

Solution

	Real Interest Rate	(i)	4.00%
	Economic Life	(N , yr)	12
	Investment Cost	(IV , \$)	2,500,000
	Salvage Percentage		20%
	Salvage Value	(SV , \$)	500,000
	Effective Investment Cost	(IV^{eff} , \$)	2,187,701
	Cost Cap Recovery	(K , \$/yr)	233,104
	Annual Demand	(q /yr)	2,500
	Operating Cost per Unit	(\$/q)	125
	Investment Cost per Unit	(\$/q)	93.242
1.	Cost per Unit	(\$/mi)	218.242

	Nominal Interest Rate		7.00%
	Current Inflation Rate		3.00%
	Real Interest Rate	(i)	4.00%
	Economic Life	(N , yr)	5
	Investment Cost	(IV , \$)	35,000
	Salvage Percentage		35%
	Salvage Value	(SV , \$)	12,250
	Effective Investment Cost	(IV^{eff} , \$)	24,931
	Cost Cap Recovery	(K , \$/yr)	5,600
	Annual Mileage	(mi/yr)	15,000
	Operating Cost per Unit	(\$/mi)	0.075
	Investment Cost per Mile	(\$/mi)	0.373
2.	Cost per Mile	(\$/mi)	0.448

Common					
	Annual Demand	(q /yr)	50,000	50,000	
Project			Current	New	
	Investment Cost	(IV , \$)	100,000	1,000,000	900,000
	Oper Cost per Unit	(\$/q)	26.25	7.00	19.25
	Operating Cost	(OC , \$/yr)	1,312,500	350,000	962,500
3.	Payback Period (IV/OP)	(yr)			0.9351

Common				
	Cost of Capital	(i)	5%	
	Economic Life	(N , yr)	10	
Project		Automated	Manual	
	Investment Cost	(IV , \$)	850,000	150,000
	Salvage Percentage		30%	0%
	Salvage Value	(SV , \$)	255,000	0
	Eff. Investment Cost	(IV^{eff} , \$)	693,452	150,000
	Cost Cap Recovery	(C^{CR} , \$/yr)	89,805	19,426
	Oper Cost per Unit	(\$/q)	120.00	145.00
Analysis				
	Fixed Cost	(F , \$/yr)	89,805	19,426
	Variable Cost	(V , \$/q)	120.00	145.00
4.	Indiff Point	(q /yr)		2,815