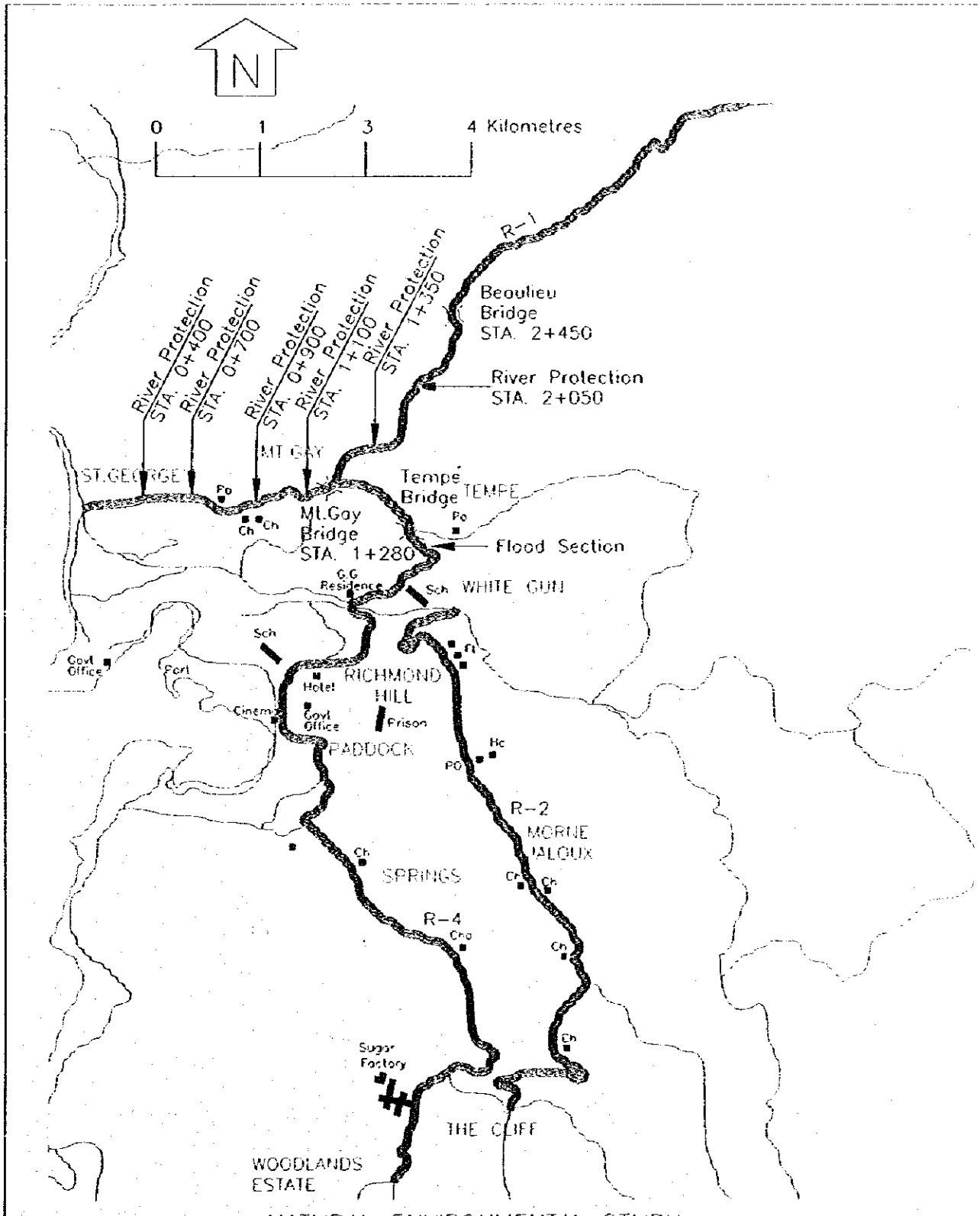
APPENDIX 7

ROAD INVENTORY MAP



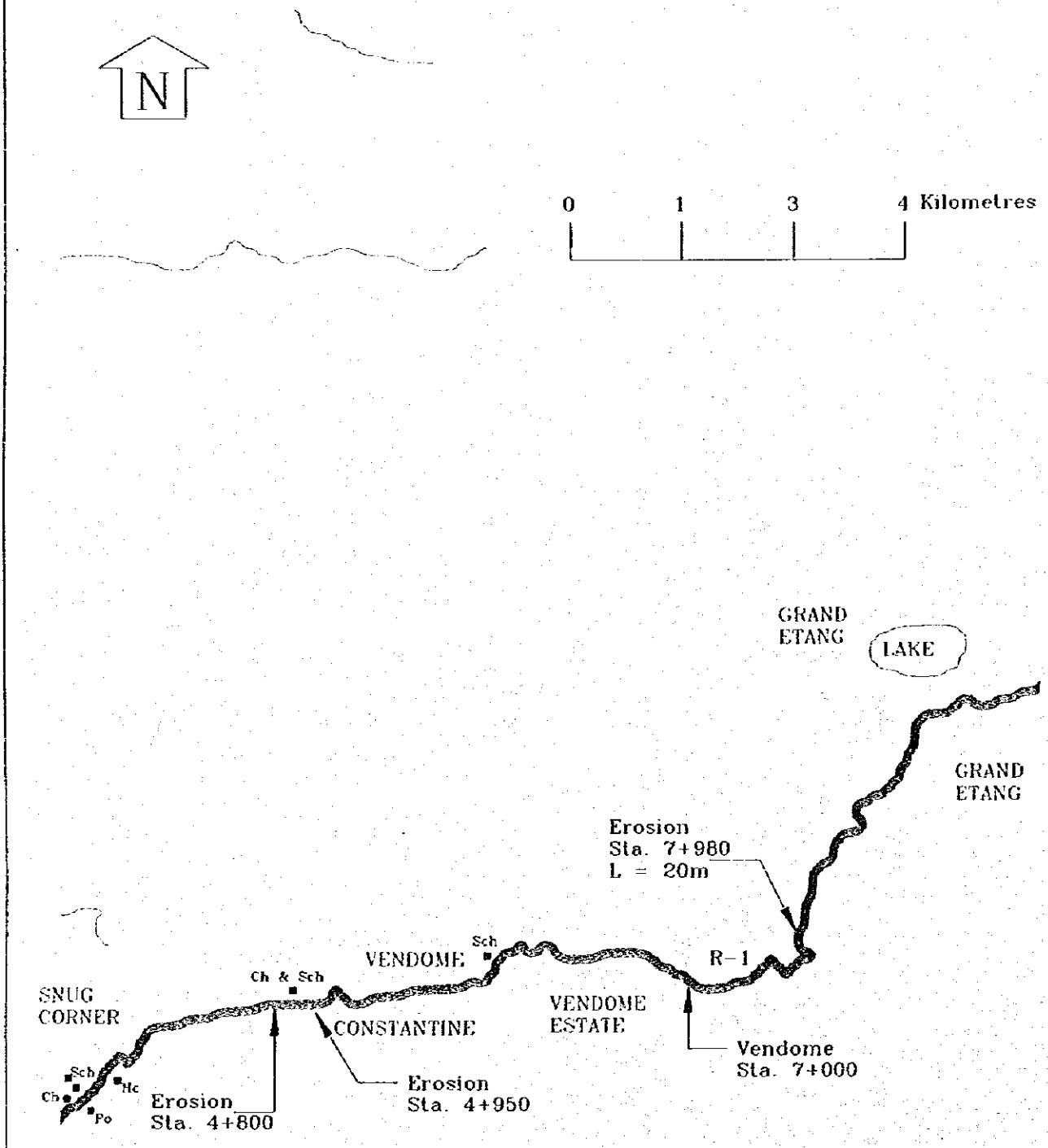
NATURAL ENVIRONMENTAL STUDY

GRENADA

Sea Coast
River Crossing
River
Existing Main Road
Study Road

R-1 GRAND ETANG
R-2 MORNE JALOUX
R-4 MT.GAY/SPRING

Appendix 7-1



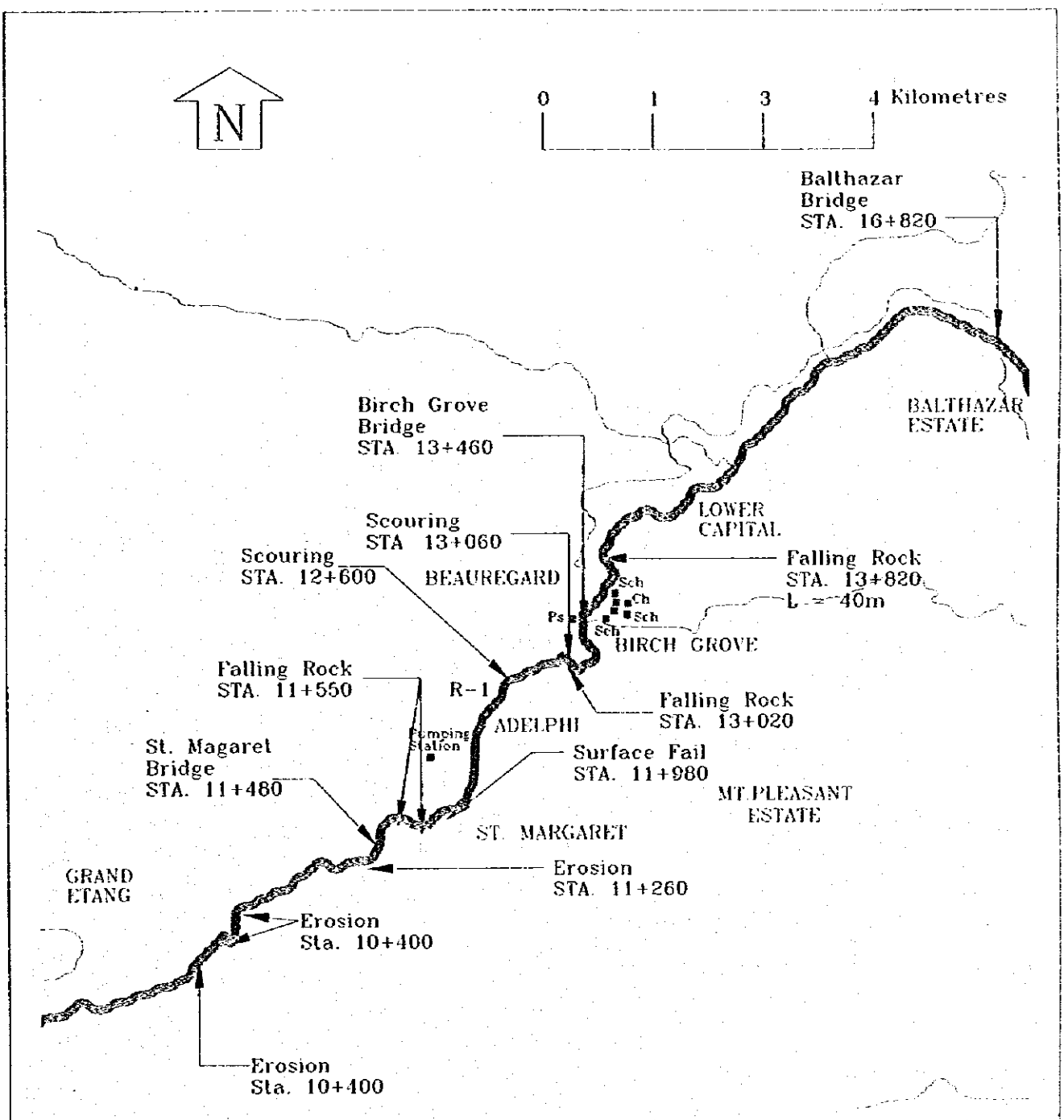
NATURAL ENVIRONMENTAL STUDY

GRENADA

Sea Coast
River Crossing
River
Existing Main Road
Study Road

R-1 GRAND ETANG

Appendix 7-2



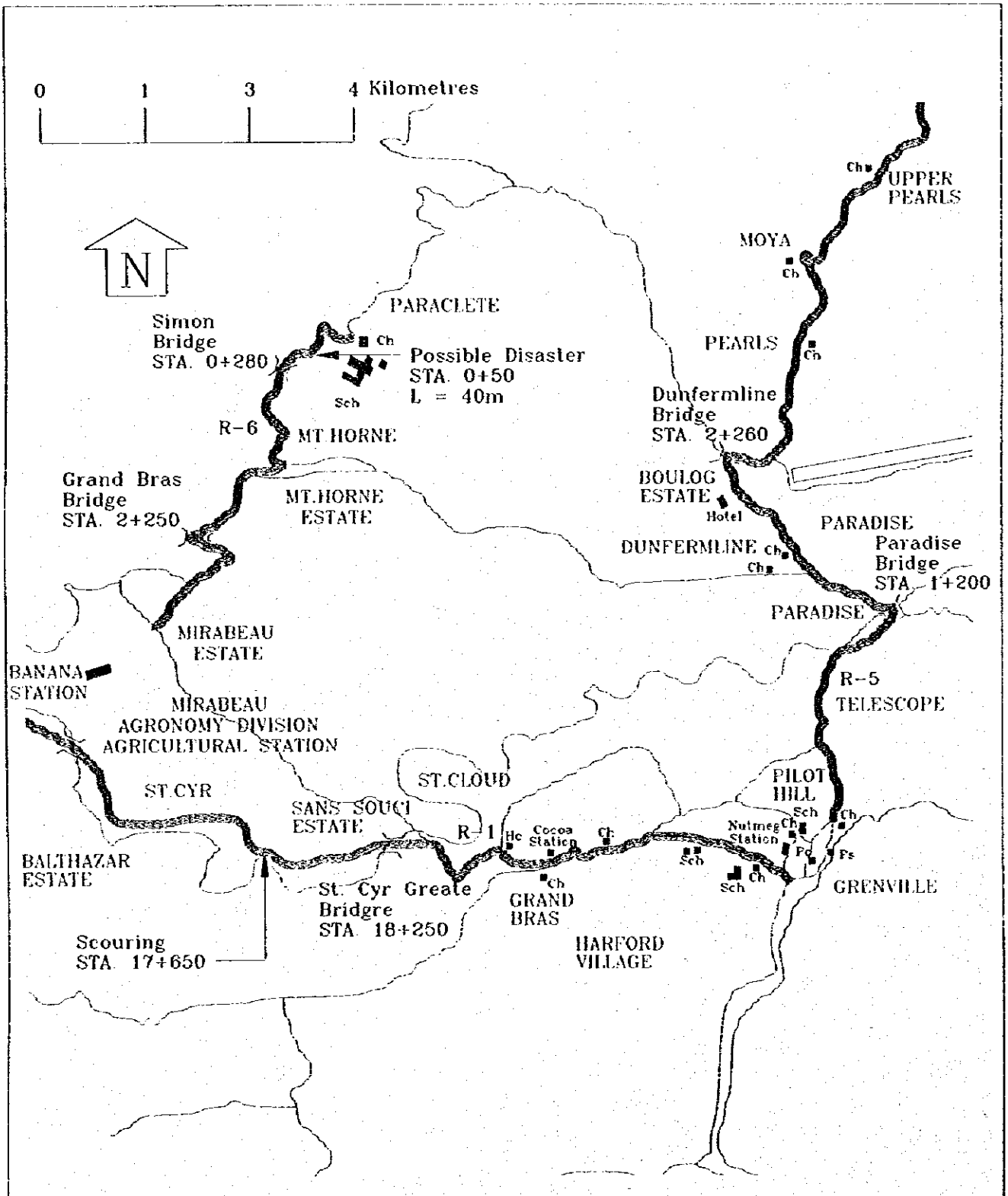
NATURAL ENVIRONMENTAL STUDY

GRENADA

Sea Coast
River Crossing
River
Existing Main Road
Study Road

R-1 GRAND ETANG

Appendix 7-3



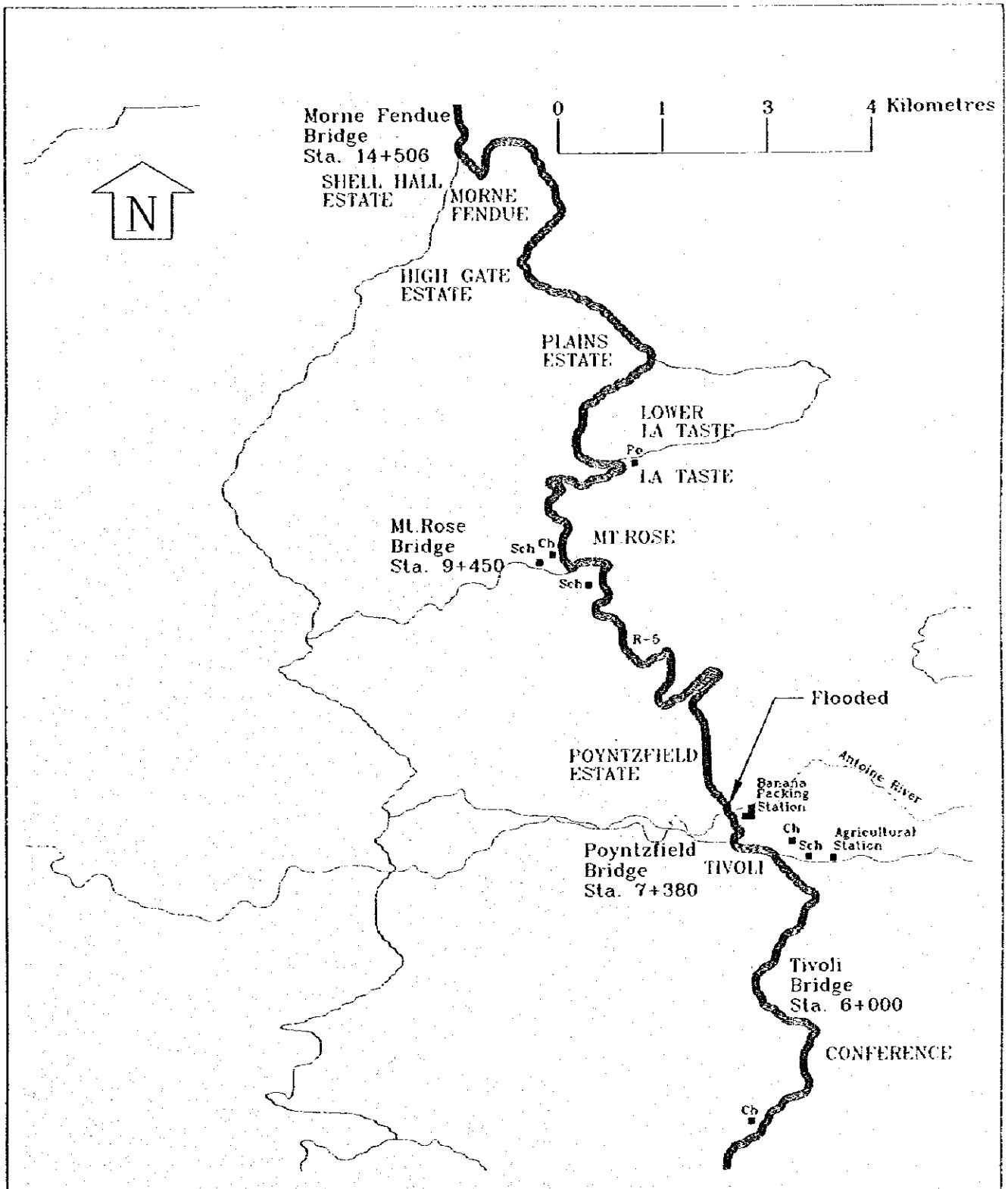
NATURAL ENVIRONMENTAL STUDY

GRENADA

Sea Coast
River Crossing
River
Existing Main Road
Study Road

R-1 GRAND ETANG
R-5 EASTERN MAIN ROAD
R-6 PARACLETE/MT.HORNE

Appendix 7-4



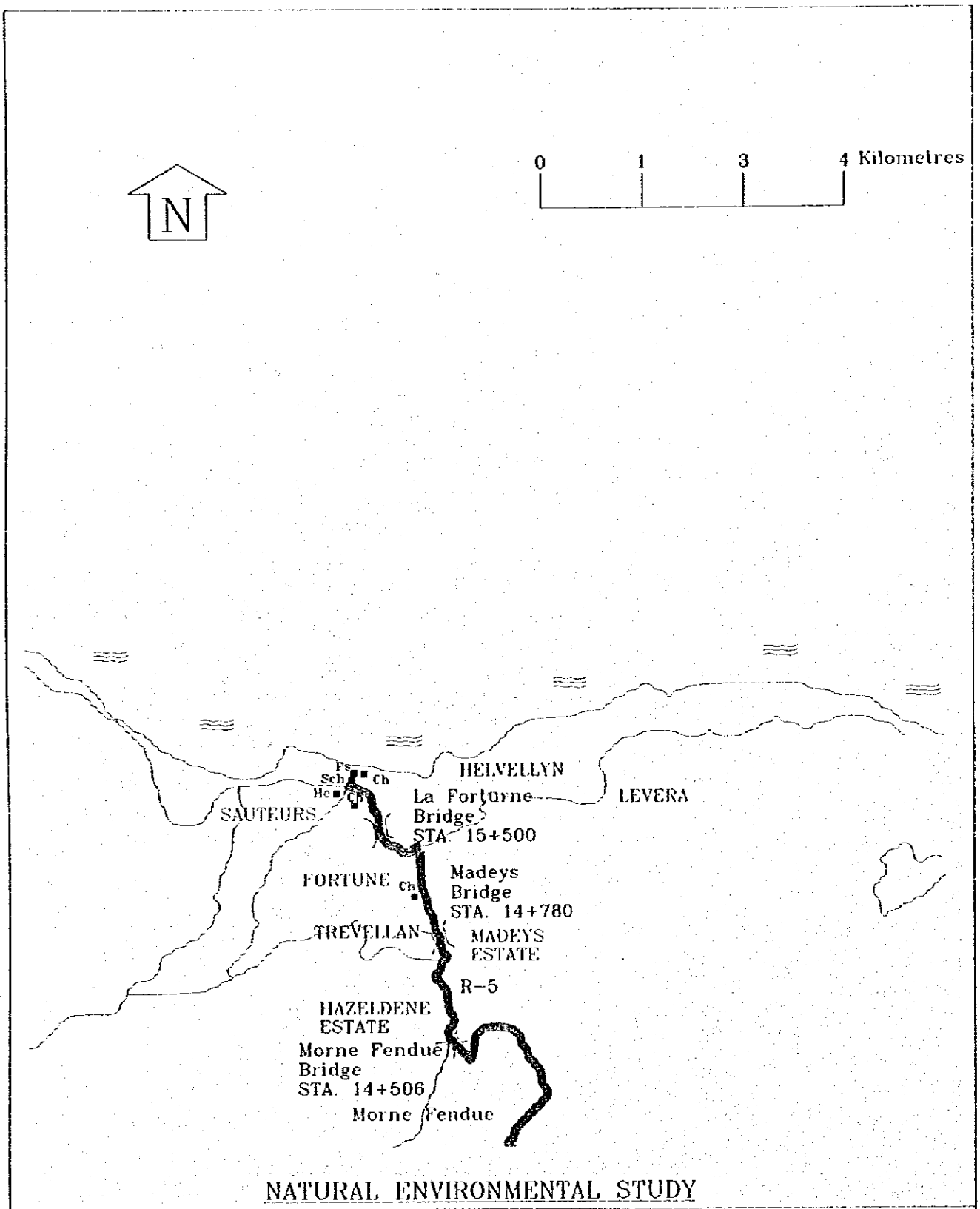
NATURAL ENVIRONMENTAL STUDY

GRENADA

Sea Coast
River Crossing
River
Existing Main Road
Study Road

R-5 EASTERN MAIN ROAD

Appendix 7-5



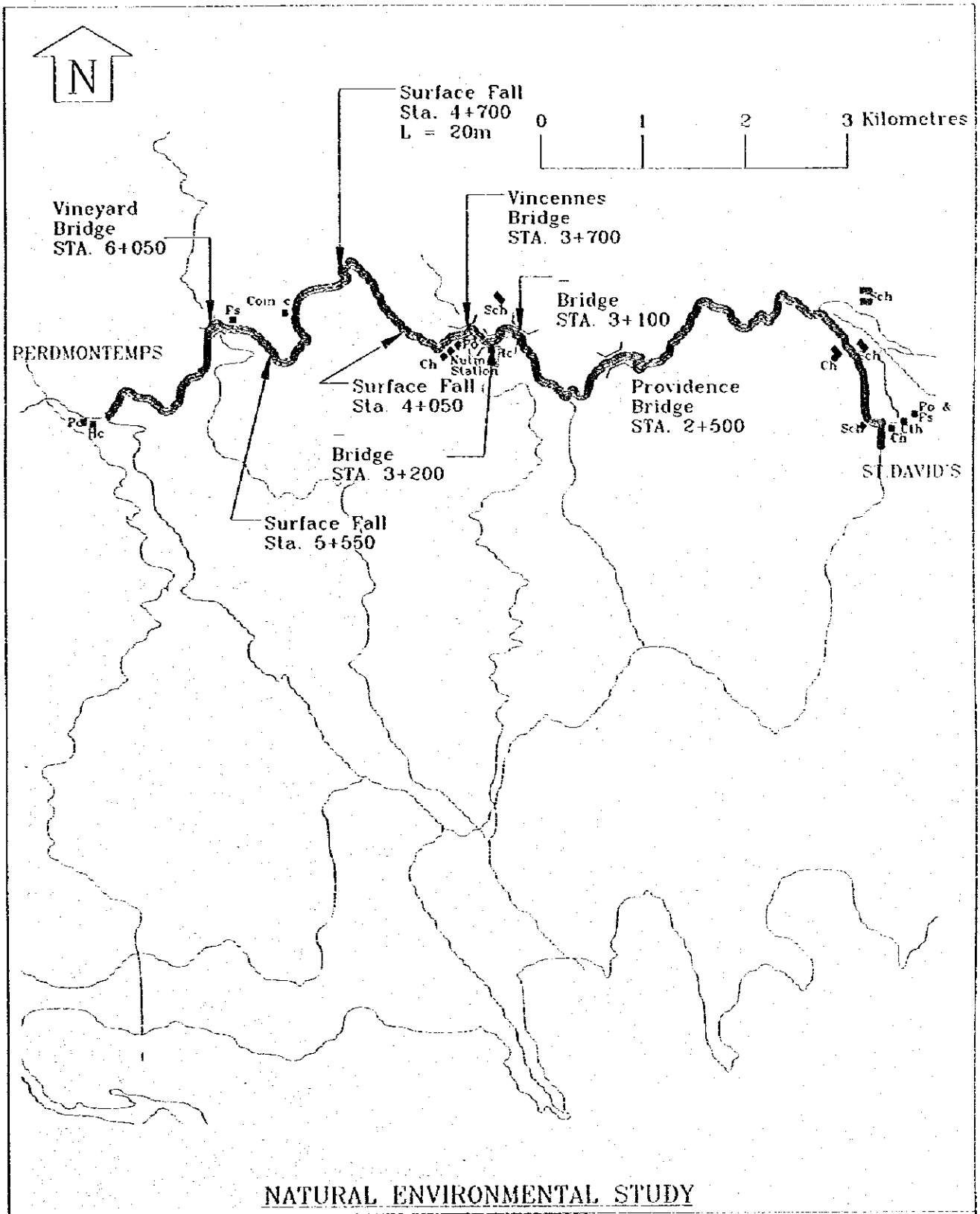
NATURAL ENVIRONMENTAL STUDY

GRENADA

Sea Coast
River Crossing
River
Existing Main Road
Study Road

R-5 EASTERN MAIN ROAD

Appendix 7-6



NATURAL ENVIRONMENTAL STUDY

GRENADA

R--3 PERDMONTEMPS/ST.DAVID'S

Appendix 7-7

APPENDIX 8

INITIAL EXAMINATION
ON NATURAL ENVIRONMENT (IEE)

Appendix 8-1 Checklist for Initial Environmental Examination

Project No. – Project Name		Grand Etang		
Segment	Province	Length (km)	Terrain	Project Type
1	St.Georges/St.Andrews	20.5 km	Mountainous/Rolling	Rehabilitation/Improvements

	Check Item	During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	A	Plantation Buffer zones	
	Water Pollution	D	Management system	A	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	C	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	D	Waste disposal plan	B		
	Land Subsidence	C	Soft ground treatment and soil stabilization	B		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	D		
	Flora					
	Fauna	D	Protection Plan	A		
Socioeconomical Environment	Population Change	C		C		
	Resettlement	D	Compensation Relocation scheme	C		
	Community Cohesion	C		D	Crossing facilities	
	Land-use Pattern	C		B		
	Industrial Activity	D		B		
	Employment & Income	A		A		
	Traffic Build-up	D	Management plan Detouring	A		
	Traffic Safety	D	Management plan Safety measures	A		
	Archaeology	D		A		

Assessment: A : High Positive Impact
B : Low Positive Impact
C : No Impact
D : Low Negative Impact
E : High Negative Impact

Appendix 8-2 Checklist for Initial Environmental Examination

Project No. – Project Name	Morne Jaloux			
Segment	Province	Length (km)	Terrain	Project Type
2	St. Georges	4.0 km	Rolling	Rehabilitation/Improvements

	Check Item	During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	C	Plantation Buffer zones	
	Water Pollution	C	Management system	C	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	D	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	C	Waste disposal plan	C		
	Land Subsidence	C	Soft ground treatment and soil stabilization	B		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	B		
	Flora					
	Fauna	C	Protection Plan	C		
Socioeconomical Environment	Population Change	C		B		
	Resettlement	C	Compensation Relocation scheme	C		
	Community Cohesion	C		C	Crossing facilities	
	Land-use Pattern	C		B		
	Industrial Activity	C		C		
	Employment & Income	A		C		
	Traffic Build-up	D	Management plan Detouring	A		
	Traffic Safety	D	Management plan Safety measures	A		
	Archaeology	D		A		

Assessment: A : High Positive Impact; B : Low Positive Impact; C : No Impact; D : Low Negative Impact; E : High Negative Impact

Appendix 8-3 Checklist for Initial Environmental Examination

Project No. – Project Name		Perdmontemps / St. David's		
Segment	Province	Length (km)	Terrain	Project Type
3	St. David's	7.1 km	Rolling	Rehabilitation/Improvements

	Check Item	During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	B	Plantation Buffer zones	
	Water Pollution	D	Management system	B	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	C	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	D	Waste disposal plan	B		
	Land Subsidence	C	Soft ground treatment and soil stabilization	B		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	B		
	Flora					
	Fauna	D	Protection Plan	B		
Socioeconomical Environment	Population Change	C		A		
	Resettlement	D	Compensation Relocation scheme	C		
	Community Cohesion	C		C	Crossing facilities	
	Land-use Pattern	D		B		
	Industrial Activity	C		C		
	Employment & Income	A		B		
	Traffic Build-up	D	Management plan Detouring	A		
	Traffic Safety	D	Management plan Safety measures	A		
	Archaeology	C		C		

Assessment: A : High Positive Impact
B : Low Positive Impact
C : No Impact
D : Low Negative Impact
E : High Negative Impact

Appendix 8-4 Checklist for Initial Environmental Examination

Project No. -- Project Name		Mt. Gay / Springs		
Segment	Province	Length (km)	Terrain	Project Type
4	St. Georges	5.8 km	Rolling	Rehabilitation/Improvements

