

5-7 Cost Estimation for Candidate Projects

5-7-1 Unit Cost

(1) Design Standard

Regarding the Construction standard for the determination of width of road, it was already mentioned in this chapter. Therefore, it is only described for the criteria of the depth of road, which was related to the traffic volume and C.B.R.

1) Subgrade

In Pakistan, the majority of highways are on plains except a part of N.W.F.P. and Baluchistan, and are generally affected by rains and floods. Therefore, it is assumed for the road reconstruction and new construction that the pavement is constructed on a subgrade 1 meter high with side slopes of 2.5:1.

2) Subbase

In generally, subbase is divided into two layers. They are to say lower and upper subbase. The materials to be used in each layers are decided by a point of view of economy and their characteristics. In this study, it is assumed that the materials of two layers are shown in Table 5-14.

3) Pavement

The types of pavement in this study are classified into two types by traffic volume of commercial vehicles per day. Classification of pavement types are shown in Table 5-15. (In this study, traffic volume of commercial vehicles means traffic of vehicles converted into standard axles with 8200 kg)

4) Thickness of Subbase and Pavement in Total

The required thickness of subbase and pavement are determined from the cumulative number of standard axles to be carried and the C.B.R. of the subgrade. These relations are described in various guide books, which have merit and demerit to adopt in Pakistan, but from the hearing and meeting with authorities in Pakistan, Road Note 29 and 31 are adopted as for the guide books.

Accordingly, based on the Road Note 29 and 31, criteria shown in Table 5-16 and 5-17 are recommended by study team in each different types of road surface treatment.

(2) Construction Method

1) Road bed clearance and removing of weeds and roots

In principle, these works shall be done by man powers, but for the gathering of weeds it should be done by machineries. (for example, bulldozer and shoveldozer)

2) Subgrade

Cases of construction are considered in two types as follows.

One of them is widening, another is heightening.

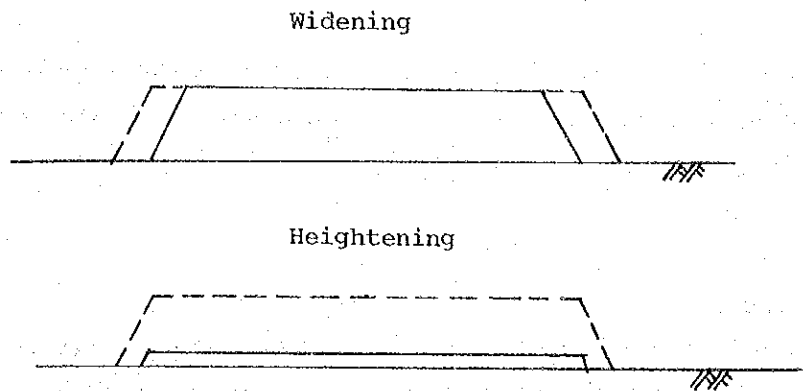


Fig. 5-8. Cases of Construction (Widening and Heightening)

In case of widening, there is no problem except the removing of weeds on the slope of existing road, but in case of heightening, construction method is more complicated than widening, because the latter is related to the control of actual traffic and also have a problem for the disposition of top soil after removing of pavement and subbase.

It is best method to set up the detour for the actual traffic control during the construction period, but one-way traffic control will be adopted in order to reduce the financial problem.

And it is also recommended that the top soil on the old road shall be recompacted. And then, in general subgrade, compaction of subgrade shall be in layers not exceeding 30 cm in depth and shall be at 98% of the maximum dry density. The equipment to be employed for subgrade are as follows;

Compaction	Tyre Roller
Laying and leveling	Bull-Dozer

3) Subbase and Base

The material to be used are shown in Table 5-14 and 5-15. And the material shall be carried from approved quarry sites and average hauling distance from quarries to construction site in each provinces is assumed as in Table 5-18.

The equipment to be employed are as follows:

Laying and leveling	Motor Grader
Compaction	Road Roller
	Tyre Roller
	Water Truck

The materials from old road scarified shall be used as possible, and compaction of subbase and base should be in layers not exceeding 20 cm in depth.

4) Pavement

In this study, the pavement type was classified into two types already. The bituminous surface has been generally using in Pakistan, therefore, only guideline for the asphalt pavement is made a suggestion in this paragraph as shown in Table

5-19.

Essentially, design of mix proportion for the asphalt concrete should be done by the specification, but for the estimation of construction cost, it is assumed as follows:

Straight Asphalt Penetration 40-60	6%
Cement	2%
Sand	38%
Aggregate	54%

As to the asphalt plant facilities and transportation means, it is assumed as follows:

Asphalt plant (traveling type) to be set up at the place within 50 km from the the construction site

Transportation by the dump truck with carrying capacity 11 t

The equipments to be employed are as follows,

- Asphalt Finisher
- Road Roller
- Tyre Roller
- Asphalt Sprayer

5) Bridge

At present, there are various methods of foundation for the bridge as spread foundation, pile foundation and pier foundation.

From these methods, taking into consideration of technical and economical problems, it is recommended to adopt the P.C. pile foundation in case of the flyover and in case of long span bridge to adopt the steel pipe pile.

(3) Unit Price

Basically, estimation of construction cost is based on the data which are offered by the authorities in Pakistan as the past reports, master plan, NESPAC price index, composite schedule of rates in Punjab and etc.

1) Labour cost per day

Province	Sind	Punjab	N.W.F.P.	Baluchistan	Remarks
Skilled Labour	100	100	90	90	
Semi-skilled Labour	60	60	55	55	
Unskilled Labour	30	30	25	25	

Source: NESPAC price index

2) **Material cost**

Province Materials	Sind	Punjab	N.W.F.P.	Baluchistan
Cement	984/t	1073/t	1161/t	1181/t
Mild Steel	5000"	5400"	5500"	5800"
Sand	80/m ³	55/m ³	55/m ³	55/m ³
Stone Ballast	90"	150"	120"	120"
Crushed Stone	147"	125"	79"	79"
Straight Asphalt	2110/t	2820/t	2780/t	2780/t

3) **Machinery cost**

In this study, the basic unit rates of machineries are estimated under the following assumption.

A. Depreciative length of time

Originally, this matter shall be determined by the cumulative operating hours of machineries, but in this study, it is assumed to be 7 years.

B. Customs and tax to imported machinery

Customs duty is normally 30% of C/F value, export the various trucks and no sale tax with the exception of following machines:

	Customs	Sales Tax
Dump Truck	60%	20%
Water Truck	60	

C. Maintenance and miscellaneous expenses

Annual maintenance rate 15% of price

Annual miscellaneous rate 7% of price

Adopted construction unit cost are shown in Table 5-20.

Table 5-14 Materials to be Used in Each Provinces

Province	Subbase		Remarks
	Lower	Upper	
Sind	Stone Ballast	Crushed Stone	
Punjab	Crushed Stone	"	
N.W.F.P.	"	"	
Baluchistan	"	"	

Table 5-15 Classification of Pavement Types

Traffic of commercial vehicles per day	Type of Pavement	Design Life
Up to 1,500	Bituminous Surface	10 years
More than 1,500	Asphalt Concrete Surface	20 "

**Table 5-16 Criteria of Subbase and Pavement Thickness
in Case of Premixed Asphalt Surface**

unit: cm

Cumulative number of standard axle	C		B	R
	5	6	7	Greater than 8
2.5 x 10 ⁶	8			
4.0 x 10 ⁶	35	30		
4.0 x 10 ⁶	8			
7.0 x 10 ⁶	40	35	30	
7.0 x 10 ⁶	9			
10 x 10 ⁶	40	35	30	
10 x 10 ⁶	10			
15 x 10 ⁶	45	40	35	30
15 x 10 ⁶	10			
40 x 10 ⁶	50	45	40	35
40 x 10 ⁶	10			
80 x 10 ⁶	55	50	45	40
80 x 10 ⁶	10			
100 x 10 ⁶	60	55	50	45

Note: Number in the upper column shows thickness of Asphalt Pavement,
lower number shows total thickness of subbase

Table 5-17 Criteria of Subbase and Pavement Thickness in Case of Bituminous Surface

unit: cm

Cumulative Number of Standard Axle	C		B	R	Greater than 25
	5	6	7	8 - 24	
0.05 x 10 ⁶ ~	3				
0.2 x 10 ⁶	40			30	20
0.2 x 10 ⁶ ~	3				
1.0 x 10 ⁶	50	40		30	20
1.0 x 10 ⁶ ~	3				
2.5 x 10 ⁶	50		40	30	20

Note: Number in the upper column shows thickness of bituminous surface, lower number shows total thickness of subbase

Table 5-18 The Average Distance of Transportation for Materials

Province	Distance	Remarks
SIND	100 Km	
PUNJAB	250	
N.W.F.P.	50	
BALUCHISTAN	50	

Table 5-19 Guideline for the Asphalt Pavement

Total Thickness cm	Binder Course cm	Wearing Course cm	Remarks
8	4	4	
9	5	4	
10	5	5	

Table 5-20 List of Construction Unit Cost

	Unit	PUNJAB	SIND	N.W.F.P.	BALUCHISTAN
Land Acquisition	m ²	Rs 8	Rs 3	Rs 11	Rs 3
Road Bed Clearance and Removal of weeds and roots	"	8	8	7	7
Dismantling and Removing Road Pavement	m ³	46	46	40	40
Subgrade	"	127	127	115	115
Subbase from old Pavement	"	173	173	167	167
Subbase (Stone Aggregate)	"	276	219	207	207
Base (Stone Aggregate)	"	322	230	276	270
Bituminous Surface	m ²	35	35	35	35
Resurfacing of Road	"	20	20	20	20
Premixed Asphalt Carpet (t=50m/m)	"	69	60	66	67
Crossing Structure	m	2,955	2,840	2,970	2,970
Superstructure (Fly Over)	"	48,760	46,870	49,390	51,530
Superstructure (Long Span bridge)	"	63,630	61,110	66,900	68,100
Substructure (Fly Over)	pier	3,240,000	3,210,000	3,270,000	3,300,000
Substructure (Long span bridge)	"	3,540,000	3,520,000	3,580,000	3,620,000
Over-Lay (t=50m/m)	m ²	72	63	69	70

Note: Including overhead of 15%.

5-7-2 Cost Estimation

Required road improvement cost by case for next 5-year (1st Stage) programme and beyond next 5-year programme 1988/89-1999/2000 (2nd Stage) are summarized as follows;

(Unit; Rs. Million)

	(1st Stage) <u>1983/84-1987/88</u>	(2nd Stage) <u>1988/89-1999/2000</u>	<u>Total</u>	<u>(Master Plan)</u>
Case; A	35,206	12,361	47,567	
Case; B	34,038	12,447	46,485	

Detailed cost estimation by case and year are shown in table 5-21 and 5-22.

I. CONSTRUCTION COST ESTIMATION FOR 1ST STAGE CONSTRUCTION

Case; A and Case; B

Table 5-21 (1)

CONSTRUCTION COST

UNIT: million rupees

CASE A B TARGET YEAR 1,888.

Road Class Province	Cord	Distance	Road Construction					Crossing		Long Span Bridge	Fly Over	Total	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure				
Primary Sind	52001	160	0	301.39	62.27	278.21	319.68	10.49	5.06	977.10	0	977.10	Case A
			0	301.39	62.27	278.21	319.68	10.49	5.06	977.10	0	977.10	Case B
	52002	15	0.95	32.29	13.35	18.63	33.98	0.68	0.47	100.35	0	100.35	
			0.95	32.29	13.35	18.63	33.98	0.68	0.47	100.35	0	100.35	
	52003	55	3.47	118.40	32.35	95.63	124.60	2.44	2.66	379.55	0	379.55	
			3.47	118.40	32.35	95.63	124.60	2.44	2.66	379.55	0	379.55	
	52004	38	2.39	81.81	21.46	43.13	86.09	1.84	1.38	238.10	0	238.10	
			2.40	81.81	21.46	43.13	86.09	1.84	1.38	238.10	0	238.10	
	52005	68	4.28	146.39	57.25	118.24	154.05	3.28	2.66	486.15	30.96	517.11	
			4.28	146.39	57.25	118.24	154.05	3.28	2.66	486.15	30.96	517.11	
	52006	132	8.32	27.99	111.67	114.05	299.05	5.92	8.58	575.58	59.57	635.15	
			8.32	27.99	111.67	114.05	299.05	5.92	8.58	575.58	59.57	635.15	
52007	22	1.39	50.32	12.40	28.51	43.34	0.99	2.52	139.47	48.60	188.07		
		1.39	50.32	12.40	28.51	43.34	0.99	2.52	139.47	48.60	188.07		
52008	109	8.83	234.66	31.02	141.26	214.73	5.26	5.69	641.45	63.70	705.15		
		8.83	234.66	31.02	141.26	214.73	5.26	5.69	641.45	63.70	705.15		
52009	13	1.05	27.99	3.61	25.83	25.61	0.63	0.62	85.34	0	85.34		
		1.05	3.50	1.16	18.08	12.96	0.63	0.07	37.47	0	37.47		
Primary Punjab	51001	48	14.21	122.71	17.32	100.15	108.74	1.78	3.93	368.84	0	368.84	
			14.21	32.29	5.14	66.77	54.34	1.78	0.99	175.52	0	175.52	
51002	100	29.60	242.19	36.36	278.21	226.55	3.65	9.16	825.72	30.29	856.01		
		29.60	53.82	11.01	139.10	113.20	3.65	1.95	352.33	15.14	367.47		
51003	12	3.17	9.69	2.62	6.26	13.58	0.44	0.35	36.11	0	36.11		
		3.17	9.69	2.62	6.26	13.58	0.44	0.35	36.11	0	36.11		
51004	70	25.20	56.51	8.21	73.03	79.22	2.43	2.61	247.21	0	247.21		
		25.20	56.51	8.21	73.03	79.22	2.43	2.61	247.21	0	247.21		
51005	18	1.30	12.11	1.90	15.65	20.37	0.69	0.49	52.51	167.28	219.79		
		1.30	12.11	1.90	15.65	20.37	0.69	0.49	52.51	167.28	219.79		

Table 5-21 (2)

Page 2

CONSTRUCTION COST

UNIT: million rupees

CASE A B TARGET YEAR 1.888.

Road Class Province	Cord	Distance	Road Construction				Crossing			Long Spun Bridge	Fly Over	Total	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure				
	51006	75	5.40	50.46	7.76	65.21	84.87	2.87	2.08	218.65	0	15.88	234.53
			5.40	50.46	7.76	65.21	84.87	2.87	2.08	218.65	0	15.88	234.53
	51007	44	14.08	100.64	15.97	76.51	99.74	1.63	2.67	311.24	15.30	0	326.54
			14.08	100.64	15.97	76.51	99.74	1.63	2.67	311.24	15.30	0	326.54
	51008	13	3.94	7.00	1.45	3.28	14.71	0.49	0	30.47	0	7.94	38.41
			3.94	7.00	1.45	3.28	14.71	0.49	0	30.47	0	7.94	38.41
	51009	79	21.49	63.78	16.42	68.68	89.39	2.25	1.44	253.45	25.34	15.88	304.67
			21.49	63.78	16.42	68.68	89.39	2.25	1.44	253.45	25.34	15.88	304.67
	51010	40	10.88	107.64	14.52	69.55	90.67	1.14	2.41	296.81	0	15.87	312.68
			10.88	107.64	14.52	69.55	90.67	1.14	2.41	296.81	0	15.87	312.68
	51011	37	3.77	84.63	12.73	55.94	83.86	1.53	1.73	244.19	0	0	244.19
			3.77	84.63	12.73	55.94	83.86	1.53	1.73	244.19	0	0	244.19
	51012	130	34.32	69.97	10.11	117.94	147.11	5.83	1.94	387.22	15.62	7.94	410.78
			34.32	69.97	10.11	117.94	147.11	5.83	1.94	387.22	15.62	7.94	410.78
	51013	67	0	135.22	37.98	93.20	151.86	3.81	4.16	426.23	719.71	15.87	1,161.81
			0	135.22	37.98	93.20	151.86	3.81	4.16	426.23	719.71	15.87	1,161.81
	51014	32	0	64.58	20.39	44.51	72.53	1.53	2.59	206.13	76.00	0	282.13
			0	64.58	20.39	44.51	72.53	1.53	2.59	206.13	76.00	0	282.13
	51015	15	0	30.27	4.52	14.10	34.01	0.75	1.80	85.45	277.63	0	363.08
			0	30.27	4.52	14.10	34.01	0.75	1.80	85.45	277.63	0	363.08
	51016	52	0	97.95	31.95	54.25	117.86	2.64	2.16	306.81	599.76	15.87	922.44
			0	97.95	31.95	54.25	117.86	2.64	2.16	306.81	599.76	15.87	922.44
	51017	38	0	76.69	12.01	66.07	75.47	1.84	1.20	233.28	273.82	47.61	554.71
			0	76.69	12.01	66.07	75.47	1.84	1.20	233.28	273.82	47.61	554.71
	51018	32	0	64.58	10.56	55.64	72.53	1.42	0.93	205.66	46.02	15.87	267.55
			0	64.58	10.56	55.64	72.53	1.42	0.93	205.66	46.02	15.87	267.55
	51019	29	0	62.43	9.66	50.43	65.73	1.26	0.94	174.58	140.31	15.87	330.76
			0	62.43	9.66	50.43	65.73	1.26	0.94	174.58	140.31	15.87	330.76

Table 5-21 (3)

Page 3

CASE A B TARGET YEAR 1,988, 4,000

UNIT: million rupees

CONSTRUCTION COST

Road Class Province	Cord	Distance	Road Construction				Crossing		Long Span Bridge	Fly Over	Total	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work				
	51020	16	0	10.76	3.07	27.82	36.26	0.98	0	79.29	0	79.29
	51021	30	0	10.76	3.07	27.82	36.26	0.98	0	79.29	0	79.29
	51022	45	0	56.51	14.52	31.30	68.00	2.03	1.68	174.04	134.57	324.48
	53001	14	0	56.51	14.52	31.30	68.00	2.03	1.68	174.04	134.57	324.48
Primary N.W.P.	53002	36	0	96.88	17.94	46.95	102.01	1.99	3.50	269.27	342.32	675.07
	53003	23	5.24	5.12	1.16	2.32	15.13	0.54	0.24	29.75	51.15	80.90
	53004	53	5.24	5.12	1.16	2.32	15.13	0.54	0.24	29.75	51.15	80.90
Primary Sind	252010	18	13.46	13.17	2.98	5.96	39.59	1.59	0.25	77.00	68.15	153.18
Primary Baluchistan	254001	82	13.46	13.17	2.98	5.96	39.59	1.59	0.25	77.00	68.15	153.18
	254002	77	8.60	36.45	4.60	9.20	47.59	1.69	1.93	110.06	159.01	269.07
	254003	293	8.60	36.45	4.60	9.20	47.59	1.69	1.93	110.06	159.01	269.07
	254004	69	0	4.88	0	10.46	13.35	2.08	1.63	32.40	58.38	146.79
	254005	144	0	4.88	0	10.46	13.35	2.08	1.63	32.40	58.38	146.79
	254006	131	1.46	9.69	0	6.04	4.53	0.79	0.45	22.96	0	30.90
			1.46	9.69	3.83	4.47	14.78	0.78	0.43	35.44	0	43.27
			8.12	49.98	3.66	49.56	20.65	2.45	1.51	135.93	0	135.93
			8.12	49.98	3.66	49.56	20.65	2.45	1.51	135.93	0	135.93
			7.62	56.32	4.48	59.63	19.39	1.75	4.24	133.43	0	133.43
			7.62	56.32	4.48	59.63	19.39	1.75	4.24	133.43	0	133.43
			0	35.72	0	85.52	36.39	6.66	0	164.29	0	164.29
			0	35.72	0	85.52	36.39	6.66	0	164.29	0	164.29
			0	8.41	0	20.14	8.57	1.57	0	38.69	0	38.69
			0	8.41	0	20.14	8.57	1.57	0	38.69	0	38.69
			14.26	105.32	3.24	85.23	36.27	5.25	4.11	253.68	0	261.83
			14.26	105.32	3.24	85.23	36.27	5.25	4.11	253.68	0	261.83
			12.97	127.75	5.52	77.53	32.99	4.00	4.73	265.49	0	314.39
			12.97	127.75	5.52	77.53	32.99	4.00	4.73	265.49	0	314.39

Table 5-21 (4)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Long Span Bridge	Fly Over	Total	Remarks	
			UNIT: million rupees														Total
			Road Construction			Crossing		Miscellaneous Work									
Land Acquisition	Subgrade	Subbase	Base	Pavement	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	
Primary Punjab	351023	14	5.26	7.53	2.55	4.23	5.22	0.63	0.10	15.00	24.04	7.94	46.98				
			5.26	7.53	2.55	4.23	5.22	0.63	0.10	15.00	24.04	7.94	46.98				
Primary N.W.P.P	353005	3	1.16	1.46	0.30	0.69	1.12	0.11	0.20	5.04	30.39	0	35.43				
			1.16	1.46	0.30	0.69	1.12	0.11	0.20	5.04	30.39	0	35.43				
	353006	54	20.80	118.49	8.61	22.95	27.20	1.95	4.57	204.57	200.39	0	404.96				
			20.80	118.49	8.61	22.95	27.20	1.95	4.57	204.57	200.39	0	404.96				
	353007	24	9.24	2.46	0.53	9.67	6.04	1.00	0.97	29.91	0	0	29.91				
			9.24	2.46	0.53	9.67	6.04	1.00	0.97	29.91	0	0	29.91				
	353008	122	2.68	59.49	0	0	25.67	0.89	5.51	94.24	0	0	94.24				
			2.68	59.49	0	0	25.67	0.89	5.51	94.24	0	0	94.24				
	353009	157	27.63	95.69	0	0	33.04	5.84	7.12	169.32	0	0	169.32				
			27.63	95.69	0	0	33.04	5.84	7.12	169.32	0	0	169.32				
	503010	141	7.76	34.38	0	14.01	17.51	2.88	1.41	77.95	0	0	77.95				
			7.76	34.38	0	14.01	17.51	2.88	1.41	77.95	0	0	77.95				
Primary Baluclietan	504007	210	0	0	0	61.29	26.08	4.83	0	92.20	0	0	92.20				
			0	0	0	61.29	26.08	4.83	0	92.20	0	0	92.20				
	504008	175	0	0	0	52.16	21.74	3.39	0	77.29	0	0	77.29				
			0	0	0	52.16	21.74	3.39	0	77.29	0	0	77.29				
Primary Sind	652011	43	0	11.57	10.00	21.36	16.02	1.91	0.30	61.16	0	7.85	69.01				
			0	11.57	10.00	21.36	16.02	1.91	0.30	61.16	0	7.85	69.01				
	652012	42	4.16	11.30	12.02	20.87	15.65	1.53	0.27	65.80	27.78	7.85	101.43				
			4.16	11.30	12.02	20.87	15.65	1.53	0.27	65.80	27.78	7.85	101.43				
	652013	8	0	2.15	2.00	2.98	2.98	0.32	0.06	10.51	0	0	10.51				
			0	2.15	2.00	2.98	2.98	0.32	0.06	10.51	0	0	10.51				
Primary Baluclietan	654009	146	0	119.48	7.39	87.59	37.27	4.25	0.65	256.63	113.53	16.30	386.46				
			0	110.13	17.02	129.59	55.14	4.25	0.62	316.75	214.45	16.30	547.50				
	654010	163	0	109.66	16.23	142.72	60.73	5.88	3.62	338.84	95.51	32.60	466.95				
			0	109.66	16.23	142.72	60.73	5.88	3.62	338.84	95.51	32.60	466.95				

Table 5-21 (5)

Page 5

CASE A B
TARGET YEAR 1,888

UNIT: million rupees

CONSTRUCTION COST

Road Class Province	Cord	Distance	Road Construction						Crossings		Long Span Bridge	Fly Over	Total	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Total				
Secondary	1024	63	0	42.38	2.35	29.62	15.87	2.45	6.23	98.90	6.39	0	105.29	
Punjab			0	42.38	2.35	29.62	15.87	2.45	6.23	98.90	6.39	0	105.29	
	1025	9	0.58	7.27	0.65	3.54	1.89	0.19	2.09	16.21	0	0	16.21	
			0.58	7.27	0.65	3.54	1.89	0.19	2.09	16.21	0	0	16.21	
NWFP	3011	55	0	20.11	0.20	5.47	6.38	1.01	0	33.62	0	0	33.62	
			0	20.11	0.20	5.47	6.38	1.01	0	33.62	0	0	33.62	
Primary	3012	39	2.58	9.51	1.91	1.40	8.21	0.98	0.51	25.10	0	0	25.10	
NWFP			2.57	9.51	1.91	1.40	8.21	0.98	0.51	25.10	0	0	25.10	
Punjab	1026	54	0	20.36	3.52	21.21	11.36	1.07	1.58	59.08	0	0	59.08	
			0	20.36	3.52	21.21	11.36	1.07	1.58	59.08	0	0	59.08	
	1027	48	12.68	32.29	8.49	33.38	17.88	0.95	1.56	107.23	119.40	39.70	266.33	
			12.67	32.29	8.49	33.38	17.88	0.95	1.56	107.23	119.40	39.70	266.33	
Secondary	3013	37	0.41	22.55	5.73	7.45	9.32	0.64	1.01	47.11	0	0	47.11	
NWFP			0	13.53	4.03	6.23	7.79	0.64	0.97	33.19	0	0	33.19	
	1028	27	0	18.16	2.79	12.69	6.80	0.45	0	40.89	0	0	40.89	
Punjab			0	10.90	2.17	10.61	5.68	0.45	0	29.81	0	0	29.81	
NWFP	3014	186	0	181.39	26.98	43.72	46.84	3.77	4.66	307.36	0	0	307.36	
			0	181.39	26.98	43.72	46.84	3.77	4.66	307.36	0	0	307.36	
	3015	50	7.15	18.29	1.33	8.42	10.52	1.30	2.30	49.21	0	0	49.21	
			7.15	18.29	1.33	8.42	10.52	1.30	2.30	49.21	0	0	49.21	
	1029	38	2.13	15.34	2.79	22.39	6.00	0.68	0.19	51.52	0	0	51.52	
Punjab			2.13	15.34	2.79	22.39	6.00	0.68	0.19	51.52	0	0	51.52	
	1030	40	2.13	16.15	2.94	23.57	8.42	0.72	0.16	54.09	0	0	54.09	
			2.24	16.15	2.94	23.57	8.42	0.72	0.16	54.09	0	0	54.09	
	1031	30	1.68	12.11	0.33	17.68	6.31	1.02	0.19	39.32	0	0	39.32	
			1.68	12.11	0.33	17.68	6.31	1.02	0.19	39.32	0	0	39.32	
Primary	2014	196	0	79.12	22.40	65.82	49.36	5.84	1.11	233.65	31.61	15.68	270.94	
Sind			12.35	79.11	22.31	65.82	49.36	5.84	1.07	235.86	31.69	12.62	280.17	

Table 5-21 (6)

Road Class		Cord	Distance	CONSTRUCTION COST										CROSSING			LONG SPAN BRIDGE			Total	Fly Over	Total	Remarks
Province				Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure				
Primary	Sind	2015	123	9.60	33.10	9.74	61.96	30.98	4.28	0.25	149.91	0	0	0	149.91	0	0	149.91					
		2016	63	0	0	5.22	26.52	13.26	2.19	0	47.19	0	0	0	47.19	0	0	47.19					
		2017	64	0	0	1.83	26.94	13.47	2.23	0	44.47	0	0	0	44.47	0	0	44.47					
		2018	47	0	0	1.22	19.78	9.89	1.63	0	32.52	0	0	0	32.52	0	0	32.52					
		2019	2	0	0	0.08	0.84	0.42	0.07	0	1.41	0	0	0	1.41	0	0	1.41					
		1032	224	26.88	90.42	15.70	88.00	47.14	4.15	4.79	277.08	0	0	0	277.08	0	0	277.08					
Punjab		1033	53	14.00	42.79	4.70	49.83	13.35	1.11	1.85	127.83	22.86	6.35	156.84	127.83	22.86	6.35	156.84					
		1034	106	0	57.05	5.87	83.28	29.74	2.35	1.39	179.68	0	0	179.68	179.68	0	0	179.68					
N.W.F.P		3016	62	3.41	15.12	0	10.44	13.05	1.86	0.89	44.77	0	0	44.77	44.77	0	0	44.77					
		3017	95	5.23	57.90	8.00	15.99	19.99	1.84	0.57	109.52	0	0	109.52	109.52	0	0	109.52					
		3018	47	28.44	34.38	1.36	3.89	11.84	1.43	2.09	83.43	0	0	83.43	83.43	0	0	83.43					
		3019	98	46.35	82.62	3.66	10.28	24.68	2.77	3.02	174.38	0	0	174.38	174.38	0	0	174.38					
		3020	29	13.72	28.28	3.82	10.89	10.81	0.56	1.44	69.52	0	0	69.52	69.52	0	0	69.52					
		3021	65	0	95.08	9.92	28.70	140.78	2.24	5.05	281.77	0	0	281.77	281.77	0	0	281.77					
				0	39.62	15.65	0	24.22	2.24	2.02	83.75	0	0	83.75	83.75	0	0	83.75					

