- ✓ Lower repair costs
- ✓ Increased tyre life.
- ✓ Higher availability of equipment
- ✓ More efficient operators
- ✓ Safer operating environment
- ✓ Less clean up time along the road
- ✓ Rough roads create higher RR and lower speeds.
- ✓ Increasing speed by 1.0kph can increase the capacity of the existing fleet by up to 50'000t per year.
- ✓ Berms at either side act as limit and minimize access points.
- ✓ Good berms can easily be seen and define road limits.
- ✓ Proper grading of the haul road with camber and super-elevation:
  - Improves drainage.
  - Helps maintain roads structural integrity.
  - Keeps tyres dry by eliminating puddles.
  - Reduces risk of tyre and vehicle damage from rocks that have fallen from the truck.

Front End Loaders (FELs) can do some maintenance work but it is not their job. It takes time away from loading. Not efficient use of the machine.
For all main and highly travelled haul roads a motor grader provides the most efficient means of maintenance.

Table 1 Effects of Haul Road Rolling Resistance

Rolling Resistance (%)	Average Speed (kph)	Cycle Time (minutes)	Production Annual (t)	Production Lost (t)	Cost per ton (USD's)
2.00	13.76	8.62	1'080'000	0	0.45
3.00	12.96	9.00	1'035'000	45'000	0.47
4.00	12.64	9.20	1'010'000	70'000	0.48
5.00	11.68	9.82	950'000	130'000	0.51
7.00	11.36	10.10	920'000	160'000	0.53
9.00	9.92	11.32	825'000	255'000	0.59

- ***Based on:***
- ***2 x 52t payload trucks.***
- ***1'400m one way haul distance.***
- ***40kph speed limit***

Source: Caterpillar