadless areas and contiguous unroaded areas. The data developed for the *Roadless Area Conservation Final EIS* and the *Interim Rule EA* used historic trends and data collected from Forest Service Field units. In addition, Forest Service personnel preparing these documents contacted Forest Service Field units to validate and update information.

The estimated economic impacts do not account for any potential substitute harvest from roaded portions of the NFS lands or other ownerships. The potential for substitute harvest can be estimated using U.S. harvest trends by region and ownership (Haynes and others 1995). During this period, NFS harvest levels declined 41 percent nationally while total U.S. harvest increased by 1 percent. In Forest Service Regions 8 and 9, harvest on other ownerships more than offset declines on NFS lands. The contribution of NFS harvest is extremely small in the eastern U.S., where private lands have always been the dominant source of wood fiber.

In the Western U.S., increased harvest on non-industrial private ownerships provided some substitute harvest to offset declined harvest on all other ownerships. These data indicate there is some potential for substitution in those regions, although these opportunities probably occur primarily in Regions 1, 4, 5, and 6. Little substitute volume is likely to exist in Regions 2, 3, and 10. When considering the potential for substitute volume, it is important to understand the difference between physical supply and economic supply and the dynamics of market forces and economic limiting factors that can make or prevent substitute volume from being available. This data might not be readily determinable for local log markets.

However, assuming the demand for timber is a function of the demand for lumber and other wood products, this substitution would only be temporary and may depend on higher stumpage prices to draw the new timber onto the market. In the long term, the substitution effect would be zero because those roadless areas would be permanently removed from the regional timber base and the regional long-term sustained yield would decline.

Economic Efficiency Effects. Economic efficiency analysis compares the benefits and costs associated with a proposed action. For example, the economic efficiency effects of the NFS timber sale program, compares the benefits of timber harvest to the cost. The benefits include the market value of the timber and any associated positive resource impacts. For example, timber harvest may result in a temporary increase in forage production or an improvement in elk winter range. To the extent these effects can be quantified, they should be added to the timber values. Similarly, the total costs should include all associated harvest costs and any negative environmental effects. For example, timber harvest may cause sedimentation that negatively impacts water-based recreation activities. The non-timber economic effects are an important component of the efficiency analysis since an increasing proportion of timber sales on the NFS are undertaken to achieve forest management objectives other than commercial harvest.

The total planned volume in the no action alternative and the estimated maximum affected volume under the final road management strategy alternative are not tied to any particular timber sale. Therefore, the estimate of the economic benefits and costs has to reflect some representative regional range of values. The data used for the benefits and costs of harvest are available from the Forest Service's Timber Sales Program Information Reporting System (TSPIRS) Economic Account.

The TSPIRS Economic Account displays the long-term benefits and costs expected to result from a given year's timber-harvesting activities. The analysis uses a traditional with-without approach by analyzing the incremental benefits and costs associated with timber harvest in a given fiscal year. The time frame for the analysis is determined by the longevity of effects, either on the timber resource or other resources.

Other resource effects may be either positive (e.g. increased recreation opportunities or increased forage available for grazing) or negative (e.g. increased sedimentation). If these effects can be expressed in physical outputs, such as animal unit months of forage or number of recreation visits, those effects can be monetized and included in the analysis. Most of the benefits and costs reported in the Economic Account are related to the timber

harvesting activity, since many of the associated resource effects are difficult to quantify. In fiscal 1997, 79 percent of the present net value was associated with timber harvest, with the remaining 21 percent attributed to other resource effects. In FY 1996, 88 percent of the present net value was associated with timber harvest.

However, there are some basic problems with the above system that prevents the Forest Service from completing a meaningful traditional cost/benefit analysis that would be consistent with Office of Management and Budget Circular A-94. First, the TSPIRS system only accounts for benefits/costs attributable to timber harvesting. For example, a road constructed for recreation purposes, or decommissioned for wildlife management purposes would not be accounted for in the TSPIRS system. Second, many of the non-market, and non-quantifiable benefits and costs that would arise from the final road management strategy alternative (see Table E1 for examples) are not reflected in the TSPIRS system and are not available from any other sources. Although some TSPIRS values are included in this report to put things in perspective, they are not a good indicator of the overall economic efficiency of the final road management strategy alternative.

Total United States wood consumption would be unaffected by the reduction in harvest. Harvest from NFS lands was only 4 percent of total U.S. production in 1997. The maximum potential harvest reduction is less than 0.01 percent of total U.S. production. Therefore, the total supply effect is marginal, and no measurable wood product price impacts are expected as a result. There could be a few isolated effects on log prices as they are relatively local markets but this is not expected to affect lumber prices which are set in regional to international markets. Consumers are not expected to suffer any measurable net welfare loss, since the combination of harvest on other ownerships and imports would probably make up for much of the NFS reduction.

Employment Effects. Employment effects can be described as direct, indirect, and induced. Direct effects include jobs associated with the harvest of the timber and processing of the raw material. Indirect effects include jobs associated with industries that supply inputs to the harvesting and processing sector. Induced effects include jobs associated with increased spending in the economy from the salaries created by the direct and indirect effects.

The TSPIRS report was also used as a source of data for estimating job effects. Estimates of total employment impacts (the sum of direct, indirect, and induced) were based on TSPIRS data. As with the data for the efficiency analysis, data from 1996 through 1998 were averaged to calculate total jobs per million board feet for each region for the no action alternative. Direct jobs per million board feet harvested are not reported separately in TSPIRS. Regional estimates of direct jobs per million board feet of harvest were based on querying Forest Service economists, based on their experience with input-output analyses related to timber harvest.