CASE A B TARGET YEAR 1,888

UNIT: million rupees

Table 5-21 (7)

Page 7

CASE A B
TARGET YEAR 1,688

UNIT: million rupees

CONSTRUCTION COST

Road Class Province	Cord	Distance	Road Construction				Crossing		Long Span Bridge	Fly Over Total	Remarks		
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work				Structure	Total
Primary Punjab	1035	38	0	51.13	1.17	26.80	87.57	3.18	1.45	171.30	77.32	0	248.62
			0	51.13	1.17	26.80	87.57	3.18	1.45	171.30	77.32	0	248.62
	1036	97	25.61	52.21	1.90	45.60	24.43	3.89	2.84	156.48	38.00	7.94	202.62
			25.61	52.21	1.90	45.60	24.43	3.89	2.84	156.48	38.00	7.94	202.62
	1037	82	28.21	55.17	7.31	57.03	82.01	3.43	2.10	235.26	0	7.94	243.20
			28.21	55.17	7.31	57.03	82.01	3.43	2.10	235.26	0	7.94	243.20
	1038	32	8.45	21.53	1.00	15.04	8.06	1.17	0.62	55.87	0	0	55.87
			8.45	21.53	1.00	15.04	8.06	1.17	0.62	55.87	0	0	55.87
	1039	94	0	0	2.17	21.79	11.67	1.46	0	37.09	0	0	37.09
			0	0	2.17	21.79	11.67	1.46	0	37.09	0	0	37.09
	1040	48	0	19.38	3.80	18.86	10.10	0.80	0.27	53.21	0	0	53.21
			0	19.38	3.80	18.86	10.10	0.80	0.27	53.21	0	0	53.21
N.W.F.P.	3022	8	2.90	4.88	1.38	1.88	2.01	0.10	0	13.15	0	6.42	19.57
			2.90	4.88	1.38	1.88	2.01	0.10	0	13.15	0	6.42	19.57
Secondary Baluchistan	4011	217	0	26.45	43.99	42.22	26.95	3.46	0	143.07	0	0	143.07
			0	26.45	43.99	42.22	26.95	3.46	0	143.07	0	0	143.07
	4012	189	19.28	184.31	26.57	111.86	47.60	3.56	11.74	404.92	0	0	404.92
			19.28	184.31	26.57	111.86	47.60	3.56	11.74	404.92	0	0	404.92
	1041	8	0	7.53	0.75	5.28	1.68	0.10	2.30	17.64	0	0	17.64
			0	7.53	0.75	5.28	1.68	0.10	2.30	17.64	0	0	17.64
1042	86	0	0	90.42	8.49	78.98	21.16	1.51	6.91	207.47	0	7.94	215.41
			0	90.42	8.49	78.98	21.16	1.51	6.91	207.47	0	7.94	215.41
2020	34	0	2.14	9.15	0	11.42	8.56	1.48	0.18	32.93	0	0	32.93
			2.14	9.15	0	11.42	8.56	1.48	0.18	32.93	0	0	32.93
2021	32	0	2.02	12.92	2.39	10.75	8.06	1.14	0.10	37.38	0	0	37.38
			2.02	12.92	2.39	10.75	8.06	1.14	0.10	37.38	0	0	37.38
2022	74	0	7.53	49.78	12.90	37.27	18.64	1.84	1.02	128.78	0	0	128.78
			7.53	49.78	12.90	37.27	18.64	1.84	1.02	128.78	0	0	128.78

Table 5-21 (8)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Long Span Bridge	Fly Over	Total	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Crossing Structure	Total	Case	Target Year				
Secondary Sind	2023	102	6.43	27.45	0	51.34	25.69	4.45	0.16	115.56	87.00	0	202.56			
			6.43	27.45	0	51.38	25.69	4.45	0.16	115.56	87.00	0	202.56			
	2024	100	6.30	4.84	7.22	50.37	25.18	3.54	0.07	97.52	107.98	0	205.50			
			6.30	4.84	7.22	50.37	25.18	3.54	0.07	97.52	107.98	0	205.50			
	2025	24	4.82	48.44	16.99	11.92	8.94	0	0	91.11	0	0	91.11			
			20.08	48.44	16.99	11.92	8.94	0	0	106.37	0	0	106.37			
	2026	21	2.08	5.65	5.83	7.05	5.29	0.92	0.11	26.93	0	0	26.93			
			2.08	5.65	5.83	7.05	5.29	0.92	0.11	26.93	0	0	26.93			
	2027	16	0	6.46	1.61	6.73	3.37	0.37	0.12	18.66	0	0	18.66			
			0	6.46	1.61	6.73	3.37	0.37	0.12	18.66	0	0	18.66			
	2028	48	0	19.38	4.78	20.20	10.10	1.03	0.20	55.69	0	0	55.69			
			0.86	19.38	4.78	20.20	10.10	1.03	0.20	56.55	0	0	56.55			
	2029	68	6.73	45.75	25.86	34.25	17.13	1.71	0.49	131.92	0	0	131.92			
			6.73	45.75	25.86	34.25	17.13	1.71	0.49	131.92	0	0	131.92			
	2030	40	3.96	32.29	6.44	26.86	10.07	0.79	0	80.41	0	0	80.41			
			3.96	32.29	6.44	26.86	10.07	0.79	0	80.41	0	0	80.41			
	2031	45	0	6.05	0.58	14.90	5.59	0.89	0	28.01	0	0	28.01			
			0	6.05	0.58	14.90	5.59	0.89	0	28.01	0	0	28.01			
	2032	81	0	43.59	9.00	34.09	17.05	1.60	0.74	106.07	0	0	106.07			
			0	43.59	9.00	34.09	17.05	1.60	0.74	106.07	0	0	106.07			
	2033	24	2.38	16.15	2.09	16.12	6.04	0.40	0.09	43.27	0	0	43.27			
			2.38	16.15	2.09	16.12	6.04	0.40	0.09	43.27	0	0	43.27			
	2034	34	3.37	27.45	1.34	17.13	8.56	1.10	0.40	59.35	0	0	59.35			
			3.37	27.45	1.34	17.13	8.56	1.10	0.40	59.35	0	0	59.35			
	2035	16	1.58	12.92	1.05	8.06	4.03	0.47	0.41	28.52	0	0	28.52			
			1.58	12.92	1.05	8.06	4.03	0.47	0.41	28.52	0	0	28.52			
	2036	52	5.15	41.98	1.83	26.19	13.10	1.68	1.62	91.55	0	0	91.55			
			5.15	41.98	1.83	26.19	13.10	1.68	1.62	91.55	0	0	91.55			

CASE A B TARGET YEAR 1,888.

UNIT: million rupees

Table S-21 (9)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Long Span Bridge	Fly Over	Total	Remarks	
			UNT: million rupees														Total
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Crossing	Total						
Secondary Sindh	2037	30	0	0	6.39	4.97	3.73	0.55	0	15.64	0	0	0	0	15.64		
			0	0	6.39	4.97	3.73	0.55	0	15.60	0	0	0	0	15.60		
	2038	55	5.45	29.60	4.00	27.70	13.85	1.81	0.40	82.81	0	0	0	0	88.21		
			5.45	29.60	4.00	27.70	13.85	1.81	0.40	82.81	0	0	0	0	88.81		
	2039	45	0	24.22	4.22	18.94	9.47	1.02	0.70	58.57	0	0	0	0	58.57		
			0	24.22	4.22	18.94	9.47	1.02	0.70	58.57	0	0	0	0	58.57		
	2040	26	0	17.49	3.00	10.94	5.47	0.51	0.30	37.71	0	0	0	0	37.71		
			0	17.49	3.00	10.94	5.47	0.51	0.30	37.71	0	0	0	0	37.71		
	2041	77	0	41.44	7.61	32.41	16.20	1.66	0.48	99.80	0	0	0	0	99.80		
			0	41.44	7.61	32.41	16.20	1.66	0.48	99.80	0	0	0	0	99.80		
	2042	31	0	16.68	2.61	13.05	6.52	0.74	0	39.60	0	0	0	0	39.60		
			0	16.68	2.61	13.05	6.52	0.74	0	39.60	0	0	0	0	39.60		
	112043	26	2.57	17.49	3.00	17.46	6.55	0.78	0.16	48.01	0	0	0	0	57.06		
			2.57	17.49	3.00	17.46	6.55	0.78	0.16	48.01	0	0	0	0	57.06		
	112044	40	3.96	26.91	3.61	26.86	10.07	0.90	0.07	72.38	0	0	0	0	72.38		
			3.96	26.91	3.61	26.86	10.07	0.90	0.07	72.38	0	0	0	0	72.38		
	112045	135	0	0	0	33.53	16.77	3.23	0	53.53	0	0	0	0	53.53		
			0	0	0	33.53	16.77	3.23	0	53.53	0	0	0	0	53.53		
	112046	76	0	0	4.61	42.65	15.99	2.09	0	65.34	0	0	0	0	65.34		
			0	0	4.61	42.65	15.99	2.09	0	65.34	0	0	0	0	65.34		
Primary Punjab	1043	129	48.50	69.43	15.97	157.01	148.37	4.24	0	483.52	0	0	0	7.94	451.46		
			48.50	69.43	15.97	157.01	148.37	4.24	0	483.52	0	0	0	7.94	451.46		
	1044	63	16.63	42.38	6.42	59.24	15.87	1.13	0.86	162.53	0	0	0	0	162.53		
			0	25.43	4.89	49.50	13.26	1.13	0.82	94.83	0	0	0	0	94.83		
	1045	92	0	37.14	6.69	36.14	19.36	1.65	1.72	102.70	0	0	0	0	102.70		
			0	37.14	6.69	36.14	19.36	1.65	1.72	102.70	0	0	0	0	102.70		
Secondary Punjab	1046	138	0	55.70	10.00	54.21	29.04	2.48	1.06	152.49	0	0	0	0	152.49		
			0	0	2.24	31.99	17.14	2.48	0	53.85	0	0	0	0	53.85		

Table 5-21 (10)

Road Class Province	Cord	Distance	CONSTRUCTION COST						UNIT: million rupees			Long Span Bridge	Fly Over	Total	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement Work	Miscellaneous	Crossing Structure	Total	CASE				
Primary	1047	46	12.14	30.95	3.80	32.44	11.59	1.02	3.16	95.10	0	7.94	103.04		
			12.14	30.95	3.80	32.44	11.59	1.02	3.16	95.10	0	7.94	103.04		
	1048	58	3.71	39.02	4.24	34.18	12.21	1.04	1.33	95.73	0	0	95.73		
			3.71	39.02	4.24	34.18	12.21	1.04	1.33	95.73	0	0	95.73		
	1049	62	23.31	41.71	4.52	29.15	15.61	1.59	1.26	117.15	0	15.88	133.03		
			23.31	41.71	4.52	29.15	15.61	1.59	1.26	117.15	0	15.88	133.03		
	1050	68	10.88	27.45	10.56	23.65	25.34	3.05	0.57	101.50	15.10	6.35	122.95		
			10.88	27.45	10.56	23.65	25.34	3.05	0.57	101.50	15.10	6.35	122.95		
Secondary	1051	34	26.37	22.87	2.35	31.97	8.56	0.69	0.52	93.31	15.15	0	108.48		
			26.37	22.87	2.35	31.97	8.56	0.69	0.52	93.31	15.15	0	108.48		
	1052	26	6.86	17.49	3.80	6.11	6.55	0.65	0.83	42.29	9.46	0	51.75		
			6.86	17.49	3.80	6.11	6.55	0.65	0.83	42.29	9.46	0	51.75		
	1053	34	10.88	82.34	8.66	47.30	77.07	1.28	4.22	231.75	0	15.88	247.63		
			10.88	82.34	8.66	47.30	77.07	1.28	4.22	231.75	0	15.88	247.63		
	1054	113	29.83	76.02	13.18	98.24	129.97	3.92	2.84	354.00	22.82	7.94	384.76		
			29.83	76.02	13.18	98.24	129.97	3.92	2.84	354.00	22.82	7.94	384.76		
Primary	1055	117	30.89	78.71	9.38	82.51	29.47	2.73	4.24	237.93	164.87	0	402.80		
			30.89	78.71	9.38	82.51	29.47	2.73	4.24	237.93	164.87	0	402.80		
Secondary	1056	171	0	69.02	0.94	33.59	35.99	6.14	2.99	148.67	0	0	148.67		
			0	69.02	0.94	33.59	35.99	6.14	2.99	148.67	0	0	148.67		
Primary	1057	70	16.80	18.84	5.87	48.69	26.08	3.06	0.62	119.96	15.90	23.82	159.68		
			16.80	18.84	5.87	48.69	26.08	3.06	0.62	119.96	15.90	23.82	159.68		
	1058	63	17.64	25.43	3.07	29.62	15.87	1.96	0.88	94.47	0	0	94.47		
			17.64	25.43	3.07	29.62	15.87	1.96	0.88	94.47	0	0	94.47		
	1059	47	12.41	46.27	4.07	32.69	17.51	2.00	0.65	113.60	16.54	21.82	153.96		
			12.41	46.27	4.07	32.69	17.51	2.00	0.65	113.60	16.54	21.82	153.96		
	1060	89	23.50	47.90	2.35	41.84	22.41	3.25	4.13	145.38	7.60	12.70	165.68		
			23.50	47.90	2.35	41.84	22.41	3.25	4.13	145.38	7.60	12.70	165.68		

Table 5-21 (11)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CROSSING			Fly Over	Total	Remarks
			Road Construction					Miscellaneous Work					Structure	Total	Long Span Bridge			
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous	Work	Structure	Total							
Secondary	1061	53	13.99	35.66	1.73	24.92	13.35	1.87	1.82	93.34	0	7.94	101.28					
			13.99	35.66	1.73	24.92	13.35	1.87	1.82	93.34	0	7.94	101.28					
	1062	48	6.91	32.29	5.69	66.77	17.88	1.64	1.34	132.52	38.78	7.94	179.24					
			6.91	32.29	5.69	66.77	17.88	1.64	1.34	132.52	38.78	7.94	179.24					
	1063	42	8.74	28.26	3.62	29.62	10.58	1.18	0.69	82.69	38.93	0	121.62					
			8.74	28.26	3.62	29.62	10.58	1.18	0.69	82.69	38.93	0	121.62					
	1064	138	0	55.70	0	54.21	29.04	5.03	0	143.98	10.15	0	154.13					
			0	55.70	0	54.21	29.04	5.03	0	143.98	10.15	0	154.13					
	1065	91	24.02	24.49	9.21	42.78	22.92	1.63	0.56	125.61	8.15	0	133.76					
			24.02	24.49	9.21	42.78	22.92	1.63	0.56	125.61	8.15	0	133.76					
	1066	78	0	0	0.25	30.64	16.42	2.80	0	50.11	0	0	50.11					
			0	0	0.25	30.64	16.42	2.80	0	50.11	0	0	50.11					
	1067	40	10.56	26.91	2.62	18.80	10.07	1.08	0.43	70.47	7.45	0	77.92					
			10.56	26.91	2.62	18.80	10.07	1.08	0.43	70.47	7.45	0	77.92					
	1068	46	0	12.38	0.76	18.07	9.68	1.51	0.19	42.59	0	0	42.59					
			0	12.38	0.76	18.07	9.68	1.51	0.19	42.59	0	0	42.59					
	1069	40	11.84	26.91	1.90	9.40	10.07	1.51	0.69	62.32	0	0	62.32					
			11.84	26.91	1.90	9.40	10.07	1.51	0.69	62.32	0	0	62.32					
	1070	37	12.43	24.89	1.20	26.09	9.32	1.33	1.42	76.68	14.99	0	91.67					
			12.43	24.89	1.20	26.09	9.32	1.33	1.42	76.68	14.99	0	91.67					
	1071	52	17.47	27.99	6.04	54.25	19.38	1.80	1.70	128.63	66.33	15.88	210.84					
			17.47	27.99	6.04	54.25	19.38	1.80	1.70	128.63	66.33	15.88	210.84					
	1072	107	8.56	43.19	6.59	63.06	22.52	1.66	1.53	147.11	0	0	147.11					
			8.56	43.19	6.59	63.06	22.52	1.66	1.53	147.11	0	0	147.11					
	1073	130	7.28	17.49	0	15.07	16.15	2.88	0.64	59.51	0	0	59.51					
			7.28	17.49	0	15.07	16.15	2.88	0.64	59.51	0	0	59.51					
	1074	25	1.40	3.37	0	9.82	5.26	0.91	0.11	20.87	0	0	20.87					
			1.40	3.37	0	9.82	5.26	0.91	0.11	20.87	0	0	20.87					

CASE A B
TARGET YEAR 1.886.

UNIT: million rupees

CONSTRUCTION COST

Table 5-21 (12)

Road Class Province	Cord	Distance	CONSTRUCTION COST							UNIT: million rupees			CASE A B		TARGET YEAR	1.888,	Remarks
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Crossing Structure	Total	Long Span Bridge	Fly Over	Total				
Secondary	1075	50	0	13.46	2.79	19.64	10.52	1.08	0.60	48.09	0	0	48.09				
			0	13.46	2.79	19.64	10.52	1.08	0.60	48.09	0	0	48.09				
	1076	31	8.18	8.34	7.04	16.17	35.09	1.11	0	75.93	0	0	75.93				
			8.18	8.34	7.04	21.56	11.55	1.11	0	57.78	0	0	57.78				
	1077	57	8.18	15.33	12.94	29.73	64.52	2.04	0	132.74	0	0	132.74				
			15.05	15.33	12.94	29.64	21.23	2.04	0	106.23	0	0	106.23				
	111078	40	9.92	26.91	2.62	18.80	10.07	1.08	0.53	69.93	0	0	69.93				
			9.92	26.91	2.62	18.80	10.07	1.08	0.53	59.93	0	0	59.93				
	111079	57	14.14	38.35	3.07	26.80	14.36	1.74	0.76	99.22	0	0	99.22				
			14.14	38.35	3.07	26.80	14.36	1.74	0.76	99.22	0	0	99.22				
	111080	35	8.68	23.55	1.16	16.45	8.81	1.28	0.48	60.41	7.50	0	67.91				
			8.68	23.55	1.16	16.45	8.81	1.28	0.48	50.41	7.50	0	67.91				
	111081	40	9.92	26.91	2.79	18.80	10.07	1.03	0.57	70.09	0	0	70.09				
			9.92	26.91	2.79	18.80	10.07	1.03	0.57	70.09	0	0	70.09				
	111082	54	0	21.80	0.15	21.21	11.36	1.54	0.70	57.16	0	0	57.16				
			0	21.80	0.15	21.21	11.36	1.94	0.70	57.16	0	0	57.16				
	111083	24	0	9.69	2.79	4.71	5.05	0.50	0.54	23.28	0	0	23.28				
			0	9.69	2.79	4.71	5.05	0.50	0.54	23.28	0	0	23.28				
	111084	138	0	55.70	3.80	27.11	29.04	4.54	2.27	122.46	0	0	122.46				
			0	55.70	3.80	27.11	29.04	4.54	2.27	122.46	0	0	122.46				
	111085	48	18.43	25.83	3.80	11.28	12.09	1.51	1.31	74.35	0	0	74.35				
			18.43	25.83	3.80	11.28	12.09	1.51	1.31	74.35	0	0	74.35				
	111086	48	1.92	19.38	0.40	18.86	10.10	1.56	0.69	53.01	7.85	0	60.86				
			1.92	19.38	0.40	18.86	10.10	1.56	0.69	53.01	7.85	0	60.86				
	111087	40	12.16	26.91	1.90	18.80	10.07	1.24	1.31	72.39	0	0	72.39				
			12.16	26.91	1.90	18.80	10.07	1.24	1.31	72.39	0	0	72.39				
	111088	51	2.04	20.59	2.79	20.03	10.73	1.16	0.63	57.97	0	0	57.97				
			2.04	20.59	2.79	20.03	10.73	1.16	0.63	57.97	0	0	57.97				

Table 5-21 (13)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Long Span Bridge	Fly Over	Total	Remarks	
			Road Construction														Total
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Crossing	Total						
Secondary	111089	52	21.65	33.10	8.94	71.29	92.79	2.99	1.85	232.61	7.60	7.94	248.15				
			21.65	33.10	8.94	71.29	92.79	2.99	1.85	232.61	7.60	7.94	248.15				
	111090	33	11.35	8.88	3.80	28.69	37.34	1.20	0.37	91.63	9.42	7.94	108.99				
			11.35	8.88	3.80	28.69	37.34	1.20	0.37	91.63	9.42	7.94	108.99				
	111091	99	34.06	26.64	10.83	103.28	36.89	3.61	0.63	215.94	9.88	7.94	233.76				
			34.06	26.64	10.83	103.28	36.89	3.61	0.63	215.94	9.88	7.94	233.76				
	111092	60	11.04	40.37	6.04	28.21	15.11	1.08	0.56	102.41	0	0	102.41				
			11.04	40.37	6.04	28.21	15.11	1.08	0.56	102.41	0	0	102.41				
	111093	104	10.82	69.97	4.95	48.89	26.19	3.11	1.22	165.15	0	0	165.15				
			10.82	69.97	4.95	48.89	26.19	3.11	1.22	165.15	0	0	165.15				
	111094	125	14.00	67.28	6.87	58.77	31.48	3.74	1.20	183.34	0	0	183.34				
			14.00	67.28	6.87	58.77	31.48	3.74	1.20	183.34	0	0	183.34				
	111095	99	26.14	79.92	9.38	46.54	24.93	1.95	3.33	192.19	19.45	0	211.64				
			26.14	79.92	9.38	46.54	24.93	1.95	3.33	192.19	19.45	0	211.64				
	111096	47	0	18.98	2.79	27.70	9.89	0.98	1.27	61.61	0	0	61.61				
			0	18.98	2.79	27.70	9.89	0.98	1.27	61.61	0	0	61.61				
	111097	82	21.65	77.23	8.20	57.82	20.65	1.47	3.04	190.06	0	0	190.06				
			21.65	77.23	8.20	57.82	20.65	1.47	3.04	190.06	0	0	190.06				
	111098	81	21.38	76.29	7.49	57.12	20.40	1.60	1.86	186.14	19.63	0	205.77				
			21.38	76.29	7.49	57.12	20.40	1.60	1.86	186.14	19.63	0	205.77				
	111099	87	3.48	11.71	2.79	51.27	18.31	2.45	0.20	90.21	0	0	90.21				
			3.48	11.71	2.79	51.27	18.31	2.45	0.20	90.21	0	0	90.21				
	111100	68	0	27.45	4.69	26.71	14.31	1.26	0.56	74.98	0	0	74.98				
			0	27.45	4.69	26.71	14.31	1.26	0.56	74.98	0	0	74.98				
	111101	46	12.14	37.14	4.52	21.63	11.59	0.88	1.52	89.42	39.25	0	128.67				
			12.14	37.14	4.52	21.63	11.59	0.88	1.52	89.42	39.25	0	128.67				
	111102	64	4.61	8.61	0	14.84	7.95	1.42	0	37.43	0	0	37.43				
			4.61	8.61	0	14.84	7.95	1.42	0	37.43	0	0	37.43				

CASE A B
TARGET YEAR 1,888,
UNIT: million rupees

Table 5-21 (14)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE A B			Total	Remarks
			UNIT: million rupees										TARGET YEAR				
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work / Structures	Crossing	Long Span Bridge	Fly Over	Total					
Secondary	111103	57	19.61	38.35	2.07	26.80	14.36	1.98	1.36	104.53	0	0	104.53				
			19.61	38.35	2.07	26.80	14.36	1.98	1.36	104.53	0	0	104.53				
	111104	29	0	11.71	4.24	11.39	6.10	0.52	0.47	34.43	0	0	34.43				
			0	11.71	4.24	11.39	6.10	0.52	0.47	34.43	0	0	34.43				
	111105	29	0	11.71	2.07	11.39	6.10	0.52	0.77	32.56	0	0	32.56				
			0	11.71	2.07	11.39	6.10	0.52	0.77	32.56	0	0	32.56				
	111106	31	0	0	0.51	7.19	3.85	0.56	0	12.11	0	0	12.11				
			0	0	0.51	7.19	3.85	0.56	0	12.11	0	0	12.11				
	111107	50	0	20.18	1.45	19.64	10.52	1.64	1.28	54.71	0	0	54.71				
			0	20.18	1.45	19.64	10.52	1.64	1.28	54.71	0	0	54.71				
Primery	3023	23	8.10	11.21	3.97	6.86	8.57	0.92	0.05	39.68	0	0	39.68				
			8.10	11.21	3.97	6.86	8.57	0.92	0.05	39.68	0	0	39.68				
	3024	66	30.49	40.23	3.45	0	16.62	2.33	1.92	95.04	0	0	95.04				
			30.50	40.23	3.45	0	16.62	2.33	1.92	95.05	0	0	95.05				
	3025	132	10.16	80.45	11.62	0	27.78	2.84	2.12	134.97	0	0	134.97				
			5.81	32.18	0	0	16.39	2.49	0.81	57.68	0	0	57.68				
	3026	29	17.23	14.14	0	0	7.30	1.46	0.33	40.46	0	0	40.46				
			17.23	14.14	0	0	7.30	1.46	0.33	40.46	0	0	40.46				
	3027	28	6.47	6.83	0	0	7.05	1.41	1.10	22.86	0	0	22.86				
			13.61	6.83	0	0	7.05	1.41	1.10	20.00	0	0	30.00				
	3028	46	22.77	22.43	0.38	0	11.59	1.95	1.10	60.22	0	0	60.22				
			22.77	22.43	0.38	0	11.59	1.95	1.10	60.22	0	0	60.22				
	3029	88	0	32.18	0.73	0	22.16	3.45	0.20	58.72	0	0	58.72				
			0	53.64	0.36	0.48	22.16	3.02	1.84	81.50	0	0	81.50				
	3030	35	21.95	21.33	1.70	14.10	8.81	1.00	0.36	69.25	0	0	69.25				
			21.95	21.33	1.70	14.10	8.81	1.00	0.36	69.25	0	0	69.25				
	3031	82	0	19.99	0	0	10.18	1.77	0	31.94	0	0	31.94				
			0	19.99	0	0	10.18	1.77	0	31.94	0	0	31.94				

Table S-21 (15)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CROSSING			Long Span Bridge	Fly Over	Total	Remarks	
			Road Construction										Structures	Total	Fly Over					Total
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structures	Total	Fly Over	Total								
Secondary	3032	33	2.90	16.09	0	0	6.94	1.20	1.09	28.22	0	28.22	0	28.22						
			2.90	16.09	0	0	6.94	1.20	1.09	28.22	0	28.22	0	28.22						
Primary	4013	346	0	41.94	48.20	66.94	42.72	8.02	0	207.82	0	207.82	0	207.82						
			0	41.94	48.20	66.94	42.72	8.02	0	207.82	0	207.82	0	207.82						
	4016	366	0	44.62	27.27	71.22	45.46	3.28	0	191.85	0	191.85	0	191.85						
			0	44.62	27.27	71.22	45.46	3.28	0	191.85	0	191.85	0	191.85						
Secondary	4015	328	16.73	119.95	24.44	63.82	40.74	2.72	0	268.40	0	268.40	0	268.40						
			16.73	119.95	24.44	63.82	40.74	2.72	0	268.40	0	268.40	0	268.40						
	4016	118	0	43.15	0	11.48	14.66	0.98	0.04	70.31	0	70.31	0	70.31						
			0	43.15	0	11.48	14.66	0.98	0.04	70.31	0	70.31	0	70.31						
	4017	230	23.46	280.37	17.14	44.75	28.57	3.81	0	398.10	0	398.10	0	398.10						
			23.46	280.37	17.14	44.75	28.57	3.81	0	398.10	0	398.10	0	398.10						
	4018	530	54.06	646.07	39.50	103.12	65.84	8.78	0	917.37	0	917.37	0	917.37						
			54.06	646.07	39.50	103.12	65.84	8.78	0	917.37	0	917.37	0	917.37						
	4019	372	10.19	453.47	27.72	72.38	46.21	6.16	0	616.13	0	616.13	0	616.13						
			10.19	453.47	27.72	72.38	46.21	6.16	0	616.13	0	616.13	0	616.13						
	4020	169	17.23	194.35	12.59	33.68	20.99	0	0	278.84	0	278.84	0	278.84						
			17.23	194.35	12.59	33.68	20.99	0	0	278.84	0	278.84	0	278.84						
	4021	115	11.73	132.25	8.57	22.37	14.28	0	0	189.20	0	189.20	0	189.20						
			11.73	132.25	8.57	22.37	14.28	0	0	189.20	0	189.20	0	189.20						
	4022	72	7.34	82.50	5.36	4.01	8.94	0	0	118.15	0	118.15	0	118.15						
			7.34	82.50	5.36	4.01	8.94	0	0	118.15	0	118.15	0	118.15						
	4023	272	27.74	312.80	20.26	52.92	33.78	0	0	447.50	0	447.50	0	447.50						
			27.74	312.80	20.26	52.92	33.78	0	0	447.50	0	447.50	0	447.50						
Total										29,380.52		29,380.52		35,206.10						
										28,129.33		28,129.33		34,038.60						

