

## **APPENDIX 10**



Appendix 10.1 Future Car OD Table of Public Transport

Bus OD Table

Zone No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	Total		
1	16	18	12	16	44	15	115	189	169	22	64	41	5	25	23	34	79	68	12	5	14	37	57	58	43	94	108	38	112	187	38	4	0	1	2	1	2	2063				
2	27	4	0	1	24	6	48	24	21	2	5	8	4	2	10	27	6	5	0	0	2	11	47	3	6	14	19	10	10	36	0	7	1	0	1	0	1	2	405			
3	12	0	0	2	2	2	4	6	0	0	0	0	0	0	0	5	13	0	0	0	0	2	1	0	1	0	1	4	0	1	5	0	0	0	0	0	0	0	77			
4	18	1	0	4	3	2	14	5	3	0	0	0	4	2	7	8	1	0	1	0	4	17	1	0	1	0	2	2	1	7	0	2	3	0	0	1	2	0	118			
5	43	27	2	23	5	56	104	67	16	21	14	14	11	16	43	28	31	9	1	61	26	25	14	12	37	52	32	59	124	9	49	1	0	0	0	0	0	1033				
6	17	7	2	2	5	11	26	23	25	3	4	8	4	6	9	24	19	6	3	0	17	30	7	3	7	11	14	3	8	20	2	10	3	0	0	0	0	341				
7	115	54	5	14	52	22	76	131	192	26	55	32	23	32	129	60	59	15	2	93	93	103	53	43	173	107	57	90	214	21	72	1	1	2	2	4	1	2142				
8	204	27	0	7	77	27	138	156	91	6	17	10	42	24	65	103	40	23	14	3	42	156	49	51	36	33	46	64	61	153	7	24	2	0	0	7	5	0	1810			
9	187	16	3	6	62	25	138	107	284	14	20	18	35	34	43	86	52	27	14	2	36	103	33	48	34	52	34	92	48	146	8	17	2	1	1	3	4	0	1855			
10	31	2	0	0	11	3	22	6	12	7	2	2	0	5	7	8	3	2	1	0	3	25	1	4	1	4	1	5	6	2	6	16	1	0	1	0	1	0	196			
11	70	8	1	0	25	3	48	17	16	2	4	4	16	7	12	19	9	4	2	0	12	38	10	5	8	9	12	4	8	27	1	3	0	0	0	0	1	0	405			
12	39	8	1	0	13	7	27	14	21	2	4	38	0	8	22	6	4	5	3	0	15	29	14	3	9	10	9	0	10	25	2	9	2	0	0	0	1	3	0	363		
13	5	7	0	3	4	4	26	49	47	8	16	0	0	38	21	13	6	1	45	10	6	19	3	9	30	10	16	35	4	26	0	0	0	0	0	0	0	0	464			
14	22	9	1	2	11	5	23	26	31	5	6	8	2	20	11	24	9	0	1	17	27	19	5	5	18	10	21	7	22	2	10	0	0	0	2	1	0	0	383			
15	21	16	5	8	17	10	34	71	54	9	11	24	0	12	5	42	27	18	7	2	31	27	25	7	25	31	41	19	45	100	12	29	1	0	0	1	0	0	787			
16	121	20	6	7	42	26	140	111	103	8	21	6	30	24	36	103	55	36	12	3	49	70	48	29	15	74	79	65	68	150	16	40	4	0	0	4	0	0	1640			
17	68	20	3	3	25	18	68	40	51	2	9	4	19	10	30	56	64	14	7	1	15	50	20	19	13	21	24	37	17	56	4	11	0	0	0	0	5	1	0	800		
18	61	7	1	2	27	8	53	24	27	2	4	17	2	18	38	13	70	3	0	11	47	14	5	8	13	8	20	12	43	2	5	3	0	0	0	1	0	0	573			
19	10	5	1	1	8	4	15	16	13	1	2	3	5	1	5	13	7	2	0	0	4	11	6	3	5	7	7	2	4	15	1	3	0	0	0	0	1	0	181			
20	4	0	0	0	0	0	2	2	0	0	0	0	0	1	1	2	3	0	0	1	1	4	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	27		
21	143	12	2	4	77	17	86	37	35	4	11	15	56	23	34	50	12	9	5	1	203	96	28	24	20	35	35	11	26	55	5	21	6	0	0	3	1	0	1203			
22	48	50	8	14	21	28	112	128	118	20	35	30	9	21	30	98	51	40	7	4	85	44	100	5	71	92	63	25	95	199	19	76	4	0	0	1	2	10	0	1809		
23	58	2	0	23	10	81	53	27	12	11	0	20	24	48	16	13	5	1	32	99	144	21	36	36	41	18	20	26	4	25	4	0	0	0	0	0	0	0	907			
24	53	4	2	0	12	5	51	49	45	4	7	4	2	4	10	32	16	5	3	0	33	60	18	63	22	27	23	9	32	23	4	17	1	1	3	0	4	0	1	649		
25	40	7	0	1	12	6	37	32	34	3	9	6	6	6	23	18	13	6	5	0	22	68	34	28	123	43	38	13	21	37	4	16	2	0	0	1	1	0	0	714		
26	87	15	2	1	34	12	100	40	48	6	11	10	21	18	38	82	22	14	9	1	37	102	32	29	40	167	71	45	51	81	7	19	4	2	5	2	4	0	0	1269		
27	104	14	6	5	54	11	96	50	51	5	16	10	33	7	38	75	24	9	8	0	38	81	38	29	37	64	123	27	58	122	13	12	3	1	3	1	16	0	0	1282		
28	28	16	0	2	23	3	61	79	19	2	4	1	9	17	16	66	35	7	2	0	10	32	12	9	13	35	31	52	19	58	4	6	0	1	0	1	6	2	0	675		
29	93	10	2	3	50	7	87	67	47	6	8	10	8	5	38	66	19	11	4	0	32	78	27	33	16	50	63	21	73	41	9	13	4	1	0	5	10	0	0	1017		
30	186	25	4	5	133	19	213	141	174	14	20	20	76	21	110	144	61	36	17	2	43	198	38	21	18	69	103	64	24	515	7	26	0	0	0	0	6	0	0	2563		
31	32	0	1	2	17	6	7	2	2	7	2	11	15	4	2	1	15	4	2	1	5	23	4	6	6	9	16	8	10	13	18	2	0	0	1	0	1	0	0	243		
32	82	8	1	2	51	11	63	19	16	2	4	9	34	13	34	39	11	6	3	1	26	72	25	17	24	13	16	17	12	34	2	119	2	0	0	3	0	0	794			
33	4	2	0	3	4	2	2	3	3	7	1	1	0	4	3	2	1	5	3	0	5	1	7	6	0	6	8	3	3	0	0	0	0	0	3	0	0	0	0	98		
34	4	0	0	0	0	0	2	6	1	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	21		
35	3	1	0	0	0	1	2	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	22	
36	6	1	0	1	0	0	4	7	6	1	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	43
37	1	1	2	2	2	1	6	5	3	3	1	1	0	2	1	6	2	1	0	0	3	3	0	3	2	7	7	12	11	0	0	0	0	0	0	0	0	0	0	0	95	
38	3	4	0	0	3	0	4	2	0	0	0	2	0	0	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
39	0	0	0	0	0	0	2	1	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	5	
Total	2073	435	75	120	991	338	2118	1833	1827	215	406	356	482	384	768	1649	795	549	187	33	1189	1825	950	676	704	1213	1255	805	1042	2579	230	773	59	8	17	37	90	27	9	29127		