Table E5 provides estimates of the total harvest on NFS lands, as well as the annual effects of the road management strategy on timber harvest in inventoried roadless areas and contiguous unroaded areas if no harvest requiring roads were allowed (*i.e.* no compelling need would be shown for timber harvest in these areas). Table E6 provides a

comparison of direct and total job effects under the no action and final road management strategy alternatives, based on harvest effects in contiguous roadless areas only. Table E7 provides an estimate of job impacts from harvest reductions in inventoried roadless areas and in contiguous unroaded areas.

The agency anticipates that the final Roadless Area Conservation Rule will supercede the interim requirements of Section 7712.16b of the final road management policy for inventoried roadless areas, except for the Tongass National Forest. Therefore, during the interim requirements period, decisions regarding access that would require roads will be limited to contiguous unroaded areas on all National Forests except for the Tongass National Forest. In contiguous unroaded areas, timber harvest and exploration and development of minerals could be impacted in this interim period. If all planned timber harvest in these contiguous unroaded areas were forgone during the interim requirements period, approximately 65 million board feet of timber per year could be affected. This figure covers all National Forests because, for the Tongass National Forest, timber harvest effects would occur only in the inventoried roadless areas, not in contiguous unroaded areas. Under this scenario, up to 433 direct and 797 total jobs could be affected (see Table E6). These effects would be expected to be of short duration, since the interim requirements period ends once a comprehensive road inventory and forest-scale roads analysis are completed and incorporated as appropriate into the forest plan.

Decisions on whether to harvest timber and build roads in contiguous unroaded areas would be made in the interim requirements period on a case-by-case basis. Therefore, it is impossible to reliably predict potential effects, since to do so would be to prejudge the outcome of decisions not yet made. Nevertheless, during the interim requirements period, the greatest potential effects resulting from timber harvests forgone in contiguous unroaded areas could be an annual loss of income of up to \$32 million. In order for these maximum potential effects to be realized, absolutely no road construction or reconstruction would occur in these areas during the interim requirements period. The Forest Service knows that this is not likely to be the case, as there will likely be road activities that are found to meet the compelling need requirement of Forest Service Manual Section 7712.16b and, therefore, may proceed.

With regard to the effect of the interim requirements of the road management policy on timber harvest and associated jobs in inventoried roadless areas of the Tongass National Forest, 261 million board feet of timber harvest have already been sold and will be removed from these areas over the next 3 to 5 years. For purposes of this cost-benefit analysis, 521 million board feet of timber are assumed to be offered over the next 5 years within these inventoried roadless areas. Of this total, 284 million board feet of planned timber offer are already through the final NEPA disclosure or decision process and some are in various stages of offer or award, and would not be subject to the interim requirements. About 237 million board feet are in earlier planning stages and would be subject to the interim requirements. The interim requirements are most likely to affect the 102 million board feet of timber planned for offer for which a draft environmental impact statement is already underway. The planning for the remaining 135 million board feet is likely to extend beyond the interim requirements period. Of the planned offer for actual harvest, the agency estimates that approximately 72.5 million board feet of this

102 million board feet would be harvested over a period of 3 to 5 years, which results in a maximum annual impact of 15 to 25 million board feet per year, unless the Regional Forester finds that a compelling need, as described in Forest Service Manual Section 7712.16b, exists for harvesting this volume. Potential economic effects associated with that volume are 75 to 125 direct jobs and 120 to 200 total jobs. Annual income effects associated with those jobs would range from \$8.6 million to \$14.4 million direct income and \$13.8 to \$23 million total income.

Direct job effects are the most obvious effect of reduced timber harvest. Indirect and induced effects are distributed over a wide range of economic sectors. The impact of reduced harvest on these jobs varies widely by community. Communities with diverse economies that have strong overall job growth are likely to have alternative job opportunities to replace harvest-related indirect and induced effects. Local communities with a strong timber sector and less economic diversity would be most impacted through indirect and induced effects. Substitution opportunities for induced and indirect effects seem likely in today's economic environment of tight job markets, but these effects vary greatly by location and type of employment. Increased job opportunities may also be available as a result of increased road decommissioning and reconstruction on all NFS lands.

Payments to states. Receipts generated from sales of products and services on the NFS are partially returned to the U.S. Treasury. States receive a portion of some Forest Service receipts based on congressionally determined formulas. Payments to States are one measure of distributional effects from timber harvest. Receipts from timber sales have historically been the largest source of payments to States from the NFS.

Historically, 25 percent of timber sale receipts from the National Forests and Grasslands have been returned to the states and counties to spend on schools and roads. The decline of timber harvests from NFS lands in the last decade has resulted in significant declines in the payments to states from timber receipts. On October 30, 2000, the President signed the Secure Rural Schools and Community Self-Determination Act of 2000, which allows counties to choose between receiving 25 percent payments under the current formula or receiving payments based on historic payment levels.

Estimated timber receipts by region are based on average receipts from fiscal years 1996-1998. (Table E8). Annual receipts under the no action alternative are estimated to be approximately \$540 million. Under the final road management strategy alternative, receipts would be reduced by approximately \$23 million. However, as a result of the Secure Rural Schools and Community Self-Determination Act, changes in timber harvests related to the final road management strategy would not cause any further reductions in payments to states through 2006.

The sum of these economic effects over the interim requirements period is difficult to estimate. Timber sold is generally harvested over 2 to 3 years from the selling date. Therefore, in the first year of the interim requirements period, only one-third to one-half of the maximum effect could occur. In the second year, two-thirds to the full maximum effect could occur. A more complicating factor is the effect of land and resource management plan revisions. As plans are revised, the plans would include new harvest

schedules that would replace the potential harvest effects of the final road management strategy alternative. The revised plans would reflect the direction in the final road management strategy, and therefore may have similar effects. But those effects would be analyzed in the revision process, and cannot be attributed to the final road management strategy. For purposes of this analysis, the effects of the final road management strategy alternative would decline over the interim requirements period and be zero by year 15.