Check Item		During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	B	Plantation Buffer zones	
	Water Pollution	D	Management system	B	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	C	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	D	Waste disposal plan	D		
	Land Subsidence	C	Soft ground treatment and soil stabilization	C		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	C		
	Flora					
	Fauna	C	Protection Plan	C		
Socioeconomical Environment	Population Change	C		A		
	Resettlement	C	Compensation Relocation scheme	C		
	Community Cohesion	C		D	Crossing facilities	
	Land-use Pattern	C		C		
	Industrial Activity	D		A		
	Employment & Income	B		A		
	Traffic Build-up	D	Management plan Detouring	A		
	Traffic Safety	D	Management plan Safety measures	A		
	Archaeology	C		C		

Assessment: A : High Positive Impact; B : Low Positive Impact; C : No Impact; D : Low Negative Impact; E : High Negative Impact

Appendix 8-5 Checklist for Initial Environmental Examination

Project No. – Project Name		Eastern Main Grenville / Sauteurs		
Segment	Province	Length (km)	Terrain	Project Type
5	St. Andrews/ St. Patrick	16.0 km	Flat / Rolling	Rehabilitation/Improvements

	Check Item	During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	C	Plantation Buffer zones	
	Water Pollution	D	Management system	B	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	D	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	D	Waste disposal plan	C		
	Land Subsidence	C	Soft ground treatment and soil stabilization	D		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	C		
	Flora					
	Fauna	D	Protection Plan	B		
Socioeconomical Environment	Population Change	C		B		
	Resettlement	C	Compensation Relocation scheme	C		
	Community Cohesion	C		D	Crossing facilities	
	Land-use Pattern	C		B		
	Industrial Activity	D		B		
	Employment & Income	A		A		
	Traffic Build-up	D	Management plan Detouring	A		
	Traffic Safety	D	Management plan Safety measures	A		
	Archaeology	C		B		

Assessment: A : High Positive Impact
B : Low Positive Impact
C : No Impact
D : Low Negative Impact
E : High Negative Impact

Appendix 8-6 Checklist for Initial Environmental Examination

Project No. -- Project Name		Paraclete / Mt. Horne		
Segment	Province	Length (km)	Terrain	Project Type
6	St. Andrews	3.4 km	Rolling	Rehabilitation/Improvements

Check Item		During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	B	Plantation Buffer zones	
	Water Pollution	D	Management system	B	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	C	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	D	Waste disposal plan	D		
	Land Subsidence	C	Soft ground treatment and soil stabilization	D		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	D		
	Flora					
	Fauna	D	Protection Plan	B		
Socioeconomical Environment	Population Change	C		A		
	Resettlement	C	Compensation Relocation scheme	C		
	Community Cohesion	C		D	Crossing facilities	
	Land-use Pattern	D		A		
	Industrial Activity	C		B		
	Employment & Income	A		B		
	Traffic Build-up	A	Management plan Detouring	A		
	Traffic Safety	A	Management plan Safety measures	A		
	Archaeology	C		B		

Assessment: A : High Positive Impact
B : Low Positive Impact
C : No Impact
D : Low Negative Impact
E : High Negative Impact

Appendix 8-7 Checklist for Initial Environmental Examination

Project No. – Project Name		Carriacou		
Segment	Province	Length (km)	Terrain	Project Type
7	Carriacou	3.1 km	Rolling	Rehabilitation/Improvements

Check Item		During Construction		After Completion		Remarks
		Assessment	Mitigation Measures	Assessment	Mitigation Measures	
Physical Environment	Air Pollution	D	Material covering Water spraying Minimizing Traffic	A	Plantation Buffer zones	
	Water Pollution	D	Management system	B	Management system Urban planning	
	Noise Pollution	D	Regulations Low-noise machinery	C	Low-noise surface Plantation Noise barriers	
	Vibration	D	Regulations Low-noise machinery	C	Regulations	
	Soil Contamination	C	Waste disposal plan	C		
	Land Subsidence	C	Soft ground treatment and soil stabilization	B		
	Soil Erosion	D	Slope protection Stream protection Drainage/Vegetation	B		
	Flora					
	Fauna	C	Protection Plan	C		
Socioeconomical Environment	Population Change	C		A		
	Resettlement	C	Compensation Relocation scheme	C		
	Community Cohesion	C		C	Crossing facilities	
	Land-use Pattern	C		B		
	Industrial Activity	C		B		
	Employment & Income	A		A		
	Traffic Build-up	D	Management plan Detouring	A		
	Traffic Safety	D	Management plan Safety measures	A		
	Archaeology	C		B		

Assessment: A : High Positive Impact
B : Low Positive Impact
C : No Impact
D : Low Negative Impact
E : High Negative Impact

QUESTIONNAIRE
WOMEN IN DEVELOPMENT COMPONENT

1) Are you the head of your household?
Yes No

2) How many family members do you support?
1-3 4-6 7-10

3) Do your children attend school?
Yes No

4) Are you currently employed?
Yes No

5) Do you have to travel to your job?
Yes No

6) If you don't have a job currently, what would help you gain employment?