II. CONSTRUCTION COST ESTIMATION FOR 2ND STAGE CONSTRUCTION

Case; A and Case; B

Table S-22 (1)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE A & B		Remarks	
			UNIT: million rupees										TARGET YEAR			2,000
			Road Construction			Crossing			Miscellaneous Work				Long Span Bridge	Fly Over		
Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Total	Total	Total	Total						
Primary Sind	52001	160	0	150.70	0	0	0	161.18	5.15	2.63	319.46	421.85	0	761.31	Case A	
	52002	15	4.32	16.13	0	0	0	15.11	0.63	0.20	34.39	0	0	34.39	Case B	
	52003	55	1.49	51.81	0	0	0	55.40	2.31	1.11	112.12	0	0	112.12		
	52004	38	0	0	0	0	0	0	0	0	0	0	0	0		
	52005	68	0	0	0	0	0	0	0	0	0	0	0	0		
	52006	137	0	0	0	0	0	0	0	0	0	0	0	0		
	52007	22	0	0	0	0	0	0	0	0	0	0	0	0		
	52008	109	0	0	0	0	0	0	0	0	0	0	0	0		
	52009	13	0	24.49	9.69	7.54	12.96	0.83	0.52	56.03	0	0	0	56.03		
Primary Punjab	51001	48	0	90.43	11.33	27.84	47.86	3.07	2.77	183.30	0	0	0	183.30		
	51002	100	0	188.40	89.40	69.60	113.20	6.40	6.83	473.83	15.14	7.94	496.91			
	51003	12	0	22.60	5.37	8.35	13.58	0.77	0.80	51.47	0	7.94	59.41			
	51004	70	0	131.83	31.33	46.71	79.22	4.49	5.83	301.41	0	15.88	317.29			
	51005	18	0	33.90	8.06	12.53	20.37	1.16	1.32	77.34	167.28	23.82	268.44			
			0	33.91	8.05	12.53	20.38	1.15	1.32	77.34	83.64	23.82	184.80			

Table 5-22 (2)

		CONSTRUCTION COST										CASE A 3		TARGET YEAR		2,000	
		UNIT: million rupees															
Road Class Province	Cord	Distance	Road Construction					Crossing		Total	Long Span Bridges	Fly Over	Total	Remarks			
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure								
	51006	75	0	141.25	33.57	52.18	86.98	4.81	5.58	322.27	0	15.88	338.15				
	51007	44	0	141.30	33.53	52.20	84.90	4.80	5.59	322.32	0	15.88	338.20				
	51008	13	0	24.48	5.82	9.05	14.71	0.83	0	54.89	0	7.94	62.83				
	51009	79	0	148.78	35.36	54.96	89.41	5.07	3.23	336.81	25.34	15.88	378.03				
	51010	40	0	148.84	23.54	54.98	89.43	5.06	3.23	325.08	25.34	15.88	366.30				
	51011	37	0	75.36	11.92	27.84	45.28	2.56	1.61	164.57	0	15.88	180.45				
	51012	130	0	244.83	58.18	90.46	147.12	8.34	6.50	555.43	15.62	7.94	578.99				
	51013	67	0	244.92	58.11	90.48	147.16	8.32	6.50	555.49	15.62	7.94	579.05				
	51014	32	0	0	0	0	0	0	0	0	0	0	0				
	51015	15	0	0	0	0	0	0	0	0	0	0	0				
	51016	52	0	0	0	0	0	0	0	0	0	0	0				
	51017	38	0	0	0	0	0	0	0	0	0	0	0				
	51018	32	0	0	0	0	0	0	0	0	0	0	0				
	51019	29	0	0	0	0	0	0	0	0	0	0	0				

Table 5-22 (3)

Page 3

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE			Remarks					
			UNIT: million rupees										A	B	TARGET YEAR		2,000				
			Road Construction			Crossing			Total	Long Span Bridge	Fly Over	Total									
Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure															
	51020	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	51021	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	51022	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Primary	53001	14	0	26.37	4.80	9.74	15.84	0.90	1.08	58.73	51.15	0	109.88								
NWFP	53002	36	0	23.90	3.14	8.36	13.79	0.90	1.08	51.17	51.15	0	102.32								
	53003	23	0	61.45	8.06	21.49	35.46	2.30	1.12	189.88	68.15	8.03	256.06								
	53004	53	0	61.46	8.07	21.50	35.46	2.31	1.12	179.92	68.15	8.03	206.10								
	252010	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Primary	254001	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sind	254002	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Primary	254003	293	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Baluchistan	254004	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	254005	144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	254006	131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 5-22 (4)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE A B			Remarks	
			UNIT: million rupees										TARGET YEAR				
			Road Construction			Crossing			Miscellaneous Work				Long Span Bridge	Fly Over	Total		
Land Acquisition	Subgrade	Subbase	Base	Favement	Miscellaneous Work	Structure	Total	2000	2000	2000							
Primary Punjab	351023	14	0	26.37	4.17	9.74	28.84	0.90	0.33	70.35	0	0	70.35	0	0	70.35	
			0	26.38	4.17	9.74	15.85	0.90	0.33	57.37	24.04	7.94	89.35				
Primary N.W.F.P	353005	3	0	5.12	0.67	1.79	6.18	1.49	0.66	15.91	0	0	15.91	0	0	15.91	
			0	5.12	0.67	1.79	2.96	0.19	0.66	11.39	30.39	0	41.78				
	353006	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	353007	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	353008	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	353009	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	503010	141	0	51.56	7.30	19.45	12.16	1.95	2.02	94.44	19.67	0	114.11	0	0	114.11	
			0	51.56	7.30	19.46	12.16	1.95	2.02	94.45	46.42	0	140.87	0	0	140.87	
Primary Baluchistan	504007	210	0	0	21.74	28.38	18.11	0	0	68.23	0	0	68.23	0	0	68.23	
			0	0	21.74	28.38	18.11	0	0	68.23	0	0	68.23	0	0	68.23	
	504008	175	0	63.99	18.12	23.65	15.09	2.42	2.55	125.82	32.77	0	158.59	0	0	158.59	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	652011	43	0	81.00	20.29	24.94	78.54	2.75	2.03	209.55	0	0	209.55	0	0	209.55	
			0	81.01	20.30	24.94	42.87	2.75	2.03	173.90	0	0	173.90	0	0	173.90	
	652012	42	0	79.13	19.82	24.36	76.70	2.59	1.79	204.69	27.78	0	232.47	0	0	232.47	
			0	79.13	19.82	24.36	76.69	2.72	1.79	204.51	27.78	0	232.29	0	0	232.29	
	652013	8	0	15.07	4.72	5.57	7.88	0.51	0.56	34.31	0	0	34.31	0	0	34.31	
			0	15.07	3.78	4.64	7.98	0.72	0.56	32.75	0	0	32.75	0	0	32.75	
	654009	148	0	0	33.15	88.36	133.93	5.65	0	261.09	0	0	261.09	0	0	261.09	
			0	252.64	33.15	88.36	295.11	9.56	1.45	680.27	214.45	0	894.72	0	0	894.72	
	654010	163	0	278.24	36.51	97.31	325.02	10.53	9.72	757.33	95.51	0	852.84	0	0	852.84	
			0	278.24	36.51	97.31	325.02	10.53	9.72	757.33	95.51	0	852.84	0	0	852.84	

Table 5-22 (5)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Crossing Total	Long Span Bridge	Fly Over	Total	Remarks			
			UNIT: million rupees															Total	Fly Over	Total
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Structure	Structure	Structure								
Secondary Punjab	1026	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1025	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N.W.F.P	3011	55	1.82	20.11	2.85	7.59	4.74	0.76	0	37.87	0	37.87	0	0	0	37.87	0	37.87	0	
Primary	3012	39	1.82	22.20	2.85	7.59	4.74	0.76	0	39.96	0	39.96	0	0	0	39.96	0	39.96	0	
N.W.F.P	1026	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Punjab	1027	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary	3013	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N.W.F.P	1028	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Punjab	3014	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N.W.F.P	3015	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1029	38	10.03	10.23	2.52	2.94	1.57	0.35	0.12	27.76	6.54	34.30	0	0	0	34.30	0	34.30	0	
Punjab	1030	40	10.03	10.23	2.52	2.32	1.58	9.57	0.12	36.37	8.17	75.30	0	0	0	75.30	0	75.30	0	
	1031	30	10.56	10.76	2.65	3.09	1.65	0.37	0.10	29.18	6.20	35.38	0	0	0	35.38	0	35.38	0	
	1031	30	10.56	10.76	2.65	3.09	1.66	0.37	0.10	29.19	7.75	49.64	0	0	0	49.64	0	49.64	0	
Primary	2014	196	7.92	8.07	1.98	2.32	1.24	0.28	0.12	21.92	15.88	37.81	0	0	0	37.81	0	37.81	0	
Sind	2014	196	7.92	8.07	1.99	2.32	1.25	0.28	0.12	21.95	0	34.65	0	0	0	34.65	0	34.65	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 5-22 (6)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Long Span Bridge	Fly Over Total	Remarks	
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Crossing Structure	Total	Case A B	Target Year				
Primary	2015	123	0	0	18.82	19.80	114.40	5.37	0	158.39	0	0	158.39	0	0	158.39
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sind	2016	63	6.24	16.95	4.96	3.48	2.61	0.58	0.16	34.98	0	0	34.98	0	0	34.98
			6.24	16.95	4.96	3.48	2.61	0.58	0.16	34.98	0	0	34.98	0	0	34.98
	2017	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2018	47	4.65	12.65	3.70	2.59	1.95	0.43	0.23	26.20	0	0	26.20	0	0	26.20
			4.65	12.65	3.70	2.59	1.95	0.43	0.23	26.20	0	0	26.20	0	0	26.20
	2019	2	0.20	0.54	0.16	0.11	0.08	0.02	0.13	1.24	0	0	1.24	0	0	1.24
			0.20	0.54	0.16	0.11	0.08	0.02	0.13	1.24	0	0	1.24	0	0	1.24
Punjab	1032	224	59.14	60.29	7.42	17.31	9.29	2.05	3.06	158.56	0	6.35	164.91	0	0	164.91
			22.18	60.29	7.42	12.32	9.29	2.05	3.06	116.61	0	12.70	129.31	0	0	129.31
	1033	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1034	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWFP	3016	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3017	95	34.49	23.16	9.24	24.65	15.40	0.87	0.22	108.03	0	0	108.03	0	0	108.03
			34.49	23.16	2.36	6.29	3.94	0.87	0.22	71.33	0	0	71.33	0	0	71.33
	3018	47	0	0	3.41	9.08	5.68	0	0	18.17	0	0	18.17	0	0	18.17
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3019	98	0	0	7.11	18.93	11.84	0	0	37.88	0	0	37.88	0	0	37.88
			35.57	23.89	2.43	6.49	4.06	0.90	1.16	74.50	0	0	74.50	0	0	74.50
	3020	29	0	49.50	6.50	17.31	51.50	1.88	2.41	129.10	0	0	129.10	0	0	129.10
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3021	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5-22 (7)

Page 7

		CONSTRUCTION COST										UNIT: million rupees			CASE A 3		TARGET YEAR		2,000	
Road Class Province	Cord	Distance	Road Construction					Crossing			Long Span Bridge	Fly Over	Total	Remarks						
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Total										
Primary Punjab	1035	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1036	97	0	0	18.74	21.86	11.72	0	0	0	0	0	52.32	0	0	52.32	0	0		
	1037	82	0	154.49	24.44	57.07	92.82	5.25	5.63	339.70	30.30	7.94	377.94	0	0	470.77	0	0		
	1038	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1039	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1040	48	13.06	12.92	1.59	3.71	1.99	0.44	0.17	33.88	0	0	33.88	0	0	33.88	0	0		
	3022	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NWFP			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Secondary Baluchistan	4011	217	0	79.36	33.69	29.32	18.72	2.99	1.53	165.61	0	0	165.61	0	0	165.61	0	0		
	4012	189	0	0	41.08	35.75	22.82	0	0	99.65	0	0	99.65	0	0	99.65	0	0		
Punjab	1041	8	2.11	2.15	2.32	1.80	0.97	0.07	0.49	9.91	0	0	9.91	0	0	9.91	0	0		
	1042	84	0	0	24.36	18.90	10.19	0	0	53.45	0	0	53.45	0	0	53.45	0	0		
Sind	2020	34	0	0	5.20	5.47	27.91	1.48	0	43.19	8.11	0	51.30	0	0	51.30	0	0		
	2021	32	0	0	4.89	5.15	26.27	1.40	0	37.71	0	0	37.71	0	0	37.71	0	0		
	2022	74	0	0	4.89	5.15	29.21	1.39	0	40.64	0	0	40.64	0	0	40.64	0	0		

Table 5-22 (8)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE		TARGET YEAR	2,000	Remarks
			UNIT: million rupees										A	B			
			Road Construction			Crossing				Long Span		Fly Over	Total				
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Total	Bridge			Span	Total		
Secondary	2023	102	0	0	15.60	15.42	83.73	4.45	0	120.20	0	0	0	120.20			
			0	0	15.60	16.42	12.32	4.45	0	0	48.79	0	0	0	48.79		
	2024	100	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			
	2025	24	0	45.22	14.16	13.92	47.96	1.55	0	122.81	0	0	0	122.81			
			0	45.22	16.99	13.92	47.86	1.54	0	0	125.53	0	0	0	125.53		
	2026	21	0	0	4.82	3.38	2.54	0	0	10.74	8.11	7.85	26.70				
			0	0	4.82	3.38	2.54	0	0	0	10.74	9.24	7.89	27.87			
	2027	16	0	0	0	0	0	0	0	0	0	0	0				
			1.58	4.31	1.26	0.88	0.66	0.15	0.08	8.92	0	0	0	8.92			
	2028	48	0.86	12.92	3.78	2.65	1.99	0.44	0.12	22.76	0	0	0	22.76			
			0	0	0	0	0	0	0	0	0	0	0	0			
	2029	68	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			
	2030	40	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			
	2031	45	0	18.16	7.37	7.76	3.88	0.62	0	37.79	0	0	0	37.79			
			0	18.16	7.37	5.18	3.88	0.62	0	0	35.21	0	0	0	35.21		
	2032	81	8.02	21.80	6.37	4.47	3.35	0.75	0.35	45.11	18.00	0	0	63.11			
			8.02	21.80	6.37	4.47	3.35	0.75	0.35	45.11	22.10	0	0	67.21			
	2033	24	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			
	2034	34	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			
	2035	16	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			
	2036	52	0	0	0	0	0	0	0	0	0	0	0				
			0	0	0	0	0	0	0	0	0	0	0	0			

Table 5-22 (9)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE A B		Remarks		
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Crossing Structure	Total	Long Span Bridge	Fly Over	Total	TARGET YEAR			
																2,000	
Secondary Sindh	2037	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2038	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2039	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2040	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2041	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2042	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	112043	26	0	0	5.97	6.28	3.14	0	0	15.39	0	0	0	0	0	15.39	
	112044	40	0	0	7.95	4.19	3.14	0	0	15.28	9.67	0	24.95	0	0	24.95	
	112045	135	0	0	9.18	6.66	4.83	0	0	23.67	7.98	0	31.65	0	0	31.65	
	112046	76	0	0	12.23	6.45	4.83	0	0	23.51	7.98	0	31.49	0	0	31.49	
Primary Punjab	1043	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1044	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1045	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Punjab	1046	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 5-22 (10)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE A. B		Remarks	
			UNIT: million rupees										TARGET YEAR			
			Road Construction			Crossing			Miscellaneous Work				Total	Long Span Bridge		Fly Over
Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure										
Primary	1047	46	0	0	8.89	10.37	5.55	0	0	0	0	0	24.81	9.44	0	34.25
			0	0	8.89	10.37	5.55	0	0	0	0	0	0	24.81	9.44	7.89
Secondary	1048	58	15.31	15.61	3.84	4.48	2.40	0.51	0	0	0	0	42.68	0	0	42.68
			15.31	15.61	3.84	4.48	2.40	0.51	0	0	0	0	42.68	0	0	42.68
Secondary	1049	62	0	0	5.99	13.97	7.49	0	0	0	0	0	27.45	9.44	0	36.89
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secondary	1050	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secondary	1051	34	0	0	4.93	7.66	31.63	1.48	0	0	0	0	45.70	0	0	45.70
			0	0	4.92	7.66	38.49	1.48	0	0	0	0	52.55	0	0	52.55
Secondary	1052	26	0	0	2.51	5.86	3.14	0	0	0	0	11.51	0	0	0	11.51
			0	0	2.51	5.86	29.43	1.13	0	0	0	38.93	0	0	0	38.93
Secondary	1053	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secondary	1054	113	0	212.89	50.51	78.65	255.83	7.23	7.61	612.72	22.82	7.94	643.48	0	0	0
			0	212.89	50.51	78.65	255.83	10.10	7.61	615.59	22.82	7.94	646.35	0	0	0
Primary	1055	117	0	0	11.30	26.37	120.61	5.11	0	163.39	0	0	163.39	0	0	163.39
			0	0	11.30	26.37	108.93	5.11	0	151.71	0	0	151.71	0	0	151.71
Secondary	1056	171	45.14	46.02	5.66	13.21	7.08	1.57	1.91	120.59	64.72	6.35	191.66	0	0	0
			45.14	46.02	5.66	13.21	7.08	1.57	1.91	120.59	164.30	19.06	303.95	0	0	0
Primary	1057	70	0	131.88	20.86	48.72	158.48	4.48	4.14	368.56	15.90	23.82	408.28	0	0	0
			0	131.88	20.86	48.72	79.24	4.48	4.14	289.32	15.90	23.82	329.04	0	0	0
Primary	1058	63	0	0	6.09	14.20	7.61	0	0	27.90	0	0	27.90	0	0	0
			0	0	6.08	14.20	76.07	0	0	96.35	0	0	96.35	0	0	0
Primary	1059	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Primary	1060	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5-22 (11)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Crossing Total	Long Span Bridge	Fly Over	Total	Remarks			
			UNIT: million rupees															Total	Fly Over	Total
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	STRUCTURE	CASE										
2,000										A B										
Secondary	1061	53	0	0	5.12	11.95	6.40	0	0	23.47	0	0	23.47	0	0	23.47				
	1062	48	0	0	5.12	11.95	6.40	0	0	23.47	0	0	23.47	0	0	23.47				
	1063	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	1064	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	1065	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	1066	78	20.60	20.99	2.58	3.01	3.23	0.72	0.18	51.31	0	0	51.31	0	0	51.31				
	1067	40	0	0	3.86	9.02	4.83	0	0	17.71	0	0	17.71	0	0	17.71				
	1068	46	10.67	12.38	1.52	3.55	1.90	0.42	0.17	30.61	0	0	30.61	0	0	30.61				
	1069	40	0	0	3.86	9.02	4.83	0	0	17.71	0	0	17.71	7.99	0	25.70				
	1070	37	0	0	3.57	8.34	38.14	1.62	0	51.67	0	0	51.67	0	0	51.67				
	1071	52	0	69.71	11.03	25.75	76.22	2.39	3.81	188.91	14.99	0	203.90	0	0	203.90				
	1072	107	0	97.97	15.50	36.19	107.12	2.52	5.71	265.01	66.33	15.88	347.22	0	0	347.22				
	1073	130	0	97.97	23.24	36.19	117.73	3.33	5.71	284.17	66.33	15.88	366.38	0	0	366.38				
	1074	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Table 5-22 (12)

		CONSTRUCTION COST										CASE A B		TARGET YEAR		2,000	
		UNIT: million rupees															
Road Class Province	Cord	Distance	Road Construction					Crossing			Long Span Bridge	Fly Over	Total	Remarks			
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure	Total							
Secondary	1075	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Punjab	1076	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1077	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111078	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111079	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111080	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111081	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111082	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111083	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111084	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111085	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111086	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111087	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111088	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5-22 (13)

Road Class Province	Cord	Distance	CONSTRUCTION COST										Long Span Bridge	Fly Over	Total	Remarks	
			UNIT: million rupees														Total
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Crossing Structure	CROSSING STRUCTURE							
Secondary	111089	82	0	154.49	36.65	57.07	92.82	5.25	8.28	354.56	7.60	7.94	370.10				
	111090	33	0	154.49	36.65	57.07	92.82	5.25	8.28	354.56	7.60	7.94	370.10				
	111091	99	0	62.17	14.75	22.97	37.35	2.11	2.48	141.83	9.42	7.94	159.19				
	111092	60	0	62.17	14.75	22.97	37.35	2.11	2.48	141.84	9.42	7.94	159.20				
	111093	104	0	186.52	44.25	68.90	225.14	6.39	4.22	534.42	9.88	7.94	552.24				
	111094	125	0	186.52	44.25	68.90	225.14	6.39	4.22	534.42	9.88	7.94	552.24				
	111095	99	0	0	5.80	13.52	61.65	2.62	0	83.79	23.97	7.94	115.70				
	111096	47	12.41	12.65	3.11	3.63	1.95	0.43	0.81	34.99	0	0	34.99				
	111097	82	12.41	12.65	3.11	3.63	1.95	0.43	0.81	34.99	0	0	34.99				
	111098	81	0	0	15.84	18.48	9.90	0	0	44.22	16.54	0	60.76				
	111099	87	0	0	0	0	0	0	0	0	0	0	0				
	111100	66	0	0	0	0	0	0	0	0	0	0	0				
	111101	46	0	0	0	0	0	0	0	0	0	0	0				
	111102	64	0	0	0	0	0	0	0	0	0	0	0				

Table S-22 (14)

Road Class Province	Cord	Distance	CONSTRUCTION COST										CASE			Remarks		
			UNIT: million rupees										A		B			
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Crossing Structure	Total	Long Span Bridge	Fly Over	Total	TARGET YEAR				
Secondary	111103	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,000
Punjab	111104	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111105	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111106	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111107	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Primary	3023	23	0	39.26	5.15	13.73	47.38	1.49	0.17	107.18	0	0	107.18	0	0	0	0	107.18
N.W.F.P	3024	66	0	39.26	6.85	16.01	23.69	1.47	0.17	87.45	0	0	87.45	0	0	0	0	87.45
	3025	132	0	0	0	12.75	7.97	0	0	20.72	0	0	20.72	0	0	0	0	20.72
	3026	29	0	0	0	12.75	7.97	0	0	20.72	0	0	20.72	0	0	0	0	20.72
Secondary	3027	28	2.90	31.18	0	8.74	5.46	1.21	0.81	51.30	0	0	51.30	0	0	0	0	51.30
N.W.F.P	3028	46	7.26	80.45	0	26.96	16.85	3.04	2.03	136.59	0	0	136.59	0	0	0	0	136.59
	3029	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3030	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3031	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table S-22 (15)

Road Class Province	Cord	Distance	CONSTRUCTION COSTS								UNIT: million rupees		CROSSING	CASE A B		REMARKS
			Road Construction			Crossing		TARGET YEAR		Long Span Bridge	Fly Over	Total		Total		
			Land Acquisition	Subgrade	Subbase	Base	Pavement	Miscellaneous Work	Structure						2,000	
Secondary	3032	33	0	0	0	0	0	0	0	0	0	0	0	0	0	
N.W.F.P.			0	0	0	0	0	0	0	0	0	0	0	0	0	
Primary			0	125.80	35.60	46.48	29.87	4.75	0	242.30	0	0	0	0	242.30	
Baluchistan	4013	344	0	125.80	33.41	46.48	29.87	4.75	0	260.11	0	0	0	0	260.11	
	4014	366	0	133.85	37.88	49.45	31.57	5.05	0	257.80	0	0	0	0	257.80	
			0	133.85	37.88	49.45	31.56	5.05	0	257.79	0	0	0	0	257.79	
Secondary	4015	328	0	0	0	0	0	0	0	0	0	0	0	0	0	
Baluchistan			0	0	0	0	0	0	0	0	0	0	0	0	0	
	4016	118	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	
	4017	230	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	
	4018	530	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	
	4019	372	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	
	4020	628	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	
	4023		0	0	0	0	0	0	0	0	0	0	0	0	0	
Total										10,778.10				12,361.04	12,467.12	
										10,653.56						

5-8 Preliminary Project Evaluation

In order to select the road projects out of 208 road links, first screening has been done to estimate the Internal Rate of Return in terms of economic cost for the 1st stage construction by the year 1987/88 and for Master Plan (1st stage + 2nd Stage construction) by the year 1999/2000.

Economic Rates of Return are calculated for Plan A and B by road section and for the same base year 1983/84 to make all roads comparable with each other.

Priority order for the Plan A and Plan B are indicated in Tables 5-23 and 5-24. Required financial costs during the 1st stage construction by the year 1987/88 are calculated for five national highways and routes of national importance by plan. These results are shown in tables 5-25 and 5-26. Project costs by plan are also summarized in Tables 5-27 and 5-28.