Land Uses (non-recreational)

Non-recreational special use authorizations on NFS lands include communication sites, public and private roads, and transmission rights-of way (e.g. pipelines). More than 47,000 active special use authorizations currently exist. These authorizations involve more than 80 types of uses on 26 million acres of land and resulted in almost \$9 million in fees to the U.S. Treasury in 1998.

Roads needed to accommodate private access, transportation or utility corridors, rights-of-ways and easements would not be affected by the final road management strategy, except possibly in a positive way through maintenance and reconstruction to maintain standards.

Under the final road management strategy alternative, road construction could be reduced as compared to the no action alternative. All private interest access projects needed to satisfy the Alaska National Interest Lands Conservation Act or other statutory right-of-access and reserved or outstanding rights would be observed under the final road management strategy alternative. However, applications for authorization that are not required by law (such as applications for new communications sites, pipelines, or other commercial enterprises) would have to demonstrate a compelling need during the interim requirements period if roads would be required in inventoried roadless or contiguous unroaded areas.

Law Enforcement

There would be no net effect from the final road management strategy alternative, since road activities needed for public safety would be undertaken under all alternatives.

Minerals

Reasonable access to privately owned minerals, mineral claims, leases, permits, and contracts would be unaffected by the final road management strategy alternative, including reconstruction of existing roads. Under the final road management strategy alternative, any proposed road construction in inventoried roadless or contiguous unroaded areas would require demonstration of a compelling need until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. Compelling need would include access needed to carry out a statute (such as the General Mining Law of 1872) or pursuant to reserved or outstanding rights including access to locatable and leasable minerals. In addition, mineral exploration and development could still occur in inventoried and contiguous unroaded areas using non-motorized access methods.

Development of locatable minerals is less likely to be affected, since the General Mining Law of 1872 guarantees access for exploration and development. The impact on leasable minerals (e.g., oil and gas) is more difficult to estimate. The agency has more discretion in allowing development of these resources. Lack of road access would limit future development potential for numerous leasable resources. The effects would be limited to the interim requirements period. Promulgation of the Roadless Area Conservation Rule would have more permanent impacts on access to leasable minerals within inventoried roadless areas, as described in the *Roadless Area Conservation Rule Final EIS*. Therefore, the incremental effect of the road management strategy would be to affect exploration and development within contiguous unroaded areas. No estimate of those effects are available.

Noxious weeds and non-native invasive plants

Roads provide easy points of entry and infestation for noxious weeds and nonnative invasive plants. Roads are also needed to provide access to treat noxious weeds and nonnative invasive plants. In the no action alternative, the greater miles of planned road construction would contribute to the spread of these species to a greater extent than the final road management strategy alternative. The final road management strategy would place a greater emphasis on reconstruction and decommissioning, which also would allow opportunities for entry and infestation. The long-run effect of increased decommissioning would be to reduce the threat of infestation through roaded access. The combination of less road construction and increased decommissioning under the final road management strategy alternative is likely to result in a net benefit from reduced infestation on roaded, unroaded, and roadless areas.

Recreation, Heritage, and Wilderness Resources

Few roads have been built on NFS lands for the sole purpose of recreation, but all roads are available for recreational use. Roads are necessary for driving for pleasure, the largest recreational use of NFS lands. Roads also provide access to developed facilities such as campgrounds, marinas, ski resorts, and visitor centers, as well as access to trailheads.

Road development generally has a negative effect on scenic quality, depending on road design and the purpose of road construction. To the extent that road development leads to activities such as mining and timber harvest, scenic quality is likely to decline from road development. However, roads also bring people into contact with scenery that was previously unavailable through vehicular access and provide benefits to new users.

Unroaded and roadless areas are important for providing primitive and semi-primitive settings for dispersed recreation activities such as backpacking and hiking. Although roads provide access to these types of areas, roads within these areas generally have a negative impact on these recreation experiences. Solitude is a key characteristic of these types of recreation settings. Increases in user density, which are likely from increased access, would have negative effects on users seeking more remote recreation experiences.

The comparison of available recreation opportunities between the no action alternative and final road management strategy alternative would vary by type of recreation activity. On existing roaded areas, the differences between the alternatives are likely to be

minimal. No decommissioning is proposed for roads that carry passenger vehicles, which are important to users driving for pleasure. Decommissioning of other roads is likely to negatively impact off-road vehicle users, although the impact should be negligible where decommissioning is undertaken because of lack of use.

Decommissioning to protect ecological values may reduce use or transfer use to other areas. To the extent that more decommissioning would occur under the final road management strategy alternative, these negative effects would be greater. Increased reconstruction under the final road management strategy may result in greater benefits from improvements of existing roads, making them accessible to a broader range of vehicles.

The planned construction activities under the no action alternative would increase access for recreational purposes in inventoried roadless and contiguous unroaded areas. The positive effects of this access would include increased recreation use in the newly roaded areas, including possible access to areas of high scenic quality and to cultural sites. Access to cultural sites for interpretation would also be enhanced.

Under the final road management strategy alternative, this access is unlikely to occur until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. The final management strategy alternative would provide more protection for scenic quality, by reducing road construction and by increasing the number of miles of roads decommissioned and reconstructed. Less access would also reduce the potential for resource degradation from increased use and access by looters and vandals to cultural sites. The reduced road construction would also maintain recreation opportunities in backcountry settings.

The demand for recreation on NFS lands is expected to continue to increase, so managers would increasingly have to make decisions to accommodate additional use without ecological degradation. No spatial data exists to demonstrate current patterns of use on NFS lands. Therefore, it is impossible to estimate the net effect of the final road management strategy alternative on recreation benefits.

Watershed and Air

Road development activities have numerous negative impacts on air and water quality, including loss of ground cover, soil compaction, reduced transpiration, increased water runoff, increased soil erosion, loss of productive soils, and increased levels of dust. These effects are most evident during the construction/reconstruction phase. Employment of best management practices minimizes these effects, but cannot eliminate them. More permanent effects result from traffic pollution and from the permanent disruption of watershed hydrology.