7) Are there jobs in your community?
Yes No

8) What work experience or training do you have?

9) What amount of schooling do you have?
Primary Secondary University Vocational courses.

10) Do you need childcare for your children when you are at work?
Yes No

11) Would you consider work in road construction?
As a clerical worker?
As an unskilled labourer?
As a heavy equipment operator?
As a skilled worker such as mason?

12) How many times per week do you travel outside your home for work or shopping?

13) How do you travel?
Car
Bus

Motorcycle
Bicycle
Other _____

14) Do you drive?
Yes No

15) Do you own your own vehicle?
Yes No

16) Do you transport your children to school?
On foot?
By bicycle?
By bus?
By car?

17) How close is the bus stop to your home?
100 meters 200 meters 500 meters 1,000 meters

18) Do you feel safe when you or your children walk on roads in your area?

19) Are there adequate bus routes available to the areas you need to visit?

20) Do the roads in your community adequately provide for your needs?
Access to schools, jobs, shopping?

21) Are there any problems with your roads currently?

22) What improvements would you like to see?
Better road surface?
Wider road width?
Sidewalks?
Signage?
Speed bumps?
Guardrails?
Lighting?
Bus stops/shelters?

23) How would you benefit from road improvements in your area?
Greater access to services?
Greater access to jobs?

24) How might you be bothered by road improvements in your area?

APPENDIX 9

PRELIMINARY COST

Appendix 9-1(1) CONSTRUCTION COST OF GRAND ETANG ROAD OPTION - 1

ITEMS	UNIT	UNIT COST (ECS)	QUANTITY															CONSTRUCTION COST MECS	REMARKS
			STA 0+000 STA 1+300	STA 1+300 STA 2+800	STA 2+800 STA 5+000	STA 5+000 STA 6+500	STA 6+500 STA 6+560	STA 6+560 STA7+000	STA 7+000 STA 9+000	STA9+000 STA11+500	STA11+500 STA12+300	STA12+300 STA15+000	STA15+000 STA16+300	STA16+300 STA18+500	STA18+500 STA19+700	STA19+700 STA20+500	TOTAL		
1.Earth Work																			
Excavation/Embankment Common Soil	m³	38.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Rock	m³	117.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m³	36.0	0	81	432	270	0	0	1,352	2,392	624	468	1,404	1,924	572	260	9,779	0.352	
Rock	m³	175.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Borrow Materials	m³	46.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m³	56.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Back Fill	m³	88.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Scarification	m²	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
2. Side Ditch	m³	572.2	0	81	432	270	0	0	702	1,242	324	243	729	999	297	1,300	6,619	3.787	
3. Subbase Course	m³	90.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Base Course	m³	152.0	65	75	264	225	0	66	300	375	120	405	345	330	180	480	3,230	0.491	
4. Asphalt Concrete Hot Mix	ton	426.0	952	1,008	1,508	810	0	269	1,344	1,530	442	1,976	1,546	1,478	878	538	14,279	6.083	
Prime Coat	m²	6.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Tack Coat	m²	1.4	7,800	8,250	12,570	6,750	0	2,244	11,200	12,750	3,680	16,470	12,880	12,100	7,320	4,480	118,494	0.166	
Shoulder Pavement	m²	5.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
5. Retaining Wall																			
H= 2.00m	lm	695.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
6. Bridge Construction																			
Substructure	ls	831.0	0	0	0	0	0	0	0	0	0	0	315	345	0	0	660	0.548	
Superstructure	m²	1,247.0	0	0	0	0	0	0	0	0	0	0	315	345	0	0	660	0.823	
Gabion	m³	138.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
7. Drainage																			
ø= 600mm	lm	4,370.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
ø= 800mm	lm	11,615.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
ø= 1,000mm	lm	13,800.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Under Drain	lm	164.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
8. Incidencial Construction	ls																	0.613	12.251
9. Engineer's Facility, Mobilization,etc	ls																	1.226	
Total																		14.068	

Appendix 9-1(2) CONSTRUCTION COST OF GRAND ETANG ROAD OPTION - 2

ITEMS	UNIT	UNIT COST	QUANTITY															CONSTRUCTION COST MEGS	REMARKS
			STA 0+000 STA 1+300	STA 1+300 STA 2+800	STA 2+800 STA 5+000	STA 5+000 STA 6+500	STA 6+500 STA 6+560	STA 6+560 STA7+000	STA 7+000 STA 9+000	STA9+000 STA11+500	STA11+500 STA12+300	STA12+300 STA15+000	STA15+000 STA16+300	STA16+300 STA18+500	STA18+500 STA19+700	STA19+700 STA20+500	TOTAL		
1 Earth Work																			
Excavation/Embankment Common Soil	m³	38.0	365	519	2,150	193	0	154	13	48	0	67	550	0	0	0	4,059	0.154	
Rock	m³	117.0	544	0	0	0	0	0	0	0	0	0	83	103	0	0	730	0.085	
Excavation/Waste Common Soil	m³	36.0	0	901	3,509	1,270	0	320	327	163	2,654	17	0	0	600	0	9,761	0.351	
Rock	m³	175.0	923	4,439	17,321	3,570	265	1,321	848	0	5,772	291	1,079	1,463	0	0	37,292	6.526	
Borrow Materials	m³	46.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m³	56.0	1,152	344	2,323	0	0	0	0	0	0	0	290	0	816	1,800	6,725	0.377	
Back Fill	m³	88.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Scarification	m²	1.5	0	9,900	0	6,750	0	0	0	0	0	16,200	0	0	0	0	32,850	0.049	
2. Side Ditch	m³	572.2	468	540	792	455	17	158	720	675	84	68	68	49	648	288	5,030	2.878	
3. Subbase Course	m³	90.0	297	0	416	0	52	0	0	0	360	0	0	0	0	0	1,125	0.101	
Base Course	m³	152.0	476	2,033	649	2,138	0	356	150	375	660	405	195	330	180	480	8,427	1.281	
4. Asphalt Concrete Hot Mix	ton	426.0	1,094	1,098	1,874	1,098	0	322	1,464	1,530	970	1,976	874	1,478	878	538	15,194	6.473	
Prime Coat	m²	6.0	1,190	9,150	356	9,150	0	616	0	0	2,440	16,470	0	0	0	0	39,372	0.236	
Tack Coat	m²	1.4	7,930	0	13,420	0	0	2,244	12,200	12,750	4,880	0	7,280	12,100	7,320	4,480	84,604	0.118	
Shoulder Pavement	m²	5.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
PCC Pavement	m²	133.0	0	0	0	0	225	0	0	0	0	0	0	0	0	0	225	0.030	
5. Retaining Wall																			
H= 2.00m	lm	695.0	280	0	1,700	0	64	0	20	80	0	70	200	0	0	0	2,414	1.678	
H=3.00m	lm	1,156.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
H=3.00 Reinforcing	lm	1,483.0	150	80	60	950	0	0	0	0	40	0	0	50	0	0	1,330	1.972	
6. Bridge Construction																			
Substructure	ls	831.0	0	0	0	0	0	0	0	41	0	153	315	345	0	0	854	0.710	
Superstructure	m²	1,247.0	0	0	0	0	0	0	0	41	0	153	315	345	0	0	854	1.065	
Gabion	m³	138.0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10	0.001	
7. Drainage																			
d= 600mm	m	4,370.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
d= 800mm	m	11,615.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
d= 1,000mm	m	13,800.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
8. Incidencial Construction	ls																	1.204	24.087
9. Engineer's Facility, Mobilization,etc	ls																	2.409	
Total																		27.700	

Appendix 9-1(3) CONSTRUCTION COST OF GRAND ETANG ROAD OPTION - 3

ITEMS	UNIT	UNIT COST	QUANTITY															CONSTRUCTION COST MECS	REMARKS
			STA 0+000 STA 1+300	STA 1+300 STA 2+800	STA 2+800 STA 5+000	STA 5+000 STA 6+500	STA 6+500 STA 6+560	STA 6+560 STA7+000	STA 7+000 STA 9+000	STA9+000 STA11+500	STA11+500 STA12+300	STA12+300 STA15+000	STA15+000 STA16+300	STA16+300 STA18+500	STA18+500 STA19+700	STA19+700 STA20+500	TOTAL		
1 Earth Work																			
Excavation/Embankment Common Soil	m³	38.0	365	519	2,150	820	0	906	1,410	1,500	0	1,765	813	550	126	0	10,916	0.415	
Rock	m³	117.0	544	0	0	0	0	0	0	0	0	567	0	0	0	0	1,111	0.130	
Excavation/Waste Common Soil	m³	36.0	0	901	3,509	2,277	0	0	1,216	2,882	5,136	0	1,652	1,193	472	1,600	21,037	0.757	
Rock	m³	175.0	923	4,439	17,321	11,710	265	1,276	9,972	12,493	17,828	3,564	4,695	4,255	0	0	88,741	15.530	
Borrow Materials	m³	46.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m³	56.0	1,152	344	2,323	836	0	367	1,396	1,000	0	0	290	381	816	0	8,925	0.500	
Back Fill	m³	88.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
Scarification	m²	1.5	0	9,900	0	6,750	0	0	0	0	0	16,200	0	0	0	0	32,850	0.049	
2 Side Ditch	m	572.2	468	540	792	456	17	158	720	675	216	972	351	594	648	288	6,694	3.945	
3 Subbase Course	m²	90.0	207	0	416	0	52	0	555	656	360	0	283	454	0	460	3,553	0.320	
Base Course	m³	152.0	476	2,033	649	2,250	0	356	435	544	660	3,017	449	734	180	480	12,263	1.864	
4 Asphalt Concrete Hot Mix	ton	426.0	1,094	1,098	1,874	1,098	0	322	1,704	2,130	970	1,976	1,129	1,887	878	778	16,936	7.216	
Crack Relief Layer	ton	383.0	0	0	0	0	0	1,022	0	0	0	0	0	0	0	0	1,022	0.391	
Prime Coat	m²	6.0	1,190	9,150	356	9,150	0	616	2,400	2,750	2,440	16,470	2,755	2,200	0	1,600	51,077	0.306	
Tack Coat	m²	1.4	7,930	0	13,420	0	0	2,244	12,200	15,250	4,880	0	7,800	13,200	7,320	4,880	89,124	0.125	
Shoulder Pavement	m²	5.9	3,900	4,500	6,600	4,500	96	1,320	1,320	7,500	2,400	8,100	3,900	6,600	3,600	2,400	56,736	0.335	
5 PCC Pavement	m²	133.0	0	0	0	0	225	0	0	0	0	0	0	0	0	0	225	0.030	
6 Retaining Wall																			
H= 2.00m	lm	695.0	280	0	1,700	0	54	440	1,400	2,500	0	70	200	0	0	0	6,654	4.625	
H=3.00m	lm	1,156.0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	50	0.058	
H=3.00 Reinforcing	lm	1,483.0	150	80	60	950	0	0	0	0	40	0	0	0	0	0	1,280	1.898	
7 Bridge Construction																			
Substructure	l.s	831.0	0	0	0	0	0	0	0	81	0	275	315	345	0	0	1,016	0.344	
Superstructure	m²	1,247.0	0	0	0	0	0	0	0	81	0	275	315	345	0	0	1,016	1.267	
Gabion	m³	138.0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10	0.001	
8 Drainage																			
d= 600mm	lm	624.3	8	8	8	11	0	0	18	43	8	22	14	11	3	0	164	0.096	
d= 800mm	lm	1,659.3	0	3	3	4	0	2	0	3	0	6	0	0	1	0	22	0.037	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	12	10	15	7	0	0	3	21	12	20	6	0	3	3	112	0.109	
Under Drain	lm	184.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	
9 Incidencial Construction	l.s																	2.042	40.847
10 Engineer's Facilty, Mobilization,etc.,	l.s																	4.095	
Total																		46.975	

Appendix 9-2(1) CONSTRUCTION COST OF MORNE JALOUX ROAD OPTION - 1

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY						CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+800	STA 0+800 STA 2+650	STA 2+650 STA 3+000	STA 3+000 STA 3+060	STA 3+060 STA 4+000	TOTAL		
1.Earth Work										
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	0	0	0	0	0	0	0.000	
Back Fill	m^3	88.0	0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	0	0	0	0	0	0	0.000	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	0	0	0	0	0	0	0.000	
4. Asphalt Concrete Hot Mix	ton	426.0	0	955	151	0	620	1,726	0.735	
Prime Coat	m^2	6.0	0	0	1,260	0	5,170	6,430	0.039	
Tack Coat	m^2	1.4	0	7,955	1,260	0	3,384	12,599	0.018	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0	0.000	
5. Retaining Wall										
H= 2.00m	lm	695.0	0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	0.000	
6. Bridge Construction										
Substructure	l.s	831.0	0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0	0.000	
Gabion	m^3	138.0								
7. Drainage									0.000	
d= 600mm	lm	624.3	0	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0	0.000	
C-BOX 1.00x1.00	lm	976.0								
Under Drain	lm	184.0	0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s								0.040	0.791
9. Engineer's Facility, Mobilization,etc.,	l.s								0.079	
Total									0.910	

Appendix 9-2(2) CONSTRUCTION COST OF MORNE JALOUX ROAD OPTION - 2

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY						CONSTRUCTION COST MECS	REMARKS
			STA 0+000 STA 0+800	STA 0+800 STA 2+650	STA 2+650 STA 3+000	STA 3+000 STA 3+060	STA 3+060 STA 4+000	TOTAL		
1.Earth Work										
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	654	654	0.025	
Rock	m^3	117.0	0	0	0	0	706	706	0.083	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	2,727	2,727	0.477	
Borrow Materials	m^3	46.0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	0	0	0	0	829	829	0.046	
Back Fill	m^3	88.0	0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	1,575	0	3,760	5,335	0.008	
2. Side Ditch	m^3	572.2	0	0	95	0	388	483	0.276	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	0	93	368	0	881	1,342	0.204	
4. Asphalt Concrete Hot Mix	ton	426.0	0	955	151	0	620	1,726	0.735	
Prime Coat	m^2	6.0	0	0	1,260	0	5,170	6,430	0.039	
Tack Coat	m^2	1.4	0	7,955	0	0	0	7,955	0.011	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0	0.000	
5. Retaining Wall										
H= 2.00m	lm	695.0	0	0	0	0	940	940	0.653	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	0.000	
6. Bridge Construction										
Substructure	l.s	831.0	0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0	0.000	
Gabion	m^3	138.0	0	0	0	0	0	0	0.000	
7. Drainage										
d= 600mm	lm	624.3	0	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0	0.000	
C-BOX 1.00x1.00	lm	976.0	0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s								0.128	2.558
9. Engineer's Facility, Mobilization,etc.,	l.s								0.256	
Total									2.941	

Appendix 9-2(3) CONSTRUCTION COST OF MORNE JALOUX ROAD OPTION - 3

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					TOTAL	CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+800	STA 0+800 STA 2+650	STA 2+650 STA 3+000	STA 3+000 STA 3+060	STA 3+060 STA 4+000			
1.Earth Work										
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	21	654	675	0.026	
Rock	m^3	117.0	0	0	0	0	706	706	0.083	
Excavation/Waste Common Soil	m^3	36.0	672	1,170	110	0	0	1,952	0.070	
Rock	m^3	175.0	1,840	1,421	0	31	2,727	6,019	1.053	
Borrow Materials	m^3	46.0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	1,080	0	182	28	829	2,119	0.119	
Back Fill	m^3	88.0	0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	1,575	0	3,760	5,335	0.008	
2.Side Ditch	m^3	572.2	288	284	95	16	388	1,071	0.613	
3.Subbase Course	m^3	90.0	0	569	0	49	0	618	0.056	
Base Course	m^3	152.0	174	486	368	0	881	1,909	0.290	
4.Asphalt Concrete Hot Mix	ton	426.0	634	1,490	231	0	620	2,975	1.267	
Prime Coat	m^2	6.0	880	2,275	1,925	0	5,170	10,250	0.062	
Tack Coat	m^2	1.4	4,400	10,175	0	0	0	14,575	0.020	
Shoulder Pavement	m^2	5.9	960	2,220	420	36	1,128	4,764	0.028	
5.PCC Pavement t=15cm	m^2	133.0	0	0	0	104	0	104	0.014	
6.Retaining Wall										
H= 2.00m	lm	695.0	800	0	0	0	940	1,740	1.209	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	0.000	
7.Bridge Construction										
Substructure	l.s	831.0	0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0	0.000	
Gabion	m^3	138.0	0	0	0	0	0	0	0.000	
8.Drainage										
d= 600mm	lm	624.3	3	0	0	0	1	4	0.002	
d= 800mm	lm	1,659.3	0	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0	0.000	
C-BOX 1.00x1.00	lm	976.0	0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0	0.000	
9.Incidencial Construction	l.s								0.246	4.920
10.Engineer's Facility, Mobilization,etc.,	l.s								0.492	
Total									5.658	

