

# **APPENDIX E**

## Financial Analysis Information



by Operational Maintenance Level

**Assumptions:**

- 1 Include only annual maintenance activities. Deferred maintenance needed to bring the road up to standard should not included.
- 2 Drainage is the main consideration for maintenance.
- 3 As the maintenance level increases attention to user comfort and safety increases accordingly.
- 4 Forest Service Policy set forth in manuals and handbooks is followed.
- 5 [Guidelines for Road maintenance Levels by SDTDC 2011 used as reference.](#)
- 6 Planning and inspection for maintenance should not included.
- 7 **Enter cost to complete the entire task described(i.e: cost to replace the number of road signs listed, cost to remove the number of hazardous trees listed). Do not divide the**

REGION 9 COST ESTIMATING MODEL MAINTENANCE TASKS

Description of Work	ML 1: Road is in storage and is in a stable condition. No potential exists for resource damage when vehicular traffic is eliminated. Maintain physical closure device (berm/boulders/slash) and drainage and signs. Road Maintenance cycle for ML1 roads is 10 years.	Cost per Mile to complete Description of Work for ML 1 roads	ML 2: High clearance vehicle use. Passenger car traffic, user comfort, and user convenience are not considered; low traffic volume and low speed; drainage structures are ditches; surface smoothness is not considered; and very few signs. Outsloped single lane road without a ditch. Brush to maintain access and drainage. Spot blade to maintain drainage. Clean/Repair structures (cattleguard, gate) and signs. Road Maintenance cycle for ML2 roads is 5 years.	Cost per Mile to complete Description of Work for ML 2 roads	ML 3: Passenger car use. Maintain surface to provide travel by prudent drivers in standard passenger cars. Some surface roughness is tolerated. User comfort and convenience is a low priority. Replace the base course and surfacing where needed; single lane with turnouts; low speeds with low to moderate traffic volume; drainage structures include ditch, culverts and dips. Surface blade to maintain template and drainage. Surface is compact, crowned or sloped to drain without segregation of surface materials; no ruts or rills; suitable material is recovered and incorporated; unsuitable material is removed. Ditches and culverts function efficiently. Clean/Repair structures (cattleguard, gate) and signs. Spot Surface with aggregate. Road Maintenance cycle for ML3 roads is 3 years.	Cost per Mile to complete Description of Work for ML 3 roads	ML 4: Passenger car use. Provide moderate degree of user comfort and convenience; moderate speeds and traffic volume; drainage structures are culverts; and double lane aggregate surface with a ditch. Brush to maintain sight distance. Surface blade free of washboard, potholes, or other irregularities. Surface is smooth, compact, crowned or sloped to drain without segregation of surface materials; no ruts or rills; suitable material is recovered and incorporated; unsuitable material is removed. Abate dust as needed. Shoulders are shaped to provide a smooth transition to traveled way and drain efficiently. Ditches and culverts function efficiently. Clean/Repair structures (cattleguard, gate) and signs. Spot Surface with aggregate. Patch and crack sealing. Road Maintenance cycle for ML4 roads is primarily 3 years.	Cost per Mile to complete Description of Work for ML 4 roads	ML 5: Passenger car use. Provide high degree of user comfort and convenience; highest traffic volume and speeds; drainage structures are culverts; and double lane paved surface. Brush to maintain access and drainage. Surface Repair include pothole patching, crack sealing, chip sealing and removal of unsuitable material. Shoulders are shaped to provide a smooth transition to traveled way and drain efficiently. Ditches and culverts function efficiently. Clean/Repair structures (cattleguard, gate) and signs. Paint pavement markings. Road Maintenance cycle for ML5 roads is every year.	Cost per Mile to complete Description of Work for ML 5 roads
Blading	Not applicable	-	2 passes with motor grader/every 5 years	\$0	once every year	\$0	twice every year	\$0	Not applicable	-
Ditching/Shoulders	Not applicable	-	Not applicable		once every year	\$0	once every year	\$0	once every year	\$0
Brushing/mowing	once every 10 years	\$0	once every 5 years	\$0	once every 3 years	\$0	once every 3 years	\$0	once every year	\$0
Clean/repair all drainage structures (bridge: channel drift)	once every 10 years	\$0	once every 5 years	\$0	once every 3 years	\$0	once every 3 years	\$0	once every 3 years	\$0
Clean/Repair Structures (road: gates, grates, cattleguards) (bridge: deck flowlines and drains)	once every 10 years	\$0	once every 5 years	\$0	once every 3 years	\$0	once every 3 years	\$0	once every 3 years	\$0
Hazardous Tree Removal	Not applicable	-	once every 5 years	\$0	once every 3 years	\$0	once every 3 years	\$0	once every year or as needed	\$0
Dust Abatement	Not applicable	-	Not applicable	-	Not applicable	-	as needed		Not applicable	-
Paint pavement markings	Not applicable	-	Not applicable	-	Not applicable	-	paint pavement markings every 6 years	\$0	paint pavement markings every 3 years	\$0
Repair asphalt - patching, potholing, crack sealing	Not applicable	-	Not applicable	-	Not applicable	-	every year	\$0	every year	\$0
Resurface asphalt - asphalt overlay or chip seal	Not applicable	-	Not applicable	-	Not applicable	-	once every 10 years	\$0	once every 10 years	\$0
Sign Maintenance/Replacement	Replace 1 per road/10 years	\$0	Replace 1 per road/10 years	\$0	Replace 1 per road every 3 years	\$0	Replace 2 per road every 3 years	\$0	Replace 2 per road every 3 years	\$0
Spot Surfacing	Not applicable	-	Not applicable	-	150 tons/100 cy every 3 year 2-3 inch depth for 1/5 mile	\$0	600 ton/400 cy every 3 years 2-3 inch depth for 1/2 mile	\$0	Not applicable	-
Cost to Maintain/Mile		\$0		\$0		\$0		\$0		\$0
Mtce Cycle		10		5		3		2		1
Annual Cost/Mile		\$0		\$0		\$0		\$0		\$0