On existing roaded areas, the final road management strategy alternative is likely to create greater short-term environmental degradation because of increased reconstruction and decommissioning activity. Road construction is likely to be similar under the no

action alternative and the final road management strategy alternative. However, in the long-term the environmental benefits would be greater under the final road management strategy alternative, since more roads that are causing ecological degradation would be decommissioned, and reconstruction would reduce environmental damage from those roads being maintained below standards.

The greatest difference between the no action alternative and the final road management strategy alternative would occur on inventoried roadless and contiguous unroaded areas. Fewer roads would be constructed under the final road management strategy alternative, particularly during the interim requirements period. Some short-term negative effects may occur as a result of decommissioning unclassified roads in these areas. Those effects would be greater for the final road management strategy alternative because more roads would be decommissioned than under the no action alternative. The long-term effects would be more beneficial under the final road management strategy alternative. Overall, the effect of reduced road construction in the interim requirements period, more decommissioning, and the use of the new analysis in the future is likely to result in better water and air quality.

Wildlife, Fish and Threatened, Endangered, and Sensitive Species

Roads and associated access activities cause a wide variety of impacts on wildlife and fish populations, including migration disruption, direct habitat loss, habitat fragmentation, alteration of stream channels, increased sediment loading in aquatic habitats, change in streamflow and water temperature, introduction of exotic species, and increased access for human disturbance. Although roads also provide access for management, the negative impacts tend to greatly outweigh the advantages of roads.

In existing roaded areas, the increased emphasis on decommissioning and reconstruction in the final road management strategy alternative would likely have greater short-term negative impacts on wildlife and fish habitat through increased disturbance activities. However, the long-term effects of those activities would be unambiguously positive compared to the fewer miles of planned reconstruction and decommissioning under the no action alternative. Road construction activities are likely to be similar under both alternatives.

On inventoried roadless and contiguous unroaded areas, there may also be short-term negative impacts from increased decommissioning of roads compared to the no action alternative. Until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis, the reduction in road construction would provide positive benefits for wildlife and fish habitat from reduced disturbance.

Passive Use Values

Passive use values (non-use values) were not addressed under any of the individual resource effects because they are applicable to several of the resource categories. Passive use values are derived from human motivations to protect environmental values either for personal satisfaction or for future generations. These values are neither traded in markets

nor subject to fees. These values are often linked to protection of ecological values, threatened and endangered species, and biological diversity.

Passive use values are likely to be greater under the final road management strategy alternative. On roaded areas, the new analysis procedure would result in a road system that creates less ecological damage. On inventoried roadless and contiguous unroaded areas, the reduced road development and increased decommissioning would protect existing ecological values. The only possible negative effect from the final road management strategy alternative is reduced access to initiate management actions, but that effect is likely to be far outweighed by the benefits.

Conclusions

The final road management strategy is focused on evaluating transportation needs on the NFS to provide reasonable access and protect ecological values. Rather than emphasizing road development, the emphasis switches to decommissioning unneeded roads, reconstructing roads to safety and environmental standards, and building roads only where needed to meet management objectives.

The final road management strategy provides guidance for transportation planning, but would not result in any land management decisions. Therefore, the effects described in this analysis illustrate the potential range of effects from implementing these strategies until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. Agency costs are not expected to vary significantly as a result of implementing the final road management strategy. Available resources would be allocated according to the priorities set by the final road management strategy, which would affect the distribution of resources across road management activities.

The differences between the no action alternative and the final road management road strategy alternative tend to be minor on roaded areas. No difference is expected for access and public safety, law enforcement, timber harvest, heritage, or wilderness resources. Potential positive effects are expected for fire, insects, and disease, noxious weeds, watershed and air, wildlife and fish, and passive use. These positive effects are tied primarily to increased decommissioning of existing classified and unclassified roads that would reduce ecological damage and human access. Effects on recreation use are more ambiguous. Higher rates of decommissioning would reduce some types of access compared to the no action alternative, particularly for high clearance vehicles. But increased reconstruction could result in improving access. Both decommissioning and reconstruction would be likely to improve the environmental quality of the recreation setting, providing benefits to users.

The expected differences between the no action alternative and the final road management strategy alternative would be greatest on inventoried roadless and contiguous unroaded areas until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a

forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. No differences are expected for access and public safety and law enforcement. Negative effects are expected from reduced timber harvest and reduced mineral exploration and extraction. Positive effects are expected for fire, insects, and disease, noxious weeds and nonnative invasive plants, watershed and air, wildlife, fish, threatened, endangered, and sensitive species, wilderness, and passive use values. These positive effects are associated with lack of new road development that limits human access and protects existing environmental quality. The effects on recreation and heritage resources are ambiguous. Less access reduces the number of recreation opportunities and limits access to heritage sites. At the same time, the quality of wilderness-type recreation use is protected and vandalism of heritage sites is lessened. The net effect is uncertain.

The final road management strategy would protect the values of inventoried roadless and contiguous unroaded areas until an analysis was undertaken that accounted for the full range of effects of entering these areas with new roads. This approach would prevent any irreversible commitment of resources until a comprehensive road inventory and forest-scale roads analysis had been completed and incorporated as appropriate into forest plans through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. The emphasis on decommissioning and reconstruction, and designing a transportation system that can be maintained within existing budget constraints would result in a comprehensive approach that should lead to an overall increase in net public benefits.

