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APPENDIX A: VEHICLE FLEET DATA

Table A.1 Vehicle fleet data used in HDM-4 model (RDA, 2008)

	MCL	3WL	CAR	VAN	MBU	LBU	LGV	MGV
New (in country) Vehicle Price	83,200.00	154,618.00	1,277,043.00	862,000.00	2,651,046.00	2,126,866.00	496,582.00	1,116,604.00
Replacement Tire	1,131.00	1,080.00	3,214.00	2,700.00	3,343.00	5,528.00	2,700.00	3,343.00
Fuel (per liter)	98.00	98.00	98.00	72.00	72.00	72.00	72.00	72.00
Lubricating Oil (per liter)	229.50	229.50	229.50	219.75	219.75	219.75	219.75	219.75
Maintenance Labour (per hr)	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Crew Wages (per hr)	65.00	65.00	80.00	95.00	130.00	125.00	100.00	125.00
Annual Overheads	20,335.00	17,692.00	119,299.00	120,275.00	80,966.00	104,227.00	37,196.00	75,664.00
Annual Interest (% per annum)	12	12	12	12	12	12	12	12
Passenger working time (per hr)	63.31	350.84	350.84	159.58	38.28	38.28	0	0
Passenger non-working time (per hr)	10.55	58.47	58.47	20.60	6.38	6.38	0	0
Cargo inventory (per hr)							358.00	767.00

APPENDIX B: ROAD MAINTENANCE AND UPGRADING COSTS

Table B.1 Road maintenance and upgrading costs (HSR, 2010)

Item No.	Description	Unit	Financial Cost / (Rs.)	Economical Cost / (Rs.)
Bituminous				
1	Premix patching	Cum	13,908.63	11,822.34
2	Slurry sealing	Sqm	211.06	179.40
3	Sand sealing without rectification, using premix	Sqm	97.78	83.11
4	Sand sealing with partial rectification, using premix	Sqm	100.93	85.79
5	Sand sealing with full rectification, using premix	Sqm	106.61	90.61
6	Sand sealing with partial by remetalling	Sqm	409.76	348.29
7	Sand sealing with full rectification by remetalling	Sqm	721.73	613.47
8	Edge metalling	Lm	694.16	590.04
9	Rehabilitation of road without increasing carriageway width	Lane km	1,708,912.86	1,452,575.93
10	New construction with 225mm sub base, 200mm dense graded aggregate base & 80mm Asphalt concrete surfacing) Gravel shoulders on either side prime or sand sealed.	Sqm	3,262.79	2,773.37
11	Upgrading penetration macadam road to surface dressing	km	4,388,760.00	3,730,446.00
12	Upgrading penetration macadam road to asphalt concrete	km	11,913,600.00	10,126,560.00
13	Upgrading surface dressing road to asphalt concrete	km	11,388,000.00	9,679,800.00
Concrete				
1	Joint seal	Lm	85.00	100.00
2	Partial depth repair	Sqm	935.00	1,100.00
3	Full depth repair	Sqm	1,785.00	2,100.00
4	Slab replacement	Sqm	1,845.00	2,170.00
Unsealed				
1	Spot graveling	Sqm	850.00	1,000.00
2	Regraveling	Sqm	1,020.00	1,200.00
3	Grading	km	127,500.00	150,000.00
4	Upgrading to penetration macadam	km	5,400,000.00	4,600,000.00
5	Upgrading to concrete	km	13,900,000.00	16,300,000.00

APPENDIX C: EIRR FOR UPGRADING ROADS

Upgrading gravel roads

Dry climate and low HV%

Table C.1 EIRR values for upgrading Gr roads in dry climate at low HV%

AADT	Growth rate					
	2%		4%		6%	
	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC
100	-1.6	-3.4	3.6	-0.7	7.9	1.9
250	22.4	7.4	26.6	10.2	30.6	12.6
500	56.1	18.6	61.5	21.7	67	24.8
1000	133.6	36.8	142.7	39.7	151.5	41.3