Table 5-23 (1) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
54	652013	89.3	92.20	5.42	17.01	86.78	1	88.2	91.12	11.12	8.19	80.00	1	
17	51008	81.4	217.67	19.81	10.99	197.86	2	80.6	280.27	30.25	9.27	250.03	2	
188	3023	23	80.1	255.70	20.47	12.49	235.23	3	78.9	273.65	38.27	7.15	235.39	3
2	52002	15	74.8	754.04	51.76	14.57	702.27	4	75.5	731.82	57.47	12.73	674.35	4
83	3020	29	74.7	413.50	35.86	11.53	377.64	5	73.3	384.68	57.30	6.71	327.37	5
97	2021	32	69.5	130.93	19.28	6.79	111.65	6	69.0	213.24	25.54	8.35	187.70	6
147	1067	40	61.6	292.51	40.19	7.28	252.31	7	60.4	361.99	44.45	8.14	317.54	7
15	51006	75	60.3	1132.50	120.98	9.36	1011.53	8	58.8	1804.24	174.46	10.34	1629.78	8
138	1038	63	59.9	367.29	48.73	7.54	318.56	9	58.6	429.80	53.36	8.05	376.44	9
171	111091	99	59.2	1113.63	120.58	9.24	993.05	10	56.4	1194.24	207.92	5.74	986.31	12
71	2015	123	58.8	514.60	77.33	6.65	437.27	11	57.3	667.60	103.63	6.44	563.97	11
189	3024	66	58.1	240.04	49.02	4.90	191.01	12	57.9	421.44	52.47	8.03	368.98	10
18	51009	79	56.9	1101.75	149.67	7.36	952.09	13	55.3	1433.52	209.46	6.84	1224.06	14
20	51011	37	56.1	1066.62	125.96	8.47	940.66	14	56.1	1066.62	125.96	8.47	940.66	13
6	52006	132	53.0	3363.93	335.15	10.04	3028.78	15	53.0	3363.93	335.15	10.04	3028.78	15
141	1061	53	52.9	340.82	52.24	6.52	288.58	16	51.2	358.52	56.14	6.39	302.38	18
173	111093	104	52.7	402.76	85.19	4.73	317.57	17	51.8	609.56	109.31	5.58	500.25	17
16	51007	44	51.8	1578.61	160.41	9.84	1418.20	18	51.8	1578.61	160.41	9.84	1418.20	16
12	51003	12	51.1	144.55	22.72	6.36	131.85	19	49.8	209.95	32.59	6.44	177.36	21
87	1037	82	51.1	788.31	125.45	6.28	662.86	20	48.2	745.25	185.23	4.02	560.03	22
1	52001	160	50.9	4354.20	479.99	9.07	3874.21	21	47.2	3984.72	597.24	6.67	3387.48	28
201	4016	118	50.7	197.46	36.27	5.44	161.19	22	50.7	197.46	36.27	5.44	161.19	19
52	652011	43	50.2	342.36	35.60	9.62	306.76	23	44.8	300.12	71.70	4.19	228.42	34
119	112043	26	49.9	182.79	29.43	6.21	153.35	24	48.0	184.73	31.99	5.77	152.74	23
5	52005	68	49.8	2333.38	261.74	8.91	2071.64	25	49.8	2333.38	261.74	8.91	2071.64	20
169	111089	82	48.9	880.21	128.00	6.88	752.21	26	46.7	1188.90	186.54	6.37	1002.36	30

Table 5-23 (2) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN								
		IRR	BENEFIT	COST	B/C	PRIORITY	IRR	BENEFIT	COST	B/C	PRIORITY		
172	111092	48.3	208.45	52.83	3.95	155.63	27	47.7	348.54	72.04	4.84	276.50	24
7	52007	47.6	738.40	105.11	7.03	633.29	28	47.6	738.40	105.11	7.03	633.29	25
142	1062	47.5	539.81	92.46	5.84	447.36	29	47.5	539.81	92.46	5.84	447.36	26
174	111094	47.5	486.90	94.57	5.15	392.33	30	47.5	486.90	94.57	5.15	392.33	27
21	51012	47.0	1419.91	201.79	7.04	1218.12	31	44.9	2111.41	293.37	7.20	1818.04	33
3	52003	47.0	1461.03	186.45	7.84	1274.58	32	43.8	1358.57	205.07	6.62	1153.50	42
145	1065	46.7	402.62	69.00	5.84	333.62	33	46.7	402.62	69.00	5.84	333.62	29
195	3030	46.3	192.90	35.72	5.40	157.18	34	44.4	205.28	37.97	5.41	167.51	36
94	1041	46.2	54.20	9.10	5.96	45.10	35	44.4	63.59	10.74	5.92	52.84	37
157	1077	45.3	365.30	68.47	5.34	296.83	36	45.3	365.30	68.47	5.34	296.83	31
111	2035	45.2	80.27	14.71	5.46	65.56	37	45.2	80.27	14.71	5.46	65.56	32
132	1052	44.7	110.75	26.69	4.15	84.06	38	43.8	158.12	28.61	5.53	129.52	40
167	11087	44.7	170.20	37.34	4.56	132.86	39	44.7	170.20	37.34	4.56	132.86	35
150	1070	44.5	169.87	47.29	3.59	122.59	40	43.9	238.69	55.87	4.63	202.82	39
84	3021	44.0	859.67	138.42	6.21	721.26	41	44.0	859.67	138.42	6.21	721.26	38
151	1071	43.9	541.89	108.76	4.98	433.13	42	39.9	479.54	163.67	2.93	315.86	53
156	1076	43.8	198.74	39.17	5.07	159.58	43	43.8	198.74	39.17	5.07	159.58	41
8	52008	43.6	2462.67	344.29	7.15	2118.38	44	43.6	2462.67	344.29	7.15	2118.38	43
120	112044	43.6	186.53	37.54	5.00	149.20	45	41.3	193.94	42.59	4.55	151.35	48
134	1054	43.4	783.55	189.01	4.15	594.54	46	41.7	1190.40	290.79	4.09	899.62	47
19	51010	43.0	982.85	153.60	6.40	829.25	47	43.0	982.85	153.60	6.40	829.25	44
146	1066	42.9	131.89	25.85	5.10	106.04	48	41.7	239.08	34.37	6.96	204.71	46
184	111104	42.4	75.35	17.76	4.24	57.59	49	42.4	75.35	17.76	4.24	57.59	45
81	3018	41.8	203.96	43.04	4.74	160.93	50	40.1	266.35	46.05	5.78	220.30	52
55	654009	41.5	846.97	189.84	4.46	657.13	51	39.3	1095.44	231.14	4.70	854.30	54
33	53002	41.2	344.23	79.01	4.36	265.22	52	37.7	364.33	113.24	3.22	251.09	59

Table 5-23 (3) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	COST	B/C	PRIORITY	IRR	BENEFIT	COST	B/C	PRIORITY			
32	53001	14	41.1	153.72	41.73	3.68	111.99	53	38.9	206.03	59.98	3.44	146.05	56
123	1043	129	41.0	1132.59	221.78	5.11	940.81	54	41.0	1132.59	221.78	5.11	910.81	49
158	111078	40	41.0	145.98	36.07	4.05	109.91	55	41.0	145.98	36.07	4.05	109.91	50
4	52004	38	40.3	698.12	122.82	5.68	575.30	56	40.3	698.12	122.82	5.68	575.30	51
155	1075	50	39.3	94.86	24.81	3.82	70.06	57	39.3	94.86	24.81	3.82	70.06	55
109	2033	24	38.5	103.85	22.32	4.65	81.53	58	38.5	103.85	22.32	4.65	81.53	57
175	111095	99	38.3	437.49	109.17	4.01	328.32	59	38.3	437.49	109.17	4.01	328.32	58
13	51004	70	37.4	441.50	129.24	3.42	312.26	60	36.9	808.60	179.42	4.51	629.18	60
106	2030	40	36.6	165.29	41.48	3.98	123.81	61	36.6	165.29	41.48	3.98	123.81	61
53	652012	42	35.5	289.17	52.32	5.53	236.85	62	28.3	252.55	92.20	2.74	160.35	88
92	4011	217	35.0	313.03	73.80	4.24	239.23	63	31.9	347.34	101.30	3.43	246.04	71
135	1055	117	34.8	700.04	197.87	3.54	502.17	64	33.1	890.66	225.01	3.96	665.65	64
183	111103	57	34.8	269.36	53.92	5.00	215.44	65	34.8	269.36	53.92	5.00	215.44	62
131	1051	999	34.4	192.79	55.96	3.45	136.84	66	32.3	226.95	65.55	3.57	163.41	68
108	2032	81	34.2	190.27	54.71	3.48	135.56	67	31.7	211.34	65.19	3.24	146.15	73
37	254001	82	34.1	258.74	70.12	3.69	188.62	68	30.9	283.97	89.31	3.18	194.66	74
63	3013	999	34.0	67.72	24.30	2.79	43.42	69	34.0	67.72	24.30	2.79	43.42	63
177	111097	82	33.2	389.51	98.04	3.97	291.47	70	30.4	396.75	108.13	3.67	288.62	79
22	51013	67	33.0	2304.04	570.73	4.04	1733.32	71	33.0	2304.04	570.73	4.04	1733.32	65
101	2025	999	32.9	157.55	47.00	3.35	110.55	72	27.9	153.40	67.39	2.28	86.00	89
65	3014	186	32.7	504.31	150.99	3.34	353.32	73	32.7	504.31	150.99	3.34	353.32	66
45	353006	54	32.7	780.25	198.93	3.92	581.32	74	32.7	780.25	198.93	3.92	581.32	67
38	254002	77	32.5	192.04	68.83	2.79	123.21	75	31.7	268.25	74.39	3.61	193.86	72
91	3022	999	32.2	30.25	10.09	3.00	20.16	76	32.2	30.25	10.09	3.00	20.16	69
133	1053	34	32.0	423.10	127.73	3.31	295.37	77	32.0	423.10	127.73	3.31	295.37	70
136	1056	171	31.8	263.14	76.69	3.43	186.45	78	30.5	426.36	108.52	3.93	317.84	76

Table 5-23 (4) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	COST	B/C	PRIORITY	B-C	PRIORITY						
129	1049	62	31.6	251.65	68.62	3.67	183.03	79	28.8	254.46	74.75	3.40	179.71	86
200	4015	328	30.7	400.77	131.85	3.04	268.92	80	30.7	400.77	131.85	3.04	268.92	75
27	51018	32	30.5	521.97	131.43	3.97	390.54	81	30.5	521.97	131.43	3.97	390.54	77
98	2022	74	30.4	213.10	66.43	3.21	146.68	82	30.4	213.10	66.43	3.21	146.68	78
178	111098	81	30.4	347.42	106.14	3.27	241.28	83	30.4	347.42	106.14	3.27	241.28	80
163	111083	24	30.3	32.76	12.01	2.73	20.75	84	30.3	32.76	12.01	2.73	20.75	81
104	2028	48	29.5	68.02	28.73	2.37	39.30	85	29.0	97.72	32.51	3.01	65.21	85
64	1028	999	29.4	49.42	21.09	2.34	28.33	86	29.4	49.42	21.09	2.34	28.33	83
72	2016	63	29.2	81.41	24.34	3.34	57.07	87	27.7	111.43	30.15	3.70	81.28	91
128	1048	58	29.0	111.15	49.38	2.25	61.77	88	29.2	178.75	56.47	3.17	122.28	84
117	2041	77	28.8	131.73	51.48	2.56	80.25	89	28.8	131.73	51.48	2.56	80.25	87
68	1030	40	27.9	75.94	27.90	2.72	48.04	90	24.6	77.05	33.78	2.28	43.27	104
126	1046	138	27.9	195.76	78.66	2.49	117.11	91	27.9	195.76	78.66	2.49	117.11	90
76	1032	224	27.3	322.04	136.11	2.37	185.92	92	25.9	415.33	163.50	2.54	231.82	97
80	3017	95	27.3	154.47	56.49	2.73	97.97	93	30.1	363.59	74.43	4.88	289.16	82
23	51014	32	27.2	451.34	138.59	3.26	312.75	94	27.2	451.34	138.59	3.26	312.75	93
102	2026	21	27.0	30.06	13.89	2.16	16.17	95	25.5	43.91	18.33	2.40	25.58	98
26	51017	38	27.0	801.64	272.50	2.94	529.15	96	27.0	801.64	272.50	2.94	529.15	94
170	111090	33	26.3	128.86	56.22	2.29	72.64	97	27.4	263.93	82.66	3.19	181.27	92
152	1072	107	26.0	170.98	75.88	2.25	95.10	98	26.0	170.98	75.88	2.25	95.10	95
11	51002	100	25.9	1318.62	428.30	3.08	890.32	99	25.9	1318.62	428.30	3.08	890.32	96
56	654010	163	25.9	530.85	229.38	2.31	301.47	100	21.2	665.77	369.43	1.80	296.33	115
180	111100	66	25.3	84.37	38.68	2.18	45.69	101	25.3	84.37	38.68	2.18	45.69	99
116	2040	26	25.0	41.87	19.45	2.15	22.42	102	25.0	41.87	19.45	2.15	22.42	100
10	51001	48	24.8	503.07	181.19	2.78	321.88	103	24.8	503.07	181.19	2.78	321.88	101
70	2014	196	24.8	302.14	133.10	2.27	169.04	104	24.8	302.14	133.10	2.27	169.04	102

Table 5-23 (5) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
181	111101	46	24.7	138.12	66.37	2.08	71.74	105	24.7	138.12	66.37	2.08	71.74	103
67	1029	38	24.6	63.79	26.58	2.40	37.22	106	21.6	66.41	32.27	2.06	34.14	114
42	254006	131	23.9	335.24	154.44	2.17	180.80	107	23.9	335.24	154.44	2.17	180.80	106
103	2027	16	23.8	22.34	9.63	2.32	12.72	108	23.8	22.34	9.63	2.32	12.72	107
82	3019	98	23.7	221.18	89.95	2.46	131.23	109	23.1	293.37	96.24	3.05	197.13	109
57	1024	63	23.0	120.72	54.31	2.22	66.41	110	23.0	120.72	54.31	2.22	66.41	110
93	4012	189	22.3	390.07	198.91	1.96	191.16	111	23.4	577.09	215.66	2.68	361.63	108
125	1045	92	22.2	99.11	52.98	1.87	46.13	112	22.2	99.11	52.98	1.87	46.13	111
28	51019	29	21.9	379.37	162.48	2.33	216.89	113	21.9	379.37	162.48	2.33	216.89	113
35	53004	53	21.2	141.49	75.72	1.87	65.77	114	22.1	200.87	78.48	2.56	122.38	112
185	111105	29	20.9	29.35	16.80	1.75	12.56	115	20.9	29.35	16.80	1.75	12.56	117
31	51022	45	20.8	701.46	331.62	2.12	369.83	116	20.8	701.46	331.62	2.12	369.83	118
9	52009	13	20.3	102.32	44.02	2.32	58.30	117	20.3	102.32	44.02	2.32	58.30	119
77	1033	53	19.7	132.18	80.90	1.63	51.28	118	19.7	132.18	80.90	1.63	51.28	120
127	1047	46	19.5	74.91	53.15	1.41	21.76	119	24.1	148.07	58.84	2.52	89.23	105
176	111096	47	19.4	62.67	31.78	1.97	30.90	120	18.5	79.96	37.59	2.13	42.37	122
105	2029	68	19.3	140.65	68.05	2.07	72.60	121	19.3	140.65	68.05	2.07	72.60	121
34	53003	23	18.5	248.80	132.18	1.88	116.62	122	18.5	248.80	132.18	1.88	116.62	123
41	254005	144	18.5	225.86	128.62	1.76	97.24	123	17.5	249.84	139.50	1.79	110.34	127
62	1027	48	18.0	191.58	130.83	1.46	60.75	124	18.0	191.58	130.83	1.46	60.75	125
179	111099	87	17.7	67.79	46.53	1.46	21.26	125	17.7	67.79	46.53	1.46	21.26	126
107	2031	45	17.0	21.72	14.45	1.50	7.27	126	15.3	28.24	20.72	1.36	7.52	134
100	2024	100	16.5	143.66	106.00	1.36	37.66	127	16.5	143.66	106.00	1.36	37.66	131
118	2042	31	16.3	27.35	20.43	1.34	6.93	128	16.3	27.35	20.43	1.34	6.93	132
66	3015	50	15.3	34.19	25.38	1.35	8.81	129	15.3	34.19	25.38	1.35	8.81	135
24	51015	15	15.1	236.99	178.36	1.33	58.63	130	15.1	236.99	178.36	1.33	58.63	136

Table 5-23 (6) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
186	111106	31	14.8	7.57	6.25	1.21	1.32	131	14.8	7.57	6.25	1.21	1.32	137
110	2034	34	14.7	38.03	30.61	1.24	7.42	132	14.7	38.03	30.61	1.24	7.42	138
73	2017	64	14.7	27.62	22.94	1.20	4.88	133	14.7	27.62	22.94	1.20	4.68	139
25	51016	52	14.6	583.12	453.14	1.29	129.98	134	14.6	583.12	453.14	1.29	129.98	140
112	2036	52	14.5	57.73	47.22	1.22	10.51	135	14.5	57.73	47.22	1.22	10.51	141
90	1040	999	14.4	31.95	27.45	1.16	4.50	136	21.0	84.88	33.07	2.57	51.80	116
58	1025	9	13.8	9.54	8.36	1.14	1.18	137	13.8	9.54	8.36	1.14	1.18	144
162	111082	54	13.2	32.19	29.48	1.09	2.70	138	13.2	32.19	29.48	1.09	2.70	145
60	3012	39	12.8	13.80	12.95	1.07	0.86	139	12.8	13.80	12.95	1.07	0.86	147
44	353005	3	12.6	19.18	18.28	1.05	0.90	140	11.8	20.54	20.92	0.98	-0.38	150
124	1044	65	10.4	65.38	73.52	0.89	-8.14	141	10.4	65.38	73.52	0.89	-8.14	151
144	1064	138	10.1	68.98	79.50	0.87	-10.53	142	10.1	68.98	79.50	0.87	-10.53	152
114	2038	55	9.8	38.85	45.81	0.85	-6.96	143	9.8	38.85	45.81	0.85	-6.96	153
59	3011	55	9.8	14.38	17.34	0.83	-2.96	144	12.0	23.58	23.63	1.00	-0.05	149
79	3016	62	9.7	19.46	23.09	0.84	-3.64	145	9.7	19.46	23.09	0.84	-3.64	154
115	2039	45	9.0	23.88	30.21	0.79	-6.33	146	9.0	23.88	30.21	0.79	-6.33	156
14	51005	18	8.5	103.19	125.66	0.82	-22.47	147	14.1	202.39	168.12	1.20	34.27	143
113	2037	30	8.3	6.03	8.07	0.75	-2.04	148	8.3	6.03	8.07	0.75	-2.04	157
165	111085	48	8.1	28.28	38.35	0.74	-10.07	149	8.1	28.28	38.35	0.74	-10.07	158
161	111081	40	7.8	26.04	36.15	0.72	-10.11	150	7.8	26.04	36.15	0.72	-10.11	159
159	111079	57	7.5	35.76	51.18	0.70	-15.42	151	7.5	35.76	51.18	0.70	-15.42	160
143	1063	42	7.1	52.97	62.73	0.53	-29.77	152	7.1	32.97	62.73	0.53	-29.77	161
95	1042	84	6.5	83.95	111.11	0.76	-27.17	153	15.9	174.13	119.99	1.45	54.14	153
61	1026	54	4.6	14.13	30.47	0.46	-16.34	154	4.6	14.13	30.47	0.46	-16.34	164
47	353008	122	3.8	24.07	48.61	0.50	-24.54	155	3.8	24.07	48.61	0.50	-24.54	165
49	503010	141	1.6	15.79	40.21	0.39	-24.42	156	0.0	15.89	59.16	0.27	-43.27	172

Table 5-23 (7) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
85	1035	38	0.0	0.0	128.24	0.0	-128.24	157	0.0	0.0	128.24	0.0	-128.24	175
86	1036	97	0.0	0.0	104.41	0.0	-104.41	158	18.1	298.66	113.10	2.64	185.56	124
50	504007	210	0.0	9.46	47.56	0.20	-38.10	159	5.2	24.50	58.89	0.42	-34.39	162
160	111080	35	0.0	0.0	35.03	0.0	-35.03	160	0.0	0.0	35.03	0.0	-35.03	185
130	1050	68	0.0	0.09	63.42	0.00	-63.33	161	0.0	0.09	63.42	0.00	-63.33	173
88	1038	32	0.0	0.0	28.82	0.0	-28.82	162	0.0	0.0	28.82	0.0	-28.82	179
89	1039	94	0.0	0.0	19.13	0.0	-19.13	163	0.0	0.0	19.13	0.0	-19.13	180
164	111084	138	0.0	0.0	63.17	0.0	-63.17	164	0.0	0.0	63.17	0.0	-63.17	190
51	504008	175	0.0	2.34	39.87	0.06	-37.52	165	3.4	21.92	66.21	0.33	-44.29	166
166	111086	48	0.0	0.0	31.39	0.0	-31.39	166	0.0	0.0	31.39	0.0	-31.39	200
30	51021	30	0.0	0.0	159.40	0.0	-159.40	167	0.0	0.0	159.40	0.0	-159.40	176
168	111088	51	0.0	0.0	29.90	0.0	-29.90	168	0.0	0.0	29.90	0.0	-29.90	168
74	2018	47	0.0	0.0	16.77	0.0	-16.77	169	13.2	25.45	21.13	1.20	4.33	146
75	2019	2	0.0	0.0	0.73	0.0	-0.73	170	14.3	1.35	0.93	1.44	0.41	142
137	1057	70	0.0	0.0	82.37	0.0	-82.37	171	16.8	282.37	146.94	1.92	135.42	130
43	351023	14	0.0	0.0	24.23	0.0	-24.23	172	9.2	22.15	35.92	0.62	-13.77	155
139	1059	47	0.0	0.0	79.42	0.0	-79.42	173	0.0	0.0	79.42	0.0	-79.42	184
140	1060	89	0.0	0.0	85.46	0.0	-85.46	174	0.0	0.0	85.46	0.0	-85.46	186
29	51020	16	0.0	0.0	40.90	0.0	-40.90	175	0.0	0.0	40.90	0.0	-40.90	177
96	2020	34	0.0	-75.80	16.99	-4.46	-92.79	176	0.0	-4.52	23.64	-0.19	-28.16	170
78	1034	106	0.0	0.0	92.68	0.0	-92.68	177	0.0	0.0	92.68	0.0	-92.68	188
39	254003	293	0.0	-88.46	84.74	-1.04	-173.21	178	0.0	-54.05	120.83	-0.45	-174.88	181
99	2023	102	0.0	-238.46	104.49	-2.28	-342.95	179	0.0	-20.12	124.45	-0.16	-144.57	174
46	353007	24	0.0	0.0	15.43	0.0	-15.43	180	0.0	0.0	15.43	0.0	-15.43	201
121	112045	135	0.0	0.11	27.61	0.00	-27.51	181	0.0	0.11	27.61	0.00	-27.51	183
182	111102	64	0.0	-1.63	19.31	-0.08	-20.93	182	0.0	-1.63	19.31	-0.08	-20.93	182

Table 5-23 (8) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan A

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
148	1068	4.6	0.0	0.0	21.97	0.0	-21.97	183	17.3	61.86	27.05	2.29	34.81	129
149	1069	4.0	0.0	0.0	32.15	0.0	-32.15	184	12.4	39.07	36.41	1.07	2.66	148
122	112046	76	0.0	0.0	33.70	0.0	-33.70	185	5.0	11.98	41.07	0.29	-29.09	163
40	254004	69	0.0	-8.37	19.96	-0.42	-28.32	186	0.0	-5.11	28.33	-0.18	-33.44	195
187	111107	50	0.0	0.0	28.22	0.0	-28.22	187	0.0	0.0	28.22	0.0	-28.22	187
48	353009	157	0.0	-3.48	87.34	-0.04	-90.82	188	0.0	-3.48	87.34	-0.04	-90.82	171
153	1073	130	0.0	-1.94	30.70	-0.06	-32.64	189	2.9	12.39	46.84	0.26	-34.45	167
190	3025	132	0.0	34.64	69.62	0.50	-34.98	190	17.3	142.26	78.14	1.82	64.12	128
191	3026	29	0.0	-24.21	20.87	-1.16	-45.08	191	0.0	-24.21	20.87	-1.16	-45.08	191
192	3027	28	0.0	2.09	11.79	0.18	-9.71	192	0.0	2.09	11.79	0.18	-9.71	192
193	3028	46	0.0	0.0	31.06	0.0	-31.06	193	0.0	0.0	31.06	0.0	-31.06	193
194	3029	999	0.0	-22.75	30.29	-0.75	-53.04	194	0.0	-22.75	30.29	-0.75	-53.04	194
154	1074	25	0.0	0.12	10.77	0.01	-10.65	195	0.0	0.12	10.77	0.01	-10.65	178
196	3031	82	0.0	0.0	16.48	0.0	-16.48	196	0.0	0.0	16.48	0.0	-16.48	196
197	3032	33	0.0	-7.57	14.56	-0.52	-22.12	197	0.0	-7.57	14.56	-0.52	-22.12	197
198	4013	344	0.0	-32.81	107.20	-0.31	-140.01	198	0.0	-8.80	147.44	-0.06	-156.24	198
199	4014	366	0.0	0.19	98.96	0.00	-98.77	199	0.0	0.17	139.74	0.00	-139.56	199
69	1031	30	0.0	-17.96	20.28	-0.89	-38.24	200	0.0	-1.97	26.56	-0.07	-28.53	189
36	252010	18	0.0	-43.38	15.94	-2.72	-59.32	201	0.0	-3.56	19.33	-0.18	-22.90	169
202	4017	230	0.0	8.38	195.56	0.04	-187.18	202	0.0	8.38	195.56	0.04	-187.18	202
203	4018	530	0.0	28.02	450.65	0.06	-422.63	203	0.0	28.02	450.65	0.06	-422.63	203
204	4019	999	0.0	9.95	302.67	0.03	-292.72	204	0.0	9.95	302.67	0.03	-292.72	204
205	4020	169	0.0	4.52	136.98	0.03	-132.46	205	0.0	4.52	136.98	0.03	-132.46	205
206	4021	115	0.0	1.64	97.59	0.02	-95.95	206	0.0	1.64	97.59	0.02	-95.95	206
207	4022	72	0.0	12.95	60.94	0.21	-48.00	207	0.0	12.95	60.94	0.21	-48.00	207
208	4023	272	0.0	48.74	219.83	0.22	-171.09	208	0.0	48.74	219.83	0.22	-171.09	208

Table 5-24 (1) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN								
		IRR BENEFIT	B/C	PRIORITY	IRR BENEFIT	B/C	PRIORITY						
54	632013	100.0	96.70	5.42	17.84	91.28	1	100.0	109.26	10.86	10.06	98.40	1
102	2026	100.0	18.01	13.89	1.30	4.12	2	28.0	52.36	18.52	2.83	33.84	93
188	3023	86.5	230.94	20.47	11.28	210.47	3	85.7	290.69	34.99	8.31	255.70	2
52	632011	43	82.2	506.68	35.60	471.09	4	80.9	515.77	65.78	7.84	449.99	3
17	51008	13	81.2	221.34	19.81	201.53	5	80.4	271.02	29.93	9.06	241.10	4
84	3021	65	73.5	260.08	43.20	216.88	6	73.5	260.08	43.20	6.02	216.88	5
171	11091	99	71.6	1308.57	120.58	1187.99	7	70.0	1268.24	190.19	6.67	1078.05	7
2	52002	15	70.0	643.75	51.76	591.99	8	70.0	643.75	51.76	12.44	591.99	6
97	2021	32	69.9	122.74	19.28	103.46	9	69.6	213.96	26.03	8.22	187.93	8
83	3020	29	66.6	357.22	35.86	321.36	10	66.6	357.22	35.86	9.96	321.36	9
138	1058	63	61.3	341.72	48.73	292.99	11	59.9	451.64	64.73	6.98	386.91	10
147	1067	40	61.2	452.10	53.09	399.01	12	59.0	443.41	86.52	5.12	356.89	11
15	51006	75	60.2	1026.45	120.98	905.48	13	58.9	1504.69	174.47	8.62	1330.22	13
71	2015	123	58.9	533.59	77.33	456.26	14	58.9	533.59	77.33	6.90	456.26	12
189	3024	66	56.7	207.86	49.03	158.83	15	57.1	414.40	52.47	7.90	361.93	14
18	51009	79	56.4	1136.29	149.67	986.63	16	54.1	1353.41	207.60	6.52	1145.81	17
169	11089	82	55.8	1011.56	128.00	883.56	17	54.2	1479.76	186.54	7.93	1293.22	16
20	51011	37	54.5	996.79	125.96	870.83	18	54.5	996.79	125.96	7.91	870.83	15
6	52006	132	54.1	3619.52	335.15	3284.38	19	54.1	3619.52	335.15	10.80	3284.38	18
141	1061	53	53.3	323.82	52.24	273.58	20	51.8	393.00	56.14	7.00	336.86	19
119	112043	26	52.9	185.40	29.43	155.97	21	51.2	207.57	33.58	6.18	173.99	20
87	1037	82	52.1	773.31	125.45	647.86	22	49.1	666.11	199.91	3.33	466.20	24
201	4016	118	50.7	197.46	36.27	161.19	23	50.7	197.46	36.27	5.44	161.19	21
16	51007	44	49.9	1360.93	160.41	1200.52	24	49.9	1360.93	160.41	8.48	1200.52	22
150	1070	37	49.6	359.13	57.58	301.55	25	46.3	352.11	91.45	3.85	260.66	28
7	52007	22	49.6	819.34	105.11	714.23	26	49.6	819.34	105.11	7.80	714.23	23

Table 5-24 (2) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
53	652012	42	49.3	415.58	52.32	7.94	363.26	27	45.1	381.07	92.20	4.13	288.87	34
142	1062	48	49.0	568.46	92.46	6.15	476.00	28	49.0	568.46	92.46	6.15	476.00	25
195	3030	35	47.1	189.32	35.72	5.30	153.60	29	47.1	189.32	35.72	5.30	153.60	26
1	52001	160	46.9	3763.53	479.99	7.84	3283.54	30	46.9	3763.53	479.99	7.84	3283.54	27
120	112044	40	46.5	173.55	37.34	4.65	136.22	31	44.9	222.60	42.57	5.23	180.03	35
145	1065	91	46.1	390.78	69.00	5.66	321.78	32	46.1	390.78	69.00	5.66	321.78	29
111	2035	16	45.8	82.10	14.71	5.58	67.39	33	45.8	82.10	14.71	5.58	67.39	30
81	3018	47	45.7	248.01	43.04	5.76	204.98	34	45.7	248.01	43.04	5.76	204.98	31
156	1076	31	45.6	172.53	29.80	5.79	142.72	35	45.6	172.53	29.80	5.79	142.72	32
157	1077	57	45.6	317.10	54.80	5.79	262.30	36	45.6	317.10	54.80	5.79	262.30	33
132	1032	26	45.1	113.75	26.69	4.26	87.06	37	43.5	156.68	33.16	4.73	123.52	38
94	1041	8	44.8	48.99	9.10	5.38	39.89	38	43.0	57.35	10.74	5.34	46.60	39
151	1071	52	44.7	557.29	108.76	5.12	448.54	39	40.7	503.93	166.71	3.02	337.22	46
167	111087	40	44.7	170.20	37.34	4.56	132.86	40	44.7	170.20	37.34	4.56	132.86	36
134	1034	113	43.9	851.31	189.01	4.50	662.30	41	40.7	1045.81	291.24	3.59	754.57	47
21	51012	130	43.9	1311.11	201.79	6.50	1109.32	42	40.9	1871.83	293.38	6.38	1578.45	45
173	111093	104	43.9	438.96	85.19	5.15	353.77	43	43.9	438.96	85.19	5.15	353.77	37
3	52003	55	42.8	1197.89	186.45	6.42	1011.44	44	42.8	1197.89	186.45	6.42	1011.44	40
33	53002	36	42.7	335.09	79.40	4.22	255.69	45	39.8	387.98	113.63	3.41	274.35	51
172	111092	60	42.6	254.58	52.83	4.82	201.75	46	42.6	254.58	52.83	4.82	201.75	41
184	111104	29	42.4	75.35	17.76	4.24	57.59	47	42.4	75.35	17.76	4.24	57.59	42
5	52005	68	41.7	1576.34	261.74	6.02	1314.60	48	41.7	1576.34	261.74	6.02	1314.60	43
32	53001	14	41.6	147.86	41.73	3.54	106.13	49	40.1	212.57	58.72	3.62	153.85	50
19	51010	40	41.4	574.71	131.64	4.37	443.07	50	40.5	808.58	161.61	5.00	646.97	49
12	51003	12	41.4	122.59	22.72	5.40	99.87	51	38.7	160.31	32.29	4.96	128.02	57
146	1066	78	41.0	139.94	25.85	5.03	104.09	52	39.5	220.45	35.92	6.14	184.53	52