Appendix 9-3(1) CONSTRUCTION COST OF ST.DAVID'S ~ PERDMONTEMPS ROAD OPTION - 1

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+600	STA 1+600 STA 3+400	STA 3+400 STA 6+100	STA 6+100 STA 7+200	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	468	988	1,456	260	3,172	0.178	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	243	513	756	135	1,647	0.942	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	240	180	203	28	651	0.099	
4. Asphalt Concrete Hot Mix	ton	426.0	595	670	1,166	541	2,972	1.266	
Prime Coat	m^2	6.0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	4,960	5,580	9,720	4,510	24,770	0.035	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	0	66	0	66	0.055	
Superstructure	m^2	1,247.0	0	0	66	0	66	0.082	
Gabion	m^3	138.0	0	0	0	0	0	0.000	
7. Drainage									
d= 600mm	lm	624.3	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.133	2.657
9. Engineer's Facility, Mobilization,etc.,	l.s							0.266	
Total								3.055	

Appendix 9-3(2) CONSTRUCTION COST OF ST.DAVID'S ~ PERDMONTEMPS ROAD OPTION - 2

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+600	STA 1+600 STA 3+400	STA 3+400 STA 6+100	STA 6+100 STA 7+200	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	150	468	618	0.023	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	1,260	1,400	1,550	1,092	5,302	0.191	
Rock	m^3	175.0	2,988	3,320	4,250	2,520	13,078	2.289	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	0	0	0	0	0	0.000	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	8,100	13,500	0	21,600	0.032	
2. Side Ditch	m^3	572.2	243	270	360	324	1,197	0.685	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	240	1,350	2,228	28	3,846	0.585	
4. Asphalt Concrete Hot Mix	ton	426.0	595	670	1,166	541	2,972	1.266	
Prime Coat	m^2	6.0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	4,960	5,580	9,720	4,510	24,770	0.035	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	0	80	0	80	0.056	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	33	106	0	139	0.116	
Superstructure	m^2	1,247.0	0	33	106	0	139	0.173	
Gabion	m^3	138.0	4	0	4	0	8	0.001	
7. Drainage									
d= 600mm	lm	624.3	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.273	5.451
9. Engineer's Facility, Mobilization,etc.,	l.s							0.545	
Total								6.269	

Appendix 9-3(3) CONSTRUCTION COST OF ST.DAVID'S ~ PERDMONTEMPS ROAD OPTION - 3

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MECS	REMARKS
			STA 0+000 STA 1+600	STA 1+600 STA 3+400	STA 3+400 STA 6+100	STA 6+100 STA 7+200	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	220	120	900	1,018	2,258	0.086	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	1,040	1,280	2,500	435	5,255	0.189	
Rock	m^3	175.0	3,325	3,720	9,497	3,440	19,982	3.497	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	169	200	498	928	1,795	0.101	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	8,100	13,500	0	21,600	0.032	
2. Side Ditch	m^3	572.2	432	351	972	396	2,151	1.231	
3. Subbase Course	m^3	90.0	756	0	0	355	1,111	0.100	
Base Course	m^3	152.0	880	1,881	2,833	371	5,965	0.907	
4. Asphalt Concrete Hot Mix	ton	426.0	1,536	1,188	1,782	924	5,430	2.313	
Prime Coat	m^2	6.0	4,000	9,900	14,850	1,650	30,400	0.182	
Tack Coat	m^2	1.4	8,800	0	0	5,940	14,740	0.021	
Shoulder Pavement	m^2	5.9	1,920	2,160	3,240	1,320	8,640	0.051	
5. Retaining Wall									
H= 2.00m	lm	695.0	200	200	500	500	1,400	0.973	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	33	106	0	139	0.116	
Superstructure	m^2	1,247.0	0	33	106	0	139	0.173	
Gabion	m^3	138.0	0	6	0	0	6	0.001	
7. Drainage									
d= 600mm	lm	624.3	7	5	10	15	37	0.023	
d= 800mm	lm	1,659.3	0	3	2	3	8	0.013	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	13	11	18	2	44	0.043	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.503	10.051
9. Engineer's Facility, Mobilization,etc.,	l.s							1.005	
Total								11.559	

Appendix 9-4(1) CONSTRUCTION COST OF MT.GAY ~ SPRINGS ROAD OPTION - 1

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+500	STA 0+500 STA 3+050	STA 3+050 STA 4+800	STA 4+800 STA 5+800	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	52	234	156	520	962	0.054	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	27	122	81	270	500	0.286	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	75	128	131	100	434	0.066	
4. Asphalt Concrete Hot Mix	ton	426.0	366	2,173	1,281	734	4,554	1.940	
Prime Coat	m^2	6.0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	3,050	18,105	10,675	6,100	37,930	0.053	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0.000	
Gabion	m^3	138.0	0	0	0	0	0	0.000	
7. Drainage									
d= 600mm	lm	624.3	0	12	0	0	12	0.007	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	40	0	0	0	40	0.079	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.124	2.485
9. Engineer's Facility, Mobilization,etc.,	l.s							0.249	
Total								2.858	

Appendix 9-4(2) CONSTRUCTION COST OF MT.GAY ~ SPRINGS ROAD OPTION - 2

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+500	STA 0+500 STA 3+050	STA 3+050 STA 4+800	STA 4+800 STA 5+800	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	38.0	0	195	0	0	195	0.007	
Rock	m^3	175.0	0	458	0	0	458	0.080	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	52	234	156	520	962	0.054	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	3,000	0	0	6,000	9,000	0.014	
2. Side Ditch	m^3	572.2	27	122	81	270	500	0.286	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	550	383	263	1,500	2,696	0.410	
4. Asphalt Concrete Hot Mix	ton	426.0	366	1,867	1,281	734	4,248	1.810	
Prime Coat	m^2	6.0	3,050	0	0	6,100	9,150	0.055	
Tack Coat	m^2	1.4	0	15,555	10,675	0	26,230	0.037	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	50	0	0	50	0.035	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	36	0	0	0	36	0.030	
Superstructure	m^2	1,247.0	36	0	0	0	36	0.045	
Gabion	m^3	138.0	0	0	0	0	0	0.000	
7. Drainage									
d= 600mm	lm	624.3	0	12	0	0	12	0.007	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	30	0	0	0	30	0.059	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.146	2.928
9. Engineer's Facility, Mobilization,etc.,	l.s							0.293	
Total								3.367	

Appendix 9-4(3) CONSTRUCTION COST OF MT.GAY ~ SPRINGS ROAD OPTION - 3

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY STA 0+000 STA 0+500	STA 0+500 STA 3+050	STA 3+050 STA 4+800	STA 4+800 STA 5+800	TOTAL	CONSTRUCTION COST MEC$	REMARKS
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	250	600	700	500	2,050	0.078	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	303	3,225	0	0	3,528	0.127	
Rock	m^3	175.0	0	11,476	0	0	11,476	2.008	
Borrow Materials	m^3	46.0	0	0	3,238	1,375	4,613	0.212	
Structural Excavation Common Soil	m^3	56.0	0	0	910	630	1,540	0.086	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	3,000	0	0	6,000	9,000	0.014	
2. Side Ditch	m^3	572.2	225	689	473	270	1,657	0.948	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	750	383	263	1,500	2,896	0.440	
4. Asphalt Concrete Hot Mix	ton	426.0	366	1,867	1,281	734	4,248	1.810	
Prime Coat	m^2	6.0	3,050	0	0	6,100	9,150	0.055	
Tack Coat	m^2	1.4	0	15,555	10,675	0	26,230	0.037	
Shoulder Pavement	m^2	5.9	1,500	7,650	5,250	3,000	17,400	0.103	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	1,000	0	0	1,000	0.695	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	153	0	0	0	153	0.127	
Superstructure	m^2	1,247.0	153	0	0	0	153	0.191	
Gabion	m^3	138.0	0	0	0	0	0	0.000	
7. Drainage									
d= 600mm	lm	624.3	8	8	6	3	25	0.016	
d= 800mm	lm	1,659.3	0	1	0	0	1	0.002	
d= 1,000mm	lm	1,971.4	0	0	2	0	2	0.004	
C-BOX 1.00 x 1.00	lm	976.0	2	3	9	0	14	0.014	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.348	6.965
9. Engineer's Facility, Mobilization,etc.,	l.s							0.697	
Total								8.010	

Appendix 9-5(1) CONSTRUCTION COST OF EASTERN MAIN ROAD OPTION - 1

ITEMS	UNIT	UNIT COST	QUANTITY								CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+700	STA 1+700 STA 3+000	STA 3+800 STA 5+000	STA 5+000 STA 6+500	STA 6+500 STA 9+200	STA9+200 STA11+100	STA10+200 STA16+000	TOTAL		
1.Earth Work												
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	520	208	260	208	624	286	2,522	4,628	0.167	
Rock	m^3	175.0	0	0	0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	0	0	0	0	0	0	0	0	0.000	
Back Fill	m^3	88.0	0	0	0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	270	108	135	108	324	149	1,310	2,404	1.376	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	170	130	200	150	270	75	580	1,575	0.239	
4. Asphalt Concrete Hot Mix	ton	426.0	1,244	796	1,244	1,098	1,782	672	3,898	10,734	4.573	
Prime Coat	m^2	6.0	0	0	0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	10,370	6,630	10,200	9,150	15,120	5,600	32,480	89,550	0.125	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0	0	0	0.000	
5. Retaining Wall					0	0	0	0	0	0	0.000	
H= 2.00m	lm	695.0	0	0	0	0	0	0	0	0	0.000	
H=3.00m	lm	1,156.0	0	0	0	0	0	0	0	0	0.000	
H=3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	0	0	0.000	
6. Bridge Construction												
Substructure	l.s	831.0	0	0	0	0	168	0	164	332	0.276	
Superstructure	m^2	1,247.0	0	0	0	0	168	0	164	332	0.414	
Gabion	m^3	138.0	0	9	0	0	0	0	0	9	0.001	
7. Drainage												
d= 600mm	lm	624.3	0	0	0	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0	0			
Under Drain	lm	184.0	0	0	0	0	0	0	0	0	0.000	7.171
8. Incidencial Construction	l.s										0.359	
9. Engineer's Facility, Mobilization,etc.,	l.s										0.717	
Total											8.246	

Appendix 9-5(2) CONSTRUCTION COST OF EASTERN MAIN ROAD OPTION - 2

ITEMS	UNIT	UNIT COST	QUANTITY								CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+700	STA 1+700 STA 3+000	STA 3+800 STA 5+000	STA 5+000 STA 6+500	STA 6+500 STA 9+200	STA9+200 STA11+100	STA10+200 STA16+000	TOTAL		
1.Earth Work												
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	449	0	346	1,142	624	520	710	3,791	0.212	
Back Fill	m^3	88.0	0	0	0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	459	351	540	405	324	270	1,107	3,456	1.978	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	170	130	200	150	270	75	580	1,575	0.239	
4. Asphalt Concrete Hot Mix	ton	426.0	1,244	796	1,244	1,098	1,782	672	3,898	10,734	4.573	
Prime Coat	m^2	6.0	0	0	0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	10,370	6,630	10,200	9,150	15,120	5,600	32,480	89,550	0.125	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0	0	0	0.000	
5. Retaining Wall												
H= 2.00m	lm	695.0	0	0	0	0	0	0	0	0	0.000	
H=3.00m	lm	1,156.0	0	0	0	0	0	0	0	0	0.000	
H=3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	0	0	0.000	
6. Bridge Construction												
Substructure	l.s	831.0	0	66	0	0	168	0	164	398	0.331	
Superstructure	m^2	1,247.0	0	66	0	0	168	0	164	398	0.496	
Gabion	m^3	138.0	0	0	0	0	0	0	0	0	0.000	
7. Drainage												
d= 600mm	lm	4,370.0	0	0	0	0	0	0	0	0	0.000	
d= 800mm	lm	11,615.0	0	0	0	0	0	0	0	0	0.000	
d= 1,000mm	lm	13,800.0	0	0	0	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	0	0	0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0	0	0	0.000	7.954
8. Incidencial Construction	l.s										0.398	
9. Engineer's Facility, Mobilization,etc.,	l.s										0.795	
Total											9.147	

Appendix 9-5(3) CONSTRUCTION COST OF EASTERN MAIN ROAD OPTION - 3

ITEMS	UNIT	UNIT COST	QUANTITY								CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+700	STA 1+700 STA 3+000	STA 3+800 STA 5+000	STA 5+000 STA 6+500	STA 6+500 STA 9+200	STA9+200 STA11+100	STA10+200 STA16+000	TOTAL		
1.Earth Work												
Excavation/Embankment Common Soil	m^3	38.0	160	720	168	630	1,480	325	1,450	4,933	0.187	
Rock	m^3	117.0	0	0	792	0	440	1,225	0	2,457	0.287	
Excavation/Waste Common Soil	m^3	36.0	0	724	0	120	0	0	2,693	3,537	0.127	
Rock	m^3	175.0	967	928	238	3,784	6,034	2,358	10,298	24,607	4.306	
Borrow Materials	m^3	46.0	0	0	0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	449	0	346	1,142	1,756	1,342	1,005	6,040	0.338	
Back Fill	m^3	88.0	0	0	0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	14,000	12,000	0	7,000	0	33,000	0.050	
2. Side Ditch	m^3	572.2	459	351	540	405	729	270	1,566	4,320	2.472	
3. Subbase Course	m^3	90.0	0	488	0	0	810	0	1,196	2,494	0.224	
Base Course	m^3	152.0	255	683	3,000	2,250	972	1,500	2,066	10,726	1.630	
4. Asphalt Concrete Hot Mix	ton	426.0	1,244	1,124	1,464	1,098	2,462	732	5,012	13,136	5.596	
Prime Coat	m^2	6.0	0	1,430	12,200	9,150	4,050	6,100	6,380	39,310	0.236	
Tack Coat	m^2	1.4	10,370	7,930	0	0	16,470	0	35,380	70,150	0.098	
Shoulder Pavement	m^3	5.9	5,100	3,900	6,000	4,500	8,100	3,000	17,400	48,000	0.283	
5. Retaining Wall												
H= 2.00m	lm	695.0	200	0	0	700	1,600	1,000	0	3,500	2.433	
H=3.00m	lm	1,156.0	0	0	0	0	0	0	0	0	0.000	
H=3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0	30	30	0.044	
6. Bridge Construction												
Substructure	l.s	831.0	268	118	0	90	168	62	293	999	0.830	
Superstructure	m^2	1,247.0	268	118	0	90	168	62	293	999	1.246	
Gabion	m^3	138.0	0	9	0	0	0	0	0	9	0.001	
7. Drainage												
d= 600mm	lm	624.3	2	2	2	3	9	2	21	41	0.026	
d= 800mm	lm	1,659.3	1	0	2	3	12	16	12	46	0.076	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0	0	0	0.000	
C-BOX 1.00 x 1.00	lm	976.0	4	10	15	2	5	0	14	50	0.049	
Under Drain	lm	184.0	0	0	0	0	0	0	0	0	0.000	20.541
8. Incidencial Construction	l.s										1.027	
9. Engineer's Facility, Mobilization,etc.,	l.s										2.054	
Total											23.622	

APPENDIX 9-6(1) CONSTRUCTION COST OF PARACLETE ~ MT. HONE ROAD OPTION - 1

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+500	STA 1+500 STA 2+000	STA 2+000 STA 3+000	STA 3+000 STA 3+200	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	494	260	780	208	1,742	0.098	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	257	135	405	108	905	0.518	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	75	50	75	10	210	0.032	
4. Asphalt Concrete Hot Mix	ton	426.0	828	150	420	72	1,470	0.626	
Prime Coat	m^2	6.0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	6,900	1,250	3,500	600	12,250	0.017	
Shoulder Pavement	m^2	5.9	0	0			0	0.000	
5. Retaining Wall							0	0.000	
H= 2.00m	lm	695.0	0	0			0	0.000	
H= 3.00m	lm	1,156.0	0	0			0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0			0	0.000	
6. Bridge Construction							0	0.000	
Substructure	l.s	831.0	0	0			0	0.000	
Superstructure	m^2	1,247.0	0	0			0	0.000	
Gabion	m^3	138.0							
7. Drainage							0	0.000	
d= 600mm	lm	624.3	0	0			0	0.000	
d= 800mm	lm	1,659.3	0	0			0	0.000	
d= 1,000mm	lm	1,971.4	0	0			0	0.000	
C-BOX 1.00x 1.00	lm	976.0							
Under Drain	lm	184.0	0	0			0	0.000	
8. Incidencial Construction	l.s						0	0.065	1.291
9. Engineer's Facility, Mobilization,etc.,	l.s							0.129	
Total								1.484	