Table E1. Summary of Effects: Expected Direction of Change in Net Benefits from the Final Road Management Strategy

	Roaded Areas	Inventoried Roadless and Contiguous Unroaded Areas
Access and Public Safety	0	0
Fire, Insects and Disease	+	+
Forest Management (Timber)	0	-
Land Uses	0	-
Law Enforcement	0	0
Minerals	0	-
Noxious weeds and nonnative invasive plants	+	+
Recreation	+/-	+/-
Heritage	0	+/-
Wilderness	+	+
Watershed and Air	+	+
Wildlife and Fish Species	+	+
Passive Use Values	+	+

0: no change expected from implementing the final road management strategy

+: net effect of implementing the final road management strategy is positive

-: net effect of implementing the final road management strategy is negative

+/-: net effect is ambiguous from implementing the final road management strategy

Table E2. Trends in NFS road construction, reconstruction, and decommissioning, 1993-1998 (miles of road)

Year	Construction	Reconstruction	Decommissioning
1993	816	2,625	2,132
1994	520	1,933	2,289
1995	468	2,400	2,126
1996	463	2,853	1,442
1997	400	3,593	1,787
1998	215	2,732	2,101
1999	192	4,119	2,907

Source: USDA Report of the Forest Service for Fiscal Years 1993-1999

Table E3. Road Development Planned under the No Action and Final Road Management Strategy (miles of road)

	Construction	Reconstruction	Temporary
No action alternative:			
Total roads	630	4,125	1,148
Miles in inventoried roadless and contiguous unroaded areas	172	53	67
Final road management strategy alternative:			
Total Roads	511	4,076	1,082

**Table E4. Forest Roads Program Funding, FY 1998, 1999, 2000, and 2001
(thousand dollars)**

	FY 1998 Final	FY 1999 Final	FY 2000 Enacted	FY2001 Enacted
<i>Roads (Forest Roads Program)</i>				
Capital Investments in New Roads				
Forest Access	2,756	4,264	4,906	3,993
Timber Access	150	0	0	0
Capital Investments on Existing Roads				
Forest Access	35,821	65,030	51,202	41,446
Timber Access	1,937	0	0	0
Subtotal Capital Investments	40,664	69,294	56,108	45,439
Engineering Support for Timber	47,400	37,400	39,331	51,305
Road Maintenance	84,974	99,884	111,240	133,599
TOTAL (Construction/Reconstruction/Maintenance)	173,038	206,588	206,679	230,343

Source: FY 2000 Explanatory Notes. Fiscal year 2001 appropriations included G.A. To be consistent with the figures for 1998-2000, the figures for FY 2001 above have been adjusted to not include G.A.

Table E5. Comparison of Planned Timber Harvest on NFS lands under the No Action and Final Road Management Strategy (million board feet)

Forest Service Region	Annual Harvest No Action Alternative On NFS Lands	Annual Harvest Road Management Strategy on All NFS Lands	Average Annual Harvest Reduction in Inventoried Roadless Areas	Average Annual Harvest Reduction In Unroaded Areas	Average Total Harvest Reduction In Roadless And Unroaded Areas
R1	320	313	3.7	3.3	7.0
R2	143	120	4.0	19.0	23.0
R3	77	77	0.2	0	.2
R4	199	182	15.6	1.1	16.7
R5	492	467	0.9	23.7	24.6
R6	694	687	3.6	3.2	6.8
R8	663	661	2.2	0	2.2
R9	596	576	5.2	14.6	19.8
R10	125	55	70.0	0	70.0
National	3,308	3,138	105.4	64.9	170.3

Source: Data from Roadless Area Conservation Final EIS and Interim Rule EA. Numbers may not add due to rounding.

Table E6. Comparison of Direct and Total Job Effects under the No Action and Final Road Management Strategy (based on harvest effects in contiguous roadless areas only)

Forest Service Region	Direct Jobs No Action Alternative	Direct Jobs Final Road Management Strategy Alternative	Total Jobs No Action Alternative	Total Jobs Final Road Management Strategy Alternative
R1	3,196	3,165	8,950	8,862
R2	861	751	2,008	1,762
R3	690	690	1,380	1,380
R4	1,794	1,787	2,990	2,979
R5	3,442	3,276	5,409	5,148
R6	5,551	5,523	9,714	9,669
R8	6,627	6,605	12,591	12,591
R9	4,172	4,081	6,556	6,410
R10	625	625	1,000	1,000
National	26,957	26,524	50,598	49,801

Table E7. Timber Job and Income Effects Associated with the Final Road Management Strategy in Inventoried Roadless Areas and Other Contiguous Areas

Forest Service Region	Direct Job Effects		Total Job Effects		Direct Income Effects (thousand \$)		Total Income Effects (thousand \$)	
	IRA	CUA	IRA	CUA	IRA	CUA	IRA	CUA
R1	35	31	100	88	1,064	941	2,991	2,646
R2	23	110	52	246	498	2,365	1,172	5,568
R3	2	0	4	0	54	0	108	0
R4	96	7	162	11	5,497	387	9,235	651
R5	6	166	10	261	321	8,461	505	13,296
R6	32	28	51	45	957	841	1,513	1,330
R8	17	0	41	0	848	0	1,724	0
R9	32	91	51	146	1,880	5,330	3,008	8,529
R10	364	0	582	0	16,730	0	26,769	0
National	607	433	1,054	797	27,849	18,326	47,025	32,019
TOTAL	1,039		1,850		46,175		79,044	

IRA=inventoried roadless areas

CUA = contiguous unroaded area

Numbers may not add due to rounding.

Table E8. Comparison of Timber Receipts under the No Action and Final Road Management Strategy Alternative

Forest Service Region	Estimated Receipts per thousand board feet (1997 \$)	Total Receipts No Action Alternative (thousand \$)	Total Receipts Final Strategy Alternative (thousand \$)	Difference (thousand \$)
R1	192	61,369	60,025	1,344
R2	164	23,524	19,752	3,722
R3	65	4,982	4,969	13
R4	146	29,105	26,667	2,438
R5	219	107,678	102,291	5,387
R6	203	140,847	139,467	1,380
R8	152	100,727	100,393	334
R9	102	60,795	58,775	2,020
R10	88	10,995	4,589	6,406
National		540,022	516,927	23,095

Receipts are a three year average (1996-98) of receipts per million board feet from NFF data from the USDA Forest Service, Rocky Mountain Research Station, Missoula MT (Schuster). Numbers may not add due to rounding.

