

8.1

Costs and Benefits of Highway Construction

		Quantity	Price/Value	Total
Costs	Asphalt	1 mill bags		
	Labor	1 mill hours		
	Repairs	\$10 million (yearly)		
Benefits	Time saved	500k hours (yearly)		
	Lives saved	5 lives (year)		

- What are the costs and benefits of the project? In the first year? Over time?

8.1

Costs and Benefits of Highway Construction: Filling in Costs

		Quantity	Price/Value	Total
Costs	Asphalt	1 mill bags	\$100/bag	100
	Labor	1 mill hours	½ at 20, ½ at 10	15
	Repairs	\$10 million (yearly)	7% discount rate	43
Benefits	Time saved	500k hours (yearly)		
	Lives saved	5 lives (year)		

APPLICATION: Valuing Life: Car Recalls

Some General Motors pickup trucks produced between 1973 and 1987 had a dangerous, side-mounted gas tank.

- 1993: Consumer groups demanded GM recall 5 trucks.
- Recall would cost \$1 billion and would save at most 32 lives.
- Using these estimates, the cost per life saved by the recall would have been $\$1 \text{ billion} / 32 = \31.25 million .

8.2

APPLICATION: Valuing Life

In October 1999, a commuter train crash at London's Paddington Station killed 31 people.

- Outraged public for more investment in rail safety.
- Safety advocates proposed measures that cost \$3–9 billion and would save 1–3 lives/year for 30–50 years.
- At best: \$20 million per life saved.
- At worst: \$300 million per life saved.

8.2

Government Revealed Preference?

Regulation Concerning	Year	Agency	Cost per life
Childproof lighters	1993	CPSC	0.13
Food labeling	1993	FDA	0.5
Reflective devices for trucks	1999	NHTSA	1.2
Asbestos	1972	OSHA	7.2
Value of statistical life			9.3
Benzene	1987	OSHA	28.2
Asbestos ban	1989	EPA	99.9
Solid waste disposal	1991	EPA	128.1
Cattle Feed	1979	EPA	217.7

8.1

Putting It All Together

		Quantity	Price/Value	Total
Costs	Asphalt	1 mill bags	\$100/bag	\$100
	Labor	1 mill hours	½ at \$20, ½ at \$10	15
	Repairs	\$10 million (yearly)	7% discount rate	43
Benefits	Time saved	500k hours (yearly)	\$19/hour	9.5
	Lives saved	5 lives (year)	\$7 million/life	35