APPENDIX 9-6(2) CONSTRUCTION COST OF PARACLETE ~ MT. HONE ROAD OPTION - 2

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+500	STA 1+500 STA 2+000	STA 2+000 STA 3+000	STA 3+000 STA 3+200	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	1,253	175	0	0	1,428	0.054	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	525	2,870	173	3,568	0.128	
Rock	m^3	175.0	0	1,825	4,090	555	6,470	1.132	
Borrow Materials	m^3	46.0	397	0	0	0	397	0.018	
Structural Excavation Common Soil	m^3	56.0	0	260	0	0	260	0.015	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	2,250	0	800	3,050	0.005	
2. Side Ditch	m^3	572.2	594	315	270	108	1,287	0.736	
3. Subbase Course	m^3	90.0	338	525	0	0	863	0.078	
Base Course	m^3	152.0	338	525	75	204	1,142	0.174	
4. Asphalt Concrete Hot Mix	ton	426.0	1,134	330	420	132	2,016	0.859	
Prime Coat	m^2	6.0	1,350	2,750	0	1,100	5,200	0.031	
Tack Coat	m^2	1.4	8,250	0	3,500	0	11,750	0.016	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0.000	
Gabion	m^3	138.0	4	0	4	0	8	0.001	
7. Drainage									
d= 600mm	lm	624.3	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00x 1.00	lm	976.0	0	0	0	0	0	0.000	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.162	3.243
9. Engineer's Facility, Mobilization,etc..	l.s							0.325	
Total								3.735	

APPENDIX 9-6(3) CONSTRUCTION COST OF PARACLETE ~ MT. HONE ROAD OPTION - 3

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY				TOTAL	CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 1+500	STA 1+500 STA 2+000	STA 2+000 STA 3+000	STA 3+000 STA 3+200			
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	1,253	175	0	0	1,428	0.054	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	525	2,870	173	3,568	0.128	
Rock	m^3	175.0	0	1,825	4,090	555	6,470	1.132	
Borrow Materials	m^3	46.0	397	0	0	0	397	0.018	
Structural Excavation Common Soil	m^3	56.0	0	260	0	0	260	0.015	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	2,250	0	800	3,050	0.005	
2. Side Ditch	m^3	572.2	594	315	270	108	1,287	0.736	
3. Subbase Course	m^3	90.0	338	525	465	0	1,328	0.120	
Base Course	m^3	152.0	338	525	465	204	1,532	0.233	
4. Asphalt Concrete Hot Mix	ton	426.0	1,134	330	900	132	2,496	1.063	
Prime Coat	m^2	6.0	1,350	2,750	2,000	1,100	7,200	0.043	
Tack Coat	m^2	1.4	8,250	0	5,500	0	13,750	0.019	
Shoulder Pavement	m^2	5.9	1,800	600	1,200	240	3,840	0.023	
5. Retaining Wall								0.000	
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction								0.000	
Substructure	l.s	831.0	66	0	65	0	131	0.109	
Superstructure	m^2	1,247.0	66	0	65	0	131	0.163	
Gabion	m^3	138.0	4	0	4	0	8	0.001	
7. Drainage								0.000	
d= 600mm	lm	624.3	8	2	5	0	15	0.009	
d= 800mm	lm	1,659.3	2	0	0	0	2	0.003	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00x 1.00	lm	976.0	4	1	1	0	6	0.006	
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.194	3.881
9. Engineer's Facility, Mobilization,etc.,	l.s							0.388	
Total								4.464	

Appendix 9-7(1) CONSTRUCTION COST OF DOVER (WINDWARD / CHERRYHILL) ROAD OPTION - 1

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+400	STA 0+400 STA 0+900	STA 0+900 STA 2+000	STA 2+000 STA 3+100	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	312	0	572	312	1,196	0.067	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0.000	
2. Side Ditch	m^3	572.2	162	0	297	162	621	0.355	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	400	30	66	110	606	0.092	
4. Asphalt Concrete Hot Mix	ton	426.0	197	186	607	541	1,531	0.652	
Prime Coat	m^2	6.0	1,640	0	0	0	1,640	0.010	
Tack Coat	m^2	1.4	0	1,550	5,060	4,510	11,120	0.016	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0.000	
Gabion	m^3	138.0							
7. Drainage									
d= 600mm	lm	624.3	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00x1.00	lm	976.0							
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.060	1.192
9. Engineer's Facility. Mobilization,etc.,	l.s							0.119	
Total								1.371	

Appendix 9-7(2) CONSTRUCTION COST OF DOVER (WINDWARD / CHERRYHILL) ROAD OPTION - 2

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+400	STA 0+400 STA 0+900	STA 0+900 STA 2+000	STA 2+000 STA 3+100	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	0	0	0	0	0	0.000	
Rock	m^3	175.0	0	0	0	0	0	0.000	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	0	0	0	0	0	0.000	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	2,400	2,500	6,600	6,600	18,100	0.027	
2. Side Ditch	m^3	572.2	108	135	297	297	837	0.479	
3. Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	400	405	1,056	1,100	2,961	0.450	
4. Asphalt Concrete Hot Mix	ton	426.0	197	186	607	541	1,531	0.652	
Prime Coat	m^2	6.0	1,640	1,550	5,060	4,510	12,760	0.077	
Tack Coat	m^2	1.4	0	0	0	0	0	0.000	
Shoulder Pavement	m^2	5.9	0	0	0	0	0	0.000	
5. Retaining Wall									
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
6. Bridge Construction									
Substructure	l.s	831.0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0.000	
Gabion	m^3	138.0	4	0	4	0	8	0.001	
7. Drainage									
d= 600mm	lm	624.3	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00x1.00	lm	976.0							
Under Drain	lm	184.0	0	0	0	0	0	0.000	
8. Incidencial Construction	l.s							0.084	1.686
9. Engineer's Facility, Mobilization,etc.,	l.s							0.169	
Total								1.939	

Appendix 9-7(3) CONSTRUCTION COST OF DOVER (WINDWARD / CHERRYHILL) ROAD OPTION - 3

ITEMS	UNIT	UNIT COST (EC$)	QUANTITY					CONSTRUCTION COST MEC$	REMARKS
			STA 0+000 STA 0+400	STA 0+400 STA 0+900	STA 0+900 STA 2+000	STA 2+000 STA 3+100	TOTAL		
1.Earth Work									
Excavation/Embankment Common Soil	m^3	38.0	0	0	0	0	0	0.000	
Rock	m^3	117.0	0	0	0	0	0	0.000	
Excavation/Waste Common Soil	m^3	36.0	924	1,438	2,343	2,981	7,686	0.277	
Rock	m^3	175.0	0	567	374	880	1,821	0.319	
Borrow Materials	m^3	46.0	0	0	0	0	0	0.000	
Structural Excavation Common Soil	m^3	56.0	208	260	572	572	1,612	0.090	
Back Fill	m^3	88.0	0	0	0	0	0	0.000	
Scarification	m^2	1.5	0	0	0	0	0	0.000	
2.Side Ditch	m^3	572.2	108	135	297	297	837	0.479	
3.Subbase Course	m^3	90.0	0	0	0	0	0	0.000	
Base Course	m^3	152.0	564	750	1,430	1,650	4,394	0.668	
4.Asphalt Concrete Hot Mix	ton	426.0	0	0	0	0	0	0.000	
Prime Coat	m^2	6.0	0	0	0	0	0	0.000	
Tack Coat	m^2	1.4	0	0	0	0	0	0.000	
Shoulder Pavement	m^2	5.9	480	600	1,320	1,320	3,720	0.022	
5.PCC Pavement	m^2	133.0	2,160	2,700	5,940	5,940	16,740	2.226	
6.Retaining Wall									
H= 2.00m	lm	695.0	0	0	0	0	0	0.000	
H= 3.00m	lm	1,156.0	0	0	0	0	0	0.000	
H= 3.00 Reinforcing	lm	1,483.0	0	0	0	0	0	0.000	
7.Bridge Construction									
Substructure	l.s	831.0	0	0	0	0	0	0.000	
Superstructure	m^2	1,247.0	0	0	0	0	0	0.000	
Gabion	m^3	138.0							
8.Drainage									
d= 600mm	lm	624.3	0	0	0	0	0	0.000	
d= 800mm	lm	1,659.3	0	0	0	0	0	0.000	
d= 1,000mm	lm	1,971.4	0	0	0	0	0	0.000	
C-BOX 1.00x1.00	lm	976.0							
Under Drain	lm	184.0	0	0	0	0	0	0.000	
9.Incidencial Construction	l.s							0.204	4.081
10.Engineer's Facility, Mobilization,etc.,	l.s							0.408	
Total								4.693	

APPENDIX 10

PRELIMINARY ECONOMIC ANALYSIS

Road R-1
Length (km) 20.5
Improvement Option I
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC – km	BENEFIT VOC – hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	634,050					634,050		-634,050	890,795	
1999	3,217,217					3,217,217		-3,217,217	4,035,677	
2000	9,017,600					9,017,600		-9,017,600	10,099,712	
2001	1,502,933	64,000	2,035,951	462,089	774,757	1,566,933	3,272,798	1,705,865	1,566,933	3,272,798
2002		64,000	2,075,007	479,251	803,531	64,000	3,357,788	3,293,788	57,143	2,998,025
2003		64,000	2,114,158	497,048	833,370	64,000	3,444,575	3,380,575	51,020	2,745,994
2004		64,000	2,153,213	514,209	862,144	64,000	3,529,566	3,465,566	45,554	2,512,275
2005		64,000	2,192,268	531,371	890,917	64,000	3,614,556	3,550,556	40,673	2,297,116
2006		129,000	2,168,374	543,447	911,165	129,000	3,622,987	3,493,987	73,198	2,055,780
2007		129,000	2,144,577	555,524	931,413	129,000	3,631,514	3,502,514	65,355	1,839,838
2008		129,000	2,120,683	566,965	950,596	129,000	3,638,244	3,509,244	58,353	1,645,757
2009		129,000	2,096,885	579,042	970,844	129,000	3,646,771	3,517,771	52,101	1,472,870
2010		3,222,000	2,072,991	591,118	991,092	3,222,000	3,655,202	433,202	1,161,886	1,318,102
2011		106,000	2,049,098	603,195	1,011,340	106,000	3,663,633	3,557,633	34,129	1,179,592
2012		106,000	2,025,300	615,271	1,031,588	106,000	3,672,160	3,566,160	30,472	1,055,658
2013		106,000	2,001,406	626,712	1,050,771	106,000	3,678,890	3,572,890	27,208	944,279
2014		106,000	1,977,609	638,789	1,071,019	106,000	3,687,417	3,581,417	24,292	845,061
2015		106,000	1,953,715	650,866	1,091,267	106,000	3,695,848	3,589,848	21,690	756,244
2016		211,000	1,897,579	684,553	1,147,749	211,000	3,729,881	3,518,881	38,549	681,435
2017		211,000	1,841,444	718,240	1,204,230	211,000	3,763,914	3,552,914	34,419	613,976
2018		211,000	1,785,404	751,292	1,259,646	211,000	3,796,342	3,585,342	30,731	552,916
2019		211,000	1,729,268	784,980	1,316,128	211,000	3,830,375	3,619,375	27,438	498,100
2020		5,283,000	1,673,132	816,667	1,372,609	5,283,000	3,864,409	-1,418,591	613,392	448,684
2021		106,000	1,616,997	852,354	1,429,091	106,000	3,898,442	3,792,442	10,989	404,139
2022		106,000	1,560,861	886,042	1,485,573	106,000	3,932,475	3,826,475	9,811	363,988
2023		106,000	1,504,821	919,094	1,540,988	106,000	3,964,903	3,858,903	8,760	327,670
2024		106,000	1,448,685	952,781	1,597,470	106,000	3,998,936	3,892,936	7,822	295,073
2025	-7,185,900	106,000	1,392,550	986,468	1,653,952	-7,079,900	4,032,970	11,112,870	-466,439	265,701
									18,651,663	31,391,071

Definitions:
B/C: Benefit – Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	1.68
EIRR %	21.77
NPV (EC$)	12,739,408

Road		R-1
Length	(km)	20.5
Improvement Option		II

(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	1,351,500					1,351,500		-1,351,500	1,898,760	
1999	5,585,643					5,585,643		-5,585,643	7,006,631	
2000	15,195,429					15,195,429		-15,195,429	17,018,880	
2001	6,331,429	66,000	3,458,824	1,110,412	1,861,761	6,397,429	6,430,998	33,569	6,397,429	6,430,998
2002		66,000	3,574,646	1,149,820	1,927,834	66,000	6,652,300	6,586,300	58,929	5,939,554
2003		66,000	3,690,564	1,189,228	1,993,907	66,000	6,873,699	6,807,699	52,615	5,479,671
2004		66,000	3,806,386	1,228,636	2,059,980	66,000	7,095,002	7,029,002	46,977	5,050,082
2005		66,000	3,922,208	1,268,044	2,126,053	66,000	7,316,304	7,250,304	41,944	4,649,644
2006		133,000	3,938,137	1,318,893	2,211,308	133,000	7,468,337	7,335,337	75,468	4,237,735
2007		133,000	3,953,970	1,369,106	2,295,497	133,000	7,618,573	7,485,573	67,382	3,859,806
2008		133,000	3,969,899	1,419,955	2,380,753	133,000	7,770,607	7,637,607	60,162	3,515,028
2009		133,000	3,985,732	1,470,168	2,464,942	133,000	7,920,843	7,787,843	53,716	3,199,095
2010		3,321,000	4,001,661	1,521,017	2,550,197	3,321,000	8,072,876	4,751,876	1,197,586	2,911,160
2011		109,000	4,017,590	1,571,230	2,634,387	109,000	8,223,208	8,114,208	35,095	2,647,653
2012		109,000	4,033,424	1,622,079	2,719,642	109,000	8,375,145	8,266,145	31,335	2,407,654
2013		109,000	4,049,353	1,672,293	2,803,832	109,000	8,525,477	8,416,477	27,978	2,188,278
2014		109,000	4,065,186	1,723,141	2,889,087	109,000	8,677,414	8,568,414	24,980	1,988,639
2015		109,000	4,081,115	1,773,355	2,973,276	109,000	8,827,746	8,718,746	22,304	1,806,332
2016		217,000	4,086,297	1,908,104	3,199,203	217,000	9,193,604	8,976,604	39,645	1,679,637
2017		217,000	4,091,574	2,042,854	3,425,129	217,000	9,559,558	9,342,558	35,397	1,559,371
2018		217,000	4,096,756	2,177,603	3,651,056	217,000	9,925,415	9,708,415	31,605	1,445,581
2019		217,000	4,102,034	2,312,353	3,876,982	217,000	10,291,369	10,074,369	28,219	1,338,285
2020		5,436,000	4,107,216	2,447,738	4,103,974	5,436,000	10,658,928	5,222,928	631,156	1,237,574
2021		109,000	4,112,397	2,582,487	4,329,901	109,000	11,024,785	10,915,785	11,300	1,142,904
2022		109,000	4,117,675	2,717,237	4,555,827	109,000	11,390,739	11,281,739	10,089	1,054,322
2023		109,000	4,122,857	2,851,987	4,781,753	109,000	11,756,597	11,647,597	9,008	971,595
2024		109,000	4,128,135	2,986,736	5,007,680	109,000	12,122,550	12,013,550	8,043	894,498
2025	-14,232,001	109,000	4,133,316	3,121,486	5,233,606	-14,123,001	12,488,408	26,611,409	-930,453	822,763
									33,992,180	68,457,858

Definitions:

B/C: Benefit - Cost ratio

IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.

NPV: Net Present Value of a series of cash flows.