Appendix F

Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (Misc. Report FS-643, August 1999)

Summary

[to be provided separately]

Appendix G

Summary of Public Comments on the Draft Environmental Assessment

The Forest Service received more than 5,900 comments on the proposed road management strategy and on the Draft Environmental Assessment (EA). These comments, collated and analyzed by the Forest Service's Content Evaluation and Analysis Team, are available to the public. In addition, the Forest Service has prepared this summary of the comments received regarding the Draft EA. The Forest Service has considered the comments received individually and collectively and, as a result, has made changes to both the proposed strategy and to the Draft EA. Below is a summary of the comments that related to the Draft EA, along with the Forest Service's responses to the concerns raised.

Range of Alternatives

Commenters stated that the Forest Service had not considered all reasonable alternatives as required by the National Environmental Policy Act (NEPA). Other alternatives suggested were the full implementation of current forest plans, no net increase in roads, a prohibition on road construction until all unnecessary roads are eliminated and adequate funding is secured, imposition of user fees, and a prohibition on road construction and commercial logging in roadless areas.

In response, the Forest Service notes that NEPA and applicable implementing regulations require the Forest Service to evaluate all reasonable alternatives. For alternatives that were eliminated from detailed study, the Forest Service must briefly discuss their reasons for having eliminated them. Neither the statute nor applicable regulations require that a particular number of alternatives be addressed.

The Draft EA did contain a discussion of the reasonable alternatives and also discussed other alternatives that were eliminated from detailed discussion. While this resulted in an analysis of only two alternatives – the no action alternative and the proposed action – the Forest Service, after consultation with the Council on Environmental Quality and other federal agencies, determined that these were the only reasonable alternatives that could be analyzed at that time.

After considering the public comments received on the proposed road management strategy, the Forest Service has amended its proposal and has developed a final rule. Although the final rule is simply a modification of the proposed rule, the Forest Service

has added the final rule as a third alternative in the Final EA.

With respect to other alternatives suggested by commenters, the Forest Service believes that they are either already included within the alternatives analyzed (e.g., full implementation of current forest plans is the no action alternative), are being considered by the Forest Service in other rulemaking proceedings (e.g., a prohibition on road construction and commercial logging in roadless areas is addressed in the *Roadless Area Conservation Environmental Impact Statement* [EIS] [USDA Forest Service, 2000]), or would not meet the purpose and need to ensure that the roads system meets current and future management objectives and public uses of NFS lands, provides for safe public use, allows for economical and efficient management, and causes minimum adverse environmental impacts.

Adequacy of Analysis

Commenters stated that the information in the Draft EA was vague and that there was no quantification of effects. Commenters sought additional information regarding road users and the miles of roads to be closed, and they sought the underlying environmental data on which the EA is based. The discussion of social and economic effects was criticized, in particular, along with the Cost-Benefit Analysis upon which that discussion was based. Commenters also stated that the Forest Service needed to consider the cumulative effects of its several ongoing or completed rulemaking proceedings and policy changes, including the Roadless Area Conservation initiative, revised Planning Rule, Government Performance and Results Act Strategic Plan, and Unified Watershed Approach to Federal Land Management. Other specific comments related to the transfer of effects to Canada should timber harvesting be restricted in the National Forests and the effect of the proposed strategy on private property in or adjacent to National Forest System (NFS) lands.

The Forest Service recognizes that the Draft EA contains a qualitative, rather than a quantitative, discussion of the potential impacts of the road management strategy. As stated in the EA, the Forest Service believes that the extent of impacts would be a factor of the number of road miles constructed, reconstructed, and decommissioned, and their location. However, those determinations would be made at the local level on the basis of a science-based roads analysis process. For this reason, the Forest Service cannot know at this time either the miles of roads affected or where they would be located. Thus, the Forest Service cannot know at this time the number of miles of roads that would be closed under the road management strategy.

The Forest Service does believe that, in general, the implementation of the road management strategy would, over time, reduce the miles of roads constructed and increase the miles of roads reconstructed and decommissioned. The EA addresses the environmental, social, and economic impacts of building fewer roads and reconstructing

and decommissioning more roads, even though those effects cannot be quantified. Although the national effects of the road management strategy cannot be quantified, the local effect of constructing, reconstructing, or decommissioning a specific road in a specific National Forest would be quantifiable and would be addressed at the local level and with appropriate NEPA analysis and documentation.

The Forest Service does not maintain data on all road users. While the existing road system on NFS lands was largely constructed over the last 50 years to develop areas for timber harvesting and to develop other resources such as mineral extraction, these roads are currently used for many purposes, including access to recreational activities and watershed, fisheries, and wildlife improvement.

The discussion of social and economic impacts and the Cost-Benefit Analysis, while they contain some estimate of anticipated timber harvesting effects, are also limited by the absence of data regarding miles of roads and areas to be affected. The data that is used was derived from the Forest Service's Timber Sales Program Information Reporting System Economic Account and updated based on data compiled for the *Roadless Area Conservation EIS* (USDA Forest Service, 2000). The Forest Service added to the discussion of potential adverse social and economic effects of the road management strategy in the Final EA.

The Draft EA addressed cumulative impacts on a national scale. Because the implementation of the road management strategy, by itself, would not result in the imposition of adverse environmental effects or the award of environmental benefits, it is not possible for the Forest Service to determine the cumulative effect of the strategy with other past, present, and reasonably foreseeable future actions that may take place on each National Forest. Using a national or programmatic viewpoint, the Final EA does include a discussion of the cumulative impacts of the Forest Service's recently revised Planning Rule, the Roadless Area Conservation initiative, and other agency policy changes such as the Government Performance and Results Act Strategic Plan.