Dry climate and medium HV%

Table C.2 EIRR values for upgrading Gr roads in dry climate at medium HV%

AADT	Growth rate					
	2%		4%		6%	
	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC
100	1.1	-2.1	6	0.6	10.3	3.3
250	26.9	9.4	31.3	12.3	35.5	14.8
500	66.4	21.7	72.3	25	78.4	28.3
1000	158.5	42.4	168.9	45.8	179.3	47.7

Dry climate and high HV%

Table C.3 EIRR values for upgrading Gr roads in dry climate at high HV%

AADT	Growth rate					
	2%		4%		6%	
	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC
100	2	-1.6	6.7	1	10.9	3.8
250	28.2	10.1	32.7	13	37	15.5
500	69.6	22.9	75.7	26.2	81.9	29.5
1000	166.6	44.7	177.6	48.2	188.5	50.3

Wet climate and low HV%

Table C.4 EIRR values for upgrading Gr roads in wet climate at low HV%

AADT	Growth rate					
	2%		4%		6%	
	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC
100	-2.3	-3.4	3.4	-0.6	7.9	2.1
250	21.6	7	24.2	8.7	27.4	10.9
500	52.3	15.8	57.6	18.7	59.4	21.4
1000	111	31.1	119.5	36.5	131.6	42.3

Wet climate and medium HV%

Table C.5 EIRR values for upgrading Gr roads in wet climate at medium HV%

AADT	Growth rate					
	2%		4%		6%	
	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC
100	0.2	-2.2	5.7	0.7	10.2	3.5
250	26.6	9.4	29.4	11.1	33	13.5
500	62.9	18.8	68.8	21.8	74.6	25.3
1000	132.7	35.9	141.9	41.7	154.5	48

Wet climate and high HV%

Table C.6 EIRR values for upgrading Gr roads in wet climate at high HV%

AADT	Growth rate					
	2%		4%		6%	
	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC	Gr to PM	Gr to PCC
100	0.9	-1.8	6.3	1.1	10.8	4
250	28.1	10.3	31.6	12.3	34.5	14.2
500	65.9	20	72	23.1	78.1	26.5
1000	140.3	38.8	149.7	43.9	162.7	50.4

Upgrading penetration macadam roads

Dry climate, low HV% and 2% growth rate

Table C.7 EIRR values for upgrading PM roads in dry climate and low HV% at 2% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	4.6	-10.7	-6.3	4.6	-10.8	-6.4	4.5	-10.8	-6.4
250	7.7	-5	-3.7	7.7	-5	-3.7	7.7	-5	-3.7
500	12.3	0.7	-0.8	12.3	0.6	-0.8	12.2	0.6	-0.9
1000	20.2	7.9	2.6	20.1	7.9	2.5	20	7.8	2.5

Dry climate, low HV% and 4% growth rate

Table C.8 EIRR values for upgrading PM roads in dry climate and low HV% at 4% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.1	-9.1	-5.6	5	-9.2	-5.6	5	-9.2	-5.6
250	8.7	-3.1	-2.5	8.7	-3.2	-2.5	8.7	-3.1	-2.5
500	13.6	2.4	0.5	13.5	2.4	0.5	13.4	2.3	0.5
1000	22.6	11	5.2	22.4	10.9	5.1	22.3	10.8	5

Dry climate, low HV% and 6% growth rate

Table C.9 EIRR values for upgrading PM roads in dry climate and low HV% at 6% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.7	-7.5	-4.7	5.6	-7.5	-4.8	5.6	-7.6	-4.8
250	9.8	-1.2	-1.2	9.8	-1.3	-1.2	9.8	-1.2	-1.2
500	15.2	4.6	2.3	15.1	4.6	2.2	15	4.5	2.2
1000	25.6	15.1	8.9	25.4	15.1	8.9	25.3	15	8.8

