

APPENDIX M

Economic Road Assessment

The Southwestern Regional Office (RO) has developed an economic analysis tool to provide basic information and data to help guide Forests through Travel Analysis. The economic analysis tool was specifically developed to help Forests meet the objectives of 36 CFR 212.5(b). This regulation states that Forests must identify the minimum road system and that long-term funding expectations is one of many factors in making this determination. The economic analysis tool is built using the average maintenance cost per mile by maintenance level for the eleven Southwestern Region's Forests.

Table 1 displays what the Gila's total annual maintenance costs would be for each of the five operational maintenance levels when using the RO economic analysis tool. The unit costs included in the table take into account all the associated costs to fully maintain a mile of road to standard for the associated maintenance level. For example, the cost to fully maintain one mile of an operational maintenance level 4 road is \$10,294. This figure includes the typical maintenance activities such as blading, brushing, culvert cleaning as well as all amortized costs associated with a typical level 4 road including replacement of such things as culverts, rock surfacing, cattle guards, and signs, based on a cyclic replacement frequency for each feature.

Using the Forest's current funding level of approximately \$1.2 million, the analysis tool estimates that the Forest can fully maintain about 22% of the miles of existing road system to standard (Table 1).

Table 1. Existing road maintenance costs.

Operation Maintenance Level	# of Miles	Forest Annual Mtc Needs (per mile)	Forest Annual Mtc Impact to Forest Budget
5	25	\$ 6,597	\$ 164,925
4	152	\$ 10,294	\$ 1,564,688
3	282	\$ 8,282	\$ 2,335,524
2	4204	\$ 350	\$ 1,471,400
1	572	\$ 55	\$ 31,460
Total:	5235		\$ 5,567,997

Table 2 displays what the Gila's total annual maintenance costs would be for each of the five operational maintenance levels based on the recommendations in Appendix L. The number of miles the Forest would maintain under this recommendation would change very little from the number of miles it currently maintains. At the current funding of \$1.2 million, the analysis tool estimates that 23% of the miles of the recommended road system could be fully maintained to standard. The change in the number of miles of roads receiving maintenance is small because there is no change in the miles of level 3-5 roads from the current system. These roads have a higher maintenance cost per mile due to their higher standard. The higher standards are necessary because these roads serve higher traffic volumes traveling at higher speeds. The greatest change from the current road system is in the number of miles of level 2 roads. This is because the cost to maintain level 2 roads is significantly less than the cost of maintaining level 3-5 roads.

Table 2. Estimated costs based on Appendix L recommendations.

Operation Maintenance Level	# of Miles	Forest Annual Mtc Needs (per mile)	Forest Annual Mtc Impact to Forest Budget
5	25	\$ 6,597	\$ 164,925
4	152	\$ 10,294	\$ 1,564,688
3	282	\$ 8,282	\$ 2,335,524
2	3127	\$ 350	\$ 1,094,450
1	1529	\$ 55	\$ 84,095
Total:	5115		\$ 5,243,682

The Forest will continue to look for other opportunities to improve the management and maintenance efficiencies of the Forest road system. The Forest will coordinate with surrounding counties on possible road conveyances (Appendix N) thereby reducing Forest road mileages. Other opportunities to be explored are seeking road maintenance partners, placing roads under permit, decommissioning roads (Appendix O), or conversion of roads to other uses. If all of the currently identified opportunities and recommendations were implemented, it is estimated that the Forest could fully maintain approximately 25% of the Forest road system (Table 3).

Table 3. Estimated costs based on implementing identified opportunities and recommendations.

Operation Maintenance Level	# of Miles	Forest Annual Mtc Needs (per mile)	Forest Annual Mtc Impact to Forest Budget
5	25	\$ 6,597	\$ 164,925
4	119	\$ 10,294	\$ 1,224,986
3	274	\$ 8,282	\$ 2,269,268
2	2909	\$ 350	\$ 1,018,150
1	621	\$ 55	\$ 34,155
Total:	3948		\$ 4,711,484

Overall, the economic analysis tool shows that the Forest's average annual road budget of \$1.2 million does not allow for the maintenance of a Forest road system that meets access needs for public and administrative purposes. It should be recognized that attempting to match current budget allocations and maintain a viable network of roads is not feasible. At the current level of funding of \$1.2 million the economic analysis tool shows that the Forest could maintain only level 4 and 5 roads. It would require that level 1-3 roads be decommissioned, conveyed to another jurisdiction or maintained through a road agreement. The Forest will continue to look for opportunities to reduce maintenance costs of the Forest road system.