With respect to Canadian imports of timber, the Draft EA indicated that a reduction in timber harvesting in the National Forests could increase timber harvesting on private lands or in Canada in order to meet demand within the United States. The Draft EA also recognized that the impacts, both beneficial and adverse, of implementing those activities on other lands would be transferred to those lands. The Forest Service did not mean to imply that this was a desirable outcome, only that it could occur. Further, the Forest Service recognizes that increasing imports from Canada would adversely affect the nation's balance of trade, and language to that effect has been added in the Final EA.

The Forest Service does not believe that the road management strategy would affect private property on or adjacent to NFS lands. New roads needed to assure access to private lands would be constructed, and existing roads needed for such access would not

be decommissioned. To the extent that roads used for access to private property were reconstructed, private property owners would benefit from the implementation of the road management strategy.

With respect to data sources, much of the information in the Draft EA came from the Environmental Assessment for the Interim Rule Suspending Road Construction in Unroaded Areas of National Forest System Land (USDA Forest Service, 1999b). For the Final EA, this information was supplemented with more recent information from the Roadless Area Conservation Draft Environmental Impact Statement (USDA Forest Service, 2000). Both of these documents include additional references. The data used in the Draft and Final EA was collected by the Forest Service staff from each National Forest.

Compliance with Other Laws and Regulations

Commenters stated that the EA needed to address the Forest Service's obligations under other laws and regulations including the National Forest Management Act, Forest and Rangeland Renewable Resources Planning Act, General Mining Law, Alaska National Interest Lands Conservation Act, and existing agreements between local government entities and regional or district Forest Service offices.

The Final EA includes a discussion of compliance with these laws. The Forest Service believes that its road management strategy is fully consistent with all laws and regulations that are applicable to the Forest Service. The rights of access guaranteed under some of these laws is not affected by the road management strategy, and the road management strategy would be implemented on each forest in conformance with existing agreements with local government entities. Further, the road management strategy would only apply to the approximate 382,000 miles of forest development (system) roads; it would not affect public or private non-system roads such as those constructed and maintained by state or local governments, except for their consideration in the context of any roads analysis process for forest system roads.

Bias

Commenters stated that they thought that the Draft EA demonstrated a bias toward passive management. Commenters also stated that the Draft EA indicated that beneficial environmental impacts "would" occur, but that adverse social and economic effects "could" occur.

The Forest Service is charged with maintaining a multiple use and sustained yield program for forest resources. Further, under the agency's proposed Strategic Plan, ecosystem health, multiple benefits for people, scientific and technical assistance, and effective public service are emphasized. Also, the agency's Natural Resource Agenda provides focus in

four areas: watershed health and restoration, sustainable forest management, National Forest roads, and recreation. However, congressional appropriations have not kept pace with the Forest Service's needs for active management. Thus, to the extent that passive (and less expensive) management can achieve the goals of multiple use and sustained yield, the Forest Service favors that option. In the Final EA, the Forest Service states that beneficial and adverse environmental, social, and economic effects "would" occur should the road management strategy be implemented.

Need for an EIS

Commenters suggested that the potential impacts of the road management strategy would be "significant" (as that term is used in NEPA) and that the Forest Service must prepare an EIS. One commenter cited case law that suggests that an EIS is required for a proposed agency policy that would determine future decisions with environmental impacts. Some commenters also suggested that the road management strategy be merged with the roadless area protection rule and that one EIS be prepared.

The adoption of the road management strategy would have no on-the-ground effects. As a result, the strategy itself would have no significant environmental impacts and an EIS is not required. Implementation of the strategy on the National Forests would have direct impacts, which would be addressed in an EA prepared for a particular proposal or in an EIS if the impacts of the proposal were significant. As noted above, it is not possible at this time to determine exactly how the strategy would be implemented on particular forests and thus to determine whether the impacts of strategy implementation, individually or cumulatively, would be significant. The Forest Service would conduct appropriate NEPA analysis and prepare appropriate NEPA documentation at the time particular projects are proposed to implement the strategy.

Moreover, the requirement to demonstrate compelling need would apply only to inventoried roadless and contiguous unroaded areas, and it would apply only until a comprehensive road inventory and forest-scale road analysis had been completed and incorporated as appropriate into the applicable forest plan through a forest plan amendment or revision or the Forest Supervisor made a written determination that the forest plan did not require amendment or revision to reflect the findings of the roads analysis. It is not a permanent restriction; thus, any impacts would be temporary and not significant. The potential impacts of a permanent restriction on activities in inventoried roadless and contiguous unroaded areas is being addressed in the *Roadless Area Conservation EIS* (USDA Forest Service, 1999b).

Preparation of an EIS for the road management strategy would not cause additional data to become available in order to quantify the potential effects of implementing the road management strategy. In addition, the Forest Service has sought public comment on the Draft EA. Thus, preparation of an EIS would not afford the public any greater

opportunities for comment than have already been provided.

Although both address roads, this Final EA and the *Roadless Area Conservation EIS* (USDA Forest Service, 1999b) are uniquely different. The road management strategy deals with all aspects of road management on all 192 million acres of NFS lands. The roadless area conservation initiative, however, only relates to the 54 million acres of inventoried roadless areas and other identified unroaded areas. Thus, the Forest Service believes that merging the documents would not be appropriate.

Editorial Changes

Commenters suggested changes to the text, many of which were adopted to increase clarity. For example, additional information was added regarding access to control fire, insects, and disease; timber harvesting; and social and economic impacts. Definitions of terms were also modified for consistency with the final rule.