Table 5-24 (3) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN				1999/2000 PLAN								
		IRR	BENEFIT	COST	B/C	PRIORITY	IRR	BENEFIT	COST	B/C	PRIORITY			
158	111078	40	41.0	145.98	36.07	4.05	109.91	53	41.0	145.98	36.07	4.05	109.91	44
104	2028	48	40.6	145.72	29.17	5.00	116.55	54	40.6	145.72	29.17	5.00	116.55	48
10	51001	48	40.2	282.53	90.54	3.12	192.00	55	39.1	414.21	120.98	3.42	293.23	56
55	654009	148	39.7	1427.56	268.95	5.31	1158.61	56	34.0	1196.96	413.05	2.90	783.91	69
72	2016	63	39.7	103.52	24.34	4.25	79.18	57	39.4	185.47	30.15	6.15	155.32	53
155	1075	50	39.3	94.86	24.81	3.82	70.06	58	39.3	94.86	24.81	3.82	70.06	54
148	1068	46	39.2	175.96	27.47	6.40	148.49	59	39.2	175.96	27.47	6.40	148.49	55
123	1043	129	38.7	678.46	184.03	3.69	494.43	60	38.7	678.46	184.03	3.69	494.43	58
109	2033	24	38.4	103.43	22.32	4.63	81.11	61	38.4	103.43	22.32	4.63	81.11	59
170	111090	33	38.4	177.26	56.22	3.15	121.04	62	37.2	283.70	82.66	3.43	201.04	61
175	111095	99	38.1	434.54	109.17	3.98	325.37	63	38.1	434.54	109.17	3.98	325.37	60
13	51004	70	37.8	478.01	129.24	3.70	368.77	64	35.8	720.28	181.07	3.98	539.20	64
106	2030	40	36.6	165.29	41.68	3.98	123.81	65	36.6	165.29	41.48	3.98	123.81	62
177	111097	82	36.5	405.88	98.04	4.14	307.84	66	36.5	405.88	98.04	4.14	307.84	63
183	111103	57	35.6	275.11	53.92	5.10	221.20	67	35.6	275.11	53.92	5.10	221.20	65
135	1055	117	34.9	710.87	197.87	3.59	513.00	68	33.0	878.26	223.07	3.94	655.19	75
131	1051	999	34.6	197.07	55.96	3.52	141.11	69	32.3	223.25	64.68	3.45	158.56	80
45	333006	54	34.6	858.73	198.93	4.32	659.80	70	34.6	858.73	198.93	4.32	659.80	66
133	1053	34	34.5	471.90	127.73	3.69	344.16	71	34.5	471.90	127.73	3.69	344.16	67
86	1056	97	34.4	631.87	104.41	6.05	527.46	72	34.4	631.87	104.41	6.05	527.46	68
108	2032	81	34.2	190.49	54.71	3.48	135.78	73	31.6	210.64	65.88	3.20	144.77	83
37	254001	82	34.0	260.21	70.12	3.71	190.09	74	31.0	277.94	85.20	3.26	192.74	85
22	51013	67	33.9	2437.50	570.73	4.27	1866.78	75	33.9	2437.50	570.73	4.27	1866.78	70
4	52004	38	33.6	491.49	122.82	4.00	368.68	76	33.6	491.49	122.82	4.00	368.68	71
129	1049	62	33.3	256.78	68.62	3.74	188.16	77	33.3	256.78	68.62	3.74	188.16	72
178	111098	81	33.2	366.33	106.14	3.45	260.19	78	33.2	366.33	106.14	3.45	260.19	74

Table 5-24 (4) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	COST	IRR	BENEFIT	COST							
11	51002	100	33.2	469.76	184.42	2.95	285.34	79	33.2	885.22	263.01	3.37	622.21	73
174	111094	125	32.9	352.67	94.57	3.73	257.90	80	32.9	352.47	94.57	3.73	257.90	76
65	3014	186	32.7	504.31	150.99	3.34	353.32	81	32.7	504.31	150.99	3.34	353.32	77
27	51018	32	32.6	559.16	131.43	4.25	427.73	82	32.6	559.16	131.43	4.25	427.73	78
38	254002	77	32.6	198.94	68.83	2.89	130.11	83	30.9	263.80	83.79	3.15	180.01	86
23	51014	32	32.5	578.70	138.59	4.18	440.10	84	32.5	578.70	138.59	4.18	440.10	79
101	2025	999	32.0	140.09	54.87	2.55	85.22	85	32.1	250.49	75.72	3.31	174.77	81
98	2022	74	31.7	227.25	66.43	3.42	160.82	86	31.7	227.25	66.43	3.42	160.82	82
136	1056	171	31.4	259.11	76.69	3.38	182.42	87	28.1	381.28	124.76	3.06	256.52	91
8	52008	109	31.2	1467.30	344.29	4.26	1123.01	88	31.2	1467.30	344.29	4.26	1123.01	84
200	4015	328	30.7	400.77	151.85	3.04	268.92	89	30.7	400.77	151.85	3.04	268.92	87
128	1048	58	30.6	142.87	49.38	2.89	93.49	90	28.6	164.59	56.47	2.91	108.12	90
163	11083	24	30.3	32.76	12.01	2.73	20.75	91	30.3	32.76	12.01	2.73	20.75	88
92	4011	217	29.7	294.49	73.80	3.99	220.69	92	26.2	321.53	101.30	3.17	220.22	98
176	11096	47	29.5	95.55	31.78	3.01	63.77	93	26.9	105.73	37.59	2.81	68.14	96
103	2027	16	28.8	25.20	9.63	2.62	15.58	94	26.9	29.89	11.11	2.69	18.78	95
117	2041	77	28.8	131.73	51.48	2.56	80.25	95	28.8	131.73	51.48	2.56	80.25	89
68	1030	40	28.6	77.34	27.90	2.77	49.43	96	25.0	81.07	36.15	2.24	44.92	103
181	11101	46	28.0	172.10	66.37	2.59	103.72	97	28.0	172.10	66.37	2.59	103.72	92
76	1052	224	27.9	372.04	136.11	2.73	235.93	98	24.7	360.61	157.59	2.29	203.02	108
26	51017	38	27.6	829.01	272.50	3.04	556.52	99	27.6	829.01	272.50	3.04	556.52	94
67	1029	38	26.8	67.45	26.58	2.54	40.88	100	22.2	73.04	39.25	1.86	33.79	118
143	1063	42	26.2	175.74	62.73	2.80	113.01	101	26.2	175.74	62.73	2.80	113.01	99
152	1072	107	26.0	170.98	75.88	2.25	93.10	102	26.0	170.98	75.88	2.25	93.10	100
51	504008	175	25.9	89.74	39.87	2.25	49.88	103	25.9	89.74	39.87	2.25	49.88	101
56	654010	163	25.8	551.03	229.38	2.40	321.65	104	20.5	634.87	369.43	1.72	265.44	122

Table 5-24 (5) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN				1999/2000 PLAN								
		IRR	BENEFIT	COST	B/C	B-C	PRIORITY	IRR	BENEFIT	COST	B/C	B-C	PRIORITY	
80	3017	95	25.4	138.01	56.49	2.44	81.52	105	26.5	251.21	68.34	3.68	182.87	97
180	11100	68	25.3	84.37	38.68	2.18	45.69	106	25.3	84.37	38.68	2.18	45.69	102
116	2040	26	25.0	41.87	19.45	2.15	22.42	107	25.0	41.87	19.45	2.15	22.42	104
91	3022	999	24.8	21.50	10.09	2.13	11.40	108	24.8	21.50	10.09	2.13	11.40	107
70	2014	196	24.1	302.14	137.63	2.20	164.51	109	24.1	302.14	137.63	2.20	164.51	109
42	254006	131	23.9	335.24	154.44	2.17	180.80	110	23.9	335.24	154.44	2.17	180.80	110
31	51022	45	23.9	827.88	331.62	2.50	496.26	111	23.9	827.88	331.62	2.50	496.26	111
127	1047	46	25.4	93.43	53.15	1.76	40.28	112	24.9	154.30	60.15	2.57	94.15	106
28	51019	29	23.3	404.52	162.48	2.49	242.03	113	23.3	404.52	162.48	2.49	242.03	112
57	1024	63	23.0	120.72	54.31	2.22	66.41	114	23.0	120.72	54.31	2.22	66.41	113
60	3012	39	22.9	29.04	12.95	2.24	16.10	115	22.9	29.04	12.95	2.24	16.10	114
61	1026	54	22.7	64.28	30.47	2.11	33.81	116	22.7	64.28	30.47	2.11	33.81	115
34	53003	23	22.2	312.59	132.18	2.36	180.42	117	22.2	312.59	132.18	2.36	180.42	117
93	4012	189	22.2	392.24	198.91	1.97	193.33	118	22.3	523.03	215.46	2.43	307.57	116
105	2029	68	22.1	173.03	68.05	2.54	104.98	119	22.1	173.03	68.05	2.54	104.98	120
35	53004	53	21.2	141.69	75.72	1.87	65.77	120	22.1	200.87	78.48	2.56	122.38	119
185	11105	29	20.9	29.35	16.80	1.75	12.56	121	20.9	29.35	16.80	1.75	12.56	121
41	254005	144	20.2	257.74	128.62	2.00	129.11	122	20.2	257.74	128.62	2.00	129.11	123
77	1033	53	19.7	132.18	80.90	1.53	51.28	123	19.7	132.18	80.90	1.63	51.28	124
90	1040	999	19.0	51.71	27.45	1.88	24.27	124	16.8	54.71	33.07	1.65	21.64	134
62	1027	48	18.9	197.88	124.41	1.59	73.47	125	18.9	197.88	124.41	1.59	73.47	125
24	51015	15	18.8	314.99	178.36	1.77	136.63	126	18.8	314.99	178.36	1.77	136.63	126
63	3013	999	18.2	25.55	17.12	1.49	8.43	127	18.2	25.55	17.12	1.49	8.43	127
179	111099	87	17.7	67.79	46.53	1.46	21.26	128	17.7	67.79	46.53	1.46	21.26	129
25	51016	52	17.3	723.06	453.14	1.60	269.92	129	17.3	723.06	453.14	1.60	269.92	130
107	2031	45	17.0	21.72	14.45	1.50	7.27	130	15.5	28.24	20.50	1.39	7.95	138

Table 5-24 (6) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR	BENEFIT	B/C	IRR	BENEFIT	B/C							
66	3015	50	16.8	39.00	25.38	1.54	13.62	131	16.8	39.00	25.38	1.54	13.62	132
125	1045	92	16.8	73.25	52.98	1.38	20.27	132	16.8	73.25	52.98	1.38	20.27	133
100	2024	100	16.5	143.66	106.00	1.36	37.66	133	16.5	143.66	106.00	1.36	37.66	136
118	2042	31	16.3	27.35	20.43	1.34	6.93	134	16.3	27.35	20.43	1.34	6.93	137
110	2034	34	15.1	39.22	30.61	1.28	8.61	135	15.1	39.22	30.61	1.28	8.61	140
112	2036	52	14.9	59.87	47.22	1.27	12.65	136	14.9	59.87	47.22	1.27	12.65	141
64	1028	999	14.8	18.65	15.38	1.21	3.27	137	14.8	18.65	15.38	1.21	3.27	142
186	11106	31	14.8	7.57	6.25	1.21	1.32	138	14.8	7.57	6.25	1.21	1.32	144
190	3025	132	14.7	32.96	29.75	1.11	3.20	139	14.7	32.96	29.75	1.11	3.20	105
73	2017	64	14.7	27.62	22.94	1.20	4.68	140	14.7	27.62	22.94	1.20	4.68	145
58	1025	9	13.8	9.54	8.36	1.14	1.18	141	13.8	9.54	8.36	1.14	1.18	147
162	111082	54	13.2	32.19	29.48	1.09	2.70	142	13.2	32.19	29.48	1.09	2.70	148
44	353005	3	12.8	19.13	18.28	1.05	0.85	143	13.0	27.59	25.21	1.08	2.07	150
14	51005	18	10.4	114.20	125.66	0.91	-11.46	144	14.6	195.33	156.35	1.25	38.98	146
144	1064	138	10.1	68.98	79.50	0.87	-16.53	145	10.1	68.98	79.50	0.87	-10.53	152
95	1042	84	10.1	94.99	107.02	0.89	-12.02	146	14.8	157.16	119.42	1.32	37.74	143
114	2038	55	9.8	38.85	45.81	0.85	-6.96	147	9.8	38.85	45.81	0.85	-6.96	153
59	3011	55	9.8	14.38	17.34	0.83	-2.96	148	11.8	23.58	23.98	0.98	-0.39	151
79	3016	62	9.7	19.46	23.09	0.84	-3.64	149	9.7	19.46	23.09	0.84	-3.64	154
115	2039	45	9.0	23.88	30.21	0.79	-6.33	150	9.0	23.88	30.21	0.79	-6.33	155
113	2037	30	8.3	6.03	8.05	0.75	-2.02	151	8.3	6.03	8.05	0.75	-2.02	156
165	111085	48	8.1	28.28	38.35	0.74	-10.07	152	8.1	28.28	38.35	0.74	-10.07	158
161	111081	40	7.8	26.94	36.15	0.72	-10.11	153	7.8	26.94	36.15	0.72	-10.11	159
126	1046	138	7.8	19.81	27.78	0.71	-7.96	154	7.8	19.81	27.78	0.71	-7.96	160
159	111079	57	7.5	35.76	51.18	0.70	-15.42	155	7.5	35.76	51.18	0.70	-15.42	161
47	353008	122	3.8	24.07	48.61	0.50	-24.54	156	3.8	24.07	48.61	0.50	-24.54	163

Table 5-24 (7) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN			1999/2000 PLAN									
		IRR BENEFIT	B/C	PRIORITY	IRR BENEFIT	B/C	PRIORITY							
50	504007	210	1.1	17.69	47.56	0.37	-29.87	157	4.1	24.42	58.89	0.41	-34.47	162
49	503010	141	0.1	13.32	40.21	0.33	-26.89	158	0.0	12.77	63.60	0.20	-50.84	179
130	1050	68	0.0	0.09	63.42	0.00	-63.33	159	0.0	0.09	63.42	0.00	-63.33	177
160	111080	35	0.0	0.0	35.03	0.0	-35.03	160	0.0	0.0	35.03	0.0	-35.03	188
89	1039	94	0.0	0.0	19.13	0.0	-19.13	161	0.0	0.0	19.13	0.0	-19.13	189
9	52009	13	0.0	0.0	19.33	0.0	-19.33	162	15.2	44.74	28.83	1.56	16.10	139
74	2018	47	0.0	0.0	16.77	0.0	-16.77	163	8.2	11.01	21.13	0.52	-10.12	157
164	111084	138	0.0	0.0	63.17	0.0	-63.17	164	0.0	0.0	63.17	0.0	-63.17	200
75	2019	2	0.0	0.0	0.73	0.0	-0.73	165	2.4	0.18	0.93	0.20	-0.75	165
166	111086	48	0.0	0.0	31.39	0.0	-31.39	166	0.0	0.0	31.39	0.0	-31.39	166
46	353007	24	0.0	0.0	15.43	0.0	-15.43	167	0.0	0.0	15.43	0.0	-15.43	174
168	111088	51	0.0	0.0	29.90	0.0	-29.90	168	0.0	0.0	29.90	0.0	-29.90	168
39	254003	293	0.0	0.0	84.74	0.0	-84.74	169	0.0	0.0	84.74	0.0	-84.74	201
137	1057	70	0.0	0.0	82.37	0.0	-82.37	170	18.0	308.85	134.41	2.30	174.44	128
78	1034	106	0.0	0.0	92.68	0.0	-92.68	171	0.0	0.0	92.68	0.0	-92.68	170
139	1059	47	0.0	0.0	82.29	0.0	-82.29	172	0.0	0.0	82.29	0.0	-82.29	190
140	1060	89	0.0	0.0	85.46	0.0	-85.46	173	0.0	0.0	85.46	0.0	-85.46	195
96	2020	34	0.0	-93.75	16.99	-5.52	-110.74	174	0.0	-8.39	25.51	-0.33	-33.89	176
48	353009	157	0.0	-3.48	87.34	-0.04	-90.82	175	0.0	-3.48	87.34	-0.04	-90.82	178
40	254004	69	0.0	-8.37	19.96	-0.42	-28.32	176	0.0	-5.11	28.33	-0.18	-33.44	173
99	2023	102	0.0	-393.59	104.49	-3.77	-498.07	177	0.0	-90.90	112.59	-0.81	-203.49	181
29	51020	16	0.0	0.0	40.90	0.0	-40.90	178	0.0	0.0	40.90	0.0	-40.90	185
82	3019	98	0.0	0.0	51.90	0.0	-51.90	179	16.5	122.97	64.27	1.91	58.70	135
121	112045	135	0.0	0.11	27.61	0.00	-27.51	180	0.0	0.11	27.61	0.00	-27.51	167
122	112046	76	0.0	0.0	33.70	0.0	-33.70	181	0.0	0.0	33.70	0.0	-33.70	169
182	111102	64	0.0	-1.63	19.30	-0.08	-20.93	182	0.0	-1.63	19.30	-0.08	-20.93	182

Table 5-24 (8) Priority Rating for the 1st Stage Construction and Master Plan in Case of Plan B

SEQ LINK-NO	LENGTH	1987/88 PLAN			1989/2000 PLAN			B/C	PRIORITY					
		IRR	BENEFIT	COST	IRR	BENEFIT	COST							
149	1069	40	0.0	0.0	32.15	0.0	-32.15	163	17.2	86.82	36.41	2.38	50.41	131
69	1031	30	0.0	-17.12	20.28	-0.84	-37.40	184	0.0	-2.11	26.04	-0.08	-28.15	172
124	1044	63	0.0	13.29	48.92	0.27	-35.63	185	0.0	13.29	48.92	0.27	-35.63	171
36	252010	18	0.0	0.0	22.32	0.0	-22.32	186	0.0	-12.79	49.63	-0.26	-62.43	175
187	111107	50	0.0	0.0	28.22	0.0	-28.22	187	0.0	0.0	28.22	0.0	-28.22	187
153	1073	130	0.0	-1.94	30.70	-0.06	-32.64	188	2.9	12.39	46.84	0.26	-34.45	164
154	1074	25	0.0	0.12	10.77	0.01	-10.65	189	0.0	0.12	10.77	0.01	-10.65	180
85	1035	38	0.0	0.0	128.24	0.0	-128.24	190	0.0	0.0	128.24	0.0	-128.24	183
191	3026	29	0.0	-24.21	20.87	-1.16	-45.08	191	0.0	-24.21	20.87	-1.16	-45.08	191
192	3027	28	0.0	2.09	15.47	0.13	-23.39	192	0.0	2.09	15.47	0.13	-13.39	192
193	3028	46	0.0	0.0	31.06	0.0	-31.06	193	0.0	0.0	31.06	0.0	-31.06	193
194	3029	999	0.0	-22.75	42.04	-0.54	-64.79	194	0.0	-22.75	42.04	-0.54	-64.79	194
43	351023	14	0.0	0.0	24.23	0.0	-24.23	195	13.2	46.05	39.07	1.18	6.98	149
196	3031	82	0.0	0.0	16.48	0.0	-16.48	196	0.0	0.0	16.48	0.0	-16.48	196
197	3032	33	0.0	-7.57	14.56	-0.52	-22.12	197	0.0	-7.57	14.56	-0.52	-22.12	197
198	4013	344	0.0	-190.52	107.20	-1.78	-297.72	198	0.0	-56.50	148.34	-0.38	-204.84	198
199	4014	366	0.0	0.19	98.96	0.00	-98.77	199	0.0	0.17	139.73	0.00	-139.56	199
30	51021	30	0.0	0.0	159.40	0.0	-159.40	200	0.0	0.0	159.40	0.0	-159.40	184
88	1038	32	0.0	0.0	28.82	0.0	-28.82	201	0.0	0.0	28.82	0.0	-28.82	186
202	4017	230	0.0	8.38	195.56	0.04	-187.18	202	0.0	8.38	195.56	0.04	-187.18	202
203	4018	530	0.0	28.02	450.65	0.06	-422.63	203	0.0	28.02	450.65	0.06	-422.63	203
204	4019	999	0.0	9.95	302.67	0.03	-292.72	204	0.0	9.95	302.67	0.03	-292.72	204
205	4020	169	0.0	4.52	136.98	0.03	-132.46	205	0.0	4.52	136.98	0.03	-132.46	205
206	4021	115	0.0	1.64	97.59	0.02	-95.95	206	0.0	1.64	97.59	0.02	-95.95	206
207	4022	72	0.0	12.95	60.94	0.21	-48.00	207	0.0	12.95	60.94	0.21	-48.00	207
208	4023	272	0.0	21.72	219.83	0.10	-198.11	208	0.0	21.72	219.83	0.10	-198.11	208

Table 5-25 Required Financial Costs by Route of National Importance in Case of Plan A

	TOTAL	FEC	83/84	84/85	85/86	86/87	87/88	SUBTOTAL 83-88	BEYOND 87/88
N5	16398.12	4868.60	2824.17	4894.99	4327.23	1128.21	0.0	13174.58	3223.54
N25	1582.14	469.39	266.22	453.30	302.32	57.62	0.0	1079.66	502.68
N35	867.10	237.14	193.76	329.68	216.91	40.50	0.0	780.84	86.26
N50	588.37	171.85	74.23	123.72	49.49	0.0	0.0	247.44	340.93
N65	2672.72	814.05	224.97	389.17	334.88	85.34	0.0	1034.36	1638.36
RCD	899.77	278.62	119.90	199.83	79.93	0.0	0.0	399.67	500.10
INDUS1	661.41	209.56	113.32	193.38	134.25	27.09	0.0	468.04	193.37
INDUS2	2098.41	623.33	379.80	645.22	412.07	73.32	0.0	1510.42	587.99
QS-D-M	1384.20	414.91	308.70	521.25	293.53	40.49	0.0	1163.98	220.22
K-C-G	2700.67	815.98	254.22	430.12	252.85	38.48	0.0	975.66	1725.01
PB-SAR	122.37	33.86	28.34	47.23	18.89	0.0	0.0	94.47	27.90
OTHERS	17591.51	5063.20	3865.13	6511.49	3482.40	417.99	0.0	14276.96	3314.58
TOTAL	47566.76	14000.46	8652.75	14739.37	9904.74	1909.04	0.0	35205.86	12360.92

Table 5-26 Required Financial Costs by Route of National Importance in Case of Plan B

	TOTAL	FEC	83/84	84/85	85/86	86/87	87/88	SUBTOTAL 83-88	BEYOND 87/88
N5	15549.33	4638.60	2680.69	4640.68	4034.42	1037.21	0.0	12392.96	3156.37
N25	1487.59	438.36	269.93	459.48	304.80	57.62	0.0	1091.83	395.76
N35	911.97	246.72	193.76	329.68	216.91	40.50	0.0	780.84	131.13
N50	456.54	134.17	74.23	123.72	49.49	0.0	0.0	247.44	209.10
N65	3446.48	1011.89	257.17	445.53	391.25	101.44	0.0	1195.40	2251.08
RCD	917.57	282.02	119.90	199.83	79.93	0.0	0.0	399.67	517.90
INDUS1	512.25	153.17	115.16	196.61	137.48	28.02	0.0	477.27	34.98
INDUS2	1341.51	366.88	511.08	524.71	288.55	37.46	0.0	1161.80	179.71
GS-D-M	1431.76	429.48	306.32	517.28	291.95	40.49	0.0	1156.04	275.72
K-C-G	2591.43	771.10	254.22	430.12	252.85	38.68	0.0	975.66	1615.77
PB-SAR	190.82	54.40	28.34	47.23	18.89	0.0	0.0	94.47	96.35
OTHERS	17649.12	5082.27	3828.40	6445.82	3400.20	391.36	0.0	14065.73	3583.42
TOTAL	46486.34	13609.04	8439.19	14360.58	9466.70	1772.58	0.0	34039.09	12447.27

Table 5-27 Summary of Project Costs with Priority in Case of Plan A

PRIORITY	TOTAL	FEC	83/84	84/85	85/86	86/87	87/88	SUBTOTAL 83-88	BEYOND 87/88
1- 10	2385.99	741.96	280.96	468.26	187.31	0.0	0.0	936.53	1349.46
1- 20	5805.44	1797.77	856.50	1449.38	855.58	131.35	0.0	3292.81	2512.65
1- 30	9888.53	3042.79	1492.46	2534.50	1606.70	282.34	0.0	5915.99	3972.55
1- 40	12054.29	3689.92	1829.84	3109.97	2092.86	361.37	0.0	7304.02	4750.26
1- 50	15353.59	4676.76	2323.99	3961.55	2696.31	529.37	0.0	9511.19	5842.08
1- 60	18193.70	5514.81	2797.72	4769.43	3250.68	639.47	0.0	11457.28	6736.40
1- 70	20467.85	6185.97	3183.41	5418.94	3595.07	679.75	0.0	12877.15	7590.67
1- 80	23768.63	7139.40	3843.94	6555.52	4499.63	894.01	0.0	15793.10	7975.49
1- 90	24923.18	7480.96	4122.82	7024.75	4743.50	920.76	0.0	16811.85	8111.28
1-100	29265.22	8757.41	4776.87	8155.71	5710.95	1166.04	0.0	19809.62	9455.54
1-110	30882.75	9227.23	5145.05	8785.26	6153.12	1261.45	0.0	21354.98	9527.71
1-120	33167.89	9878.99	5633.84	9623.45	6794.65	1402.53	0.0	23454.60	9713.23
1-130	34975.93	10362.77	6029.22	10301.75	7309.62	1518.56	0.0	25159.33	9816.53
1-140	36342.73	10740.16	6332.07	10821.88	7711.38	1610.80	0.0	26476.34	9866.32
1-150	37575.14	11073.50	6609.89	11284.92	7896.58	1610.80	0.0	27402.44	10172.62
1-160	39141.90	11533.41	6993.48	11924.23	8152.29	1610.80	0.0	28681.09	10460.72
1-170	40220.81	11846.60	7228.88	12322.00	8379.54	1643.25	0.0	29573.97	10646.75
1-180	42291.91	12456.88	7593.36	12929.46	8622.51	1643.25	0.0	30788.92	11502.90
1-190	43309.89	12753.02	7808.86	13288.65	8766.17	1643.25	0.0	31507.31	11802.47
1-200	44550.06	13123.25	8019.52	13639.77	8906.61	1643.25	0.0	32209.57	12340.37
1-208	47566.66	14000.23	8652.56	14739.16	9904.53	1909.04	0.0	35205.74	12360.80

Table 5-28 Summary of Project Costs with Priority in Case of Plan B

PRIORITY	TOTAL	FEC	83/84	84/85	85/86	86/87	87/88	SUBTOTAL 83-88	BEYOND 87/88
1-10	1580.77	490.05	212.79	354.65	141.86	0.0	0.0	709.30	871.47
1-20	5254.59	1611.15	791.33	1335.33	741.38	98.69	0.0	2966.73	2287.87
1-30	8533.85	2620.39	1382.82	2309.54	1404.83	229.06	0.0	5306.25	3227.62
1-40	9815.26	2977.59	1613.23	2726.90	1571.78	229.06	0.0	6140.95	3674.33
1-50	14042.20	4231.58	2169.45	3686.86	2370.69	426.64	0.0	8653.62	5388.59
1-60	16756.60	5040.28	2517.29	4281.95	2802.38	518.85	0.0	10120.43	6636.16
1-70	19366.01	5765.06	2985.67	5080.41	3346.65	625.94	0.0	12038.62	7327.36
1-80	23010.43	6845.30	3728.80	6344.55	4175.13	779.66	0.0	15028.12	7982.29
1-90	26011.94	7741.06	4277.95	7290.23	4936.91	962.29	0.0	17467.37	8544.54
1-100	27889.17	8267.52	4618.49	7871.68	5344.15	1045.47	0.0	18879.84	9009.30
1-110	30493.23	9033.11	5007.11	8537.09	5833.21	1151.62	0.0	20529.12	9966.06
1-120	32904.68	9710.98	5514.42	9410.62	6535.37	1319.60	0.0	22780.14	10124.48
1-130	35156.31	10320.44	6014.43	10269.77	7203.97	1474.33	0.0	24962.68	10193.57
1-140	35984.86	10559.43	6222.02	10615.74	7342.35	1474.33	0.0	25654.64	10330.16
1-150	37265.84	10915.69	6503.93	11085.61	7530.29	1474.33	0.0	26594.41	10671.37
1-160	38243.28	11190.47	6734.42	11469.77	7683.94	1474.33	0.0	27362.75	10880.46
1-170	39359.43	11528.44	6945.50	11831.59	7824.66	1474.33	0.0	28066.39	11292.97
1-180	40766.23	11925.02	7300.03	12412.48	8061.00	1474.33	0.0	29248.20	11517.96
1-190	41814.39	12240.62	7517.87	12775.56	8206.23	1474.33	0.0	29974.39	11839.92
1-200	43465.09	12729.73	7798.45	13248.61	8463.57	1506.78	0.0	31017.83	12447.17
1-208	46486.23	13608.81	8438.98	14360.48	9466.48	1772.58	0.0	34038.97	12447.17

5-9 Plan of Action

The total amount of the plan of action for 6th Five Year Plan period must be consistent with the available financial resources. The plan is divided into five units covering the highway networks of National Transport plan.