# Taxi OD Table

Zone No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	Total	
1	56	310	20	23	150	83	125	413	392	109	97	93	20	63	35	210	209	94	1105	3	179	135	555	114	239	335	494	239	151	295	8	112	0	0	0	0	0	19	4	2	5481
2	290	29	5	4	92	36	116	72	39	10	26	4	74	24	119	83	34	0	2	0	53	168	67	82	30	12	42	96	31	65	0	13	0	0	0	0	1	0	0	1739	
3	36	3	2	0	18	0	27	0	1	2	2	19	2	0	0	0	2	2	0	0	0	10	9	14	0	6	3	16	0	3	16	0	0	0	0	0	0	0	0	210	
4	15	0	0	1	17	0	2	0	1	0	0	3	0	0	1	1	0	0	0	0	1	3	0	0	0	0	7	0	2	9	5	0	0	0	0	0	0	0	0	78	
5	102	94	19	19	45	25	44	112	77	3	13	4	2	0	23	185	63	7	1	0	89	84	163	53	116	71	9	6	9	23	17	7	1	0	0	0	0	0	1	1525	
6	59	35	0	0	21	2	29	39	5	1	0	0	0	0	9	22	2	1	0	13	5	66	28	22	38	26	0	45	4	5	2	0	0	0	0	0	0	0	0	478	
7	114	132	55	2	45	37	55	127	126	9	8	16	2	40	172	92	21	45	0	140	70	96	170	98	121	163	45	164	248	4	19	4	0	0	0	1	4	0	0	2462	
8	350	67	30	0	145	3	134	167	66	29	22	42	70	35	88	145	30	12	2	1	50	195	26	45	27	49	162	104	42	52	1	3	0	3	0	1	3	5	0	2206	
9	323	85	30	3	143	4	113	45	22	3	3	22	44	6	53	120	24	10	2	3	78	121	42	63	24	89	151	17	78	146	8	8	0	1	0	41	1	0	0	2125	
10	75	10	0	1	27	2	22	28	2	1	3	3	40	0	13	1	8	4	3	0	6	13	32	17	12	0	19	4	2	19	1	13	0	0	0	0	0	0	0	381	
11	72	0	0	0	5	0	8	2	3	1	2	0	3	4	0	14	3	0	1	0	3	6	0	22	5	1	2	6	6	0	0	0	0	0	0	0	0	0	0	171	
12	74	0	1	0	62	0	4	21	4	3	0	7	75	0	4	41	19	0	0	2	96	1	26	1	0	33	44	8	10	2	1	0	0	0	0	0	0	0	0	539	
13	43	61	25	10	8	0	18	82	8	1	3	10	15	6	0	7	4	32	1	2	8	9	233	19	112	151	5	2	3	128	17	5	0	0	0	0	0	0	0	1119	
14	74	0	1	0	0	0	2	2	5	0	7	0	27	31	7	35	22	26	10	0	41	3	1	0	14	1	2	19	31	3	1	0	0	0	0	1	0	1	368		
15	39	103	2	1	6	14	4	110	35	9	0	4	0	13	27	43	26	5	0	6	29	124	12	21	109	42	4	6	19	2	22	0	0	0	0	0	0	0	0	837	
16	261	79	0	7	165	24	131	160	46	0	16	27	6	21	179	20	9	10	3	0	100	113	100	134	11	57	112	67	40	41	3	6	0	0	0	0	2	0	0	1950	
17	244	2	0	1	74	2	89	38	24	19	6	17	3	23	5	9	60	2	1	1	29	13	20	59	1	11	4	6	65	76	5	3	0	0	0	0	0	0	0	912	
18	83	0	0	2	1	0	6	0	2	1	7	6	1	0	9	22	8	2	12	2	0	2	10	1	0	2	1	115	12	1	9	2	0	0	0	0	0	0	0	0	248
19	101	0	2	1	0	35	2	2	4	6	0	3	10	0	3	1	8	32	1	14	4	1	0	8	1	1	2	0	0	48	3	1	0	0	0	0	0	0	332		
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	
21	179	19	1	2	112	19	153	37	48	3	3	2	9	21	7	64	27	3	5	2	204	208	4	38	3	59	66	117	9	47	1	19	1	2	0	0	0	0	0	1496	
22	217	111	26	3	163	4	83	268	22	7	96	98	1	69	37	191	8	9	69	7	177	91	45	74	115	80	117	35	66	37	27	115	0	0	0	0	0	0	0	2469	
23	494	64	0	1	247	44	147	29	36	25	0	0	294	1	120	84	34	0	0	20	56	137	87	62	22	82	3	74	4	11	3	0	0	1	0	0	0	0	2202		
24	134	84	12	0	44	38	180	68	81	17	6	15	124	4	25	94	49	0	0	6	61	102	42	16	65	70	31	5	150	9	6	2	2	0	0	3	9	2	1556		
25	215	26	14	0	144	33	105	96	17	1	5	0	111	16	35	29	1	3	1	4	93	51	23	228	35	75	19	30	6	8	2	1	0	1	0	0	0	2	1374		
26	306	2	1	15	91	26	129	41	13	1	1	0	71	1	44	32	3	1	1	66	116	21	80	37	91	26	8	18	28	11	2	1	0	0	0	4	1	0	1390		
27	407	88	1	0	9	19	172	176	9	24	3	21	6	18	73	151	4	96	2	0	64	81	117	6	48	50	831	154	10	130	6	7	0	0	2	1	0	0	2789		
28	238	50	4	4	0	43	14	4	6	10	30	1	2	2	76	5	25	0	0	69	6	77	47	29	49	229	370	65	48	14	42	0	0	0	0	7	1	0	1617		
29	156	46	3	0	8	49	135	12	71	2	9	9	58	18	30	58	49	4	0	0	9	153	27	5	60	23	11	68	110	7	2	1	2	1	1	0	0	0	1137		
30	157	45	7	9	25	4	524	35	159	7	9	12	14	44	126	70	11	15	30	2	51	37	6	98	97	46	118	104	21	802	12	11	5	0	0	2	0	0	3315		
31	6	0	0	0	2	0	2	1	1	0	0	0	1	0	2	3	0	0	0	1	4	0	1	1	1	1	3	2	3	0	0	0	0	0	0	0	0	0	0	37	
32	97	9	0	0	8	2	17	16	4	0	0	0	8	2	22	6	3	0	0	26	119	2	2	3	42	6	40	1	8	1	20	0	0	0	0	0	0	0	0	464	
33	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	
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	0	0	0	0	0	0	0	0	0	0	0	0	0
35	2	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	0	0	0	4	
36	3	0	0	0	1	0	3	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	19
37	16	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	0	0	0	0	42
38	5	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	0	0	0	22	
39	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	0	0	0	0	0	0
Total	15696	1554	261	1118	1888	470	2676	2180	1648	297	357	567	1128	459	1129	1999	803	402	320	25	1514	2179	2130	1378	1452	1622	3019	1612	1099	252	186	444	17	9	5	47	50	23	7	43292	

## **Appendix 10.2 Bus Rate Policy in Japan**

### **(1) Rate Regime**

Setting of a bus rate is a permission system, and the rate setting which is free of bus operators is not allowed.

A process of application of bus rate permission is shown in Fig.10.2.1. In order to be a public utility charge, a bus rate requires approval of a report of deliberative council of governments, the Ministry of Transport and the Economic Planning Agency.

As for an ultimate way of thinking of permission of a rate, the way of thinking is that the rate is permitted to reset as much as the deficit balance is dissolved in case that administrative income and expenditure goes into the red, i.e., it is not to stabilize a management foundation of operators. In other words, a rate adds a suitable profit to an initial cost and has set up.

On a reduction regime of a rate, there are various reduction regimes, for example, the reduction regime for commuting, attending school and so on. Among them, in case that it becomes a reference in Tegucigalpa, there is a reduction regime for transit.

This reduces the rate to the passenger who makes transit and hopes transference the transport that an operator differs, in Japan.

This reduction regime is available as a mitigation method of the rate for transit bus passengers in Tegucigalpa.

### **(2) Furtherance Regime**

For service reclamation of bus transport, various furtherance regime is devised for the purpose of betterment of advantage facilities of a user and stabilization of bus business management.

There is various furtherance regime in a government and a municipality to carry out effective measures. Among them, the furtherance regime which becomes a reference in Tegucigalpa is introduced below.