Dry climate, medium HV% and 2% growth rate

Table C.10 EIRR values for upgrading PM roads in dry climate and medium HV% at 2% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5	-9.8	-5.9	5	-9.8	-5.9	4.9	-9.9	-5.9
250	8.7	-3.7	-2.9	8.6	-3.8	-2.9	8.6	-3.7	-2.9
500	13.9	2.3	0.3	13.8	2.2	0.2	13.7	2.2	0.2
1000	23.1	10.3	3.9	22.9	10.2	3.8	22.8	10.1	3.8

Dry climate, medium HV% and 4% growth rate

Table C.11 EIRR values for upgrading PM roads in dry climate and medium HV% at 4% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.6	-8.1	-5	5.5	-8.2	-5.1	5.5	-8.2	-5.1
250	9.8	-1.8	-1.6	9.7	-1.8	-1.6	9.7	-1.8	-1.6
500	15.4	4.2	1.7	15.3	4.1	1.7	15.2	4	1.6
1000	25.8	13.4	6.6	25.5	13.3	6.6	25.4	13.2	6.5

Dry climate, medium HV% and 6% growth rate

Table C.12 EIRR values for upgrading PM roads in dry climate and medium HV% at 6% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	6.3	-6.4	-4.1	6.2	-6.5	-4.1	6.2	-6.5	-4.1
250	11	0.2	-0.1	10.9	0.1	-0.2	10.9	0.1	-0.2
500	17.1	6.5	3.6	17	6.4	3.5	16.9	6.3	3.5
1000	28.9	17.6	10.4	28.7	17.5	10.4	28.5	17.4	10.3

Dry climate, high HV% and 2% growth rate

Table C.13 EIRR values for upgrading PM roads in dry climate and high HV% at 2% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.1	-9.6	-5.7	5	-9.6	-5.7	5	-9.7	-5.7
250	8.9	-3.4	-2.5	8.8	-3.5	-2.6	8.8	-3.5	-2.6
500	14.3	2.7	0.8	14.2	2.6	0.7	14.1	2.5	0.6
1000	24	10.9	4.6	23.8	10.8	4.5	23.6	10.7	4.4

Dry climate, high HV% and 4% growth rate

Table C.14 EIRR values for upgrading PM roads in dry climate and high HV% at 4% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.7	-7.9	-4.8	5.6	-8	-4.8	5.6	-8	-4.9
250	10	-1.5	-1.2	9.9	-1.6	-1.2	9.9	-1.6	-1.2
500	15.8	4.6	2.3	15.6	4.5	2.2	15.5	4.4	2.1
1000	26.7	14.1	7.3	26.5	13.9	7.2	26.3	13.8	7.1

Dry climate, high HV% and 6% growth rate

Table C.15 EIRR values for upgrading PM roads in dry climate and high HV% at 6% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	6.4	-6.2	-3.8	6.3	-6.3	-3.8	6.3	-6.3	-3.9
250	11.2	0.5	0.3	11.1	0.4	0.2	11.1	0.4	0.2
500	17.6	6.9	4.1	17.4	6.8	4	17.3	6.7	4
1000	29.9	18.2	11	29.6	18	11	29.5	18	10.9

Wet climate, low HV% and 2% growth rate

Table C.16 EIRR values for upgrading PM roads in wet climate and low HV% at 2% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	4.7	-9.8	-6.1	4.7	-9.8	-6.1	4.7	-9.9	-6.1
250	8	-4.3	-3.2	8	-4.3	-3.2	8	-4.3	-3.2
500	12.8	1.3	-0.1	12.7	1.2	-0.2	12.6	1.2	-0.2
1000	20.8	8.6	3.4	20.6	8.5	3.3	20.5	8.4	3.3