A plan of action has been framed by selecting a limited number of groups of priority highway sections from first stage construction plan of 'B' which can reasonably be implemented during the 6th Five Year Plan period.

In the absence of sufficiency rating system becomes a priority tool for highway improvement because of limitation of required data, the comparison in cost with benefit in terms of savings in time and operating costs are basically used as a tool to determine the priority of construction for highways.

The optimum operating year and internal rate of return are calculated by road section. The economic rates of return have been calculated for the same base year 1983 to make all roads comparable with each other. The calculations show that many of the projects are feasible already before the base year 1983/1984, with an opportunity cost of capital of 12%. Results are shown in Table 5-29.

For determining the highways of national importance, highway programme is grouped for the continuity and consistency of route development as shown in Table 5-30.

Highway with low-priority in terms of economic rate of return such as N-50, RCD Highway and direct highway from Quetta to Multan have been involved through discussion made with authorities concerned.

As the results, primary and secondary road networks must be considered equally importance to the national economy and these roads will take up the major part of total highway investment in Pakistan. It is, therefore, proposed that the Federal Government shall be in charge of road authority and financial responsibility for the primary as well as the secondary road listed in Table 5-30 as plan of action for road project under federal budget.

On the basis of the priority determinations made, plan of actions are prepared and shown in Table 5-30 and 5-31. The proposed plan of actions are shown in Fig. 5-9. Location map project proposed by master plan of National Highway Board and map of proposed 6th Five Year Plan of National Highway Board are shown in Fig. 5-10 and 5-11.

The annual phasing for road projects have been carried out on the basis of the size of the projects and construction capabilities. The smaller projects costing less than Rs. 200 million are phased to complete in 3 years and the phasing of their expenditures over the years will be made in the ratio 30:50:20.

The bigger projects costing more than Rs. 200 million are phased to complete in 4 years and the phasing of their expenditures over the years will be made in the ratio 20:35:35:10.

Functional classification of the road network should not be regarded as a one-time

process, social economy valid for all times to come. It is proposed that the decision on the proper classification of a highway should be based on an evaluation of the functional use and the character of the interest.

Table 5-29 (1) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN			PRIORITY	CONSTRUCTION COST				1ST Y.R.	OPTIMUM TIMING		
		IRR	BENEFIT	COST		B/C	1ST	2ND	3RD			4TH	
54	652015	8	100.0	96.70	5.42	17.84	91.28	1	3.15	5.25	2.10	1.85	83/84
102	2026	21	100.0	18.01	13.89	1.30	4.12	2	8.08	13.46	5.39	0.29	83/84
188	3023	23	86.5	230.94	20.47	11.28	210.47	3	11.90	19.84	7.94	1.41	83/84
52	652011	43	82.2	506.68	35.60	14.23	471.09	4	20.70	34.50	13.80	1.13	83/84
17	51008	13	81.2	221.34	19.81	11.17	201.53	5	11.52	19.20	7.68	1.24	83/84
84	3021	65	73.5	260.08	43.20	6.02	216.88	6	25.12	41.88	16.75	1.24	83/84
171	111091	99	71.6	1308.57	120.58	10.85	1187.99	7	70.13	116.88	46.75	0.90	83/84
2	52002	15	70.0	643.75	51.76	12.44	591.99	8	30.10	50.17	20.07	0.93	83/84
97	2021	32	69.9	122.74	19.28	6.37	103.46	9	11.21	18.69	7.48	1.05	83/84
83	3020	29	66.6	357.22	35.86	9.96	321.36	10	20.86	34.76	13.90	0.90	83/84
138	1058	63	61.3	341.72	48.73	7.01	292.99	11	28.34	47.23	18.89	0.78	83/84
147	1067	40	61.2	452.10	53.09	8.52	399.01	12	30.88	51.46	20.59	0.77	83/84
15	51006	75	60.2	1026.45	120.98	8.48	905.48	13	70.36	117.26	46.91	0.65	83/84
71	2015	123	58.9	533.59	77.33	6.90	456.26	14	44.97	74.95	29.98	0.75	83/84
189	3024	66	56.7	207.86	49.03	4.24	158.83	15	28.51	47.52	19.01	0.79	83/84
18	51009	79	56.4	1136.29	149.67	7.59	986.63	16	60.93	106.63	106.63	0.88	83/84
169	111089	82	55.8	1011.56	128.00	7.90	883.56	17	74.44	124.07	49.63	0.51	83/84
20	51011	37	54.5	996.79	125.96	7.91	870.83	18	73.26	122.09	48.84	0.63	83/84
6	52006	132	54.1	3619.52	335.15	10.80	3284.38	19	136.45	238.79	238.79	0.70	83/84
141	1061	53	53.3	325.82	52.24	6.24	273.58	20	30.38	50.64	20.26	0.64	83/84
119	112043	26	52.9	185.40	29.43	6.30	155.97	21	17.12	28.53	11.41	0.61	83/84
87	1037	82	52.1	773.31	125.45	6.16	647.86	22	72.96	121.60	48.64	0.61	83/84
201	4016	118	50.7	197.46	36.27	5.44	161.19	23	21.09	33.15	14.06	0.65	83/84
16	51007	44	49.9	1360.93	160.41	8.48	1200.52	24	65.31	114.29	114.29	0.64	83/84
150	1070	37	49.6	339.13	57.58	6.24	301.55	25	33.49	55.81	22.33	0.55	83/84
7	52007	22	49.6	819.34	105.11	7.80	714.23	26	61.13	101.88	40.75	0.50	83/84

Table 5-29 (2) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN		B-C		PRIORITY	CONSTRUCTION COST			1ST Y.R.	OPTIMUM TIMING		
		IRR	BENEFIT	COST	B/C		1ST	2ND	3RD			4TH	
53	652012	42	49.3	415.58	52.32	7.94	363.26	27	30.43	50.71	20.29	0.37	83/84
142	1062	48	49.0	568.46	92.46	6.15	476.00	28	53.77	89.62	35.85	0.55	83/84
195	3030	35	47.1	189.32	35.72	5.30	153.60	29	20.77	34.62	13.85	0.53	83/84
1	52001	160	46.9	3763.53	479.99	7.84	3283.54	30	195.42	341.98	341.98	0.54	83/84
120	112044	40	46.5	173.55	37.34	4.65	136.22	31	21.71	36.19	14.48	0.52	83/84
145	1065	91	46.1	390.78	69.00	5.66	321.78	32	40.13	66.88	26.75	0.51	83/84
111	2035	16	45.8	82.10	14.71	5.58	67.39	33	8.56	14.26	5.70	0.50	83/84
81	3018	47	45.7	248.01	43.04	5.76	204.98	34	25.03	41.71	16.69	0.43	83/84
156	1076	31	45.6	172.53	29.80	5.79	142.72	35	17.33	28.89	11.56	0.48	83/84
157	1077	57	45.6	317.10	54.80	5.79	262.30	36	31.87	53.11	21.25	0.48	83/84
132	1052	26	45.1	113.75	26.69	4.26	87.06	37	15.52	25.87	10.35	0.50	83/84
94	1041	8	44.8	48.99	9.10	5.38	39.89	38	5.29	8.82	3.53	0.47	83/84
151	1071	52	44.7	557.29	108.76	5.12	448.54	39	63.25	105.42	42.17	0.50	83/84
167	111087	40	44.7	170.20	37.34	4.56	132.86	40	21.72	36.19	14.48	0.54	83/84
134	1054	113	43.9	851.31	189.01	4.50	662.30	41	76.95	134.67	134.67	0.60	83/84
21	51012	130	43.9	1311.11	201.79	6.50	1109.32	42	82.16	143.77	143.77	0.45	83/84
173	111093	104	43.9	438.96	85.19	5.15	353.77	43	49.54	82.57	33.03	0.42	83/84
3	52003	55	42.8	1197.89	186.45	6.42	1011.44	44	75.91	132.84	132.84	0.49	83/84
33	53002	36	42.7	335.09	79.40	4.22	255.69	45	46.18	76.96	30.79	0.45	83/84
172	111092	60	42.6	254.58	52.83	4.82	201.75	46	30.72	51.20	20.48	0.45	83/84
184	111104	29	42.4	75.35	17.76	4.24	57.59	47	10.33	17.21	6.89	0.51	83/84
5	52005	68	41.7	1576.34	261.74	6.02	1314.60	48	106.56	186.48	186.48	0.48	83/84
32	53001	14	41.6	147.86	41.73	3.54	106.13	49	24.27	40.45	16.18	0.48	83/84
19	51010	40	41.4	574.71	131.64	4.37	443.07	50	53.59	93.79	93.79	0.58	83/84
12	51003	12	41.4	122.59	22.72	5.40	99.87	51	13.21	22.02	8.81	0.26	83/84
146	1066	78	41.0	129.94	25.85	5.03	104.09	52	15.03	25.05	10.02	0.58	83/84

Table 5-29 (3) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	IRR	BENEFIT	1987/88 PLAN			B-C	B-C	PRIORITY	CONSTRUCTION COST			1ST Y.R. TIMING
				COST	B/C	PRIORITY				1ST	2ND	3RD	
158	111078	40	41.0	145.98	36.07	4.05	109.91	53	20.98	34.96	13.99	0.48	83/84
104	2028	48	40.6	145.72	29.17	5.00	116.55	54	16.96	28.27	11.31	0.39	83/84
10	51001	48	40.2	282.53	90.54	3.12	192.00	55	52.66	87.76	35.10	0.47	83/84
55	654009	148	39.7	1427.56	268.95	5.31	1158.61	56	109.50	191.62	191.62	0.45	83/84
72	2016	63	39.7	103.52	24.34	4.25	79.18	57	14.16	23.59	9.44	0.39	83/84
155	1075	50	39.3	94.86	24.81	3.82	70.06	58	14.43	24.04	9.62	0.46	83/84
148	1068	46	39.2	175.96	27.47	6.40	148.49	59	15.98	26.63	10.65	0.18	83/84
123	1043	129	38.7	678.46	184.03	3.69	494.43	60	74.93	131.12	131.12	0.57	83/84
109	2033	24	38.4	103.43	22.32	4.63	81.11	61	12.98	21.63	8.65	0.36	83/84
170	111090	33	38.4	177.26	56.22	3.15	121.04	62	32.70	54.49	21.80	0.30	83/84
175	111095	99	38.1	434.54	109.17	3.98	325.37	63	63.49	105.82	42.33	0.40	83/84
13	51004	70	37.8	478.01	129.24	3.70	348.77	64	52.62	92.08	92.08	0.43	83/84
106	2030	40	36.6	165.39	41.48	3.98	123.81	65	24.12	40.21	16.08	0.37	83/84
177	111097	82	36.5	405.88	98.04	4.14	307.84	66	57.02	95.03	38.01	0.32	83/84
183	111103	57	35.6	275.11	53.92	5.10	221.20	67	31.36	52.26	20.91	0.17	83/84
135	1055	117	34.9	710.87	197.87	3.59	513.00	68	80.56	140.98	140.98	0.39	83/84
131	1051	999	34.6	197.07	55.96	3.52	141.11	69	32.54	54.24	21.70	0.31	83/84
45	353006	54	34.6	858.73	198.95	4.32	659.80	70	80.99	141.74	141.74	0.35	83/84
133	1053	34	34.5	471.90	127.73	3.69	344.16	71	74.29	123.82	49.53	0.33	83/84
86	1036	97	34.4	631.87	104.41	6.05	527.46	72	60.73	101.21	40.48	0.15	83/84
108	2032	81	34.2	190.49	54.71	3.48	135.78	73	31.82	53.03	21.21	0.32	83/84
37	254001	82	34.0	260.21	70.12	3.71	190.09	74	40.78	67.96	27.19	0.24	83/84
22	51013	67	33.9	2437.50	570.73	4.27	1866.78	75	232.36	406.63	406.63	0.33	83/84
4	52004	38	33.6	491.49	122.82	4.00	368.68	76	71.43	119.05	47.62	0.27	83/84
129	1049	62	33.3	256.78	68.62	3.74	188.16	77	39.91	66.51	26.61	0.20	83/84
178	111098	81	33.2	366.33	106.14	3.45	260.19	78	61.73	102.88	41.15	0.30	83/84

Table 5-29 (4) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN			CONSTRUCTION COST				1ST Y.R.	OPTIMUM TIMING				
		IRR	BENEFIT	COST	B/C	B-C	PRIORITY	1ST			2ND	3RD	4TH	
11	51002	100	33.2	469.76	184.42	2.55	285.34	79	75.08	131.39	131.39	37.54	0.48	83/84
174	111094	125	32.9	352.47	94.57	3.73	257.90	80	55.00	91.67	36.67		0.20	83/84
65	3014	186	32.7	504.31	150.99	3.34	353.32	81	61.47	107.58	107.58	30.74	0.40	83/84
27	51018	32	32.6	559.16	131.43	4.25	427.73	82	53.51	93.64	93.64	26.76	0.20	83/84
38	254002	77	32.6	198.94	68.83	2.89	130.11	83	40.03	66.71	26.69		0.32	83/84
23	51014	32	32.5	578.70	138.59	4.18	440.10	84	56.43	98.75	98.75	28.21	0.29	83/84
101	20235	999	32.0	140.09	54.87	2.55	85.22	85	31.91	53.18	21.27		0.35	83/84
98	2022	74	31.7	227.25	66.43	3.42	160.82	86	38.63	64.39	25.76		0.28	83/84
136	1056	171	31.4	259.11	76.69	3.38	182.42	87	44.60	74.33	29.73		0.26	83/84
8	52008	109	31.2	1467.30	344.29	4.26	1123.01	88	140.17	245.30	245.30	70.08	0.18	83/84
200	4015	328	30.7	400.77	131.85	3.04	268.92	89	53.68	93.94	93.94	26.84	0.36	83/84
128	1048	58	30.6	142.87	49.38	2.89	93.49	90	28.72	47.86	19.15		0.29	83/84
163	111083	24	30.3	32.76	12.01	2.73	20.75	91	6.98	11.64	4.66		0.33	83/84
92	4011	217	29.7	294.49	73.80	3.99	220.69	92	42.92	71.53	28.61		0.16	83/84
176	111096	47	29.5	95.55	31.78	3.01	63.77	93	18.48	30.80	12.32		0.23	83/84
103	2037	16	28.8	25.20	9.63	2.62	15.58	94	5.60	9.33	3.73		0.27	83/84
117	2041	77	28.8	131.73	51.48	2.56	80.25	95	29.94	49.90	19.96		0.31	83/84
68	1030	40	28.6	77.34	27.90	2.77	49.43	96	16.23	27.04	10.82		0.25	83/84
181	111101	66	28.0	172.10	66.37	2.59	105.72	97	38.60	64.33	25.73		0.25	83/84
76	1032	224	27.9	372.04	136.11	2.73	235.93	98	55.42	96.98	96.98	27.71	0.30	83/84
26	51017	38	27.6	829.01	272.50	3.04	556.52	99	110.94	194.15	194.15	55.47	0.24	83/84
67	1059	38	26.8	67.45	26.58	2.54	40.88	100	15.46	25.76	10.30		0.23	83/84
143	1063	42	26.2	175.74	62.73	2.80	113.01	101	36.49	60.81	24.32		0.14	84/85
152	1072	107	26.0	170.98	75.88	2.25	95.10	102	44.13	73.55	29.42		0.27	83/84
51	504008	175	25.9	89.74	39.87	2.25	49.88	103	23.19	38.64	15.46		0.26	83/84
56	654010	163	25.8	551.03	229.38	2.40	321.65	104	93.39	163.43	163.43	46.69	0.26	83/84

Table 5-29 (5) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN			CONSTRUCTION COST			1ST Y.R.	OPTIMUM TIMING				
		IRR	BENEFIT	COST	B/C	B-C	PRIORITY			1ST	2ND	3RD	4TH
80	5017	95	25.4	138.01	56.49	2.44	81.52	105	32.86	54.76	21.90	0.19	83/84
180	111100	68	25.3	84.37	38.68	2.18	45.69	106	22.49	37.49	15.00	0.26	83/84
116	2040	26	25.0	41.87	19.45	2.15	22.42	107	11.31	18.85	7.54	0.26	83/84
91	3022	999	24.8	21.50	10.09	2.13	11.40	108	5.87	9.79	3.91	0.25	83/84
70	2014	196	24.1	302.14	137.63	2.20	164.51	109	56.03	98.06	28.02	0.26	83/84
42	254006	131	23.9	335.24	154.44	2.17	180.80	110	62.88	110.04	31.44	0.26	83/84
31	51022	45	23.9	827.88	331.62	2.50	496.26	111	135.01	236.27	67.51	0.15	83/84
127	1047	46	23.4	93.43	53.15	1.76	40.28	112	30.91	51.52	20.61	0.24	83/84
28	51019	29	23.3	404.52	162.48	2.49	242.03	113	66.15	115.77	33.08	0.19	84/85
57	1024	63	23.0	120.72	54.31	2.22	66.41	114	31.59	52.64	21.06	0.18	83/84
60	3012	39	22.9	29.04	12.95	2.24	16.10	115	7.53	12.55	5.02	0.17	83/84
61	1026	54	22.7	64.28	30.47	2.11	33.81	116	17.72	29.54	11.82	0.15	83/84
34	53003	23	22.2	312.59	132.18	2.36	180.42	117	53.81	94.17	26.91	0.13	84/85
93	4012	189	22.2	392.24	198.91	1.97	193.33	118	80.98	141.72	40.49	0.20	83/84
105	2029	68	22.1	173.03	68.05	2.54	104.98	119	39.58	65.96	26.38	0.13	86/87
35	53004	53	21.2	141.49	75.72	1.87	65.77	120	44.04	73.39	29.36	0.15	83/84
185	11105	29	20.9	29.35	16.80	1.75	12.56	121	9.77	16.28	6.51	0.21	83/84
41	254005	144	20.2	257.74	128.62	2.00	129.11	122	52.37	91.64	26.18	0.13	83/84
77	1033	53	19.7	132.18	80.90	1.63	51.28	123	47.05	78.42	31.37	0.20	83/84
90	1040	999	19.0	51.71	27.45	1.88	24.27	124	15.96	26.60	10.64	0.15	86/87
62	1027	48	18.9	197.88	124.41	1.59	73.47	125	72.36	120.59	48.24	0.17	83/84
24	51015	15	18.8	314.99	178.36	1.77	136.63	126	72.62	127.08	36.31	0.15	83/84
63	3013	999	18.2	25.55	17.12	1.49	8.43	127	9.96	16.60	6.64	0.18	83/84
179	111099	87	17.7	67.79	46.53	1.46	21.26	128	27.06	45.10	18.04	0.17	83/84
25	51016	52	17.3	723.06	453.14	1.60	269.92	129	184.49	322.85	92.24	0.13	84/85
107	2031	45	17.0	21.72	14.45	1.50	7.27	130	8.40	14.00	5.60	0.13	85/86

Table 5-29 (6) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN				CONSTRUCTION COST			1ST Y.R. TIMING	OPTIMUM TIMING			
		IRR	BENEFIT	COST	S/C	B-C	PRIORITY	1ST			2ND	3RD	4TH
66	3015	50	16.8	39.00	25.38	1.54	13.62	131	14.76	24.60	9.84	0.12	86/87
125	1045	92	16.8	73.25	52.98	1.38	20.27	132	30.81	51.55	20.54	0.17	83/84
100	2024	100	16.5	143.66	106.00	1.36	37.66	133	61.65	102.75	41.10	0.16	85/84
118	2042	31	16.3	27.35	20.43	1.34	6.93	134	11.88	19.80	7.92	0.16	83/84
110	2034	34	15.1	39.22	30.61	1.28	8.61	135	17.80	29.67	11.87	0.13	86/87
112	2036	52	14.9	59.87	47.22	1.27	12.65	136	27.46	45.77	18.31	0.12	86/87
64	1028	999	14.8	18.65	15.38	1.21	3.27	137	8.94	14.90	5.96	0.15	83/84
186	11106	31	14.8	7.57	6.25	1.21	1.32	138	3.63	6.05	2.42	0.14	83/84
190	3025	132	14.7	32.96	29.75	1.11	3.20	139	17.30	28.84	11.54	0.34	83/84
73	2017	64	14.7	27.62	22.94	1.20	4.68	140	13.34	22.23	8.89	0.14	83/84
58	1025	9	13.8	9.54	8.36	1.14	1.18	141	4.86	8.11	3.24	0.12	85/86
162	11082	54	13.2	32.19	29.48	1.09	2.70	142	17.15	28.58	11.43	0.13	83/84
44	353005	3	12.8	19.13	18.28	1.05	0.85	143	10.63	17.71	7.09	0.14	84/85
14	51005	18	10.4	114.20	125.66	0.91	-11.46	144	73.08	121.80	48.72	0.13	84/85
144	1064	138	10.1	68.98	79.50	0.87	-10.53	145	46.24	77.06	30.83	****	****
95	1042	84	10.1	94.99	107.02	0.89	-12.02	146	62.24	103.73	41.49	0.13	86/87
114	2038	55	9.8	38.85	45.81	0.85	-6.96	147	26.64	44.40	17.76	****	****
59	3011	55	9.8	14.38	17.34	0.83	-2.96	148	10.09	16.81	6.72	****	****
79	3016	62	9.7	19.46	23.09	0.84	-3.64	149	13.13	22.58	8.95	****	****
115	2039	45	9.0	23.88	30.21	0.79	-6.33	150	17.57	29.28	11.71	****	****
113	2037	30	8.3	6.03	8.05	0.75	-2.02	151	4.68	7.80	3.12	****	****
165	11085	48	8.1	28.28	38.35	0.74	-10.07	152	22.30	37.17	14.87	****	****
161	11081	40	7.8	26.04	36.15	0.72	-10.11	153	21.03	35.04	14.02	****	****
126	1046	138	7.8	19.81	27.78	0.71	-7.96	154	16.15	26.92	10.77	****	****
159	111079	57	7.5	35.76	51.18	0.70	-15.42	155	29.77	49.61	19.84	****	****
47	353008	122	3.8	24.07	48.61	0.50	-24.54	156	28.27	47.12	18.85	****	****

Table S-29 (7) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN			CONSTRUCTION COST			OPTIMUM TIMING				
		IRR	BENEFIT	COST	B/C	B-C	PRIORITY		1ST Y.R.			
50	504007	210	1.1	17.69	47.56	0.37	-29.87	157	27.66	46.10	18.44	*****
49	503010	141	0.1	13.32	40.21	0.33	-26.89	158	23.38	38.97	15.59	*****
130	1050	68	0.0	0.09	63.42	0.00	-63.33	159	36.88	61.47	24.59	*****
160	111080	35	0.0	0.0	35.03	0.0	-35.03	160	20.37	33.96	13.58	*****
89	1039	94	0.0	0.0	19.13	0.0	-19.13	161	11.13	18.54	7.42	*****
9	52009	13	0.0	0.0	19.33	0.0	-19.33	162	11.24	18.73	7.49	*****
74	2018	47	0.0	0.0	16.77	0.0	-16.77	163	9.76	16.26	6.50	*****
164	111084	138	0.0	0.0	63.17	0.0	-63.17	164	36.74	61.23	24.49	*****
75	2019	2	0.0	0.0	0.73	0.0	-0.73	165	0.42	0.70	0.28	*****
166	111086	48	0.0	0.0	31.39	0.0	-31.39	166	18.26	30.43	12.17	*****
46	353007	24	0.0	0.0	15.43	0.0	-15.43	167	8.97	14.95	5.98	*****
168	111088	51	0.0	0.0	29.90	0.0	-29.90	168	17.39	28.98	11.59	*****
39	254003	293	0.0	0.0	84.74	0.0	-84.74	169	49.29	82.14	32.86	*****
137	1057	70	0.0	0.0	82.37	0.0	-82.37	170	47.90	79.84	31.94	*****
78	1034	106	0.0	0.0	92.68	0.0	-92.68	171	53.90	89.84	35.94	*****
139	2059	47	0.0	0.0	82.29	0.0	-82.29	172	47.86	79.76	31.91	*****
140	1060	89	0.0	0.0	85.46	0.0	-85.46	173	49.70	82.84	33.14	*****
96	2020	34	0.0	-93.75	16.99	-5.52	-110.74	174	9.88	16.46	6.59	*****
48	353009	157	0.0	-3.48	87.34	-0.04	-90.82	175	50.80	84.66	33.86	*****
40	254004	69	0.0	-8.37	19.96	-0.42	-28.32	176	11.61	19.34	7.74	*****
99	2023	102	0.0	-393.59	104.69	-3.77	-498.07	177	60.77	101.28	40.51	*****
29	51020	16	0.0	0.0	40.90	0.0	-40.90	178	23.79	39.64	15.86	*****
82	3019	98	0.0	0.0	51.90	0.0	-51.90	179	30.18	50.30	20.12	*****
121	112045	155	0.0	0.11	27.61	0.00	-27.51	180	16.06	26.76	10.71	*****
122	112046	76	0.0	0.0	33.70	0.0	-33.70	181	19.60	32.67	13.07	*****
182	111102	64	0.0	-1.63	19.30	-0.08	-20.93	182	11.23	18.71	7.48	*****

Table 5-29 (8) Priority Rating in Terms of IRR with Phasing and Optimum Timing of Construction
(1st Stage Construction)

SEQ LINK-NO	LENGTH	1987/88 PLAN			CONSTRUCTION COST			1ST Y.R.	OPTIMUM TIMING			
		IRR	BENEFIT	COST	B/C	PRIORITY	1ST			2ND	3RD	4TH
149	1069	40	0.0	0.0	32.15	0.0	-32.15	183	18.70	51.16	12.46	*****
69	1031	30	0.0	-17.12	20.28	-0.84	-37.40	184	11.80	19.66	7.86	*****
124	1044	63	0.0	13.29	48.92	0.27	-35.63	185	28.45	47.41	18.97	*****
36	252010	18	0.0	0.0	22.32	0.0	-22.32	186	12.98	21.63	8.65	*****
187	111107	50	0.0	0.0	28.22	0.0	-28.22	187	16.41	27.35	10.94	*****
153	1073	130	0.0	-1.94	30.70	-0.06	-32.64	188	17.85	29.75	11.90	*****
154	1074	25	0.0	0.12	10.77	0.01	-10.65	189	6.26	10.43	4.17	*****
85	1035	38	0.0	0.0	128.24	0.0	-128.24	190	74.59	124.31	49.72	*****
191	3026	29	0.0	-24.21	20.87	-1.16	-45.08	191	12.14	20.23	8.09	*****
192	3027	28	0.0	2.09	15.47	0.13	-13.39	192	9.00	15.00	6.00	*****
193	3028	46	0.0	0.0	31.06	0.0	-31.06	193	18.07	30.11	12.04	*****
194	3029	999	0.0	-22.75	42.04	-0.54	-64.79	194	24.45	40.75	16.30	*****
43	351023	14	0.0	0.0	24.23	0.0	-24.23	195	14.09	23.49	9.40	*****
196	3031	82	0.0	0.0	16.48	0.0	-16.48	196	9.58	15.97	6.39	*****
197	3032	33	0.0	-7.57	14.56	-0.52	-22.12	197	8.47	14.11	5.64	*****
198	4013	344	0.0	-190.52	107.20	-1.78	-297.72	198	62.35	103.91	41.56	*****
199	4014	366	0.0	0.19	98.96	0.00	-98.77	199	57.55	95.92	38.37	*****
30	51021	30	0.0	0.0	159.40	0.0	-159.40	200	64.90	113.57	113.57	32.45
88	1038	32	0.0	0.0	28.82	0.0	-28.82	201	16.76	27.93	11.17	*****
202	4017	230	0.0	8.38	195.56	0.04	-187.18	202	79.62	139.33	139.33	39.81
203	4018	530	0.0	28.02	450.65	0.06	-422.63	203	183.47	321.08	321.08	91.74
204	4019	999	0.0	9.95	302.67	0.03	-292.72	204	123.23	215.65	215.65	61.61
205	4020	169	0.0	4.52	136.98	0.03	-132.46	205	55.77	97.59	97.59	27.88
206	4021	115	0.0	1.64	97.59	0.02	-95.95	206	56.76	94.60	37.84	*****
207	4022	72	0.0	12.95	60.94	0.21	-48.00	207	35.44	59.07	23.63	*****
208	4023	272	0.0	21.72	219.83	0.10	-198.11	208	89.50	156.62	156.62	44.75