#### **1) Concerning development of facilities**

- Development of bus terminal
- Installation of bus executive lane
- Establishment of key route bus route
- Improvement of bus stop facility, such as shelter, guide sign board, etc.
- Bus operating information system
- Others various for reclamation of a bus service

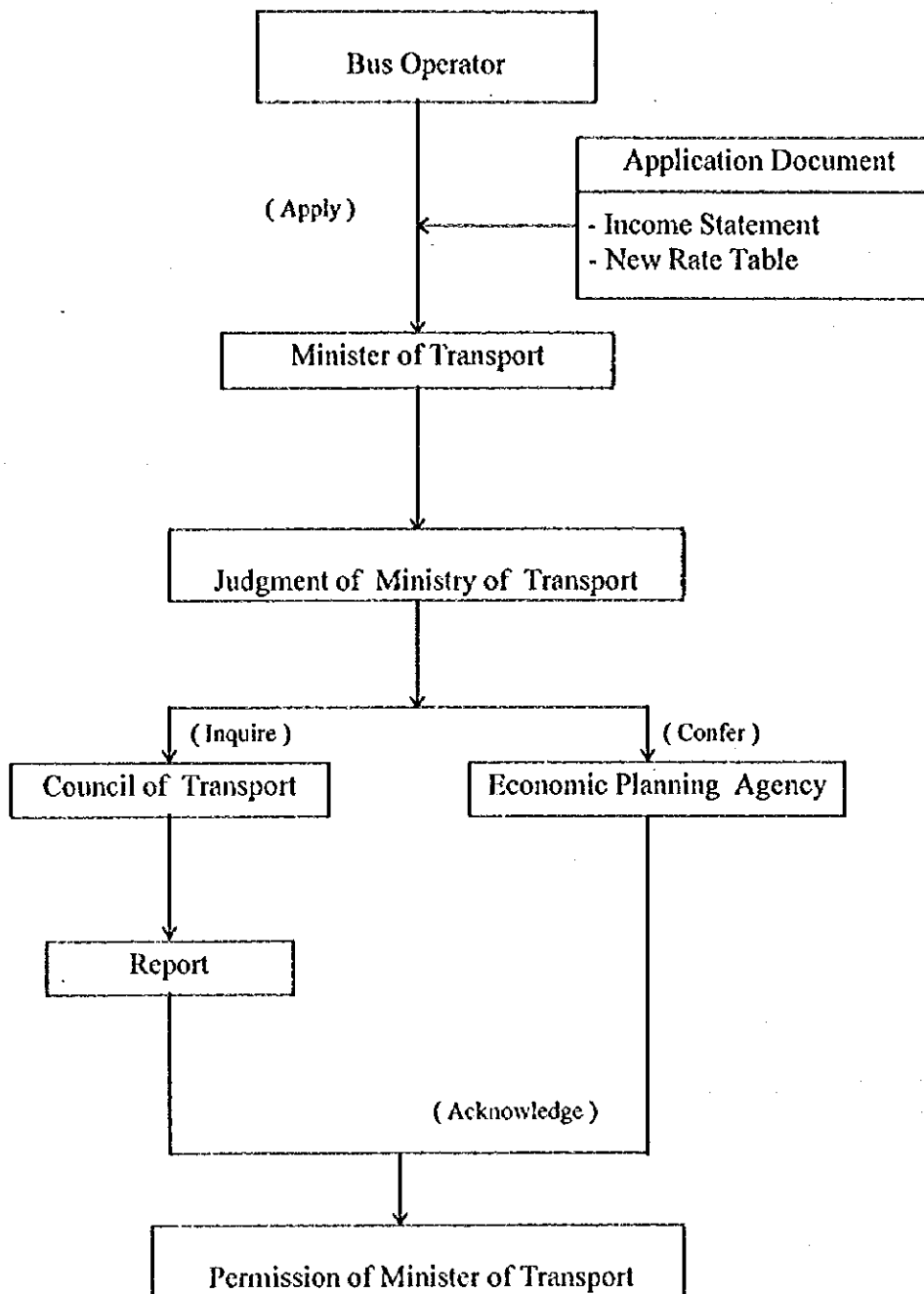
#### **2) Concerning reclamation of Vehicle**

- Purchasing of pollution-free vehicle
- Purchasing of the bus which can be correspondence in utilization of a physically handicapped person

#### **3) Concerning business**

- Covering of bus business deficit
- Establishment of bus route in new housing estate
- Others various for administrative rationalization

Moreover, grant of subsidiary payments, a loan, preferential treatment of a tax and so on is as for furtherance measures.



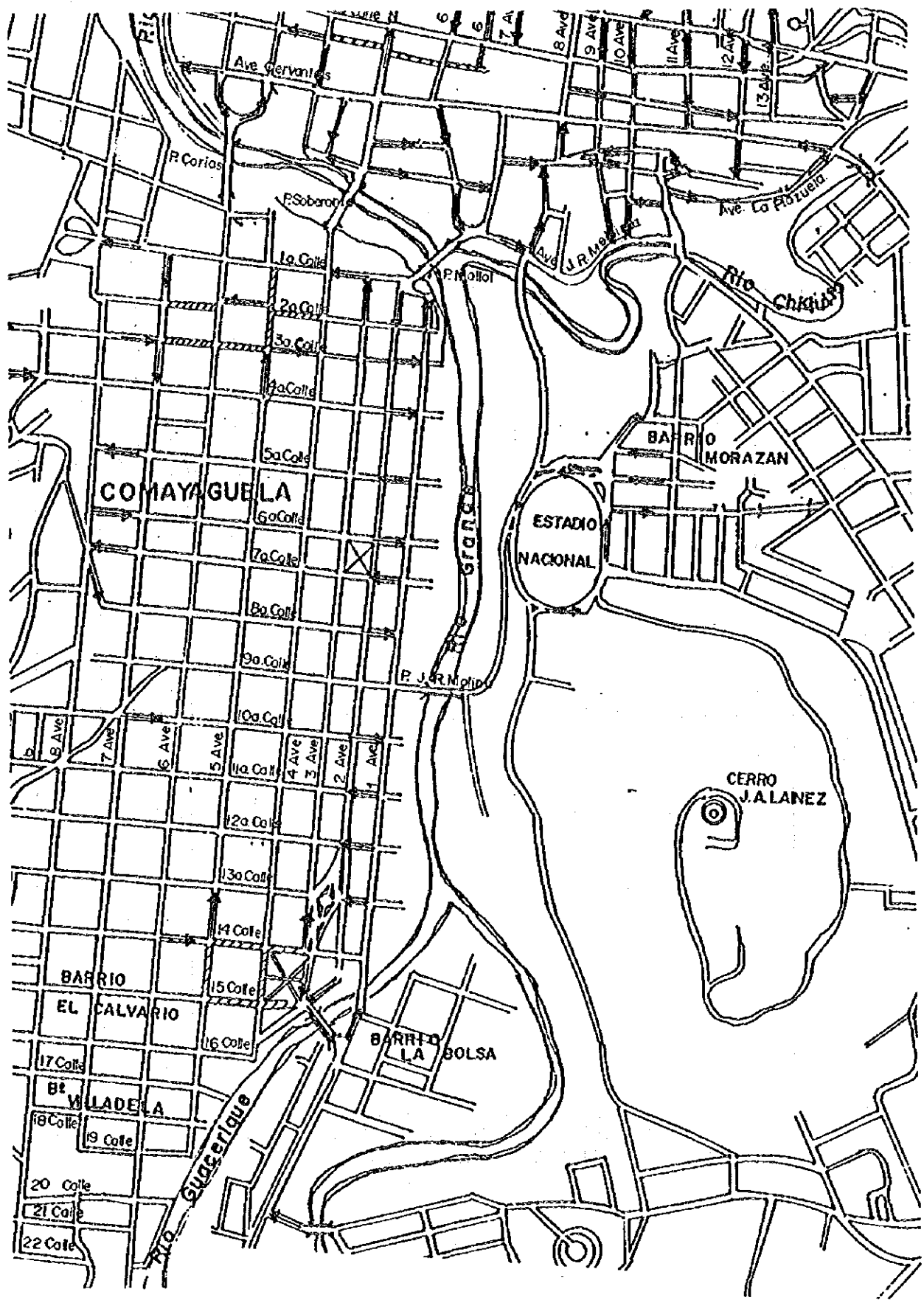
**Fig. 10.2.1 Application Process of Bus Rate Permission**