B / C	2.0139
EIRR %	23.99
NPV (EC$)	34,465,678

Road R-1
Length (km) 20.5
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	2,533,650					2,533,650		-2,533,650	3,559,596	
1999	8,639,750					8,639,750		-8,639,750	10,837,702	
2000	22,545,600					22,545,600		-22,545,600	25,251,072	
2001	15,030,400	71,000	5,280,692	1,868,696	3,133,130	15,101,400	10,282,519	-4,818,881	15,101,400	10,282,519
2002		71,000	5,391,332	1,918,910	3,217,320	71,000	10,527,562	10,456,562	63,393	9,399,609
2003		71,000	5,501,973	1,968,487	3,300,443	71,000	10,770,903	10,699,903	56,601	8,586,498
2004		71,000	5,612,613	2,018,701	3,384,633	71,000	11,015,946	10,944,946	50,536	7,840,933
2005		71,000	5,723,253	2,068,278	3,467,757	71,000	11,259,288	11,188,288	45,122	7,155,481
2006		142,000	5,771,712	2,166,798	3,632,939	142,000	11,571,449	11,429,449	80,575	6,565,951
2007		142,000	5,820,075	2,265,318	3,798,121	142,000	11,883,513	11,741,513	71,942	6,020,558
2008		142,000	5,868,534	2,364,473	3,964,369	142,000	12,197,376	12,055,376	64,234	5,517,473
2009		142,000	5,916,897	2,462,993	4,129,551	142,000	12,509,440	12,367,440	57,351	5,052,353
2010		3,546,000	5,965,356	2,561,512	4,294,733	3,546,000	12,821,601	9,275,601	1,278,723	4,623,598
2011		116,000	6,013,815	2,660,032	4,459,915	116,000	13,133,762	13,017,762	37,349	4,228,720
2012		116,000	6,062,178	2,758,552	4,625,097	116,000	13,445,827	13,329,827	33,347	3,865,354
2013		116,000	6,110,637	2,857,707	4,791,344	116,000	13,759,689	13,643,689	29,774	3,531,769
2014		116,000	6,159,000	2,956,227	4,956,527	116,000	14,071,754	13,955,754	26,584	3,224,883
2015		116,000	6,207,459	3,054,746	5,121,709	116,000	14,383,914	14,267,914	23,736	2,943,234
2016		233,000	6,232,792	3,262,591	5,470,189	233,000	14,965,573	14,732,573	42,568	2,734,154
2017		233,000	6,258,125	3,470,436	5,818,670	233,000	15,547,232	15,314,232	38,007	2,536,090
2018		233,000	6,283,459	3,678,281	6,167,151	233,000	16,128,890	15,895,890	33,935	2,349,082
2019		233,000	6,308,792	3,886,126	6,515,632	233,000	16,710,549	16,477,549	30,299	2,173,033
2020		5,814,000	6,334,221	4,093,970	6,864,113	5,814,000	17,292,304	11,478,304	675,045	2,007,754
2021		116,000	6,359,554	4,301,815	7,212,593	116,000	17,873,962	17,757,962	12,025	1,852,936
2022		116,000	6,384,887	4,509,660	7,561,074	116,000	18,455,621	18,339,621	10,737	1,708,245
2023		116,000	6,410,220	4,717,505	7,909,555	116,000	19,037,279	18,921,279	9,587	1,573,289
2024		116,000	6,435,553	4,925,350	8,258,036	116,000	19,618,938	19,502,938	8,559	1,447,641
2025	-24,374,700	116,000	6,460,886	5,133,194	8,606,516	-24,258,700	20,200,597	44,459,297	-1,598,214	1,330,858
									55,931,586	108,552,013

Definitions:

B/C: Benefit - Cost ratio

IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.

NPV: Net Present Value of a series of cash flows.

B / C	1.94
EIRR %	22.82
NPV (EC$)	52,620,427

Road R-2
Length (km) 3.2
Improvement Option I
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	67,635					67,635		-67,635	60,388	
1999	984,465					984,465		-984,465	784,809	
2000	480,960					480,960		-480,960	342,338	
2001		9,000	0	65,468	109,766	9,000	175,234	166,234	5,720	111,364
2002		9,000	0	64,197	107,635	9,000	171,831	162,831	5,107	97,502
2003		9,000	0	62,925	105,503	9,000	168,429	159,429	4,560	85,331
2004		9,000	0	61,019	102,306	9,000	163,325	154,325	4,071	73,880
2005		9,000	0	59,747	100,175	9,000	159,922	150,922	3,635	64,590
2006		18,000	0	62,290	104,438	18,000	166,728	148,728	6,491	60,124
2007		18,000	0	65,468	109,766	18,000	175,234	157,234	5,796	56,421
2008		18,000	0	68,010	114,029	18,000	182,039	164,039	5,175	52,332
2009		18,000	0	70,553	118,292	18,000	188,844	170,844	4,620	48,472
2010		459,000	0	73,731	123,620	459,000	197,351	-261,649	105,191	45,228
2011		15,000	0	76,273	127,883	15,000	204,156	189,156	3,069	41,774
2012		15,000	0	78,816	132,146	15,000	210,961	195,961	2,740	38,542
2013		15,000	0	81,358	136,408	15,000	217,767	202,767	2,447	35,522
2014		15,000	0	84,536	141,737	15,000	226,273	211,273	2,185	32,955
2015		15,000	0	87,079	146,000	15,000	233,078	218,078	1,951	30,309
2016		30,000	0	83,265	139,605	30,000	222,870	192,870	3,483	25,877
2017		30,000	0	80,087	134,277	30,000	214,364	184,364	3,110	22,222
2018		30,000	0	76,273	127,883	30,000	204,156	174,156	2,777	18,897
2019		30,000	0	72,460	121,489	30,000	193,948	163,948	2,479	16,028
2020		747,000	0	69,282	116,160	747,000	185,442	-561,558	55,120	13,683
2021		15,000	0	65,468	109,766	15,000	175,234	160,234	988	11,545
2022		15,000	0	61,654	103,372	15,000	165,026	150,026	882	9,707
2023		15,000	0	57,841	96,978	15,000	154,818	139,818	788	8,131
2024		15,000	0	54,663	91,649	15,000	146,312	131,312	703	6,861
2025	-766,530	15,000	0	50,849	85,255	-751,530	136,104	887,634	-31,466	5,699
									1,389,157	1,012,997

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.73
EIRR %	7.51
NPV (EC$)	-376,160

Road R-2
Length (km) 3.2
Improvement Option II
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	157,300					157,300		-157,300	220,995	
1999	1,950,700					1,950,700		-1,950,700	2,446,958	
2000	940,800					940,800		-940,800	1,053,696	
2001	0	11,000	0	70,553	118,292	11,000	188,844	177,844	11,000	188,844
2002		11,000	0	69,282	116,160	11,000	185,442	174,442	9,821	165,573
2003		11,000	0	67,375	112,963	11,000	180,338	169,338	8,769	143,764
2004		11,000	0	66,104	110,832	11,000	176,935	165,935	7,830	125,939
2005		11,000	0	64,197	107,635	11,000	171,831	160,831	6,991	109,202
2006		21,000	0	67,375	112,963	21,000	180,338	159,338	11,916	102,329
2007		21,000	0	70,553	118,292	21,000	188,844	167,844	10,639	95,674
2008		21,000	0	74,366	124,686	21,000	199,052	178,052	9,499	90,041
2009		21,000	0	77,545	130,014	21,000	207,559	186,559	8,482	83,830
2010		531,000	0	80,723	135,343	531,000	216,065	-314,935	191,484	77,915
2011		17,000	0	83,901	140,671	17,000	224,572	207,572	5,474	72,306
2012		17,000	0	87,079	146,000	17,000	233,078	216,078	4,887	67,004
2013		17,000	0	90,892	152,394	17,000	243,286	226,286	4,363	62,445
2014		17,000	0	94,070	157,722	17,000	251,793	234,793	3,896	57,704
2015		17,000	0	97,248	163,051	17,000	260,299	243,299	3,479	53,262
2016		35,000	0	94,070	157,722	35,000	251,793	216,793	6,394	46,002
2017		35,000	0	90,892	152,394	35,000	243,286	208,286	5,709	39,685
2018		35,000	0	87,714	147,065	35,000	234,780	199,780	5,098	34,194
2019		35,000	0	84,536	141,737	35,000	226,273	191,273	4,551	29,424
2020		873,000	0	81,358	136,408	873,000	217,767	-655,233	101,361	25,284
2021		17,000	0	77,545	130,014	17,000	207,559	190,559	1,762	21,517
2022		17,000	0	74,366	124,686	17,000	199,052	182,052	1,574	18,424
2023		17,000	0	71,188	119,357	17,000	190,546	173,546	1,405	15,747
2024		17,000	0	68,010	114,029	17,000	182,039	165,039	1,254	13,432
2025	-1,524,400	17,000	0	64,832	108,700	-1,507,400	173,533	1,680,933	-99,311	11,433
									4,049,977	1,750,978

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.4323
EIRR %	3.09
NPV (EC$)	-2,298,999

Road R-2
Length (km) 3.2
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	314,700					314,700		-314,700	442,131	
1999	3,767,300					3,767,300		-3,767,300	4,725,701	
2000	1,811,200					1,811,200		-1,811,200	2,028,544	
2001	0	17,000	0	130,300	218,467	17,000	348,767	331,767	17,000	348,767
2002		17,000	0	129,029	216,335	17,000	345,364	328,364	15,179	308,361
2003		17,000	0	127,758	214,204	17,000	341,962	324,962	13,552	272,610
2004		17,000	0	125,851	211,007	17,000	336,858	319,858	12,100	239,769
2005		17,000	0	124,580	208,875	17,000	333,455	316,455	10,804	211,917
2006		35,000	0	129,029	216,335	35,000	345,364	310,364	19,860	195,969
2007		35,000	0	134,114	224,861	35,000	358,975	323,975	17,732	181,868
2008		35,000	0	138,563	232,321	35,000	370,884	335,884	15,832	167,769
2009		35,000	0	143,648	240,846	35,000	384,494	349,494	14,136	155,291
2010		864,000	0	148,097	248,306	864,000	396,403	-467,597	311,567	142,947
2011		20,000	0	152,547	255,766	20,000	408,312	388,312	6,439	131,466
2012		20,000	0	157,632	264,291	20,000	421,923	401,923	5,750	121,293
2013		20,000	0	162,081	271,751	20,000	433,832	413,832	5,134	111,354
2014		20,000	0	167,166	280,277	20,000	447,442	427,442	4,583	102,542
2015		20,000	0	171,615	287,736	20,000	459,351	439,351	4,092	93,992
2016		41,000	0	166,530	279,211	41,000	445,741	404,741	7,491	81,435
2017		41,000	0	161,445	270,685	41,000	432,131	391,131	6,688	70,490
2018		41,000	0	156,360	262,160	41,000	418,520	377,520	5,971	60,955
2019		41,000	0	151,275	253,634	41,000	404,910	363,910	5,332	52,654
2020		1,017,000	0	146,826	246,175	1,017,000	393,001	-623,999	118,081	45,630
2021		20,000	0	141,741	237,649	20,000	379,390	359,390	2,073	39,330
2022		20,000	0	136,656	229,123	20,000	365,780	345,780	1,851	33,856
2023		20,000	0	131,571	220,598	20,000	352,169	332,169	1,653	29,104
2024		20,000	0	126,487	212,072	20,000	338,559	318,559	1,476	24,982
2025	-2,946,600	20,000	0	121,402	203,547	-2,926,600	324,949	3,251,549	-192,811	21,408
									7,627,941	3,245,758

Definitions:

B/C: Benefit - Cost ratio

IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.

NPV: Net Present Value of a series of cash flows.

B / C	0.43
EIRR %	3.45
NPV (EC$)	-4,382,183

Road R-3
Length (km) 7.2
Improvement Option I
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	137,700					137,700		-137,700	193,459	
1999	1,025,100					1,025,100		-1,025,100	1,285,885	
2000	1,958,400					1,958,400		-1,958,400	2,193,408	
2001		14,000	0	33,052	55,416	14,000	88,468	74,468	14,000	88,468
2002		14,000	0	33,687	56,482	14,000	90,169	76,169	12,500	80,508
2003		14,000	0	34,959	58,613	14,000	93,572	79,572	11,161	74,595
2004		14,000	0	35,594	59,679	14,000	95,273	81,273	9,965	67,813
2005		14,000	0	36,230	60,744	14,000	96,974	82,974	8,897	61,629
2006		28,000	0	37,501	62,876	28,000	100,377	72,377	15,888	56,956
2007		28,000	0	38,772	65,007	28,000	103,779	75,779	14,186	52,578
2008		28,000	0	40,043	67,139	28,000	107,182	79,182	12,666	48,484
2009		28,000	0	41,315	69,270	28,000	110,585	82,585	11,309	44,663
2010		693,000	0	42,586	71,401	693,000	113,987	-579,013	249,903	41,105
2011		23,000	0	43,222	72,467	23,000	115,689	92,689	7,405	37,249
2012		23,000	0	44,493	74,598	23,000	119,091	96,091	6,612	34,236
2013		23,000	0	45,764	76,730	23,000	122,494	99,494	5,904	31,441
2014		23,000	0	47,035	78,861	23,000	125,896	102,896	5,271	28,852
2015		23,000	0	48,306	80,992	23,000	129,299	106,299	4,706	26,457
2016		45,000	0	49,578	83,124	45,000	132,702	87,702	8,221	24,244
2017		45,000	0	51,484	86,321	45,000	137,805	92,805	7,340	22,479
2018		45,000	0	52,756	88,452	45,000	141,208	96,208	6,554	20,566
2019		45,000	0	54,663	91,649	45,000	146,312	101,312	5,852	19,026
2020		1,134,000	0	55,934	93,781	1,134,000	149,715	-984,285	131,665	17,383
2021		23,000	0	57,205	95,912	23,000	153,117	130,117	2,384	15,873
2022		23,000	0	59,112	99,109	23,000	158,221	135,221	2,129	14,645
2023		23,000	0	60,383	101,241	23,000	161,624	138,624	1,901	13,357
2024		23,000	0	62,290	104,438	23,000	166,728	143,728	1,697	12,302
2025	-1,560,600	23,000	0	63,561	106,569	-1,537,600	170,130	1,707,730	-101,300	11,209
									4,129,567	946,118

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.23
EIRR %	-1.48
NPV (EC$)	-3,183,449

Road R-3
Length (km) 7.2
Improvement Option II
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	322,150					322,150		-322,150	452,598	
1999	1,739,170					1,739,170		-1,739,170	2,181,615	
2000	4,414,080					4,414,080		-4,414,080	4,943,770	
2001	0	15,000	0	40,679	68,204	15,000	108,883	93,883	15,000	108,883
2002		15,000	0	41,950	70,336	15,000	112,286	97,286	13,393	100,255
2003		15,000	0	43,222	72,467	15,000	115,689	100,689	11,958	92,226
2004		15,000	0	43,857	73,533	15,000	117,390	102,390	10,677	83,556
2005		15,000	0	45,128	75,664	15,000	120,792	105,792	9,533	76,766
2006		30,000	0	46,400	77,795	30,000	124,195	94,195	17,023	70,472
2007		30,000	0	48,306	80,992	30,000	129,299	99,299	15,199	65,507
2008		30,000	0	49,578	83,124	30,000	132,702	102,702	13,570	60,027
2009		30,000	0	51,484	86,321	30,000	137,805	107,805	12,116	55,657
2010		747,000	0	52,756	88,452	747,000	141,208	-605,792	269,376	50,921
2011		24,000	0	54,027	90,584	24,000	144,611	120,611	7,727	46,561
2012		24,000	0	55,934	93,781	24,000	149,715	125,715	6,899	43,039
2013		24,000	0	57,205	95,912	24,000	153,117	129,117	6,160	39,301
2014		24,000	0	59,112	99,109	24,000	158,221	134,221	5,500	36,260
2015		24,000	0	60,383	101,241	24,000	161,624	137,624	4,911	33,071
2016		49,000	0	81,994	137,474	49,000	219,468	170,468	8,952	40,096
2017		49,000	0	103,605	173,708	49,000	277,312	228,312	7,993	45,236
2018		49,000	0	125,215	209,941	49,000	335,156	286,156	7,137	48,814
2019		49,000	0	146,826	246,175	49,000	393,001	344,001	6,372	51,106
2020		1,215,000	0	169,073	283,474	1,215,000	452,546	-762,454	141,070	52,544
2021		24,000	0	190,683	319,707	24,000	510,390	486,390	2,488	52,911
2022		24,000	0	212,294	355,941	24,000	568,235	544,235	2,221	52,596
2023		24,000	0	233,905	392,174	24,000	626,079	602,079	1,983	51,741
2024		24,000	0	255,516	428,408	24,000	683,923	659,923	1,771	50,465
2025	-3,237,700	24,000	0	277,126	464,641	-3,213,700	741,767	3,955,467	-211,725	48,869
									7,965,286	1,456,879

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.1829
EIRR %	0.65
NPV (EC$)	-6,508,407

Road R-3
Length (km) 7.2
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	570,200					570,200		-570,200	801,090	
1999	2,689,533					2,689,533		-2,689,533	3,373,750	
2000	7,398,400					7,398,400		-7,398,400	8,286,208	
2001	1,233,067	23,000	0	10,170	17,051	1,256,067	27,221	-1,228,846	1,256,067	27,221
2002		23,000	0	17,797	29,839	23,000	47,636	24,636	20,536	42,533
2003		23,000	0	25,424	42,628	23,000	68,052	45,052	18,335	54,251
2004		23,000	0	33,052	55,416	23,000	88,468	65,468	16,371	62,970
2005		23,000	0	40,679	68,204	23,000	108,883	85,883	14,617	69,197
2006		45,000	0	52,756	88,452	45,000	141,208	96,208	25,534	80,125
2007		45,000	0	65,468	109,766	45,000	175,234	130,234	22,798	88,779
2008		45,000	0	77,545	130,014	45,000	207,559	162,559	20,356	93,889
2009		45,000	0	89,621	150,262	45,000	239,884	194,884	18,175	96,885
2010		1,125,000	0	102,333	171,576	1,125,000	273,910	-851,090	405,686	98,775
2011		37,000	0	114,410	191,824	37,000	306,234	269,234	11,913	98,599
2012		37,000	0	126,487	212,072	37,000	338,559	301,559	10,637	97,328
2013		37,000	0	138,563	232,321	37,000	370,884	333,884	9,497	95,197
2014		37,000	0	151,275	253,634	37,000	404,910	367,910	8,479	92,795
2015		37,000	0	163,352	273,882	37,000	437,234	400,234	7,571	89,467
2016		73,000	0	209,116	350,612	73,000	559,728	486,728	13,337	102,260
2017		73,000	0	254,880	427,342	73,000	682,222	609,222	11,908	111,285
2018		73,000	0	300,644	504,072	73,000	804,716	731,716	10,632	117,202
2019		73,000	0	346,408	580,801	73,000	927,209	854,209	9,493	120,574
2020		1,836,000	0	392,808	658,597	1,836,000	1,051,404	-784,596	213,172	122,075
2021		37,000	0	438,572	735,326	37,000	1,173,898	1,136,898	3,836	121,694
2022		37,000	0	484,336	812,056	37,000	1,296,392	1,259,392	3,425	119,994
2023		37,000	0	530,100	888,786	37,000	1,418,885	1,381,885	3,058	117,260
2024		37,000	0	575,864	965,516	37,000	1,541,379	1,504,379	2,730	113,735
2025	-5,945,600	37,000	0	621,628	1,042,245	-5,908,600	1,663,873	7,572,473	-389,271	109,619
									14,209,939	2,343,708