Wet climate, low HV% and 4% growth rate

Table C.17 EIRR values for upgrading PM roads in wet climate and low HV% at 4% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.3	-8.3	-5.3	5.2	-8.4	-5.3	5.2	-8.4	-5.3
250	9.1	-2.4	-1.9	9	-2.5	-2	9	-2.5	-2
500	14.1	3.1	1.3	14	3	1.2	13.9	2.9	1.2
1000	23.2	11.8	6.1	23	11.7	6.1	22.9	11.6	6

Wet climate, low HV% and 6% growth rate

Table C.18 EIRR values for upgrading PM roads in wet climate and low HV% at 6% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.9	-6.7	-4.3	5.9	-6.8	-4.3	5.8	-6.8	-4.4
250	10.2	-0.5	-0.5	10.1	-0.6	-0.6	10.2	-0.6	-0.6
500	15.8	5.3	3	15.6	5.2	3	15.5	5.1	2.9
1000	26	16	9.9	25.8	15.9	9.8	25.7	15.8	9.8

Wet climate, medium HV% and 2% growth rate

Table C.19 EIRR values for upgrading PM roads in wet climate and medium HV% at 2% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.2	-8.9	-5.5	5.1	-8.9	-5.5	5.1	-9	-5.6
250	9	-3	-2.3	8.9	-3.1	-2.4	8.9	-3.1	-2.3
500	14.4	3	1	14.3	2.9	0.9	14.2	2.8	0.9
1000	23.8	11	4.8	23.5	10.9	4.7	23.3	10.8	4.6

Wet climate, medium HV% and 4% growth rate

Table C.20 EIRR values for upgrading PM roads in wet climate and medium HV% at 4% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.8	-7.3	-4.6	5.7	-7.4	-4.6	5.7	-7.4	-4.7
250	10.1	-1.1	-0.9	10	-1.2	-1	10.1	-1.2	-1
500	15.9	4.9	2.6	15.8	4.8	2.5	15.7	4.7	2.4
1000	26.5	14.3	7.7	26.2	14.2	7.6	26	14.1	7.5

Wet climate, medium HV% and 6% growth rate

Table C.21 EIRR values for upgrading PM roads in wet climate and medium HV% at 6% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	6.5	-5.7	-3.6	6.5	-5.8	-3.6	6.4	-5.8	-3.6
250	11.4	0.9	0.6	11.3	0.8	0.5	11.3	0.8	0.5
500	17.7	7.2	4.4	17.5	7	4.3	17.4	7	4.3
1000	29.4	18.5	11.4	29.1	18.3	11.4	28.9	18.3	11.3

Wet climate, high HV% and 2% growth rate

Table C.22 EIRR values for upgrading PM roads in wet climate and high HV% at 2% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.3	-8.6	-5.3	5.2	-8.7	-5.3	5.2	-8.8	-5.3
250	9.2	-2.7	-1.9	9.1	-2.8	-2	9.2	-2.8	-2
500	14.8	3.4	1.6	14.7	3.3	1.5	14.5	3.2	1.4
1000	24.7	11.7	5.6	24.4	11.6	5.4	24.2	11.4	5.4

Wet climate, high HV% and 4% growth rate

Table C.23 EIRR values for upgrading PM roads in wet climate and high HV% at 4% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	5.9	-7.1	-4.3	5.9	-7.2	-4.4	5.8	-7.2	-4.4
250	10.4	-0.8	-0.5	10.3	-0.9	-0.6	10.3	-0.9	-0.5
500	16.4	5.4	3.1	16.2	5.2	3	16	5.1	3
1000	27.5	15	8.4	27.2	14.8	8.3	27	14.7	8.2

Wet climate, high HV% and 6% growth rate

Table C.24 EIRR values for upgrading PM roads in wet climate and high HV% at 6% growth rate

AADT	Sub-grade								
	Low			Med			High		
	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC	PM to SD	PM to AC	PM to PCC
100	6.7	-5.4	-3.2	6.6	-5.5	-3.3	6.6	-5.6	-3.3
250	11.7	1.2	1	11.6	1.1	1	11.6	1.1	1
500	18.2	7.7	5.1	18	7.5	5	17.8	7.4	4.9
1000	30.5	19.1	12.1	30.2	19	12	29.9	18.9	11.9