Some commenters suggested the addition of maps to show inventoried roadless and contiguous unroaded areas, along with maps showing areas of high fire risk and risk from insects and disease, for each forest, Forest Service Region, and nationally. This Final EA contains a map of all NFS lands and the inventoried roadless areas within those lands. Maps of inventoried roadless areas by state and the Commonwealth of Puerto Rico can be found in Volume 2 of the Forest Service *Roadless Area Conservation EIS* (USDA Forest Service, 1999b); other maps are available on the website created for the roadless area conservation initiative (<http://roadless.fs.fed.us/>).

Appendix H

Biological Evaluation

*National Marine Fisheries Service and
U.S. Fish and Wildlife Service
Concurrence Letters*



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, Maryland 20910

SEP 14 2000

James R. Furnish
Deputy Chief, National Forest System
U.S. Forest Service
P.O. Box 96090
Washington, D.C. 20090-6090

Dear Mr. Furnish:

The National Marine Fisheries Service (NMFS) has completed its review of the Biological Assessment Biological Evaluation and associated materials for the U.S. Forest Service's proposed Forest System Transportation Policy (Policy), which you transmitted to us on June 7, 2000. In your transmittal letter, you asked us to concur with your list of species that may be affected by the proposed Policy, your analyses of the probable effects of the proposed Policy on those species, and your conclusion that the proposed Policy is not likely to adversely affect listed species under NMFS jurisdiction. This letter constitutes our response to your request.

As described in the documents provided, the U.S. Forest Service proposes to implement new standards that will (1) affect how the Forest Service plans roads on the National Forest System, and (2) guide future road construction, reconstruction, and decommissioning on the National Forest System. Once the Policy is implemented, future road projects on specific units of the National Forest System would be subject to consultation pursuant to section 7 of the Endangered Species Act, as amended (16 U.S.C. 1536).

Based on our understanding of the proposed Policy, it should effect more rigorous analyses of why it would be necessary to construct roads on the National Forest System. Because of the Policy, those analyses would emphasize decommissioning roads that are not needed, reconstructing and maintaining heavily-used roads, and critically reviewing any new road construction for environmental compliance. While we cannot predict how the proposed Policy will specifically change the road system on the National Forest System, we expect the general application of the Policy would increase the number of roads that are decommissioned and decrease the number of roads that are constructed.

For many years, NMFS has expressed concern about the effects of roads on the National Forest System on species under our



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jurisdiction, particularly threatened and endangered species. The proposed change in Policy would represent a substantial improvement over current conditions and should dramatically reduce the adverse effects of road construction and reconstruction on listed species. Therefore, based on our review of the documents you provided us, we concur with your species list and with your determination that the proposed Forest Service Transportation Policy may affect, but is not likely to adversely affect, threatened and endangered species under NMFS jurisdiction. We also conclude that the proposed change in Policy is not likely to destroy or adversely modify critical habitat that has been designated for listed species.

Further, we believe the proposed Policy will benefit listed, proposed, and candidate species by reducing the deleterious effects of roads on the National Forest System. We believe the proposed Policy would help the Forest Service fulfill its obligations to utilize its authorities to further the purposes of the Endangered Species Act, in accordance with section 7(a)(1) of the Act.

This concludes consultation on the proposed Forest System Transportation Policy. We look forward to cooperating with the Forest Service in future consultations on site-specific road projects. If you have any questions or concerns regarding this correspondence, or the consultation process in general, please feel free to contact me or Craig Johnson of my staff at (301) 713-1401.

Sincerely,



Donald R. Knowles
Director
Office of Protected Resources



United States Department of the Interior
FISH AND WILDLIFE SERVICE

In Reply Refer To:
FWS/AES00-00023/TE

SEP 15 2000

Mr. James R. Furnish
Deputy Chief for National Forest System
U.S. Forest Service
P.O. Box 96090
Washington, D.C. 20090-6090

Dear Mr. Furnish:

The Fish and Wildlife Service has completed review of the Biological Assessment/ Biological Evaluation and associated materials for the Forest Service's Forest System Transportation Policy that were transmitted to us on June 7, 2000. You have requested concurrence on the analysis and determination in the BA/BE and on the list of species that may be affected by the Policy. As described in the documents provided, the Forest Service proposes to institute planning and analytical standards to assess the Forest Road System and guide future construction, reconstruction, and decommissioning of National Forest System roads. As a national guidance document, the Policy would not directly make any land management decisions. The effects of actions proposed under the Policy would be subject to consultation under Section 7 of the Endangered Species Act as forest plans are established or revised and also as individual projects are developed and implemented.

The Policy is likely to result in more rigorous analysis of the need for roads in the National Forests, with emphasis on decommissioning roads that are not needed, reconstructing and maintaining heavily used roads, and careful justification for and environmental review of new construction. While the future configuration of the Forest Road System under the Policy is not certain, the likely outcome would be to increase the decommissioning of existing roads and decrease the construction of new roads.

Based on our review of the documents you have provided us, we concur with the species list and with your determination that the Forest Service Transportation Policy may affect, but is not likely to adversely affect, threatened and endangered species. It is also not likely to destroy or adversely modify any critical habitat of such species and is not likely to jeopardize any species proposed to be listed as endangered or threatened or result in destruction or adverse modification of any area proposed to be designated as critical habitat.

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Mr. James R. Furnish

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The likely effects of the proposed Policy will be to benefit listed, proposed, and candidate species by reducing the deleterious effects associated with roads in the National Forests as described in the BA/BE. We view this action as a material contribution to the Forest Service's obligation under Section 7(a)(1) of the Endangered Species Act to utilize programs under its jurisdiction to further the purposes of the Act.

This concludes informal consultation under Section 7 of the Endangered Species Act on the Forest Service's National Forest System Transportation Policy. If you have further questions about this consultation or further need for consultation, please feel free to contact us.

Sincerely,



Assistant Director
for Endangered Species

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