ROUTE_STAT	EX - EXISTING
JURISDICTI	FS - FOREST SERVICE
SYSTEM	NFSR - NATIONAL FOREST SYSTEM ROAD
PRIMARY_MA	(All)
SECURITY_I	909

**Superior**

Row Labels	Sum of SEG_LENGTH	Cost to Maintain/Mile	Maintenance Cycle	Annual Cost/Mile	Total Annual Cost
1 - BASIC CUSTODIAL CARE (CLOSED)	912.00	\$125	10	\$13	\$11,400
2 - HIGH CLEARANCE VEHICLES	984.00	\$1,500	5	\$300	\$295,200
3 - SUITABLE FOR PASSENGER CARS	216.00	\$4,600	3	\$1,533	\$331,200
4 - MODERATE DEGREE OF USER COMFORT	315.00	\$5,450	2	\$2,725	\$858,375
5 - HIGH DEGREE OF USER COMFORT	72.00	\$8,000	1	\$8,000	\$576,000
<b>Total Miles</b>	<b>2,499.00</b>	<b>Total Annual Cost:</b>		<b>\$2,072</b>	

(1000's)

Estimated Annual Funds Available for Road Maintenance		
Collected Trust Funds (CWFS, CWK2, CWKV)		\$0
Timber Sale Purchaser		
Stewardship Integrated Resource Contracts		
Title II (RAC)		
Other Non-FS		
Other FS Appropriated Funds		
NFRR		
CMRD		\$617,000
<b>Estimated Funds Available for Annual Road Maintenance</b>		<b>\$617</b>
<b>Estimated Funds Needed or Available for Road Maintenance</b>		<b>\$1,455</b>

(1000s)

REGION 9 MAINTENANCE COST ESTIMATE  
SUPERIOR NATIONAL FOREST "BEFORE"

ROUTE_STAT	EX - EXISTING
JURISDICTI	FS - FOREST SERVICE
SYSTEM	NFSR - NATIONAL FOREST SYSTEM ROAD
PRIMARY_MA	(All)
SECURITY_I	909

**Superior**

Row Labels	Sum of SEG_LENGTH	Cost to Maintain/Mile	Maintenance Cycle	Annual Cost/Mile	Total Annual Cost
1 - BASIC CUSTODIAL CARE (CLOSED)	951.00	\$125	10	\$13	\$11,888
2 - HIGH CLEARANCE VEHICLES	949.00	\$1,500	5	\$300	\$284,700
3 - SUITABLE FOR PASSENGER CARS	182.00	\$4,600	3	\$1,533	\$279,067
4 - MODERATE DEGREE OF USER COMFORT	313.00	\$5,450	2	\$2,725	\$852,925
5 - HIGH DEGREE OF USER COMFORT	31.00	\$8,000	1	\$8,000	\$248,000
<b>Total Miles</b>	<b>2,426.00</b>	<b>Total Annual Cost:</b>		<b>\$1,677</b>	

(1000's)

Estimated Annual Funds Available for Road Maintenance		
Collected Trust Funds (CWFS, CWK2, CWKV)		\$0
Timber Sale Purchaser		
Stewardship Integrated Resource Contracts		
Title II (RAC)		
Other Non-FS		
Other FS Appropriated Funds		
NFRR		
CMRD		\$617,000
<b>Estimated Funds Available for Annual Road Maintenance</b>		<b>\$617</b>
<b>Estimated Funds Needed or Available for Road Maintenance</b>		<b>\$1,060</b>

(1000s)

REGION 9 MAINTENANCE COST ESTIMATE  
SUPERIOR NATIONAL FOREST "AFTER"