## **APPENDIX 11**









Appendix 11.1 Location of Soil Survey



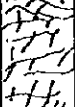






Soil Data of Point A

DEPTH ( MTS )	SIMBOL	MATERIAL DESCRIPTION	NUMBER OF STROKES/FEET	SIMPLE COMPRESSIVE STRENGTH <sub>kg/cm<sup>2</sup></sub>	ANGLE OF FRICTION	HUMIDITY %
1.0		Redish Silty Sand				
2.0		Silty Grovelly Sand and Some Boulder	50	4.0	38°	
3.0		Grovelly Sand and Abundant Boulder		6.0		
4.0		Fractured Shale		10.0		
5.0						
6.0						

\* PERMISSIBLE BEARING CAPACITY , Kg/cm<sup>2</sup>  
 ○ BORING WITH BIT ( ROTARY )

Soil Data of Point A

DEPTH ( MTS )	SIMBOL	MATERIAL DESCRIPTION	NUMBER OF STROKES/ FEET	SIMPLE COMPRESSIVE STRENGTH Kg/cm <sup>2</sup>	ANGLE OF FRICTION	HUMIDITY %
1.0		Deposit of Sand - Gravel - Boulder				
2.0		Weathered Shale	80	4.0		
3.0		Very Fractured Shale				
4.0						
5.0		Semi - Fractured Shale		10.0		
6.0						
6.50						

\* PERMISSIBLE BEARING CAPACITY ; Kg/cm<sup>2</sup>

○ BORING WITH BIT ( ROTARY )










Soil Data of Point A

DEPTH (MTS)	SIMBOL	MATERIAL DESCRIPTION	NUMBER OF STROKES / FEET	SIMPLE COMPRESSIVE STRENGTH <sup>Kg/cm<sup>2</sup></sup>	ANGLE OF FRICTION	HUMIDITI %
1.0		Filling of Silty Sand and Some Gravel and Boulder (Cobble)				
2.0		Sand With Some Gravel and Boulder				
3.0						
4.0		Very Fractured Shale	50	9.0		
5.0			80	15.0		
6.0		Fractured Shale				
7.0			100	20.0		
8.0						

PERMISSIBLE BEARING CAPACITY , Kg/cm<sup>2</sup>







○ BORING WITH DRILL BIT ( ROTARY )

Soil Data of Point B

DEPTH (MTS)	SIMBOL	MATERIAL DESCRIPTION	NUMBER OF STROKES/ FEET	SIMPLE COMPRESSIVE STRENGTH $\text{kg/cm}^2$	ANGLE OF FRICTION	HUMIDITY %
1.0		Heterogeneous Filling Material		*		
1.0		Reddish Clay				
2.0		Weathered Reddish Shale	40	3.0		
3.0		Very Fractured Shale	100	6.0		
4.0		Semi - Fractured Shale				
5.0						
6.0						
6.5						
7.0						

\* PERMISSIBLE BEARING CAPACITY,  $\text{Kg/cm}^2$   
 ○ BORING WITH DRILL BIT ( ROTARI )

Soil Data of Point B

DEPTH (MTS)	SIMBOL	MATERIAL DESCRIPTION	NUMBER OF STROKES/ FEET	SIMPLE COMPRESSIVE STRENGTH $\text{kg/cm}^2$	ANGLE OF FRICTION	HUMIDITY %
1.0		Deposit of Sand Gravel Boulder		*		
2.0		Reddish Clay With Some Plasticity	70	4.0		
3.0		Semi Weathered Shale	100	6.0		
4.0		Very Fractured Shale				
5.0		Semi - Fractured Shale				
6.0						

\* PERMISSIBLE BEARING CAPACITY ,  $\text{Kg/cm}^2$

○ BORING WITH BIT ( ROTARY )

## Appendix 11.2 Estimated Construction Cost

### Project - 3

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			5
(2) Earthwork				
Soil Excavation	cu.m	3.30	3000	10
Embankment	cu.m	4.50	10000	45
Sub Total				55
(3) Pavement				
Subgrade Preparation	sq.m	0.80	2500	2
Aggregate Subbase Course	cu.m	10.00	375	4
Aggregate Base Course	cu.m	26.00	375	10
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	2500	3
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	2500	1
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	2500	88
Overlay (T=5cm)	sq.m	18.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	1000	2
Sub Total				109
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	15	2
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				2
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			12
Total				183

### Estimated Construction Cost

**Project - 5**

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			3
(2) Earthwork				
Soil Excavation	cu.m	3.30	2500	8
Embankment	cu.m	4.50	5000	23
Sub Total				31
(3) Pavement				
Subgrade Preparation	sq.m	0.80	1530	1
Aggregate Subbase Course	cu.m	10.00	230	2
Aggregate Base Course	cu.m	26.00	230	6
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	1530	2
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	1530	1
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	1530	54
Overlay (T=5cm)	sq.m	18.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	0	0
Sub Total				65
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	15	2
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				2
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			7
<b>Total</b>				<b>108</b>



### Estimated Construction Cost

Project - 6-1

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			38
(2) Earthwork				
Soil Excavation	cu.m	3.30	10000	33
Embankment	cu.m	4.50	1100	5
Sub Total				38
(3) Pavement				
Subgrade Preparation	sq.m	0.80	6900	6
Aggregate Subbase Course	cu.m	10.00	1100	11
Aggregate Base Course	cu.m	26.00	1100	29
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	6900	7
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	6900	3
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	6900	242
Overlay (T=5cm)	sq.m	18.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	2800	6
Sub Total				303
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	30	5
- ditto - (D=1.0m)	l.m	240.00	30	7
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				12
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	1350	824
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				824
(6) Miscellaneous Works	L.S			82
<b>Total</b>				<b>1296</b>

### Estimated Construction Cost

Project - 6-2

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			142
(2) Earthwork				
Soil Excavation	cu.m	3.30	0	0
Embankment	cu.m	4.50	12500	56
Sub Total				56
(3) Pavement				
Subgrade Preparation	sq.m	0.80	10100	8
Aggregate Subbase Course	cu.m	10.00	1520	15
Aggregate Base Course	cu.m	26.00	1520	40
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	10100	10
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	10100	5
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	10100	354
Overlay (T=5cm)	sq.m	18.00	8100	146
Sidewalk (Asphalt Pavement)	sq.m	2.00	5100	10
Sub Total				587
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	40	6
- ditto - (D=1.0m)	l.m	240.00	40	10
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				16
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	670.00	4725	3166
- ditto - (L=30m)	sq.m	720.00	810	583
Sub Total				3749
(6) Miscellaneous Works	L.S			309
Total				4858

### Estimated Construction Cost

**Project - 7.**

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			12
(2) Earthwork				
Soil Excavation	cu.m	3.30	4600	15
Embankment	cu.m	4.50	9200	41
Sub Total				57
(3) Pavement				
Subgrade Preparation	sq.m	0.80	5700	5
Aggregate Subbase Course	cu.m	10.00	860	9
Aggregate Base Course	cu.m	26.00	860	22
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	5700	6
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	5700	3
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	5700	200
Overlay (T=5cm)	sq.m	18.00	4200	76
Sidewalk (Asphalt Pavement)	sq.m	2.00	2400	5
Sub Total				324
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	10	2
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	10	7
Sub Total				8
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			27
<b>Total</b>				<b>428</b>