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.16
EIRR %	1.47
NPV (EC$)	-11,866,231

Road R-4
Length (km) 5.6
Improvement Option 1
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	128,700					128,700		-128,700	180,814	
1999	958,100					958,100		-958,100	1,201,841	
2000	1,830,400					1,830,400		-1,830,400	2,050,048	
2001	0	22,000	0	21,611	36,233	22,000	57,844	35,844	22,000	57,844
2002		22,000	0	23,518	39,431	22,000	62,948	40,948	19,643	56,204
2003		22,000	0	24,789	41,562	22,000	66,351	44,351	17,538	52,894
2004		22,000	0	26,696	44,759	22,000	71,455	49,455	15,659	50,860
2005		22,000	0	27,967	46,890	22,000	74,857	52,857	13,981	47,573
2006		43,000	0	34,323	57,547	43,000	91,870	48,870	24,399	52,130
2007		43,000	0	40,043	67,139	43,000	107,182	64,182	21,785	54,302
2008		43,000	0	46,400	77,795	43,000	124,195	81,195	19,451	56,180
2009		43,000	0	52,120	87,387	43,000	139,507	96,507	17,367	56,344
2010		1,080,000	0	58,476	98,044	1,080,000	156,520	-923,480	389,459	56,443
2011		35,000	0	64,832	108,700	35,000	173,533	138,533	11,269	55,873
2012		35,000	0	70,553	118,292	35,000	188,844	153,844	10,062	54,288
2013		35,000	0	76,909	128,949	35,000	205,857	170,857	8,984	52,838
2014		35,000	0	82,629	138,540	35,000	221,169	186,169	8,021	50,686
2015		35,000	0	88,986	149,197	35,000	238,182	203,182	7,162	48,737
2016		71,000	0	102,969	172,642	71,000	275,611	204,611	12,971	50,353
2017		71,000	0	116,317	195,021	71,000	311,338	240,338	11,582	50,786
2018		71,000	0	130,300	218,467	71,000	348,767	277,767	10,341	50,796
2019		71,000	0	143,848	240,846	71,000	384,494	313,494	9,233	49,999
2020		1,764,000	0	157,632	264,291	1,764,000	421,923	-1,342,077	204,812	48,988
2021		35,000	0	171,615	287,736	35,000	459,351	424,351	3,628	47,619
2022		35,000	0	184,963	310,116	35,000	495,079	460,079	3,240	45,824
2023		35,000	0	198,946	333,561	35,000	532,507	497,507	2,892	44,008
2024		35,000	0	212,294	355,941	35,000	568,235	533,235	2,583	41,929
2025	-1,458,600	35,000	0	226,278	379,386	-1,423,600	605,663	2,029,263	-93,790	39,902
									4,206,975	1,273,402

Definitions:

B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.30
EIRR %	1.51
NPV (EC$)	-2,933,574

Road R-4
Length (km) 5.8
Improvement Option II
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	231,515					231,515		-231,515	325,262	
1999	992,457					992,457		-992,457	1,244,938	
2000	2,370,368					2,370,368		-2,370,368	2,654,812	
2001		22,000	0	84,536	141,737	22,000	226,273	204,273	22,000	22[illegible]3
2002		22,000	0	88,350	148,131	22,000	236,481	214,481	19,643	21[illegible]4
2003		22,000	0	91,528	153,459	22,000	244,987	222,987	17,538	19[illegible]2
2004		22,000	0	95,342	159,854	22,000	255,195	233,195	15,659	18[illegible]3
2005		22,000	0	98,520	165,182	22,000	263,702	241,702	13,981	16[illegible]7
2006		43,000	0	110,596	185,430	43,000	296,026	253,026	24,399	16[illegible]3
2007		43,000	0	122,673	205,678	43,000	328,351	285,351	21,785	16[illegible]3
2008		43,000	0	134,114	224,861	43,000	358,975	315,975	19,451	16[illegible]2
2009		43,000	0	146,191	245,109	43,000	391,299	348,299	17,367	15[illegible]9
2010		1,080,000	0	158,267	265,357	1,080,000	423,624	-656,376	389,459	15[illegible]3
2011		35,000	0	170,344	285,605	35,000	455,949	420,949	11,269	14[illegible]3
2012		35,000	0	182,420	305,853	35,000	488,274	453,274	10,062	14[illegible]7
2013		35,000	0	193,861	325,036	35,000	518,897	483,897	8,984	13[illegible]8
2014		35,000	0	205,938	345,284	35,000	551,222	516,222	8,021	12[illegible]6
2015		35,000	0	218,015	365,532	35,000	583,546	548,546	7,162	11[illegible]5
2016		71,000	0	240,897	403,897	71,000	644,793	573,793	12,971	11[illegible]1
2017		71,000	0	263,779	442,262	71,000	706,040	635,040	11,582	11[illegible]0
2018		71,000	0	286,661	480,626	71,000	767,287	696,287	10,341	11[illegible]1
2019		71,000	0	309,543	518,991	71,000	828,534	757,534	9,233	10[illegible]2
2020		1,764,000	0	332,425	557,356	1,764,000	889,781	-874,219	204,812	10[illegible]0
2021		35,000	0	354,671	594,655	35,000	949,326	914,326	3,628	9[illegible]4
2022		35,000	0	377,553	633,020	35,000	1,010,573	975,573	3,240	9[illegible]8
2023		35,000	0	400,435	671,385	35,000	1,071,820	1,036,820	2,892	8[illegible]8
2024		35,000	0	423,317	709,750	35,000	1,133,067	1,098,067	2,583	8[illegible]7
2025	-1,797,170	35,000	0	446,199	748,115	-1,762,170	1,194,314	2,956,484	-116,095	7[illegible]4
									4,976,979	3,43[illegible]4

Definitions:

B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0[illegible]0
EIRR %	3.[illegible]5
NPV (EC$)	-1,5[illegible]5

Road R-4
Length (km) 5.8
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	505,450					505,450		-505,450	710,121	
1999	1,973,950					1,973,950		-1,973,950	2,476,123	
2000	5,126,400					5,126,400		-5,126,400	5,741,568	
2001	854,400	22,000	0	144,284	241,912	876,400	386,195	-490,205	876,400	386,195
2002		22,000	0	150,640	252,569	22,000	403,208	381,208	19,643	360,008
2003		22,000	0	156,996	263,226	22,000	420,221	398,221	17,538	334,998
2004		22,000	0	163,352	273,882	22,000	437,234	415,234	15,659	311,215
2005		22,000	0	169,708	284,539	22,000	454,248	432,248	13,981	288,682
2006		43,000	0	189,412	317,576	43,000	506,988	463,988	24,399	287,679
2007		43,000	0	209,116	350,612	43,000	559,728	516,728	21,785	283,576
2008		43,000	0	228,820	383,649	43,000	612,469	569,469	19,451	277,050
2009		43,000	0	248,524	416,685	43,000	665,209	622,209	17,367	268,667
2010		1,080,000	0	268,228	449,721	1,080,000	717,949	-362,051	389,459	258,900
2011		35,000	0	287,932	482,758	35,000	770,690	735,690	11,269	248,141
2012		35,000	0	307,636	515,794	35,000	823,430	788,430	10,062	236,716
2013		35,000	0	327,340	548,831	35,000	876,170	841,170	8,984	224,891
2014		35,000	0	347,044	581,867	35,000	928,911	893,911	8,021	212,882
2015		35,000	0	366,748	614,903	35,000	981,651	946,651	7,162	200,885
2016		71,000	0	387,723	650,071	71,000	1,037,794	966,794	12,971	189,601
2017		71,000	0	409,333	686,305	71,000	1,095,638	1,024,638	11,582	178,722
2018		71,000	0	430,309	721,472	71,000	1,151,781	1,080,781	10,341	167,750
2019		71,000	0	451,919	757,706	71,000	1,209,625	1,138,625	9,233	157,299
2020		1,764,000	0	472,895	792,874	1,764,000	1,265,768	-498,232	204,812	146,964
2021		35,000	0	493,870	828,042	35,000	1,321,911	1,286,911	3,628	137,038
2022		35,000	0	515,481	864,275	35,000	1,379,756	1,344,756	3,240	127,710
2023		35,000	0	536,456	899,443	35,000	1,435,898	1,400,898	2,892	118,666
2024		35,000	0	558,066	935,676	35,000	1,493,743	1,458,743	2,583	110,220
2025	-4,230,100	35,000	0	579,042	970,844	-4,195,100	1,549,886	5,744,986	-276,382	102,110
									10,373,892	5,616,547

Definitions:

B/C: Benefit - Cost ratio

IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.

NPV: Net Present Value of a series of cash flows.

B / C	0.54
EIRR %	6.34
NPV (EC$)	-4,757,345

Road R-5
Length (km) 16
Improvement Option I
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC – km	BENEFIT VOC – hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	371,250					371,250		-371,250	521,580	
1999	1,883,750					1,883,750		-1,883,750	2,362,976	
2000	5,280,000					5,280,000		-5,280,000	5,913,600	
2001	880,000	35,000	0	0	0	915,000	0	-915,000	915,000	0
2002		35,000	7,965	13,983	23,445	35,000	45,393	10,393	31,250	40,530
2003		35,000	15,833	28,602	47,956	35,000	92,392	57,392	27,902	73,654
2004		35,000	23,798	42,586	71,401	35,000	137,785	102,785	24,912	98,073
2005		35,000	31,666	56,569	94,846	35,000	183,082	148,082	22,243	116,352
2006		71,000	29,939	61,019	102,306	71,000	193,264	122,264	40,287	109,663
2007		71,000	28,116	65,468	109,766	71,000	203,350	132,350	35,971	103,023
2008		71,000	26,389	69,282	116,160	71,000	211,830	140,830	32,117	95,821
2009		71,000	24,565	73,731	123,620	71,000	221,916	150,916	28,676	89,628
2010		1,764,000	22,838	78,180	131,080	1,764,000	232,098	-1,531,902	636,116	83,697
2011		58,000	21,015	82,629	138,540	58,000	242,184	184,184	18,674	77,977
2012		58,000	19,288	87,079	146,000	58,000	252,366	194,366	16,674	72,549
2013		58,000	17,464	90,892	152,394	58,000	260,751	202,751	14,887	66,928
2014		58,000	15,737	95,342	159,854	58,000	270,932	212,932	13,292	62,091
2015		58,000	13,914	99,791	167,313	58,000	281,018	223,018	11,868	57,502
2016		116,000	35,697	143,012	239,780	116,000	418,489	302,489	21,193	76,456
2017		116,000	57,383	186,870	313,313	116,000	557,566	441,566	18,922	90,951
2018		116,000	79,166	230,091	385,780	116,000	695,037	579,037	16,895	101,228
2019		116,000	100,852	273,948	459,313	116,000	834,113	718,113	15,085	108,468
2020		2,898,000	122,635	317,170	531,780	2,898,000	971,584	-1,926,416	336,477	112,808
2021		58,000	144,418	360,391	604,247	58,000	1,109,055	1,051,055	6,013	114,972
2022		58,000	166,104	404,249	677,779	58,000	1,248,132	1,190,132	5,368	115,527
2023		58,000	187,887	447,470	750,246	58,000	1,385,603	1,327,603	4,793	114,510
2024		58,000	209,573	491,327	823,779	58,000	1,524,679	1,466,679	4,280	112,503
2025	-4,207,500	58,000	231,356	534,549	896,246	-4,149,500	1,662,151	5,811,651	-273,378	109,506
									10,823,673	2,204,417

Definitions;
B/C: Benefit – Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.20
EIRR %	1.27
NPV (EC$)	-8,619,256

Road	R-5
Length (km)	16
Improvement Option	II
(Unit: EC$)	

Year	Economic Cost	Maintenance Cost	BENEFIT VOC – km	BENEFIT VOC – hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	446,615					446,615		-446,615	627,462	
1999	1,928,429					1,928,429		-1,928,429	2,419,021	
2000	5,268,672					5,268,672		-5,268,672	5,900,913	
2001	1,756,224	35,000	0	74,366	124,686	1,791,224	199,052	-1,592,172	1,791,224	199,052
2002		35,000	7,965	102,969	172,642	35,000	283,575	248,575	31,250	253,192
2003		35,000	15,833	132,207	221,664	35,000	369,704	334,704	27,902	294,726
2004		35,000	23,798	160,810	269,620	35,000	454,227	419,227	24,912	323,310
2005		35,000	31,666	189,412	317,576	35,000	538,654	503,654	22,243	342,324
2006		71,000	29,939	196,404	329,298	71,000	555,641	484,641	40,287	315,286
2007		71,000	28,116	204,031	342,087	71,000	574,234	503,234	35,971	290,925
2008		71,000	26,389	211,023	353,809	71,000	591,221	520,221	32,117	267,438
2009		71,000	24,565	218,015	365,532	71,000	608,112	537,112	28,676	245,606
2010		1,764,000	22,838	225,642	378,320	1,764,000	626,800	-1,137,200	636,116	226,030
2011		58,000	21,015	232,634	390,043	58,000	643,691	585,691	18,674	207,251
2012		58,000	19,288	239,625	401,765	58,000	660,678	602,678	16,674	189,929
2013		58,000	17,464	246,617	413,488	58,000	677,569	619,569	14,887	173,915
2014		58,000	15,737	254,244	426,276	58,000	696,258	638,258	13,292	159,564
2015		58,000	13,914	261,236	437,999	58,000	713,149	655,149	11,868	145,924
2016		116,000	35,697	309,543	518,991	116,000	864,230	748,230	21,193	157,892
2017		116,000	57,383	357,213	598,918	116,000	1,013,515	897,515	18,922	165,326
2018		116,000	79,166	405,520	679,911	116,000	1,164,596	1,048,596	16,895	169,617
2019		116,000	100,852	453,191	759,837	116,000	1,313,880	1,197,880	15,085	170,856
2020		2,898,000	122,635	501,497	840,830	2,898,000	1,464,962	-1,433,038	336,477	170,092
2021		58,000	144,418	549,804	921,822	58,000	1,616,043	1,558,043	6,013	167,530
2022		58,000	166,104	597,474	1,001,749	58,000	1,765,328	1,707,328	5,368	163,398
2023		58,000	187,887	645,781	1,082,742	58,000	1,916,409	1,858,409	4,793	158,377
2024		58,000	209,573	693,452	1,162,668	58,000	2,065,693	2,007,693	4,280	152,423
2025	-4,699,970	58,000	231,356	741,758	1,243,661	-4,641,970	2,216,775	6,858,745	-305,823	146,046
									11,816,692	5,256,031

Definitions:

B/C: Benefit – Cost ratio

IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.

NPV: Net Present Value of a series of cash flows.

