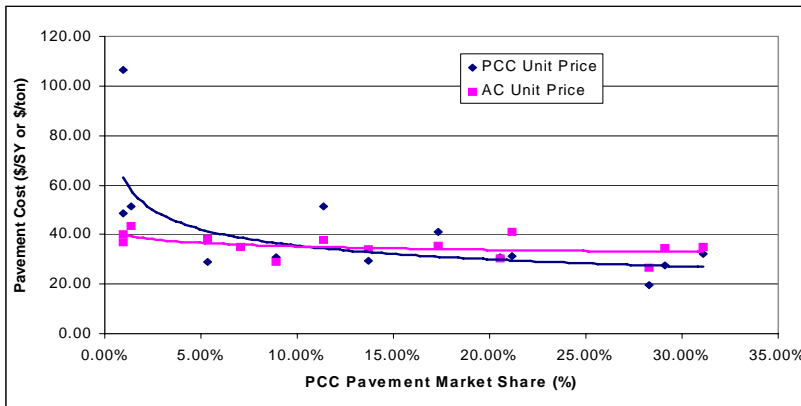




BENEFITS OF A TWO PAVEMENT SYSTEM

One of the many benefits of a two pavement system is that competition between industries, as well as between contractors within each industry is increased. This lowers the average unit costs for both pavement materials. Figure 2 shows that as the market share becomes more balanced, the average unit costs for both concrete and asphalt pavement decrease.

Figure 2 - Benefit of a Two-Pavement System on Pavement Costs



States: 5-year average data for GA, IL, IN, KS, KY, MD, MO, NC, OH, PA, TN, VA, WI, WV

One of the things that can be done using this graph is a “break-even analysis.” That is, an agency can run “what if” scenarios to find out what would happen if they had varying degrees of a two pavement system. Using Table 2, assume an agency spends \$200 million per year on pavement items, spending all of their pavement dollars on asphalt (0% concrete market share). At this level, with no industry competition, the asphalt costs about \$40/ton. Converting to tonnage, the state is buying about 5 million tons of asphalt for their \$200 million.

Now suppose the same agency makes a commitment towards using some concrete. Assuming the agency plans to spend the same amount of money (\$200 million), but this time they spend 10% of their pavement dollars on concrete (i.e., a 10% concrete pavement market share). In this scenario, the asphalt prices drops to approximately \$35.25/ton and the unit cost for concrete would be \$35.50/square yard. For the same amount of money, the state can still afford the same 5 million tons of asphalt, but because competition results in *lower* asphalt prices, they can use the balance (\$20 million) to buy 560,000 square yards of concrete at the \$35.50/square yard price. Essentially, by showing a commitment to concrete, an agency lowers the asphalt price enough to get the concrete for FREE.

At a 30% concrete pavement market share (with only an approximate 15% reduction in asphalt tonnage) the agency would get over 2.2 million square yards of concrete pavement. No matter how you look at it, the concrete advantages to the road manager and the tax-payer are tremendous!

Table 2- Break-even Analysis for \$200 million/ year Pavement Expenditures

Investment Total	Concrete Market Share	Expenditures on Asphalt (\$)	Asphalt Unit Price (\$)	Tons of Asphalt	Expenditures on Concrete (\$)	Concrete Unit Price (\$)	Square Yards Concrete
\$200,000,000	0%	\$200,000,000	\$ 40.00	5,000,000	-	-	-
\$200,000,000	1%	\$198,000,000	\$ 39.87	4,966,009	\$2,000,000	\$ 62.48	32,012
\$200,000,000	5%	\$190,000,000	\$ 36.63	5,186,919	\$10,000,000	\$ 42.12	237,427
\$200,000,000	10%	\$180,000,000	\$ 35.24	5,108,553	\$20,000,000	\$ 35.54	562,747
\$200,000,000	15%	\$170,000,000	\$ 34.42	4,939,181	\$30,000,000	\$ 32.18	932,281
\$200,000,000	20%	\$160,000,000	\$ 33.84	4,728,210	\$40,000,000	\$ 29.99	1,333,815
\$200,000,000	25%	\$150,000,000	\$ 33.39	4,492,341	\$50,000,000	\$ 28.39	1,760,956
\$200,000,000	30%	\$140,000,000	\$ 33.02	4,239,459	\$60,000,000	\$ 27.15	2,209,679

Sources: Bid Tabs Professional, OMAN Systems Inc.