### Estimated Construction Cost

#### Project - 8

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			65
(2) Earthwork				
Soil Excavation	cu.m	3.30	64000	211
Embankment	cu.m	4.50	3000	14
Sub Total				225
(3) Pavement				
Subgrade Preparation	sq.m	0.80	7250	6
Aggregate Subbase Course	cu.m	10.00	1100	11
Aggregate Base Course	cu.m	26.00	1100	29
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	7250	7
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	7250	4
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	7250	254
Overlay (T=5cm)	sq.m	18.00	24800	446
Sidewalk (Asphalt Pavement)	sq.m	2.00	2100	4
Sub Total				761
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	15	2
- ditto - (D=1.0m)	l.m	240.00	15	4
- ditto - (D=1.5m)	l.m	350.00		0
Box Culvert (1.5 x 1.5)	l.m	400.00		0
- ditto - (2.5 x 2.5)	l.m	650.00		0
Sub Total				6
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	1688	1030
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				1030
(6) Miscellaneous Works	L.S			141
<b>Total</b>				<b>2227</b>

### Estimated Construction Cost

Project - 9

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			57
(2) Earthwork				
Soil Excavation	cu.m	3.30	17000	56
Embankment	cu.m	4.50	5000	23
Sub Total				79
(3) Pavement				
Subgrade Preparation	sq.m	0.80	13300	11
Aggregate Subbase Course	cu.m	10.00	2000	20
Aggregate Base Course	cu.m	26.00	2000	52
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	13300	13
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	13300	7
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	13300	466
Overlay (T=5cm)	sq.m	18.00	16000	288
Sidewalk (Asphalt Pavement)	sq.m	2.00	7860	16
Sub Total				872
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	40	6
- ditto - (D=1.0m)	l.m	240.00	40	10
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				16
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	1350	824
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				824
(6) Miscellaneous Works	L.S			125
Total				1972

### Estimated Construction Cost

**Project - 10**

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			37
(2) Earthwork				
Soil Excavation	cu.m	3.30	13000	43
Embankment	cu.m	4.50	26000	117
Sub Total				160
(3) Pavement				
Subgrade Preparation	sq.m	0.80	17000	14
Aggregate Subbase Course	cu.m	10.00	2550	26
Aggregate Base Course	cu.m	26.00	2550	66
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	17000	17
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	17000	9
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	17000	595
Overlay (T=5cm)	sq.m	18.00	12530	226
Concrete Pavement (T=17.5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	7160	14
Sub Total				966
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	40	6
- ditto - (D=1.0m)	l.m	240.00	40	10
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				16
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			80
<b>Total</b>				<b>1258</b>

### Estimated Construction Cost

Project - 11-1

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			57
(2) Earthwork				
Soil Excavation	cu.m	3.30	29300	97
Embankment	cu.m	4.50	34400	155
Sub Total				251
(3) Pavement				
Subgrade Preparation	sq.m	0.80	8720	7
Aggregate Subbase Course	cu.m	10.00	1310	13
Aggregate Base Course	cu.m	26.00	1310	34
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	8720	9
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	8720	4
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	8720	305
Overlay (T=5cm)	sq.m	18.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	3500	7
Sub Total				379
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	20	3
- ditto - (D=1.0m)	l.m	240.00	20	5
- ditto - (D=1.5m)	l.m	350.00	20	7
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				15
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	1728	1140
Sub Total				1140
(6) Miscellaneous Works	L.S			125
<b>Total</b>				<b>1969</b>

### Estimated Construction Cost

Project - 11-2

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			65
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	29300	132
Sub Total				148
(3) Pavement				
Subgrade Preparation	sq.m	0.80	24580	20
Aggregate Subbase Course	cu.m	10.00	3690	37
Aggregate Base Course	cu.m	26.00	3690	96
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	24580	25
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	24580	12
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	24580	860
Overlay (T=5cm)	sq.m	18.00	14000	252
Sidewalk (Asphalt Pavement)	sq.m	2.00	15400	31
Sub Total				1332
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	70	25
Box Culvert (1.5 x 1.5)	l.m	400.00	45	18
- ditto - (2.5 x 2.5)	l.m	650.00	45	29
Sub Total				72
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	702	463
Sub Total				463
(6) Miscellaneous Works	L.S			141
Total				2222



### Estimated Construction Cost

Project - 12

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			47
(2) Earthwork				
Soil Excavation	cu.m	3.30	135000	446
Embankment	cu.m	4.50	5000	23
Sub Total				468
(3) Pavement				
Subgrade Preparation	sq.m	0.80	21600	17
Aggregate Subbase Course	cu.m	10.00	3250	33
Aggregate Base Course	cu.m	26.00	3250	85
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	21600	22
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	21600	11
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	21600	756
Overlay (T=5cm)	sq.m	18.00	2500	45
Sidewalk (Asphalt Pavement)	sq.m	2.00	7450	15
Sub Total				983
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	60	9
- ditto - (D=1.0m)	l.m	240.00	60	14
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				23
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			103
<b>Total</b>				<b>1624</b>

### Estimated Construction Cost

**Project - 13**

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			14
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	10000	45
Sub Total				62
(3) Pavement				
Subgrade Preparation	sq.m	0.80	5500	4
Aggregate Subbase Course	cu.m	10.00	825	8
Aggregate Base Course	cu.m	26.00	825	21
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	5500	6
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	5500	3
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	5500	193
Overlay (T=5cm)	sq.m	18.00	7000	126
Sidewalk (Asphalt Pavement)	sq.m	2.00	7440	15
Sub Total				376
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	20	3
- ditto - (D=1.0m)	l.m	240.00	20	5
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				8
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			31
<b>Total</b>				<b>490</b>

### Estimated Construction Cost

#### Project - 14

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			38
(2) Earthwork				
Soil Excavation	cu.m	3.30	31500	104
Embankment	cu.m	4.50	30500	137
Sub Total				241
(3) Pavement				
Subgrade Preparation	sq.m	0.80	18100	14
Aggregate Subbase Course	cu.m	10.00	2750	28
Aggregate Base Course	cu.m	26.00	2750	72
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	18100	18
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	18100	9
Asphalt Concrete Surface (T= 10cm )	sq.m	35.00	18100	634
Overlay (T=5cm)	sq.m	18.00	5750	104
Sidewalk (Asphalt Pavement)	sq.m	2.00	9520	19
Sub Total				897
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	15	2
- ditto - (D=1.0m)	l.m	240.00	15	4
- ditto - (D=1.5m)	l.m	350.00	50	18
Box Culvert (1.5 x 1.5)	l.m	400.00	50	20
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				43
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			83
<b>Total</b>				<b>1302</b>

### Estimated Construction Cost

Project - 15

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			123
(2) Earthwork				
Soil Excavation	cu.m	3.30	195000	644
Embankment	cu.m	4.50	25600	115
Sub Total				759
(3) Pavement				
Subgrade Preparation	sq.m	0.80	17800	14
Aggregate Subbase Course	cu.m	10.00	2700	27
Aggregate Base Course	cu.m	26.00	2700	70
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	17800	18
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	17800	9
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	17800	623
Overlay (T=5cm)	sq.m	18.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	7100	14
Sub Total				775
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	60	21
Box Culvert (1.5 x 1.5)	l.m	400.00	30	12
- ditto - (2.5 x 2.5)	l.m	650.00	30	20
Sub Total				53
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	2363	1441
- ditto - (L=30m)	sq.m	660.00	1215	802
Sub Total				2243
(6) Miscellaneous Works	L.S			268
<b>Total</b>				<b>4221</b>