B / C	0.4448
EIRR %	4.88
NPV (EC$)	-6,560,661

Road R-5
Length (km) 16
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	1,167,900					1,167,900		-1,167,900	1,640,815	
1999	4,238,500					4,238,500		-4,238,500	5,316,774	
2000	11,337,600					11,337,600		-11,337,600	12,698,112	
2001	7,558,400	38,000	0	102,969	172,642	7,596,400	275,611	-7,320,789	7,596,400	275,611
2002		38,000	7,965	133,478	223,795	38,000	365,238	327,238	33,929	326,105
2003		38,000	15,833	164,623	276,014	38,000	456,470	418,470	30,293	363,895
2004		38,000	23,798	195,133	327,167	38,000	546,097	508,097	27,048	388,701
2005		38,000	31,666	225,642	378,320	38,000	635,628	597,628	24,150	403,953
2006		76,000	29,939	234,540	393,240	76,000	657,719	581,719	43,124	373,208
2007		76,000	28,116	243,439	408,159	76,000	679,714	603,714	38,504	344,364
2008		76,000	26,389	252,338	423,079	76,000	701,805	625,805	34,379	317,461
2009		76,000	24,565	261,236	437,999	76,000	723,800	647,800	30,695	292,331
2010		1,908,000	22,838	270,135	452,918	1,908,000	745,891	-1,162,109	688,044	268,976
2011		62,000	21,015	279,033	467,838	62,000	767,886	705,886	19,962	247,239
2012		62,000	19,288	287,932	482,758	62,000	789,977	727,977	17,824	227,100
2013		62,000	17,464	296,830	497,677	62,000	811,972	749,972	15,914	208,413
2014		62,000	15,737	305,729	512,597	62,000	834,063	772,063	14,209	191,146
2015		62,000	13,914	314,627	527,517	62,000	856,058	794,058	12,686	175,166
2016		125,000	35,697	389,630	653,268	125,000	1,078,594	953,594	22,837	197,055
2017		125,000	57,383	464,632	779,020	125,000	1,301,035	1,176,035	20,390	212,227
2018		125,000	79,166	540,269	905,837	125,000	1,525,272	1,400,272	18,206	222,147
2019		125,000	100,852	615,271	1,031,588	125,000	1,747,712	1,622,712	16,255	227,272
2020		3,123,000	122,635	690,274	1,157,340	3,123,000	1,970,248	-1,152,752	362,601	228,759
2021		62,000	144,418	765,276	1,283,091	62,000	2,192,785	2,130,785	6,427	227,319
2022		62,000	166,104	840,278	1,408,843	62,000	2,415,225	2,353,225	5,739	223,552
2023		62,000	187,887	915,915	1,535,660	62,000	2,639,462	2,577,462	5,124	218,132
2024		62,000	209,573	990,918	1,661,411	62,000	2,861,902	2,799,902	4,575	211,174
2025	-12,151,200	62,000	231,356	1,065,920	1,787,163	-12,089,200	3,084,439	15,173,639	-796,462	203,209
									27,948,554	6,574,516

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.24
EIRR %	2.03
NPV (EC$)	-21,374,038

Road R-6
Length (km) 3.2
Improvement Option I
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	66,600					66,600		-66,600	93,568	
1999	969,400					969,400		-969,400	1,216,015	
2000	473,600					473,600		-473,600	530,432	
2001		7,000	0	27,331	45,825	7,000	73,156	66,156	7,000	73,156
2002		7,000	0	27,331	45,825	7,000	73,156	66,156	6,250	65,318
2003		7,000	0	27,331	45,825	7,000	73,156	66,156	5,580	58,319
2004		7,000	0	26,696	44,759	7,000	71,455	64,455	4,982	50,860
2005		7,000	0	26,696	44,759	7,000	71,455	64,455	4,449	45,411
2006		14,000	0	27,331	45,825	14,000	73,156	59,156	7,944	41,511
2007		14,000	0	28,602	47,956	14,000	76,559	62,559	7,093	38,787
2008		14,000	0	29,238	49,022	14,000	78,260	64,260	6,333	35,401
2009		14,000	0	30,509	51,153	14,000	81,662	67,662	5,654	32,982
2010		351,000	0	31,145	52,219	351,000	83,364	-267,636	126,574	30,062
2011		12,000	0	31,781	53,285	12,000	85,065	73,065	3,864	27,389
2012		12,000	0	33,052	55,416	12,000	88,468	76,468	3,450	25,432
2013		12,000	0	33,687	56,482	12,000	90,169	78,169	3,080	23,144
2014		12,000	0	34,959	58,613	12,000	93,572	81,572	2,750	21,444
2015		12,000	0	35,594	59,679	12,000	95,273	83,273	2,455	19,495
2016		23,000	0	41,315	69,270	23,000	110,585	87,585	4,202	20,203
2017		23,000	0	46,400	77,795	23,000	124,195	101,195	3,752	20,259
2018		23,000	0	52,120	87,387	23,000	139,507	116,507	3,350	20,318
2019		23,000	0	57,205	95,912	23,000	153,117	130,117	2,991	19,911
2020		576,000	0	62,925	105,503	576,000	168,429	-407,571	66,878	19,556
2021		12,000	0	68,646	115,095	12,000	183,741	171,741	1,244	19,048
2022		12,000	0	73,731	123,620	12,000	197,351	185,351	1,111	18,267
2023		12,000	0	79,451	133,211	12,000	212,663	200,663	992	17,575
2024		12,000	0	84,536	141,737	12,000	226,273	214,273	885	16,696
2025	-754,800	12,000	0	90,257	151,328	-742,800	241,585	984,385	-48,937	15,916
									2,073,941	776,460

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.37
EIRR %	2.72
NPV (EC$)	-1,297,481

Road R-6
Length (km) 3.2
Improvement Option II
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	146,160					146,160		-146,160	205,344	
1999	2,127,440					2,127,440		-2,127,440	2,668,661	
2000	1,039,360					1,039,360		-1,039,360	1,164,083	
2001		9,000	0	30,509	51,153	9,000	81,662	72,662	9,000	81,662
2002		9,000	0	33,052	55,416	9,000	88,468	79,468	8,036	78,989
2003		9,000	0	34,959	58,613	9,000	93,572	84,572	7,175	74,595
2004		9,000	0	37,501	62,876	9,000	100,377	91,377	6,406	71,446
2005		9,000	0	39,408	66,073	9,000	105,481	96,481	5,720	67,035
2006		17,000	0	41,950	70,336	17,000	112,286	95,286	9,646	63,714
2007		17,000	0	44,493	74,598	17,000	119,091	102,091	8,613	60,335
2008		17,000	0	47,035	78,861	17,000	125,896	108,896	7,690	56,949
2009		17,000	0	49,578	83,124	17,000	132,702	115,702	6,866	53,596
2010		432,000	0	52,756	88,452	432,000	141,208	-290,792	155,784	50,921
2011		14,000	0	55,298	92,715	14,000	148,013	134,013	4,508	47,656
2012		14,000	0	57,841	96,978	14,000	154,818	140,818	4,025	44,507
2013		14,000	0	60,383	101,241	14,000	161,624	147,624	3,593	41,485
2014		14,000	0	62,925	105,503	14,000	168,429	154,429	3,208	38,600
2015		14,000	0	65,468	109,766	14,000	175,234	161,234	2,865	35,856
2016		28,000	0	69,282	116,160	28,000	185,442	157,442	5,115	33,880
2017		28,000	0	72,460	121,489	28,000	193,948	165,948	4,567	31,637
2018		28,000	0	76,273	127,883	28,000	204,156	176,156	4,078	29,734
2019		28,000	0	80,087	134,277	28,000	214,364	186,364	3,641	27,876
2020		711,000	0	83,901	140,671	711,000	224,572	-486,428	82,552	26,074
2021		14,000	0	87,079	146,000	14,000	233,078	219,078	1,451	24,162
2022		14,000	0	90,892	152,394	14,000	243,286	229,286	1,296	22,518
2023		14,000	0	94,706	158,788	14,000	253,494	239,494	1,157	20,949
2024		14,000	0	97,884	164,116	14,000	262,000	248,000	1,033	19,332
2025	-1,656,480	14,000	0	101,698	170,510	-1,642,480	272,208	1,914,688	-108,210	17,934
									4,277,903	1,121,444

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.26
EIRR %	1.41
NPV (EC$)	-3,156,459

Road R-6
Length (km) 3.2
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	210,700					210,700		-210,700	331,541	
1999	2,217,700					2,217,700		-2,217,700	3,115,709	
2000	2,140,800					2,140,800		-2,140,800	2,685,420	
2001		10,000	0	30,509	51,153	10,000	81,662	71,662	10,000	81,662
2002		10,000	0	33,052	55,416	10,000	88,468	78,468	8,929	78,989
2003		10,000	0	34,959	58,613	10,000	93,572	83,572	7,972	74,595
2004		10,000	0	37,501	62,876	10,000	100,377	90,377	7,118	71,446
2005		10,000	0	39,408	66,073	10,000	105,481	95,481	6,355	67,035
2006		20,000	0	41,950	70,336	20,000	112,286	92,286	11,349	63,714
2007		20,000	0	44,493	74,598	20,000	119,091	99,091	10,133	60,335
2008		20,000	0	47,671	79,927	20,000	127,598	107,598	9,047	57,719
2009		20,000	0	50,213	84,190	20,000	134,403	114,403	8,078	54,283
2010		495,000	0	52,756	88,452	495,000	141,208	-353,792	178,502	50,921
2011		16,000	0	55,298	92,715	16,000	148,013	132,013	5,152	47,656
2012		16,000	0	57,841	96,978	16,000	154,818	138,818	4,600	44,507
2013		16,000	0	61,019	102,306	16,000	163,325	147,325	4,107	41,921
2014		16,000	0	63,561	106,569	16,000	170,130	154,130	3,667	38,989
2015		16,000	0	66,104	110,832	16,000	176,935	160,935	3,274	36,204
2016		33,000	0	76,273	127,883	33,000	204,156	171,156	6,029	37,299
2017		33,000	0	85,807	143,868	33,000	229,676	196,676	5,383	37,465
2018		33,000	0	95,977	160,919	33,000	256,897	223,897	4,806	37,416
2019		33,000	0	105,511	176,905	33,000	282,416	249,416	4,291	36,725
2020		819,000	0	115,681	193,956	819,000	309,637	-509,363	95,091	35,951
2021		16,000	0	125,215	209,941	16,000	335,156	319,156	1,659	34,745
2022		16,000	0	135,385	226,992	16,000	362,377	346,377	1,481	33,541
2023		16,000	0	144,919	242,977	16,000	387,897	371,897	1,322	32,057
2024		16,000	0	155,089	260,028	16,000	415,118	399,118	1,181	30,631
2025	-2,284,600	16,000	0	164,623	276,014	-2,268,600	440,637	2,709,237	-149,460	29,030
									6,382,732	717,060

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.11
EIRR %	1.07
NPV (EC$)	-5,167,896

Road	R-7
Length (km)	3.1
Improvement Option	1
(Unit: EC$)	

Year	Economic Cost	Maintenance Cost	BENEFIT VOC – km	BENEFIT VOC – hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	61,650					61,650		-61,650	86,614	
1999	897,350					897,350		-897,350	1,125,636	
2000	438,400					438,400		-438,400	491,008	
2001		7,000	0	636	1,066	7,000	1,701	-5,299	7,000	1,701
2002		7,000	0	636	1,066	7,000	1,701	-5,299	6,250	1,519
2003		7,000	0	1,271	2,131	7,000	3,403	-3,597	5,580	2,713
2004		7,000	0	1,271	2,131	7,000	3,403	-3,597	4,982	2,422
2005		7,000	0	1,271	2,131	7,000	3,403	-3,597	4,449	2,162
2006		14,000	0	1,271	2,131	14,000	3,403	-10,597	7,944	1,931
2007		14,000	0	1,271	2,131	14,000	3,403	-10,597	7,093	1,724
2008		14,000	0	1,271	2,131	14,000	3,403	-10,597	6,333	1,539
2009		14,000	0	1,271	2,131	14,000	3,403	-10,597	5,654	1,374
2010		351,000	0	1,271	2,131	351,000	3,403	-347,597	126,574	1,227
2011		11,000	0	1,271	2,131	11,000	3,403	-7,597	3,542	1,096
2012		11,000	0	1,271	2,131	11,000	3,403	-7,597	3,162	978
2013		11,000	0	1,271	2,131	11,000	3,403	-7,597	2,823	873
2014		11,000	0	1,271	2,131	11,000	3,403	-7,597	2,521	780
2015		11,000	0	1,271	2,131	11,000	3,403	-7,597	2,251	696
2016		23,000	0	1,907	3,197	23,000	5,104	-17,896	4,202	932
2017		23,000	0	2,542	4,263	23,000	6,805	-16,195	3,752	1,110
2018		23,000	0	3,178	5,328	23,000	8,507	-14,493	3,350	1,239
2019		23,000	0	3,814	6,394	23,000	10,208	-12,792	2,991	1,327
2020		567,000	0	4,449	7,460	567,000	11,909	-555,091	65,833	1,383
2021		11,000	0	5,085	8,526	11,000	13,610	2,610	1,140	1,411
2022		11,000	0	5,720	9,591	11,000	15,312	4,312	1,018	1,417
2023		11,000	0	6,356	10,657	11,000	17,013	6,013	909	1,406
2024		11,000	0	6,992	11,723	11,000	18,714	7,714	812	1,381
2025	-698,700	11,000	0	7,627	12,788	-687,700	20,416	708,116	-45,307	1,345
									1,938,116	35,687

Definitions:

B/C: Benefit – Cost ratio

IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.

NPV: Net Present Value of a series of cash flows.

B / C	0.02
EIRR %	-7.60
NPV (EC$)	-1,902,429

Road R-7
Length (km) 3.1
Improvement Option II
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	87,300					87,300		-87,300	122,650	
1999	1,270,700					1,270,700		-1,270,700	1,593,966	
2000	620,800					620,800		-620,800	695,296	
2001		7,000	0	13,348	22,380	7,000	35,727	28,727	7,000	35,727
2002		7,000	0	13,983	23,445	7,000	37,429	30,429	6,250	33,418
2003		7,000	0	13,983	23,445	7,000	37,429	30,429	5,580	29,838
2004		7,000	0	14,619	24,511	7,000	39,130	32,130	4,982	27,852
2005		7,000	0	14,619	24,511	7,000	39,130	32,130	4,449	24,868
2006		14,000	0	15,255	25,577	14,000	40,831	26,831	7,944	23,169
2007		14,000	0	15,255	25,577	14,000	40,831	26,831	7,093	20,686
2008		14,000	0	15,890	26,642	14,000	42,533	28,533	6,333	19,240
2009		14,000	0	15,890	26,642	14,000	42,533	28,533	5,654	17,178
2010		360,000	0	16,526	27,708	360,000	44,234	-315,766	129,820	15,951
2011		12,000	0	16,526	27,708	12,000	44,234	32,234	3,864	14,242
2012		12,000	0	17,161	28,774	12,000	45,935	33,935	3,450	13,205
2013		12,000	0	17,161	28,774	12,000	45,935	33,935	3,080	11,790
2014		12,000	0	17,797	29,839	12,000	47,636	35,636	2,750	10,917
2015		12,000	0	17,797	29,839	12,000	47,636	35,636	2,455	9,747
2016		24,000	0	17,797	29,839	24,000	47,636	23,636	4,385	8,703
2017		24,000	0	17,797	29,839	24,000	47,636	23,636	3,915	7,771
2018		24,000	0	17,797	29,839	24,000	47,636	23,636	3,495	6,938
2019		24,000	0	17,797	29,839	24,000	47,636	23,636	3,121	6,195
2020		594,000	0	17,797	29,839	594,000	47,636	-546,364	68,967	5,531
2021		12,000	0	17,797	29,839	12,000	47,636	35,636	1,244	4,938
2022		12,000	0	17,797	29,839	12,000	47,636	35,636	1,111	4,409
2023		12,000	0	17,797	29,839	12,000	47,636	35,636	992	3,937
2024		12,000	0	17,797	29,839	12,000	47,636	35,636	885	3,515
2025	-989,400	12,000	0	17,797	29,839	-977,400	47,636	1,025,036	-64,393	3,138
									2,636,339	362,904

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.14
EIRR %	-3.33
NPV (EC$)	-2,273,434

Road R-7
Length (km) 3.1
Improvement Option III
(Unit: EC$)

Year	Economic Cost	Maintenance Cost	BENEFIT VOC - km	BENEFIT VOC - hr	BENEFIT Time	COST TOTAL	BENEFIT TOTAL	B-C	Dis. Cost (12%)	Dis. Benefit (12%)
1998	216,050					216,050		-216,050	303,535	
1999	3,076,950					3,076,950		-3,076,950	3,859,726	
2000	1,500,800					1,500,800		-1,500,800	1,680,896	
2001		9,000	0	18,433	30,905	9,000	49,338	40,338	9,000	49,338
2002		9,000	0	19,068	31,971	9,000	51,039	42,039	8,036	45,571
2003		9,000	0	19,704	33,036	9,000	52,740	43,740	7,175	42,044
2004		9,000	0	20,340	34,102	9,000	54,442	45,442	6,406	38,750
2005		9,000	0	20,975	35,168	9,000	56,143	47,143	5,720	35,680
2006		19,000	0	21,611	36,233	19,000	57,844	38,844	10,781	32,822
2007		19,000	0	22,246	37,299	19,000	59,546	40,546	9,626	30,168
2008		19,000	0	23,518	39,431	19,000	62,948	43,948	8,595	28,475
2009		19,000	0	24,153	40,496	19,000	64,649	45,649	7,674	26,111
2010		468,000	0	24,789	41,562	468,000	66,351	-401,649	168,765	23,927
2011		15,000	0	25,424	42,628	15,000	68,052	53,052	4,830	21,911
2012		15,000	0	26,060	43,693	15,000	69,753	54,753	4,312	20,052
2013		15,000	0	27,331	45,825	15,000	73,156	58,156	3,850	18,777
2014		15,000	0	27,967	46,890	15,000	74,857	59,857	3,438	17,155
2015		15,000	0	28,602	47,956	15,000	76,559	61,559	3,069	15,665
2016		31,000	0	27,331	45,825	31,000	73,156	42,156	5,664	13,365
2017		31,000	0	26,696	44,759	31,000	71,455	40,455	5,057	11,656
2018		31,000	0	25,424	42,628	31,000	68,052	37,052	4,515	9,911
2019		31,000	0	24,789	41,562	31,000	66,351	35,351	4,031	8,628
2020		765,000	0	23,518	39,431	765,000	62,948	-702,052	88,822	7,309
2021		15,000	0	22,246	37,299	15,000	59,546	44,546	1,555	6,173
2022		15,000	0	21,611	36,233	15,000	57,844	42,844	1,388	5,354
2023		15,000	0	20,340	34,102	15,000	54,442	39,442	1,240	4,499
2024		15,000	0	19,704	33,036	15,000	52,740	37,740	1,107	3,892
2025	-2,396,900	15,000	0	18,433	30,905	-2,381,900	49,338	2,431,238	-156,925	3,250
									6,061,886	520,484

Definitions:
B/C: Benefit - Cost ratio
IRR: Internal Rate of Return, which is the percentage rate that equates the present value of an expected future series of cash flows to the initial investment.
NPV: Net Present Value of a series of cash flows.

B / C	0.09
EIRR %	-2.88
NPV (EC$)	-5,541,402