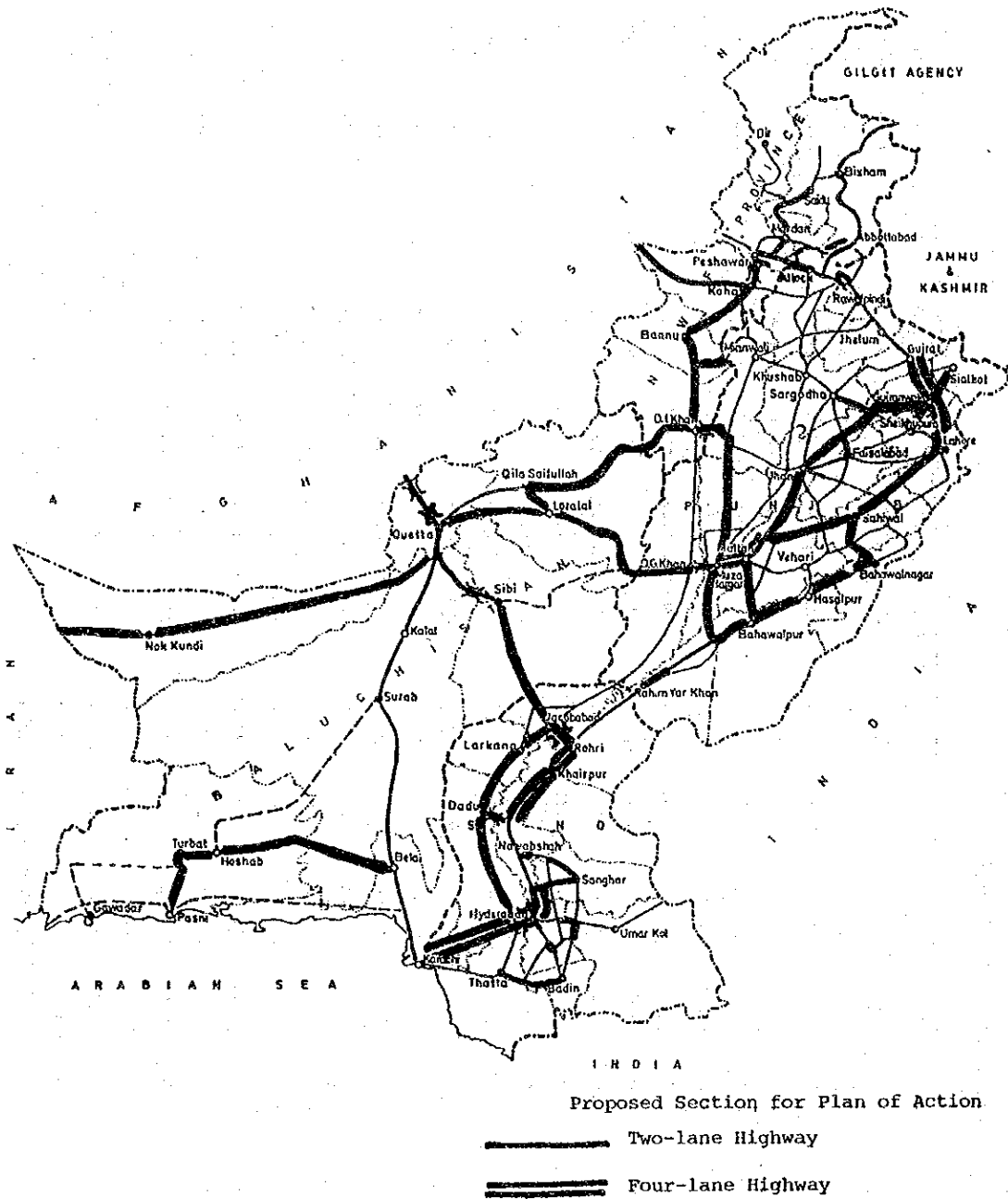


Fig. 5-9 Location Map of Proposed Plan of Action for 6th Five Year Plan (including On-going Project)

Table 5-30 (1) Plan of Action for Road Project under Federal Budget

NAME OF PROJECTS	ESTIMATED COST FOR MASTER PLAN		ALLOCATION DURING 1983-88										TOTAL BEYOND 1987		1ST STAGE CONSTRUCTION			
	TOTAL	FEC	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	COST	FEC	TYPE	IRR
			-84	-85	-86	-87	-88	-88	-88	-88	-88	-88	-88					
NATIONAL HIGHWAY N-5																		
1 KABIRWALA - KHANEWAL	99	30	12	19	8	0	0	0	38	61	38	11	IV	81.2				
51008																		
2 KOTRI - HYDERABAD	100	33	30	50	20	0	0	100	20	0	100	33	V	70.0				
52002																		
3 LODHRAN - MULTAN	573	181	0	70	117	47	0	235	338	235	75	IV	60.2					
51006																		
4 KHANEWAL - CHICHAWATNI	671	202	0	61	107	107	30	305	366	305	88	IV	56.4					
51009																		
5 MORO - KHAIRPUR	682	215	0	136	239	239	68	682	0	682	211	V	54.1					
52006																		
6 MULTAN - KABIRWALA	327	101	0	65	114	114	33	327	0	327	101	V	49.9					
51007																		
7 KHAIRPUR - ROHRI	204	59	0	61	102	41	0	204	0	204	59	V	49.6					
52007																		
8 KARACHI - KOTRI	977	320	0	195	342	342	98	977	0	977	322	V	46.9					
52001																		
9 HYDERABAD - HALA	380	123	0	0	76	133	133	342	38	380	122	V	42.8					
52003																		
10 ATTOCK - JEHANGIRA	183	46	0	0	24	40	16	81	102	81	19	IV	41.6					
53001																		
11 CHICHAWATNI - SAHIWAL	448	136	0	0	54	94	94	241	207	268	80	IV	41.4					
51010																		
12 TRANDA - CHANI GOTH	102	30	0	0	0	13	22	35	67	44	13	IV	41.4					
51003																		
13 S/P BOUND - RAHIMYAR KHAN	359	112	0	0	0	53	88	141	218	176	55	IV	40.2					
51001																		
14 CHANI GOTH - BAHAWALPUR	591	180	0	0	0	53	92	145	446	263	76	IV	37.8					
51004																		
SUB TOTAL	5696	1768	42	657	1203	1276	674	3853	1843	4080	1265							

Table 5-30 (2) Plan of Action for Road Project under Federal Budget

NAME OF PROJECTS	(MILLION RP., FINANCIAL, 1981 PRICE)										1ST STAGE CONSTRUCTION COST	FEC	TYPE	IRR	
	ESTIMATED COST FOR MASTER PLAN TOTAL	--- ALLOCATION DURING 1983-88 ---		TOTAL BEYOND 1987		TOTAL BEYOND 1987		COST							
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
NATIONAL HIGHWAY N-35															
1 HARIPUR - ABBOTTABAD 553006	405	110	0	0	0	81	142	223	182	405	109	V	34.6		
SUB TOTAL	405	110	0	0	0	81	142	223	182	405	109				
NATIONAL HIGHWAY N-50															
1 N/B BOUND - GILA SAIFULLAH 504007	160	48	0	0	0	0	28	28	133	92	28	I	1.1		
2 D.I.KHAN - N/B BOUND 503010	219	62	0	0	0	0	23	23	195	78	23	I	0.1		
SUB TOTAL	379	110	0	0	0	0	51	51	328	170	51				
NATIONAL HIGHWAY N-65															
1 JACOBABAD - S/B BOUND 652013	43	14	3	5	2	0	0	11	33	11	4	IV	100.0		
2 RORRI - SHIKARPUR 652011	251	80	21	35	14	0	0	69	182	69	23	IV	82.2		
3 SHIKARPUR - JACOBABAD 652012	342	103	0	30	51	20	0	101	240	101	27	IV	49.3		
4 S/B BOUND - SIBI 654009	1459	413	0	0	0	109	109	218	1241	548	142	IV	39.7		
SUB TOTAL	2095	610	24	70	67	129	109	399	1696	729	196				

Table 5-30 (3) Plan of Action for Road Project under Federal Budget

NAME OF PROJECTS	ESTIMATED COST FOR MASTER PLAN										FINANCIAL, 1981 PRICE				CONSTRUCTION TYPE	
	TOTAL										TOTAL BEYOND 1987		1ST STAGE			
	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97		1997-98
INDUS HIGHWAY NORTH LINK																
1 KOHAT - PESHAWAR	84	27	25	42	17	0	0	84	0	84	0	84	28	IV	73.5	
3021																
2 JATTA - KOHAT	70	18	21	35	14	0	0	70	0	70	0	70	18	IV	66.6	
3020																
3 JAJAZAI - BANNU	83	18	0	0	25	42	17	83	0	83	0	83	18	III	45.7	
3018																
4 CHOWK MUNDA - SARAI KRISHMA	165	49	0	0	50	83	33	165	0	165	0	165	50	III	43.9	
111093																
5 MUZAFFARGARH - CHOWK MUNDA	102	29	0	0	31	51	20	102	0	102	0	102	30	III	42.6	
111092																
6 D.I.KHAN - JAJAZAI	181	48	0	0	0	33	55	88	93	109	33	109	33	II	25.4	
3017																
7 T.M.RANAH - MUZAFFARGARH	374	104	0	0	0	0	75	75	299	374	105	374	105	IV	38.7	
001043																
8 SARAI KRISHMA - P/N BOUND	87	25	0	0	0	0	16	16	71	53	16	53	16	II	19.0	
001040																
9 BANNU - JATTA	175	44	0	0	0	0	30	30	145	101	29	101	29	II	0.0	
3019																
SUB TOTAL	1321	362	46	77	137	209	246	713	608	1141	327	1141	327			
INDUS HIGHWAY SOUTH LINK																
1 DADU - LARKANA	150	45	0	45	75	30	0	150	0	150	0	150	45	III	58.9	
2015																
2 LARKANA - SHIKARPUR	82	24	0	0	0	14	24	38	44	47	14	47	14	II	39.7	
2016																
3 KOTRI - DADU	280	84	0	0	0	56	98	154	126	280	84	280	84	III	24.1	
2014																
SUB TOTAL	512	153	0	45	75	100	122	342	170	477	143	477	143			

Table 5-30 (4) Plan of Action for Road Project under Federal Budget

NAME OF PROJECTS	(MILLION RP., FINANCIAL, 1981 PRICE)											
	ESTIMATED COST FOR MASTER PLAN		--- ALLOCATION DURING 1983-88 ---				TOTAL BEYOND		1ST STAGE CONSTRUCTION			
	TOTAL	FEC	1983-84	1984-85	1985-86	1987-88	1988-89	COST	FEC	TYPE	IRR	
QUETTA-D.G.KHAN-MULTAN LINK												
1 KARAMAD/QURESHI - MUZAFFARGARH	91	27	0	0	16	26	10	52	39	14	III	45.1
001032												
2 S/P BOUND - BEWATA	28	8	0	0	5	9	4	18	10	5	III	44.8
001041												
3 MUZAFFARGARH - MULTAN	248	77	0	0	0	74	124	198	50	77	V	34.5
001033												
4 LORALAI - B/P BOUND	505	150	0	0	0	0	81	81	424	117	III	22.2
4012												
5 BEWATA - D.G.KHAN	290	86	0	0	0	0	65	65	225	62	III	9.5
001042												
6 LORALAI - QILA SAIFULLAH	118	34	0	0	0	0	35	35	83	34	I	0.0
4022												
SUB TOTAL	1280	382	0	0	21	109	319	449	831	1048	309	
KABIRWALA-JHANG-CHINIOT- PINDI BHATTIAN-GUJRANWALA LINK												
1 PINDI BHATTIAN - GUJRANWALA	674	207	70	117	47	0	0	234	440	61	IV	71.6
111091												
2 JHANG - CHINIOT	618	190	0	74	124	50	0	248	370	67	IV	55.8
111089												
3 KABIRWALA - JHANG	1031	295	0	0	77	135	135	346	685	104	IV	43.9
001054												
4 CHINIOT - PINDI BHATTIAN	268	79	0	0	0	33	54	87	181	27	IV	38.4
111090												
SUB TOTAL	2591	771	70	191	248	218	189	915	1676	976	259	

Table 5-30 (5) Plan of Action for Road Project under Federal Budget

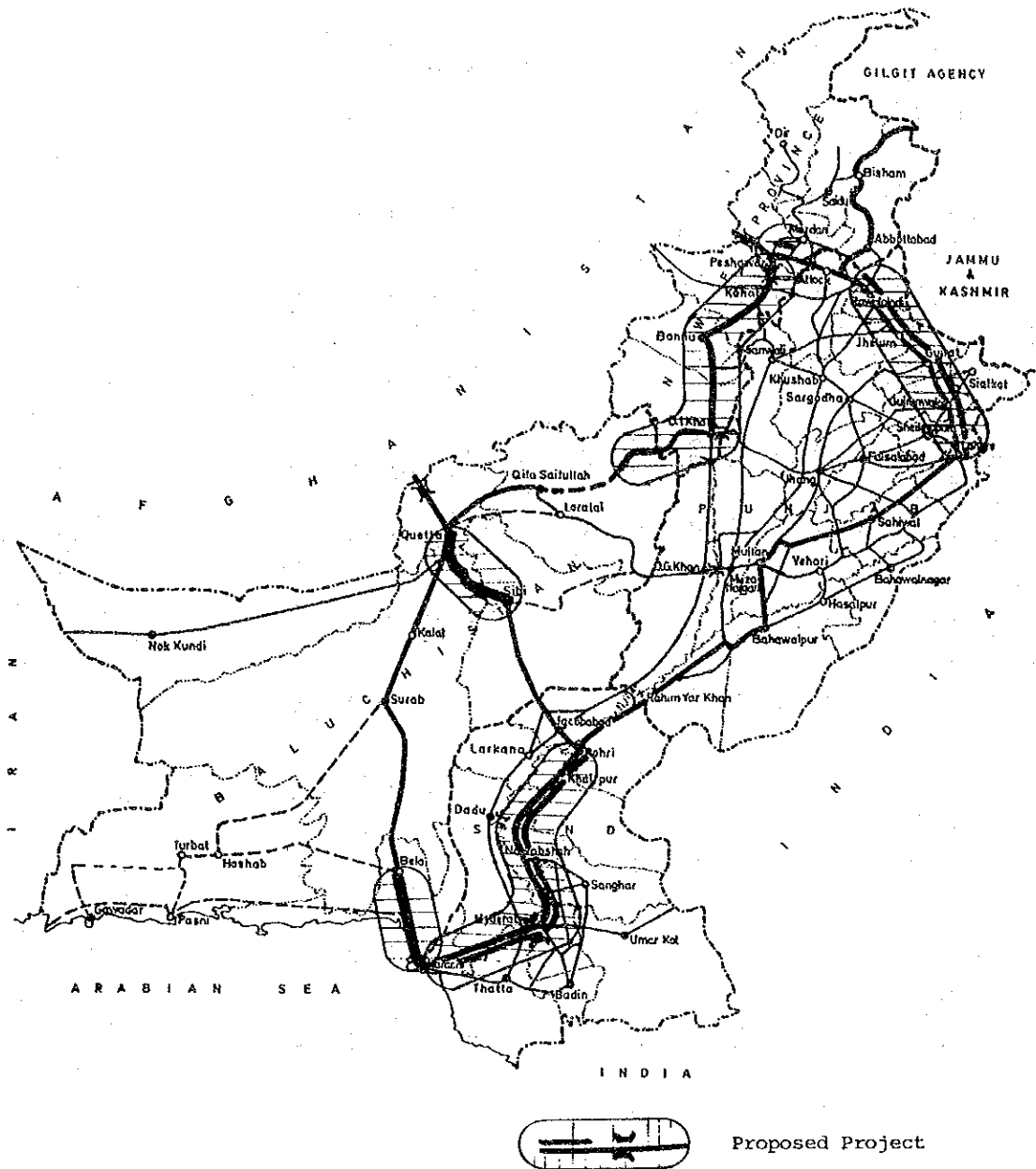
NAME OF PROJECTS	ESTIMATED COST FOR MASTER PLAN TOTAL	(MILLION RP., FINANCIAL, 1981 PRICE)						1ST STAGE CONSTRUCTION				
		1983-84	1984-85	1985-86	1986-87	1987-88	TOTAL 1983-88	BEYOND 1987	COST	FEC	IRR	
RCD HIGHWAY												
1 GUETTA - DALBANDIN 4013	468	0	0	0	0	62	62	406	207	64	I	0.0
2 DALBANDIN - IRAN BOUND 4014	450	0	0	0	0	58	58	392	192	60	I	0.0
SUB TOTAL	918	0	0	0	0	120	120	798	399	124		
PINDI BHATTIAN-SARGODHA DIRECT LINK												
1 PINDI BHATTIAN - SARGODHA 001058	191	28	47	19	0	0	94	96	94	25	III	61.3
SUB TOTAL	191	28	47	19	0	0	94	96	94	25		
FEDERAL BUDGET TOTAL	15388	4602	1087	1770	2122	1972	7159	8228	9519	2808		

Table 5-31 (1) Plan of Action for Road Project under Provincial Budget

NAME OF PROJECTS	(MILLION RP., FINANCIAL, 1981 PRICE)										1ST STAGE CONSTRUCTION	
	ESTIMATED COST FOR MASTER PLAN		--- ALLOCATION DURING 1983-88 ---		TOTAL BEYOND		COST		FEC		IRR	
	TOTAL	FEC	1983-84	1984-85	1985-86	1986-87	1987-88	1988	1987	1988	TYPE	IRR
PUNJAB PROVINCE												
1 BAHAWALNAGAR - ARIFWALA 001067	304	95	31	51	21	0	0	103	201	103	28	61.2
2 SHEIKHUPURA - GUJRANWALA 001061	125	35	30	51	20	0	0	101	23	101	28	53.3
3 FAISALABAD - JHANG 001037	714	220	0	73	122	49	0	244	470	244	66	52.1
4 FAISALABAD - CHINIOT 001070	316	96	0	0	33	56	22	111	205	111	29	49.6
5 GUJRANWALA - SIALKOT 001062	179	49	0	0	0	54	90	144	35	179	48	49.0
6 BAHAWALPUR - HASSALPUR 001065	134	35	0	0	0	0	40	40	94	134	35	46.1
7 HASSALPUR - BAHAWALNAGAR 001066	111	29	0	0	0	0	15	15	96	50	15	41.0
8 ARIFWALA - SAHIVAL 001068	53	15	0	0	0	0	16	16	38	53	15	39.2
SUB TOTAL	1936	574	61	175	196	159	183	774	1162	975	264	
SIND PROVINCE												
1 SAKLAND - NAWABSHAH 2026	55	15	8	13	5	0	0	26	29	26	8	100.0
2 TANDO ALLAYAR - MIRPUR KHAS 2021	78	27	11	19	7	0	0	37	41	37	11	69.9
3 HALA - SHAHADPUR 112043	82	23	17	29	11	0	0	57	25	57	17	52.9
4 SHAHADPUR - SANGHAR 112044	104	30	0	22	36	14	0	72	31	72	22	46.5
5 TANDO M.KHAN - MATLI 2035	29	8	0	9	14	6	0	29	0	29	9	45.8
6 GUPCHANI - SANGHAR 2028	56	17	0	0	17	28	11	56	0	56	17	40.6
7 SUJWAL - THATTA 2031	44	13	0	0	13	22	9	44	9	44	13	38.4
8 MIRPUR KHAS - DIGRI 2030	80	24	0	0	0	24	40	64	16	80	24	36.6
9 BADIN - SUJWAL 2032	173	50	0	0	0	32	53	85	88	106	33	34.2
SUB TOTAL	701	207	36	92	103	126	113	470	239	507	154	

Table 5-31 (2) Plan of Action for Road Project under Provincial Budget

NAME OF PROJECTS	(MILLION R.P. FINANCIAL-1981 PRICE)												
	ESTIMATED COST FOR MASTER PLAN		ALLOCATION DURING 1983-88				TOTAL BEYOND		1ST STAGE CONSTRUCTION		IRR		
	TOTAL	FEC	1983-84	1984-85	1985-86	1986-87	1987-88	1983-88	1989-90	COST		FEC	TYPE
N.W.F.P													
1 MARDAN - CHAKDARA	116	28	29	48	19	0	0	96	20	96	22	III	56.7
3024													
2 CHAKDARA - SAIDU SHARIF	70	17	0	21	35	14	0	70	0	70	17	III	47.1
3030													
3 KABUL - KOHAT	307	96	0	0	61	108	108	277	30	307	95	III	32.7
3014													
4 JAJAZAI - N/P BOUND	25	8	0	0	8	13	4	25	0	25	8	II	22.9
3012													
SUB TOTAL	518	149	29	69	123	135	112	468	50	498	142		
BALUCHISTAN PROVINCE													
1 HOSHAB - PIDAPAK	70	22	21	35	14	0	0	70	0	70	22	I	50.7
4016													
2 BELA - HOSHAB	268	80	0	54	94	94	27	268	0	268	80	I	30.7
4015													
3 GUETTA - LORALAI	309	95	0	0	43	72	29	143	166	143	44	I	29.7
4011													
4 PIDARAK - PASANI	189	55	0	0	0	57	95	151	38	189	55	I	0.0
4021													
SUB TOTAL	836	252	21	89	151	223	151	632	204	670	201		



**Fig. 5-10 Location Map of Project by the Year 1986/1987
Proposed by Master Plan of N.H.B.**

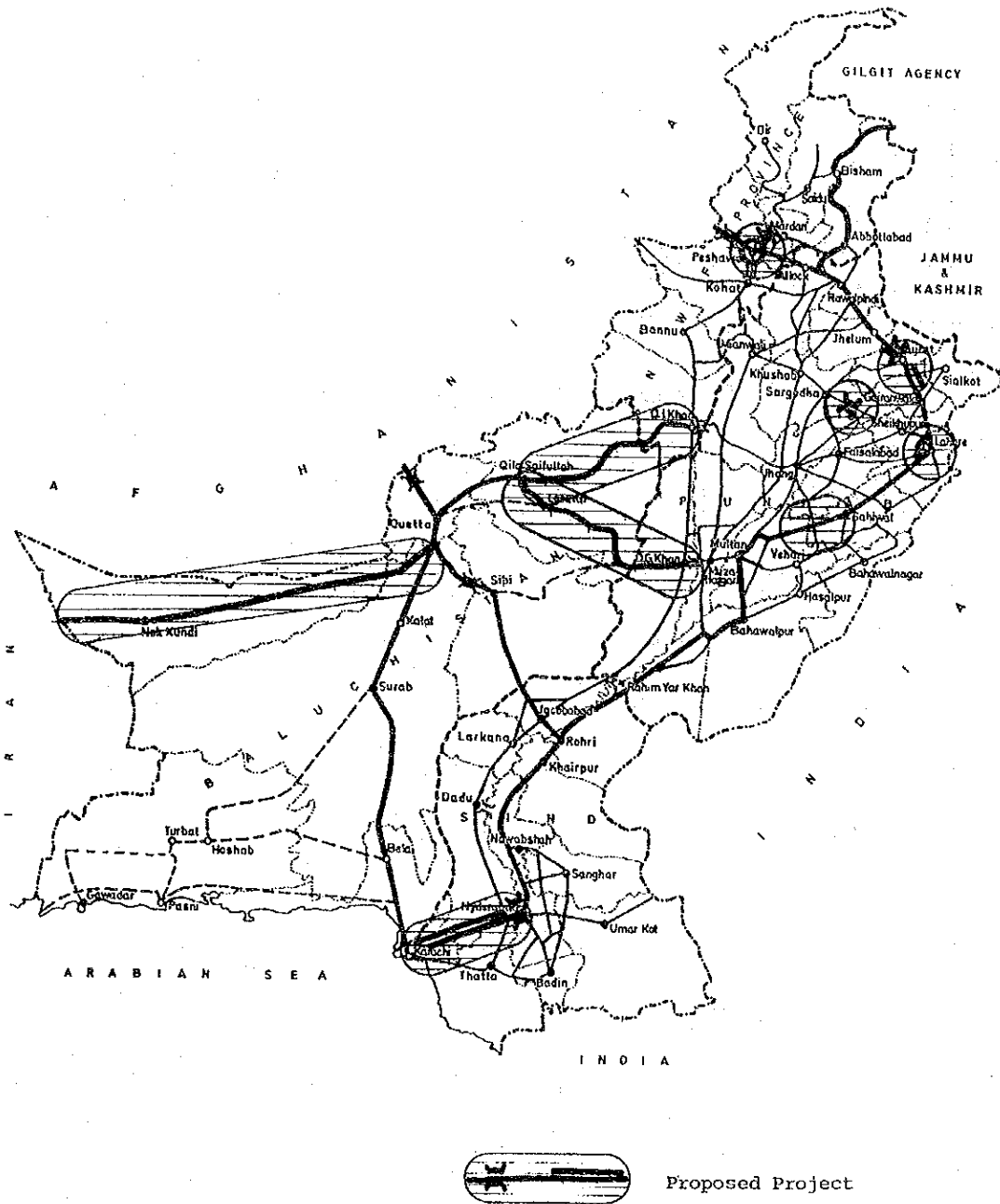


Fig. 5-11 Location Map of Proposed 6th Five Year Plan by N.H.B.