### Estimated Construction Cost

**Project - 16**

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) General</b>	L.S			95
<b>(2) Earthwork</b>				
Soil Excavation	cu.m	3.30	267000	881
Embankment	cu.m	4.50	43200	194
Sub Total				1076
<b>(3) Pavement</b>				
Subgrade Preparation	sq.m	0.80	24900	20
Aggregate Subbase Course	cu.m	10.00	3750	38
Aggregate Base Course	cu.m	26.00	3750	98
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	24900	25
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	24900	12
Asphalt Concrete Surface (T= 10cm)	sq.m	35.00	24900	872
Overlay (T=5cm)	sq.m	18.00	5600	101
Sidewalk (Asphalt Pavement)	sq.m	2.00	12200	24
Sub Total				1189
<b>(4) Drainage Structures</b>				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	90	32
Box Culvert (1.5 x 1.5)	l.m	400.00	45	18
- ditto - (2.5 x 2.5)	l.m	650.00	45	29
Sub Total				79
<b>(5) Bridges</b>				
PC I-Beam Bridge (L=25m)	sq.m	610.00	1013	618
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				618
<b>(6) Miscellaneous Works</b>	L.S			207
<b>Total</b>				<b>3263</b>

### Estimated Construction Cost

Project - 20

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			3
(2) Earthwork				
Soil Excavation	cu.m	3.30	1000	3
Embankment	cu.m	4.50	0	0
Sub Total				3
(3) Pavement				
Subgrade Preparation	sq.m	0.80	2630	2
Aggregate Subbase Course	cu.m	10.00	400	4
Aggregate Base Course	cu.m	26.00	0	0
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	0	0
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	0	0
Block Pavement	sq.m	20.00	2630	53
Overlay (T=5cm)	sq.m	20.00	2050	41
Sidewalk (Asphalt Pavement)	sq.m	2.00	0	0
Sub Total				100
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Facilities				
Plantation	sq.m	30.00	50	2
Sub Total				2
(6) Miscellaneous Works	L.S			7
<b>Total</b>				<b>115</b>

**Estimated Construction Cost**

**Project - 21**

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			5
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	5000	23
Sub Total				39
(3) Pavement				
Subgrade Preparation	sq.m	0.80	2300	2
Aggregate Subbase Course	cu.m	10.00	350	4
Aggregate Base Course	cu.m	26.00	350	9
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	2300	2
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	2300	1
Asphalt Concrete Surface (T= 10cm)	sq.m	40.00	2300	92
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	170	0
Sub Total				110
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			10
<b>Total</b>				<b>164</b>

### Estimated Construction Cost

Project - 23

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			5
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	5000	23
Sub Total				39
(3) Pavement				
Subgrade Preparation	sq.m	0.80	2300	2
Aggregate Subbase Course	cu.m	10.00	350	4
Aggregate Base Course	cu.m	26.00	350	9
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	2300	2
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	2300	1
Asphalt Concrete Surface (T= 10cm)	sq.m	40.00	2300	92
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	170	0
Sub Total				110
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			10
Total				164



### Estimated Construction Cost

Project - 22

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			5
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	5000	23
Sub Total				39
(3) Pavement				
Subgrade Preparation	sq.m	0.80	2300	2
Aggregate Subbase Course	cu.m	10.00	350	4
Aggregate Base Course	cu.m	26.00	350	9
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	2300	2
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	2300	1
Asphalt Concrete Surface (T= 10cm)	sq.m	40.00	2300	92
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	170	0
Sub Total				110
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			10
<b>Total</b>				<b>164</b>

### Estimated Construction Cost

Project - 24

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			5
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	5000	23
Sub Total				39
(3) Pavement				
Subgrade Preparation	sq.m	0.80	2300	2
Aggregate Subbase Course	cu.m	10.00	350	4
Aggregate Base Course	cu.m	26.00	350	9
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	2300	2
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	2300	1
Asphalt Concrete Surface (T= 10cm )	sq.m	40.00	2300	92
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	170	0
Sub Total				110
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Bridges				
PC I-Beam Bridge (L=25m)	sq.m	610.00	0	0
- ditto - (L=30m)	sq.m	660.00	0	0
Sub Total				0
(6) Miscellaneous Works	L.S			10
<b>Total</b>				<b>164</b>

### Estimated Construction Cost

Project - 25

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			10
(2) Earthwork				
Soil Excavation	cu.m	3.30	5000	17
Embankment	cu.m	4.50	5000	23
Sub Total				39
(3) Pavement				
Subgrade Preparation	sq.m	0.80	4250	3
Aggregate Subbase Course	cu.m	10.00	640	6
Aggregate Base Course	cu.m	26.00	640	17
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	4250	4
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	4250	2
Asphalt Concrete Surface (T= 10cm )	sq.m	40.00	4250	170
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	210	0
Sub Total				203
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Facilities				
Office	sq.m	300.00	280	84
Sub Total				84
(6) Miscellaneous Works	L.S			23
<b>Total</b>				<b>360</b>

### Estimated Construction Cost

Project - 26

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			29
(2) Earthwork				
Soil Excavation	cu.m	3.30	500	2
Embankment	cu.m	4.50	500	2
Sub Total				4
(3) Pavement				
Subgrade Preparation	sq.m	0.80	210	0
Aggregate Subbase Course	cu.m	10.00	35	0
Aggregate Base Course	cu.m	26.00	35	1
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	210	0
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	210	0
Asphalt Concrete Surface (T= 10cm )	sq.m	40.00	210	8
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	75	0
Sub Total				10
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Facilities				
Parking Facilities	sq.m	300.00	3000	900
Sub Total				900
(6) Miscellaneous Works	L.S			64
<b>Total</b>				<b>1008</b>

### Estimated Construction Cost

Project - 27

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			19
(2) Earthwork				
Soil Excavation	cu.m	3.30	7000	23
Embankment	cu.m	4.50	7000	32
Sub Total				55
(3) Pavement				
Subgrade Preparation	sq.m	0.80	9050	7
Aggregate Subbase Course	cu.m	10.00	1360	14
Aggregate Base Course	cu.m	26.00	1360	35
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	9050	9
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	9050	5
Asphalt Concrete Surface (T= 10cm)	sq.m	40.00	9050	362
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	600	1
Sub Total				433
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Facilities				
Office	sq.m	300.00	350	105
Sub Total				105
(6) Miscellaneous Works	L.S			41
Total				653

### Estimated Construction Cost

Project - 28

Item	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
(1) General	L.S			187
(2) Earthwork				
Soil Excavation	cu.m	3.30	10000	33
Embankment	cu.m	4.50	10000	45
Sub Total				78
(3) Pavement				
Subgrade Preparation	sq.m	0.80	61400	49
Aggregate Subbase Course	cu.m	10.00	9250	93
Aggregate Base Course	cu.m	26.00	9250	241
Prime Coat (1.0 liter/sq.m)	sq.m	1.00	61400	61
Tack Coat (0.5 liter/sq.m)	sq.m	0.50	61400	31
Asphalt Concrete Surface (T= 10cm )	sq.m	40.00	61400	2456
Overlay (T=5cm)	sq.m	20.00	0	0
Sidewalk (Asphalt Pavement)	sq.m	2.00	0	0
Sub Total				2930
(4) Drainage Structures				
Pipe Culvert (D=0.8m)	l.m	150.00	0	0
- ditto - (D=1.0m)	l.m	240.00	0	0
- ditto - (D=1.5m)	l.m	350.00	0	0
Box Culvert (1.5 x 1.5)	l.m	400.00	0	0
- ditto - (2.5 x 2.5)	l.m	650.00	0	0
Sub Total				0
(5) Facilities				
Office	sq.m	300.00	9420	2826
Sub Total				2826
(6) Miscellaneous Works	L.S			408
<b>Total</b>				<b>6430</b>

### Appendix 11.3 Estimated Land Acquisition and Resettlement Cost

**Project - 3**

Description	Unit	Unit Cost (US\$)	Quantity	Total (US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	17	0	0
None-Inhabited	sq.m	14	6000	84
Sub Total				84
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	35000	0	0
Semi-Permanent House	nos.	15000	0	0
Sub Total				0
<b>Total</b>				<b>84</b>

**Project - 5**

Description	Unit	Unit Cost (US\$)	Quantity	Total (US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	15	0	0
None-Inhabited	sq.m	10	3000	30
Sub Total				30
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	35000	0	0
Semi-Permanent House	nos.	15000	0	0
Sub Total				0
<b>Total</b>				<b>30</b>