Upgrading surface dressing roads

Dry climate, low HV% and 2% growth rate

Table C.25 EIRR values for upgrading SD roads in dry climate and low HV% at 2% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-14.1	<-90	-14.2	<-90	-14.2
250	<-90	-8.8	<-90	-8.8	<-90	-8.9
500	-6.1	-4.5	-6.3	-4.5	-6.4	-4.6
1000	5.2	1.5	5	1.4	5	1.3

Dry climate, low HV% and 4% growth rate

Table C.26 EIRR values for upgrading SD roads in dry climate and low HV% at 4% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-12.3	<-90	-12.4	<-90	-12.4
250	-12.8	-6.8	-13.1	-6.9	-13.2	-6.9
500	-2.5	-2.3	-2.7	-2.4	-2.7	-2.4
1000	10.3	5.7	10.2	5.6	10.1	5.6

Dry climate, low HV% and 6% growth rate

Table C.27 EIRR values for upgrading SD roads in dry climate and low HV% at 6% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-9.3	<-90	-9.4	<-90	-9.4
250	-6	-3.6	-6.2	-3.7	-6.3	-3.7
500	3.9	2.2	3.8	2.1	3.7	2.1
1000	16.5	10.6	16.4	10.5	16.3	10.5

Dry climate, medium HV% and 2% growth rate

Table C.28 EIRR values for upgrading SD roads in dry climate and medium HV% at 2% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-13	<-90	-13.1	<-90	-13.1
250	-16.8	-7.6	-17.4	-7.6	-17.6	-7.7
500	-3.9	-3.2	-4.1	-3.3	-4.2	-3.3
1000	7.4	2.9	7.2	2.7	7.1	2.7

Dry climate, medium HV% and 4% growth rate

Table C.29 EIRR values for upgrading SD roads in dry climate and medium HV% at 4% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-11.2	<-90	-11.2	<-90	-11.3
250	-10	-5.6	-10.3	-5.7	-10.4	-5.7
500	-0.4	-0.9	-0.6	-1	-0.6	-1.1
1000	12.4	7.1	12.3	7	12.3	7

Dry climate, medium HV% and 6% growth rate

Table C.30 EIRR values for upgrading SD roads in dry climate and medium HV% at 6% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-9.3	<-90	-9.4	<-90	-9.4
250	-6	-3.6	-6.2	-3.7	-6.3	-3.7
500	3.9	2.2	3.8	2.1	3.7	2.1
1000	16.5	10.6	16.4	10.5	16.3	10.5

Dry climate, high HV% and 2% growth rate

Table C.31 EIRR values for upgrading SD roads in dry climate and high HV% at 2% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-12.6	<-90	-12.7	<-90	-12.8
250	-16.2	-7.2	-16.9	-7.3	-17.2	-7.3
500	-3.7	-2.7	-4	-2.8	-4.1	-2.9
1000	7.8	3.4	7.5	3.2	7.4	3.2

Dry climate, high HV% and 4% growth rate

Table C.32 EIRR values for upgrading SD roads in dry climate and high HV% at 4% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-10.8	<-90	-10.9	<-90	-10.9
250	-9.7	-5.2	-10.1	-5.3	-10.2	-5.3
500	-0.3	-0.5	-0.5	-0.7	-0.6	-0.7
1000	12.7	7.5	12.6	7.4	12.5	7.4

Dry climate, high HV% and 6% growth rate

Table C.33 EIRR values for upgrading SD roads in dry climate and high HV% at 6% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	<-90	-9	<-90	-9.1	<-90	-9.1
250	-5.8	-3.2	-6.1	-3.3	-6.1	-3.3
500	4.2	2.7	4	2.6	4	2.5
1000	16.9	11.1	16.8	11	16.7	11