Appendix 1. Highway Inventory

PROVINCE
PUNJAB

ROAD INVENTORY

No.	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	WIDTH		TYPE OF SURFACE	PAVEMENT CM	DEPTH		CONDITION OF SURFACE	SUBGRADE C.B.R	BRIDGE		No. OF CULVERTS	RE-MARKS
					R.O.W m	FORMATION m			BASE CM	SUBBASE CM			L	W		
051001	150-27	48	Flat	112	30.4	9.7	6.2	2.5	11	11	Fair	7	0	0	67	RC; No. of railway crossings
051002	27-79	99	"	"	"	11.3	6.1	"	"	"	Poor	5	22-23	6.5- 9.4	155	RC=1
051003	79-80	13	"	"	33.5	8.9	"	"	15	13	"	8	0	0	19	U/C 13 km Completion 6/85 RC=1
051004	80-25	70	"	"	21.7	9.2	5.8	"	11	11	Fair	7	0	0	141	U/C 11 km Completion 2/83 RC=2
051005	25-121	18	"	"	57.9	9.8	6.4	"	15	"	Poor	8	591	10.8	32	RC=3
051006	121-23	75	"	"	"	9.6	6.4	"	10	"	Poor	"	0	0	135	RC=2 Completion 3/83
051007	23-75	44	"	"	27.3	11.9	6.2	"	"	"	"	"	23-25	5.3- 7.8	51	U/C
051008	75-119	13	"	"	33.4	11.3	6.3	"	"	"	"	"	0	0	0	Completion 6/82 RC=1
051009	119-72	79	"	"	"	9.4	6.2	"	"	"	"	"	24-111	5.1- 8.2	78	RC=2
051010	72-24	40	"	"	"	9.3	6.2	"	"	"	"	"	0	0	39	RC=2
051011	24-71	37	"	"	"	11.9	6.9	"	"	"	"	"	0	0	33	U/C 138km
051012	71-17	130	"	"	34.2	11.3	7.5	"	"	11	"	7	24-28	7.1- 12.4	157	RC=1 Completion 6/83
051013	17-19	67	"	"	72.0	14.2	9.5	"	20	"	Very Poor	"	26-36	9.8	90	U/C 44.5 km Completion 12/83 RC=1
051014	19-61	32	"	"	76.0	14.0	8.0	"	18	15	Fair	"	21-25	10.2- 12.9	56	U/C Completion 6/82

ROAD INVENTORY

PROVINCE PUNJAP

No.	LINK	DISTANCE m	TERRAIN	DESIGN SPEED KM/HR	ROW m	WIDTH FORMATION m	PAVEMENT m	TYPE OF SURFACE	PAVEMENT CM	DEPTH		CONDITION OF SURFACE	SUBGRADE C.B.R	BRIDGE	No. OF COVERTS	REMARKS	
										BASE CM	SUBGRADE CM						
051015	61-12	15	Flat	112	73.0	14.4	8.4	Triple	2.5	18	8	Fair	7	20-752	10.2- 15.0	39	U/C Completion 6/82
051016	12-11	52	"	"	76.0	14.5	8.5	"	"	15	11	"	8	23-995	4.0- 10.9	50	RC=1
051017	11-93	38	Hilly	"	"	14.0	8.1	"	"	20	0	"	10	35-250	6.3- 23.0	26	RC=3
051018	93-57	32	"	"	"	13.8	7.4	"	"	"	"	"	"	22-76	7.2- 12.3	20	RC=1
051019	57-10	29	Flat	"	"	13.3	7.3	"	"	"	"	"	"	24-329	3	19	RC=1
051020	10-117	16	"	"	79.5	24.2	13.3	"	"	"	"	"	"	0	0	25	U/C 42 km
051021	117-55	30	"	"	75.1	14.7	11.3	"	"	15	10	"	"	70-126	8.3- 10.8	39	Completion 6/82 RC=1
051022	55-9	45	Hilly	"	67.1	13.4	7.4	"	"	"	"	"	"	33-593	7.0- 12.0	71	RC=4
051023	55-152	14	Flat	"	20.1	10.8	7.5	"	"	"	"	"	"	27-36	6.5	8	RC=1
001024	10-48	63	Moun- tan- ous	80	19.0	10.1	6.5	"	"	13	13	Poor	7	31-46	6.0- 26.1	40	RC=3
001025	48-155	9	"	"	10.0	6.8	3.5	"	"	10	10	"	20	0	0	113	
001026	156-95	54	Flat	112	33.4	9.9	3.3	Trip- ple	"	"	"	Fair	"	60-195	7.3- 8.7	171	
001027	95-14	48	"	"	"	"	3.3	"	"	"	"	"	10	855	3.7	101	RC=5
001028	157-95	27	Moun- tan- ous	50	"	"	2.8	Biru- men- ous	"	"	"	Poor	"	0	0		

ROAD INVENTORY

PROVINCE PUNJAB

No.	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION		BRIDGE		No. OF CONCRETS	REMARKS
					R.O.W. m	FORMATION m		PAVEMENT CM	BASE CM	SUBGRADE CM	OF SURFACE	C.D.R. %	L		
001029	158-68	38	Flat	112	26.8	10.0	Trip-ple	2.5	8	13	7	35	6.7	20	RC=5
001030	68-56	40	"	"	"	"	"	"	15	0	"	26	6.1	17	RC=2
001031	56-117	30	"	"	10.2	5.7	"	"	10	10	"	24-166	8.6-8.5	20	RC=2
001032	159-21	224	"	"	18.5	9.8	"	"	8	8	"	0	0	518	RC=2
001033	21-74	53	"	"	33.4	9.4	"	"	"	13	5	22-55	6.7	100	RC=1
001034	74-160	106	"	"	"	8.9	"	"	"	"	"	152	6.7	113	RC=1
001035	17-18	38	"	"	65.8	18.6	"	"	10	15	7	25-55	5.0-7.2	47	
001036	18-15	97	"	"	33.4	11.4	"	"	15	"	"	24-67	6.7-8.5	230	RC=1
001037	15-16	82	"	"	24.1	10.0	"	"	11	12	8	198	11.6	136	RC=1
001038	16-66	32	"	"	33.4	"	"	"	8	11	"	0	0	40	
001039	66-65	94	"	"	33.1	"	"	"	"	"	"	0	0	35	
001040	65-161	48	Flat		33.4	9.9	Trip-ple	"	10	"	"	0	0	29	U/C Completion 6/85
001041	162-97	8	"		5.7	2.7	Gravel	0	7	12	6	0	0	83	
001042	97-21	84	Main-tanous		20.1	7.1	Trip-ple	2.5	"	"	"	74	6.7	280	RC=1

		ROAD INVENTORY														PROVINCE	
No.	LINK	DISTANCE km	DESIGN TERRAIN	SPEED km/h	WIDTH		TYPE OF SURFACE	DEPTH BASE cm	SUBBASE cm	CONDITION SURFACE	SUBSURFACE C.B.R	BRIDGE			REMARKS		
					R.O.W m	FORMATION m						PAVEMENT cm	L	W		Nr. OF COVERTS	
001043	79-22	129	Flat		19.9	10.6	5.5	2.5	11	11	Poor	5					RC=L
001044	22-101	63	"	112	33.4	9.9	3.0	"	6	10	Fair	"	59	7.3	93		RC=L
001045	101-66	92	"	"	"	10.0	3.0	"	10	11	"	8	24	6.7	186		
001046	66-62	138	"	"	52.5	"	3.0	"	6	10	Poor	"	88	7.3	115		
001047	62-60	46	Moun- taneous	"	33.4	"	3.7	"	8	"	Fair	7	37	8.5	205		RC=L
001048	60-92	58	Flat	"	25.6	8.2	3.0	"	"	"	"	"	0	0	86		
001049	92-57	62	"	"	20.1	10.0	4.3	"	10	"	"	10	37	7.3	82		RC=2
001050	17-50	68	"	"	47.3	11.6	7.5	"	15	15	Fairly Good	8	23-219	5.5- 22.6	62		RC=L
001051	21-85	34	"	"	33.4	10.2	3.4	"	8	11	Poor	6	21-24	16.1- 16.2	34		U/C Completion 6/83
001052	85-22	23	"	"	"	9.7	4.2	"	10	15	Fair	8	47	16.9	54		
001053	22-23	34	"	"	27.0	10.7	6.3	"	"	11	"	"	0	0	76		RC=L
001054	75-16	113	"	112	33.4	10.3	5.8	"	"	"	"	"	24-311	3.0- 7.6	184		RC=L
001055	16-13	117	"	"	"	"	3.9	"	8	"	Poor	7	1-200	4.9	275		
001056	13-12	171	"	"	"	9.5	6.0	"	10	"	"	9	21-915	4.3- 11.3	323		U/C 171 km Completion 4/83 RC=3

ROAD INVENTORY

PROVINCE PUNJAB

No.	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION OF SURFACE	SURGRADE C.B.R. %	BRIDGE			No. OF COVERTS	REMARKS
					R.O.W. m	PAVEMENT m		PAVEMENT cm	BASE cm			Substrate cm	L	W		
001057	18-63	70	Flat	112	36.6	13.1	7.3	2.5	10	11	Fair	8	49-132	3	100	RC=3
001058	63-13	63	"	"	51.8	11.5	5.2	"	"	"	"	"	0	0	95	
001059	13-62	47	"	112	33.4	12.2	7.1	"	"	"	"	"	93-695	9.0-12.2	70	Completion / 82 RC=3
001060	62-14	89	"	"	"	10.5	6.1	"	8	8	"	"	23	6.6	335	RC=2
001061	18-19	53	"	"	"	10.1	5.9	"	8	11	"	"	0	0	118	RC=1
001062	19-20	48	"	"	49.0	10.0	5.7	"	10	"	"	6	37-101	7.3-18.5	87	RC=1
001063	20-61	42	"	"	41.0	"	4.7	"	"	"	"	"	23-101	5.8-6.7	45	RC=1
001064	17-15	138	"	"	33.4	"	6.1	"	8	8	Poor	7	21-198	4.3-11.6	277	RC=1
001065	25-78	91	"	80	"	13.0	3.0	"	"	11	Fair	10	49-79	6.7-7.3	91	RC=1
001066	78-26	78	"	"	"	12.7	6.0	"	"	"	Poor	"	0	0	31	RC=1
001067	26-76	40	"	112	"	9.8	4.5	"	6	"	Fair	8	20	4.3	28	RC=1
001068	76-24	46	"	"	38.1	11.2	5.5	"	"	"	"	"	0	0	63	
001069	67-15	40	"	"	29.7	9.5	6.3	"	15	15	"	"	31	8.5	45	
001070	15-64	37	Flat	"	24.9	9.8	6.0	"	13	8	Fair	7	21-198	6.2-11.6	92	

ROAD INVENTORY

PROVINCE
PUNJAB

No.	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION SURFACE	SUBGRADE C.B.R. %	BRIDGE		No. OF SPANNS	RE MARKS
					R.O.W. m	FORMATION m		PAVEMENT cm	BASE cm			L	W		
001071	64-13	52	Flat	112	24.9	11.1	Triple	2.5	13	8	7	21-29	3	138	RC=2
001072	27-80	107	"	80	23.5	10.0	"	"	10	11	"	59	8.5	165	RC=3
001073	26-73	130	"	"	26.9	9.3	"	"	8	"	Poor	25-58	5	206	RC=2
001074	69-71	25	"	112	27.1	12.2	"	"	20	"	Pair	0	0	36	
001075	77-78	50	"	80	33.4	10.5	"	"	10	"	Pair	0	0	98	RC=1
001076	119-120	31	"	"	"	13.3	"	"	"	15	7				
001077	120-121	57	"	"	"	"	"	"	"	"	"				
111078	23-120	40	"	112	36.0	10.2	"	"	"	11	8	0	0	35	RC=1
111079	120-77	57	"	"	"	9.9	"	"	"	"	"	63	7.3	49	
111080	77-98	35	"	"	"	10.0	"	"	"	"	"	21	6.7	31	
111081	98-76	40	"	"	"	9.6	"	"	"	"	"	0	0	42	
111082	76-73	54	"	"	"	9.9	"	"	"	"	Poor	0	0	76	
111083	73-69	24	"	"	33.4	10.0	"	"	20	10	Pair	0	0	38	
111084	59-17	138	"	"	47.3	11.0	"	"	"	"	Pair	23-97	6	368	RC=4

ROAD INVENTORY

PROVINCE
PUNJAB

No.	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION OF SURFACE	SUBGRADE C.B.R. %	BRIDGE		No. OF CULVERTS	REMARKS
					R.O.W. m	FORMATION m		PAVEMENT cm	BASE cm			Subbase cm	L		
111085	67-70	48	Flat		18.8	10.8	Trip- Pie.	2.5	15	11	8	38	9.8	106	
111086	98-72	48	"	112	28.8	10.0	"	"	10	"	"	43	4.3	75	RC=1
111087	72-70	40	"	"	28.8	10.2	"	"	"	"	"	342	7.3	95	RC=1
111088	70-16	51	"	"	28.8	10.0	"	"	"	"	"	0	0	68	RC=2
111089	16-64	82	"	"	33.4	12.2	"	"	10	10	"	23	9.8	200	U/C Completion 11/82 RC=1
111090	64-63	33	"	"	24.4	12.5	"	"	"	"	"	37	9.8	60	RC=1
111091	63-19	99	"	"	"	"	"	"	8	11	"	44-146	2.0- 8.5	102	RC=1
111092	22-100	60	"	"	43.5	9.7	"	"	6	"	"	154	7.3	36	RC=1
111093	100-65	104	"	"	53.5	"	"	"	"	"	"	0	0	79	
111094	65-14	125	"	"	52.7	10.9	"	"	10	"	"	27-225	7.3- 8.4	97	RC=1
111095	14-58	99	"	"	33.4	8.5	"	"	"	"	"	37-46	6.0	180	
111096	60-58	47	"	"	"	10.0	"	"	8	13	"	0	0	137	
111097	58-68	82	"	"	"	8.0	"	"	"	"	"	93	7.3	141	
111098	68-9	81	Hilly	"	"	7.7	"	"	"	"	"	22-48	7.3	86	RC=2

PROVINCE
PUNJAB

ROAD INVENTORY

No.	LINK	DISTANCE KM	TERRAIN	DESIGN SPEED KM/HR	R.O.W M	WIDTH FORMATION		TYPE OF SURFACE	DEPTH		CONDITION OF SURFACE	BRIDGE			REMARKS	
						PAVEMENT M	PAVEMENT CM		BASE CM	SUBBASE CM		C.R.	L	W		No. OF COVERS
111099	58-56	87	Flat	112	29.0	11.5	4.7	Trip- plc	2.5	10	10	7	0	0	66	35 km 58 - 68
111100	93-92	68	"	"	33.4	10.1	3.1	"	"	8	11	8	85	6.0	60	U/C 68 km Completion 10/82
111101	92-58	46	"	"	"	8.7	3.2	"	"	10	10	"	23-74	2.5- 2.4	82	RC=1
111102	16-67	64	"	"	25.0	9.1	3.7	"	"	7	11	Pair	0	0	28	RC=1
111103	67-71	57	"	"	23.5	9.6	5.8	"	"	10	"	"	30	18.3	88	
111104	74-99	29	"	"	33.4	9.5	3.0	"	"	"	15	Very Poor	0	0	51	RC=2
111105	99-100	29	"	"	"	"	"	"	"	"	11	Poor	0	0	83	
111106	100-101	31	"	"	"	"	"	"	"	"	"	"	0	0	26	
001052	22-85	23	"	"	33.4	9.7	4.2	"	"	10	15	Pair	47	6.9	54	
111107	85-99	50	"	"	"	"	5.5	"	"	15	11	Good	0	0	138	

ROAD INVENTORY

PROVINCE
SIND

No.	LINK	DISTANCE km.	DESIGN SPEED km/hr	ROW	WIDTH FORMATION	TYPE OF SURFACE	PAVEMENT cm	DEPTH		CONDITION SURFACE	SUBGRADE C.B.R. %	BRISE			No. OF COVERTS	REMARKS
								BASE cm	PAVEMENT cm			L	W	H		
052001	59-118	160	Flat 100	76.0	14.6	7.5	Trip- ple	9.0	15	15	5	49-40	12	122	U/O L = 64 km Completion 6/83	
052002	118-33	15	"	45.6	13.4	7.0	"	4.0	"	23	"	0		10		
052003	33-87	55	"	"	"	6.9	"	"	16	16	"	0		56		
052004	87-86	38	"	"	"	7.5	"	"	17	17	"	0		29		
052005	86-102	68	"	"	"	"	"	"	"	12	"	26-29	2	56	RC=1	
052006	102-32	132	"	"	12.5	"	"	3.0	18	17	"	29-33	4	181	RC=3 U/C L = 45 km	
052007	32-29	22	"	"	11.9	"	"	2.5	20	14	"	33-35	3	50	Completion 3/83 RC=1	
052008	29-82	109	"	40.1	13.3	"	"	4.0	"	11	"	23-33	3	120	RC=1	
052009	82-150	13	"	"	13.4	"	"	"	9	"	"	0		13		
252010	39-151	18	"	"	10.7	7.3	Bitumi- nous				"	109-129	2	38	RC=1	
652011	29-28	43	"	"	12.9	6.9	Trip- ple	4.0	19	20	"	0		51	RC=1	
652012	28-83	42	"	"	13.4	6.1	"	2.5	18	17	"	22-64	3	45	RC=1	
652013	83-154	8	"	"	"	6.6	"	"	"	"	"	0		14		
002014	118-34	196	"	60	45.6	11.6	"	2.0	18	19	"	26-67	4	125	RC=2	

ROAD INVENTORY

PROVINCE
SIND

No	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	WIDTH			TYPE OF SURFACE	DEPTH		CONDITION SURFACE	SUBGRADE CBR	BRIDGE			REMARKS
					ROW	FORMATION	PAVEMENT		BASE	SUBBASE			L	W	No OF CULVERTS	
002015	34-30	123	Flat	60	40.5	13.4	5.4	Trip- stone	4.0	15	11	5	67	1	43	
002016	30-28	63	"	"	33.4	"	"	"	"	16	17	"	0	0	29	
002017	28-84	64	"	"	"	12.9	"	"	"	15	19	"	22-72	5.7-7.3	95	
002018	84-81	47	"	"	"	"	"	"	"	"	"	Fairly Good	0	0	41	
002019	81-159	2	"	"	"	"	"	"	"	"	"	Good	0	0	23	
002020	33-105	34	"	"	45.6	13.4	7.3	Bitumi- nous	2.5	21	15	"	23	6.7	30	
002021	105-106	32	"	"	"	12.2	6.0	"	"	"	"	"	0	0	11	
002022	106-35	74	"	"	33.4	9.7	3.6	"	4.5	14	14	"	0	0	69	U/C L = 19 km.
002023	39-37	102	"	"	45.6	13.4	7.3	"	2.5	11	23	"	59-457	6.7-13.4	27	Completion 5/83
002024	37-33	100	"	"	"	"	5.5	"	4.0	15	15	"	41-499	5	12	U/C L = 18 km Completion 6/83
002025	34-102	24	"	"	"	"	"	"	"	"	"	"	"	"	"	U/C New Bridge Completion 6/82
002026	86-31	21	"	"	33.4	13.4	7.3	Bitumi- nous	2.5	11	11	Poor	36	7.3	18	RC=1
002027	31-103	16	"	"	"	9.7	3.6	"	4.0	19	15	"	0	0	13	U/C L = 52 km
002028	103-36	48	"	"	60.8	"	"	"	2.5	11	16	"	1	7.8	22	Completion 6/83

PROVINCE
SINDH

ROAD INVENTORY

No.	LINK	DISTANCE KM	DESIGN SPEED KM/HR	DESIGN SPEED KM/HR	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION OF SURFACE	SUBGRADE C.B.R. %	BRIDGE		No. OF COLUMNS	REMARKS
					R.O.W. m	FORMATION m		PAVEMENT cm	BASE cm			L	W		
002029	56-106	68	60	Flat	33.4	9.7	4.2	2.5	8	8	4	0	0	33	U/C L = 58 km Completion 6/84
002030	106-122	40	"	"	"	9.1	3.3	"	11	15	"	0	0		U/C L = 19 km Completion 6/84
002031	122-38	45	"	"	"	"	"	"	"	"	"	0	0		
002032	38-109	81	"	"	"	"	"	"	"	"	Very Poor	5	3	62	U/C L = 43 km Completion 6/83
002033	109-37	24	"	"	"	10.0	1.0	8	8	10	"	0	0	6	U/C L = 24 km Completion 6/83
002034	33-107	34	"	"	"	8.5	6.4	13	15	15	"	46-61	2	34	
002035	107-88	16	"	"	"	9.1	5.8	18	"	"	"	0	0	23	
002036	88-38	52	"	"	"	8.5	6.4	11	"	"	"	30-35	2	91	
002037	103-104	30	"	"	66.9	9.7	3.6	8	8	6	Poor	4	0	34	U/C L = 30 km Completion 6/84
002038	104-105	55	"	"	33.4	10.5	5.5	2.5	13	14	Fair	5	1	"	
002039	105-108	45	"	"	"	9.3	3.8	"	15	11	Poor	"	0	59	U/C L = 27 km Completion 6/83
002040	108-88	26	"	"	"	7.9	3.3	"	11	15	Very Poor	"	1	20	
002041	107-109	77	"	"	"	9.1	3.6	"	13	"	"	"	1	40	
002042	81-82	31	"	"	"	"	4.0	"	"	"	"	"	"	"	U/C L = 31 km Completion 12/83

ROAD INVENTORY

PROVINCE
SINDH

No	LINK	DISTANCE	TERRAIN	DESIGN SPEED	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION SURFACE		BRIDGE			No. OF JOINTS	REMARKS
					ROW	W		RAVEMENT	BASE	SURFACE	SUBGRADE	L	W	L		
112043	87-104	26	Flat	60	33.4	9.7	5.4	1.5	11	0	Poor	4	43	6.7	11	U/C L = 15 km Completion 6/84
112044	104-36	40	"	"	"	"	5.0	2.5	12	15	Fair	"	33	7.9	5	
112045	30-83	135	"	"	"	12.7	4.0	"	13	15	"	"	22	3.8	139	
112046	83-84	76	"	"	"	13.4	4.6	"	"	"	Fairly Good	"		0	47	
112047	108-122	13	"	"	"	7.9	"	"	16	"	Very Poor	"	27	7.3	38	

ROAD INVENTORY

No.	LINK	DISTANCE	TERRAIN	DESIGN SPEED	WIDTH		ROW	TYPE OF SURFACE		DEPTH BASE	CONDITION OF SURFACE		BRIDGE		No. OF CONCRETS	REMARKS	
					RECONSTRUCTION	PAVEMENT		PAVEMENT	BASE		CONCRETE	SPUR	L	W			
053001	9-116	14	Flat	65	33.4	11.5	6.0	Trip-ple	5.5	15	35	Fair	35	21-67	8.0-9.0	26	
053002	116-53	36	"	"	"	"	"	"	"	"	60	"	"	21-00	8.0-10	27	RC=1
053003	53-2	23	"	"	33.0	15.5	10.0	"	"	21	55	"	15	10 28-121	7.4-15.4	48	
053004	2-49	53	Moun-tani-ous	50	14.2	10.0	5.7	"	4.5	19	3	Poor	30	23-50	8.1-16.0	103	RC=7
353005	152-90	3	Hilly	65	31.5	11.2	6.7	"	2.5	23	15	Fair	15	20-23	8.3-8.9	16	
353006	90-4	54	Moun-tani-ous	"	"	11.2	6.9	"	"	"	"	"	"	47-277	7.8-8.6	82	
353007	4-54	24	"	60	"	9.0	6.5	"	4.0	15	19	Poor	11	21-40	8.8	52	
353008	54-89	122	"	50	"	9.0	6.6	"	"	"	"	Very Poor	38	21-157	7.9-9.0	445	
353009	89-47	157	"	45	18.0	8.1	"	Bitu-minous	"	"	"	Fair	43			460	
503010	5-153	141	Hilly	40	29.0	7.5	3.9	"	2.5	"	15	Poor	11	23-140	3.3-6.7	227	
003011	155-4	55	Moun-tani-ous	"	10.0	6.8	3.5	Trip-ple	"	"	"	"	13				
003012	59-156	39	Hilly	50	28.0	11.4	4.8	Double	"	20	"	"	"			83	U/C. L= 23 Km. Completion 5/83
003013	94-157	37	Moun-tani-ous	"	13.5		3.3	Bitu-minous	2.0	14	15	"	12			109	U/C. L= 37 Km. Completion 6/83
003014	49-3	186	"	40	20.5	7.0	4.2	Trip-ple	"	12	13	"	13			188	U/C. L= 60 Km. Completion 6/83

NO.		LINK		DISTANCE	TERRAIN	DESIGN SPEED	WIDTH		TYPE OF SURFACE	PAVEMENT	DEPTH		CONDITION OF SURFACE		BRIDGE			REMARKS
							R.O.W.	FORMATION			BASE	SUBBASE	CER	L	W	NO. OF CONCRETS		
003015	3-158	50	Flat	45	21.0	9.6	5.4	Double	1.5	15	15	17	0	0	0	237		
003016	160-5	62	"	65	28.5	11.0	6.2	Triple	2.0	"	12	10	0	0	0	143		
003017	5-59	95	"	"	"	7.8	4.0	"	"	"	18	12	0	0	0	37	U/C. L= 35 Km Completion 6/84	
003018	58-6	47	"	"	12.0	8.5	5.8	"	2.5	17	21	14	0	0	0	169	U/C. L= 37 Km Completion 6/84	
003019	6-94	98	Hilly	"	24.0	8.4	5.4	"	"	19	22	23	0	0	0	195	U/C. L= 16 Km Completion 6/83	
003020	94-3	29	Flat	"	"	7.0	4.0	"	2.0	20	23	"	0	0	0	58		
003021	3-2	65	Moun- tan- ous	"	22.0	9.6	6.6	"	2.5	"	19	22	0	0	0	136		
003022	161-5	8	Flat	"	"	"	2.8	"	"	"	"	"	"	"	"	"	U/C. Completion 6/85	
003023	53-1	23	"	"	35.4	10.5	6.2	"	3.5	13	15	12	0	0	0	4		
003024	1-52	66	Hilly	"	25.1	9.5	5.9	"	2.5	15	"	31	0	0	0	124		
003025	52-7	132	Moun- tan- ous	45	9.3	8.4	3.6	Double	"	18	22	25	0	0	0	137	U/C. L= 92 Km Completion 6/83	
003026	2-91	29	Flat	65	12.5	10.8	7.3	"	5.0	15	20	27	0	0	0	89	U/c Completion 9/83	
003027	91-1	28	"	"	"	"	"	"	"	"	"	"	0	0	0	89	U/C Completion 9/83	
003028	1-115	46	"	"	21.5	10.6	7.1	"	2.5	10	15	18	0	0	0	89		

PROVINCE
N.W.F.P.

ROAD INVENTORY

ROAD INVENTORY

PROVINCE
N.M.F.P.

Page/3

No.	LINK	DISTANCE	TERRAIN	DESIGN SPEED	R.O.W.	WIDTH FORMATION	PAVEMENT SURFACE	TYPE OF SURFACE	PAVEMENT SURFACE	DEPTH BASE	SUBBASE	CONDITION OF SURFACE	SUBGRADE CSR	BRIDGE		No. OF COLLECTS	REMARKS
														L	W		
003029	115-90	88	Moun- tain- ous	40	18.6	9.8	7.1	Double	2.0	12	15	Fair	13	0		124	
003030	52-8	35	Flat	65	9.7		4.8	TriP- Pie	2.5	13	0	Fairly Good	22	0		23	
003031	8-89	82	Moun- tain- ous	25	11.5	7.6	3.6	"	3.0	15	38	Fair					
003032	116-115	33	Flat	65	26.0	8.8	6.1	Double	2.5	13	23	"	15	0		88	
003033	2-1																PLAN

ROAD INVENTORY

PROVINCE
BALUCHISTAN

No	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/hr	R.O.W m	WIDTH		TYPE OF SURFACE	DEPTH		CONDITION OF SURFACE	% C.B.R	BRIDGE			REMARKS
						FORMATION m	PAVEMENT m		PAVEMENT cm	BASE cm			Subbase cm	L	W	
254001	151-114	82	Flat	65	10.1	5.0	Bitu- minous	2.5	20	0	Fair	7	33.00	7.9-10.0	93	
254002	114-44	77	"	"	9.4	3.8	"	"	"	"	"	"	24.161	8.2-10.6	228	
254003	44-110	293	Mount- anous	45	8.5	"	"	"	"	"	"	"	20-74	5.4-23.8	1223	U/C L = 103 km Completion 6/83
254004	110-43	69	Flat	65	8.6	"	"	"	"	"	"	"	23-39	11.0-26.4	205	
254005	43-40	144	Hilly	50	8.8	6.1	"	"	"	"	Poor	"	0		221	RC=1
254006	40-49	131	"	"	7.3	5.1	"	"	"	"	"	"	55-58	7.7-8.3	191	RC=6
504007	153-96	210	Flat	65		4.4	"	"	"	"	Very Poor	"	25	10.8	655	U/C Completion 6/84 RC=13
504008	96-40	175	"	"		3.7	"	"	"	"	"	"	35-70	4.6-5.5	297	
654009	154-45	148	"	50	66.0	8.6	4.8	Double	23	"	Poor	"	22-94	4.2-10.9	35	RC=2
654010	45-40	163	Mount- anous	25		9.6	5.6	Tripple	18	"	Fair	"	8		234	RC=4
004011	40-41	217	"	30	53.0	9.0	3.6	Gravel	5	4	Very Poor	5			172	U/C 19 km RC=9 Completion 6/85
004012	41-162	189	Flat	40		7.3	"	Bitum- inous	23	7	"	"			474	U/C 10 km Completion 6/84
004013	40-42	344	Hilly	30	66.0	9.3	3.9	Double	8	0	Fair	"				
004014	42-51	366	Flat	60		"	"	Gravel	8	0	"	"				

ROAD INVENTORY

PROVINCE BALUCHISTAN

No.	LINK	DISTANCE km	TERRAIN	DESIGN SPEED km/pb	WIDTH		TYPE OF SURFACE	DEPTH			CONDITION OF SURFACE	BRIDGE			REMARKS		
					R.O.W. m	FORMATION m		PAVEMENT cm	PAVEMENT cm	BASE cm		SUBBASE cm	C.B.R. %	L		W	No. OF CONVERTS
004015	44-112	326	Flat	40	16.7	7.2	3.6	Gravel	0	23	0	Poor	5				
004016	112-111	118	"	"	33.4	"	"	"	0	15	15	"	10			4	
004017	111-46	230	"														
004018	110-112	530	Hilly														
004019	114-113	372	Flat														PLAN
004020	113-46	169	"														PLAN
004021	111-113	115	"														
004022	41-96	72	Mounta- rains														
004023	45-97	272	Hilly														PLAN