## Estimated Land Acquisition and Resettlement Cost

### Project - 6-1

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	12	11520	138
None-Inhabited	sq.m	9	0	0
Sub Total				138
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	35000	50	1750
Semi-Permanent House	nos.	15000	29	435
Sub Total				2185
<b>Total</b>				<b>2323</b>

### Project - 6-2

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	25	14000	350
None-Inhabited	sq.m	17	3100	53
Sub Total				403
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	40000	50	2000
Semi-Permanent House	nos.	15000	52	780
Sub Total				2780
<b>Total</b>				<b>3183</b>



## Estimated Land Acquisition and Resettlement Cost

### Project - 7

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	13	5700	74
None-Inhabited	sq.m	9	0	0
Sub Total				74
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	35000	30	1050
Semi-Permanent House	nos.	15000	50	750
Sub Total				1800
<b>Total</b>				<b>1874</b>

### Project - 8

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	10	4100	41
None-Inhabited	sq.m	7	9650	68
Sub Total				109
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	30000	10	300
Semi-Permanent House	nos.	15000	5	75
Sub Total				375
<b>Total</b>				<b>484</b>

## Estimated Land Acquisition and Resettlement Cost

### Project - 9

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	12	6825	82
None-Inhabited	sq.m	9	7500	68
Sub Total				149
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	50000	15	750
Semi-Permanent House	nos.	15000	5	75
Sub Total				825
<b>Total</b>				<b>974</b>

### Project - 10

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	20	17000	340
None-Inhabited	sq.m	14	0	0
Sub Total				340
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	35000	100	3500
Semi-Permanent House	nos.	15000	130	1950
Sub Total				5450
<b>Total</b>				<b>5790</b>

## Estimated Land Acquisition and Resettlement Cost

### Project - 11-1.

Description	Unit	Unit Cost (US\$)	Quantity	Total (US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	15	7150	107
None-Inhabited	sq.m	10	7150	72
Sub Total				179
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	35000	20	700
Semi-Permanent House	nos.	15000	20	300
Sub Total				1000
<b>Total</b>				1179

### Project - 11-2.

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	12	16800	202
None-Inhabited	sq.m	9	19000	171
Sub Total				373
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	30000	40	1200
Semi-Permanent House	nos.	15000	50	750
Sub Total				1950
<b>Total</b>				2323

## Estimated Land Acquisition and Resettlement Cost

### Project - 12

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	10	15600	156
None-Inhabited	sq.m	7	6000	42
Sub Total				198
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	25000	40	1000
Semi-Permanent House	nos.	15000	53	795
Sub Total				1795
Total				1993

### Project - 13

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	10	5500	55
None-Inhabited	sq.m	7	0	0
Sub Total				55
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	25000	44	1100
Semi-Permanent House	nos.	15000	44	660
Sub Total				1760
Total				1815

## Estimated Land Acquisition and Resettlement Cost

### Project - 14

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	6	16000	96
None-Inhabited	sq.m	4	17600	70
Sub Total				166
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	15000	50	750
Semi-Permanent House	nos.	10000	46	460
Sub Total				1210
<b>Total</b>				1376

### Project - 15

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	8	25000	200
None-Inhabited	sq.m	6	15700	94
Sub Total				294
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	25000	40	1000
Semi-Permanent House	nos.	15000	61	915
Sub Total				1915
<b>Total</b>				2209

## Estimated Land Acquisition and Resettlement Cost

### Project - 16

Description	Unit	Unit Cost (US\$)	Quantity	Total (1000US\$)
<b>(1) Land Acquisition/Compensation</b>				
Inhabited Land	sq.m	7	8000	56
None-Inhabited	sq.m	5	9100	46
Sub Total				102
<b>(2) Resettlement /Compensation</b>				
Permanent House	nos.	20000	40	800
Semi-Permanent House	nos.	10000	23	230
Sub Total				1030
<b>Total</b>				1132

## **APPENDIX 13**





### Appendix 13.1 Cash Flow Table by Project

#### Project-6-1

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			17,318,600		-17,318,600
1998			17,318,600		-17,318,600
1999			17,318,600		-17,318,600
2000	-140,893	2,909,976		88,325	2,680,758
2001	-281,787	5,819,952		88,325	5,449,840
2002	-422,680	8,729,928		88,325	8,218,923
2003	-563,574	11,639,904		88,325	10,988,005
2004	-704,467	14,549,880		88,325	13,757,088
2005	-845,361	17,459,856		88,325	16,526,170
2006	-986,254	20,369,832		88,325	19,295,253
2007	-1,127,148	23,279,808		88,325	22,064,336
2008	-1,268,041	26,189,784		88,325	24,833,418
2009	-1,408,935	29,099,760		88,325	27,602,501
2010	-1,549,828	32,009,736		88,325	30,371,583
				IRR=	16.64%
				B/C=	1.37
				NPV=	15,319,891

#### Project-6-2

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			33,942,161		-33,942,161
1998			33,942,161		-33,942,161
1999			33,942,161		-33,942,161
2000	1,272,299	2,609,088		173,105	3,708,282
2001	2,544,598	5,218,177		173,105	7,589,670
2002	3,816,897	7,827,265		173,105	11,471,057
2003	5,089,196	10,436,354		173,105	15,352,445
2004	6,361,495	13,045,442		173,105	19,233,832
2005	7,633,794	15,654,530		173,105	23,115,220
2006	8,906,093	18,263,619		173,105	26,996,607
2007	10,178,392	20,872,707		173,105	30,877,994
2008	11,450,691	23,481,796		173,105	34,759,382
2009	12,722,990	26,090,884		173,105	38,640,769
2010	13,995,289	28,699,973		173,105	42,522,157
				IRR=	13.64%
				B/C=	1.12
				NPV=	811,000

**Project-7**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			32,727,482		-32,727,482
1998	2,115,117	2,490,224		55,637	4,549,705
1999	4,230,234	4,980,449		55,637	9,155,047
2000	6,345,352	7,470,673		55,637	13,760,388
2001	8,460,469	9,960,898		55,637	18,365,730
2002	10,575,586	12,451,122		55,637	22,971,072
2003	12,690,703	14,941,347		55,637	27,576,413
2004	14,805,821	17,431,571		55,637	32,181,755
2005	16,920,938	19,921,795		55,637	36,787,096
2006	19,036,055	22,412,020		55,637	41,392,438
2007	21,151,172	24,902,244		55,637	45,997,780
2008	23,266,290	27,392,469		55,637	50,603,121
2009	25,381,407	29,882,693		55,637	55,208,463
2010	27,496,524	32,372,917		55,637	59,813,805
				IRR=	43.92%
				B/C=	4.89
				NPV=	114,894,616

**Project-8**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			13,310,651		-13,310,651
1998			13,310,651		-13,310,651
1999			13,310,651		-13,310,651
2000	3,040,107	2,707,923		67,884	5,680,146
2001	6,080,214	5,415,846		67,884	11,428,176
2002	9,120,321	8,123,769		67,884	17,176,206
2003	12,160,429	10,831,692		67,884	22,924,237
2004	15,200,536	13,539,615		67,884	28,672,267
2005	18,240,643	16,247,538		67,884	34,420,297
2006	21,280,750	18,955,462		67,884	40,168,327
2007	24,320,857	21,663,385		67,884	45,916,357
2008	27,360,964	24,371,308		67,884	51,664,388
2009	30,401,071	27,079,231		67,884	57,412,418
2010	33,441,179	29,787,154		67,884	63,160,448
				IRR=	34.48%
				B/C=	3.69
				NPV=	86,664,131