Wet climate, low HV% and 2% growth rate

Table C.34 EIRR values for upgrading SD roads in wet climate and low HV% at 2% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	< -90	-13.5	< -90	-13.6	< -90	-13.6
250	-17.9	-8.1	-18.5	-8.2	-18.8	-8.3
500	-5.3	-3.8	-5.5	-3.9	-5.6	-3.9
1000	6.5	2.8	6.3	2.6	6.2	2.6

Wet climate, low HV% and 4% growth rate

Table C.35 EIRR values for upgrading SD roads in wet climate and low HV% at 4% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	-75.7	-11.7	-77.9	-11.8	-78.4	-11.8
250	-11.2	-6.2	-11.5	-6.3	-11.6	-6.3
500	-1.4	-1.4	-1.7	-1.5	-1.8	-1.6
1000	10.9	6.4	10.8	6.4	10.8	6.3

Wet climate, low HV% and 6% growth rate

Table C.36 EIRR values for upgrading SD roads in wet climate and low HV% at 6% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	-31.7	-9.9	-33.7	-10	-34.3	-10
250	-7.2	-4.2	-7.4	-4.3	-7.5	-4.3
500	3	1.8	2.8	1.7	2.8	1.6
1000	14.7	9.7	14.6	9.6	14.6	9.6

Wet climate, medium HV% and 2% growth rate

Table C.37 EIRR values for upgrading SD roads in wet climate and medium HV% at 2% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	< -90	-12.4	< -90	-12.5	< -90	-12.5
250	-13.8	-6.9	-14.3	-7	-14.4	-7
500	-3.2	-2.4	-3.5	-2.6	-3.5	-2.6
1000	8.7	4.2	8.4	4.1	8.4	4

Wet climate, medium HV% and 4% growth rate

Table C.38 EIRR values for upgrading SD roads in wet climate and medium HV% at 4% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	-56.3	-10.5	-59.5	-10.6	-60.6	-10.6
250	-8.8	-4.9	-9.1	-5	-9.2	-5
500	0.5	0	0.2	-0.1	0.1	-0.2
1000	13	7.9	12.9	7.8	12.8	7.7

Wet climate, medium HV% and 6% growth rate

Table C.39 EIRR values for upgrading SD roads in wet climate and medium HV% at 6% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	-21.6	-8.7	-22.5	-8.8	-22.9	-8.8
250	-5.2	-2.9	-5.5	-3	-5.5	-3
500	4.9	3.2	4.6	3.1	4.6	3
1000	16.8	11.1	16.7	11	16.7	11

Wet climate, high HV% and 2% growth rate

Table C.40 EIRR values for upgrading SD roads in wet climate and high HV% at 2% growth rate

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	< -90	-12	< -90	-12.1	< -90	-12.1
250	-13.3	-6.4	-13.9	-6.5	-14.1	-6.6
500	-2.9	-1.9	-3.2	-2.1	-3.3	-2.1
1000	9	4.8	8.7	4.6	8.6	4.5

Wet climate, high HV% and 4% growth rate

Table C.41 EIRR values for upgrading SD roads in wet climate and high HV% at 4%

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	-52.7	-10.1	-56.6	-10.2	-58	-10.2
250	-8.5	-4.4	-8.9	-4.5	-9	-4.6
500	0.8	0.6	0.5	0.4	0.4	0.3
1000	13.4	8.4	13.3	8.3	13.2	8.2

Wet climate, high HV% and 6% growth rate

Table C.42 EIRR values for upgrading SD roads in wet climate and high HV% at 6%

AADT	Sub-grade					
	Low		Med		High	
	SD to PCC	SD to AC	SD to PCC	SD to AC	SD to PCC	SD to AC
100	-20.7	-8.3	-21.7	-8.4	-22.1	-8.4
250	-4.9	-2.4	-5.2	-2.5	-5.3	-2.6
500	5.2	3.8	4.9	3.6	4.8	3.5
1000	17.3	11.7	17.1	11.6	17.1	11.5