

Table 3-3. Average Durability and Marginal Maintenance Cost by Road Classification under Current Traffic Levels^a

Road classification	Durability				Marginal maintenance cost (cents per esal-mile)	
	Rigid pavement ^b		Flexible pavement ^c		Current investment	Optimal investment
	Current	Optimal	Current	Optimal		
<i>Rural</i>						
Principal arterial						
Interstate	9.52	11.35	5.26	6.43	1.48	0.46
Other	7.79	8.67	3.90	4.91	4.38	1.13
Minor arterial	6.52	6.59	3.30	4.13	10.02	2.60
Major collector	6.00 ^d	3.74 ^d	2.46	2.69	16.49	9.96
Minor collector	6.00 ^d	3.37 ^d	2.18	2.42	31.18	16.09
Local	6.00 ^d	6.00 ^e	2.18	2.18	101.30	101.30
<i>Urban</i>						
Principal arterial						
Interstate	10.07	13.52	5.56	7.69	2.38	0.33
Other freeways	9.21	11.81	4.97	6.79	4.32	0.61
Other	7.92	10.04	4.21	6.04	10.92	0.87
Minor arterial	6.78	7.50	3.22	4.79	33.92	3.23
Collector	6.00 ^d	4.97 ^d	2.51	3.73	125.45	13.66
Local	6.00 ^d	6.00 ^e	2.51	2.51 ^e	40.92	40.92

Source: Authors' calculations based on loading levels and distributions derived from disaggregate average daily traffic volume for the above road classifications provided by the FHWA.

a. The marginal costs presented are averaged across low, intermediate, and high-type pavements, and across four volume ranges.

b. Durability is pavement thickness measured in inches.

c. Durability is measured by a composite index, called a structural number, reflecting pavement, base, and sub-base thicknesses in inches with weights 0.44, 0.14, and 0.11, respectively.

d. There are relatively few road-miles of collector or local roads with rigid pavement. Durability under current investment is assumed for such roads to be equal to the minimum of the range defining "high-type rigid" pavements, although this leads to extremely long lifetimes.

e. We are unable to determine optimal investment for local roads because we lack information on their traffic volume. Thus their durability is assumed the same under current and optimal investment.