**Project-9**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			14,343,374		-14,343,374
1998			14,343,374		-14,343,374
1999			14,343,374		-14,343,374
2000	6,284,738	3,417,078		73,151	9,628,665
2001	12,569,476	6,834,157		73,151	19,330,481
2002	18,854,213	10,251,235		73,151	29,032,297
2003	25,138,951	13,668,314		73,151	38,734,114
2004	31,423,689	17,085,392		73,151	48,435,930
2005	37,708,427	20,502,471		73,151	58,137,746
2006	43,993,164	23,919,549		73,151	67,839,562
2007	50,277,902	27,336,628		73,151	77,541,378
2008	56,562,640	30,753,706		73,151	87,243,195
2009	62,847,378	34,170,785		73,151	96,945,011
2010	69,132,115	37,587,863		73,151	106,646,827
				IRR=	44.57%
				B/C=	5.77
				NPV=	165,961,305

**Project-10**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			33,383,179		-33,383,179
1998			33,383,179		-33,383,179
1999			33,383,179		-33,383,179
2000	2,993,537	2,903,013		170,254	5,726,296
2001	5,987,073	5,806,026		170,254	11,622,845
2002	8,980,610	8,709,039		170,254	17,519,395
2003	11,974,147	11,612,052		170,254	23,415,945
2004	14,967,684	14,515,066		170,254	29,312,495
2005	17,961,220	17,418,079		170,254	35,209,045
2006	20,954,757	20,321,092		170,254	41,105,594
2007	23,948,294	23,224,105		170,254	47,002,144
2008	26,941,830	26,127,118		170,254	52,898,694
2009	29,935,367	29,030,131		170,254	58,795,244
2010	32,928,904	31,933,144		170,254	64,691,794
				IRR=	18.21%
				B/C=	1.51
				NPV=	41,093,377

**Project-11a**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			15,290,037		-15,290,037
1998			15,290,037		-15,290,037
1999			15,290,037		-15,290,037
2000	1,312,276	2,533,585		77,979	3,767,881
2001	2,624,551	5,067,170		77,979	7,613,742
2002	3,936,827	7,600,754		77,979	11,459,602
2003	5,249,103	10,134,339		77,979	15,305,463
2004	6,561,379	12,667,924		77,979	19,151,323
2005	7,873,654	15,201,509		77,979	22,997,184
2006	9,185,930	17,735,094		77,979	26,843,044
2007	10,498,206	20,268,679		77,979	30,688,905
2008	11,810,481	22,802,263		77,979	34,534,765
2009	13,122,757	25,335,848		77,979	38,380,626
2010	14,435,033	27,869,433		77,979	42,226,487
				IRR=	24.13%
				B/C=	2.15
				NPV=	42,513,335

**Project-11b**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			21,908,480		-21,908,480
1998			21,908,480		-21,908,480
1999			21,908,480		-21,908,480
2000	1,434,913	3,035,770		111,733	4,358,950
2001	2,869,827	6,071,539		111,733	8,829,633
2002	4,304,740	9,107,309		111,733	13,300,316
2003	5,739,653	12,143,079		111,733	17,770,999
2004	7,174,567	15,178,848		111,733	22,241,682
2005	8,609,480	18,214,618		111,733	26,712,365
2006	10,044,393	21,250,388		111,733	31,183,048
2007	11,479,307	24,286,157		111,733	35,653,731
2008	12,914,220	27,321,927		111,733	40,124,414
2009	14,349,133	30,357,697		111,733	44,595,097
2010	15,784,047	33,393,466		111,733	49,065,780
				IRR=	20.56%
				B/C=	1.74
				NPV=	39,401,246

**Project-12**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			17,396,464		-17,396,464
1998			17,396,464		-17,396,464
1999			17,396,464		-17,396,464
2000	2,050,788	2,730,277		88,722	4,692,343
2001	4,101,576	5,460,554		88,722	9,473,408
2002	6,152,363	8,190,831		88,722	14,254,473
2003	8,203,151	10,921,109		88,722	19,035,538
2004	10,253,939	13,651,386		88,722	23,816,603
2005	12,304,727	16,381,663		88,722	28,597,668
2006	14,355,515	19,111,940		88,722	33,378,733
2007	16,406,303	21,842,217		88,722	38,159,798
2008	18,457,090	24,572,494		88,722	42,940,863
2009	20,507,878	27,302,771		88,722	47,721,928
2010	22,558,666	30,033,049		88,722	52,502,993
				IRR=	25.71%
				B/C=	2.35
				NPV=	56,757,091

**Project-13**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			16,406,771		-16,406,771
1998			16,406,771		-16,406,771
1999	2,769,158	2,853,183		55,783	5,566,557
2000	5,538,315	5,706,365		55,783	11,188,898
2001	8,307,473	8,559,548		55,783	16,811,238
2002	11,076,630	11,412,731		55,783	22,433,578
2003	13,845,788	14,265,913		55,783	28,055,919
2004	16,614,946	17,119,096		55,783	33,678,259
2005	19,384,103	19,972,279		55,783	39,300,599
2006	22,153,261	22,825,461		55,783	44,922,939
2007	24,922,419	25,678,644		55,783	50,545,280
2008	27,691,576	28,531,827		55,783	56,167,620
2009	30,460,734	31,385,010		55,783	61,789,960
2010	33,229,891	34,238,192		55,783	67,412,301
				IRR=	43.48%
				B/C=	5.15
				NPV=	116,080,605

**Project-14**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			19,363,555		-19,363,555
1998			19,363,555		-19,363,555
1999	1,297,254	2,183,635		65,836	3,415,053
2000	2,594,508	4,367,271		65,836	6,895,943
2001	3,891,762	6,550,906		65,836	10,376,832
2002	5,189,016	8,734,542		65,836	13,857,722
2003	6,486,270	10,918,177		65,836	17,338,611
2004	7,783,524	13,101,813		65,836	20,819,501
2005	9,080,778	15,285,448		65,836	24,300,390
2006	10,378,032	17,469,083		65,836	27,781,279
2007	11,675,286	19,652,719		65,836	31,262,169
2008	12,972,540	21,836,354		65,836	34,743,058
2009	14,269,794	24,019,990		65,836	38,223,948
2010	15,567,048	26,203,625		65,836	41,704,837
IRR=					28.79%
B/C=					2.70
NPV=					56,154,643

**Project-15**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			46,933,570		-46,933,570
1998			46,933,570		-46,933,570
1999	3,742,521	2,627,779		159,574	6,210,726
2000	7,485,042	5,255,558		159,574	12,581,026
2001	11,227,562	7,883,338		159,574	18,951,326
2002	14,970,083	10,511,117		159,574	25,321,626
2003	18,712,604	13,138,896		159,574	31,691,926
2004	22,455,125	15,766,675		159,574	38,062,226
2005	26,197,646	18,394,454		159,574	44,432,526
2006	29,940,166	21,022,234		159,574	50,802,826
2007	33,682,687	23,650,013		159,574	57,173,126
2008	37,425,208	26,277,792		159,574	63,543,426
2009	41,167,729	28,905,571		159,574	69,913,726
2010	44,910,250	31,533,350		159,574	76,284,026
IRR=					23.46%
B/C=					2.04
NPV=					83,144,272

**Project-16**

	Benefit		Cost		Cash Flow
	Voc Saving	Time cost Saving	Initial Cost	Maintenance Cost	
1997			32,229,562		-32,229,562
1998			32,229,562		-32,229,562
1999	433,281	2,096,225		109,581	2,419,925
2000	866,561	4,192,451		109,581	4,949,431
2001	1,299,842	6,288,676		109,581	7,478,937
2002	1,733,123	8,384,901		109,581	10,008,443
2003	2,166,403	10,481,127		109,581	12,537,949
2004	2,599,684	12,577,352		109,581	15,067,455
2005	3,032,965	14,673,577		109,581	17,596,961
2006	3,466,245	16,769,802		109,581	20,126,467
2007	3,899,526	18,866,028		109,581	22,655,973
2008	4,332,807	20,962,253		109,581	25,185,479
2009	4,766,088	23,058,478		109,581	27,714,985
2010	5,199,368	25,154,704		109,581	30,244,491
				IRR=	14.43%
				B/C=	1.18
				NPV=	9,813,209











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