

Appendix 4.3.1 (1) O.D. Table of Inter-zonal Passenger Traffic (1984)

Unit: 1,000 persons

D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total
1																				
2	416.0																			
3	116.5	83.1																		
4	546.2	160.8	195.3																	
5	564.7	29.7	14.6	101.2																
6	1,650.7	189.5	97.5	963.5	730.8															
7	930.7	0.1	0.1	0.3	0.4	0.2														
8																				
9	644.7	2.3	0.7	0.5	2.5	0.2	473.6													
10	2,497.0	0.4	0.4	1.5	1.9	2.4	27.3	1,696.2												
11	265.0	0.2	0.1	0.2	0.2	4.4			0.2	0.1										
12	661.1	28.3	12.7	61.1	486.2	323.6	54.3	146.4	1.3	1.3										
13	2,983.2	12.7	0.7	25.0	49.7	114.8	72.9	247.5	208.9	0.4	890.2									
14	1,325.2					0.4			0.1		147.4	0.5	0.3							
15	2,543.6	0.4	0.1	0.4	0.2	0.8			0.3	0.8	0.2	0.1	1.0	0.3						
16																				
17	544.1	0.1		0.2	0.9	0.4	0.2		1.2	0.4	253.2	2.5	0.7	0.1	1.9					
18	1,319.2	0.1		0.2	0.1	0.2	0.1		0.2	0.2	53.0	0.2			0.1			512.8		
19	1,296.1	0.4	0.1	0.1		0.1	0.2		0.4		43.7	0.2	0.1		0.1			206.6	953.1	
Total	18,304.0	508.1	332.3	1,154.2	1,272.9	447.5	633.6		2,092.5	211.7	499.2	893.7	2.1	0.4	2.1			719.4	953.1	28,016.8

Appendix 4.3.1 (2) O.D. Table of Inter-zonal Passenger Traffic (1991)

Unit: 1,000 persons

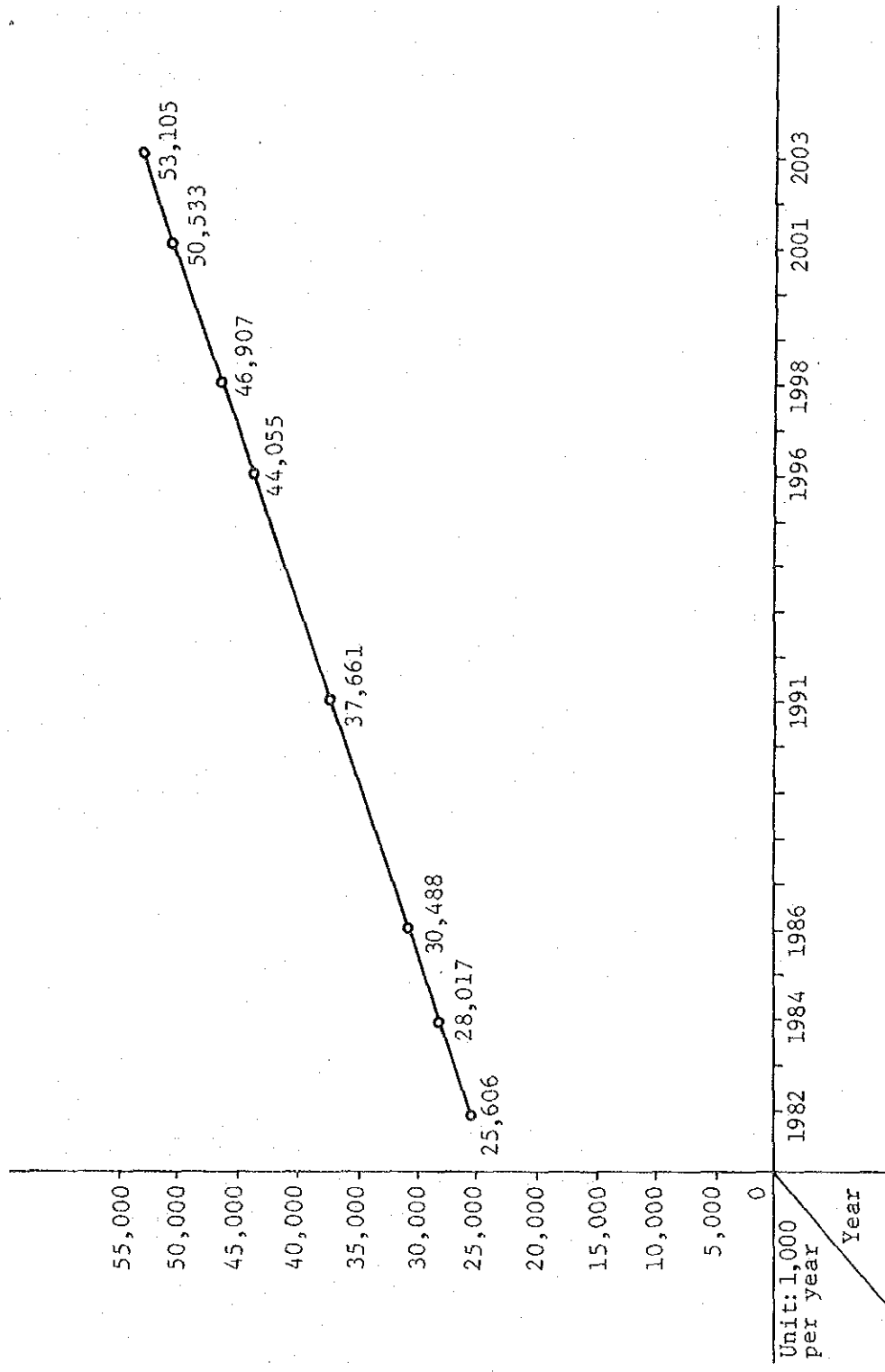
O	D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	
1	1																					
2	1	537.2																				
3	1	150.5	111.6																			
4	1	704.5	216.1	262.4																		
5	1	767.6	39.9	19.6	136.0																	
6	1	2131.8	254.6	131.0	1294.7	982.1																
7	1	1224.3	0.1	0.1	0.4	0.6	0.3															
8	1																					
9	1	847.9	3.1	0.9	0.7	3.4	2.9	636.4														
10	1	3285.2	0.6	0.6	2.1	2.5	3.2	36.6	2279.4													
11	1	326.8	0.3	0.1	0.3	0.3	5.9		0.3	0.1												
12	1	894.7	38.1	17.1	82.1	653.3	434.9	73.0	196.8	1.8	1.8											
13	1	4036.8	17.1	8.8	33.5	66.8	154.3	104.7	332.5	280.8	0.6	196.4										
14	1	1792.9					0.6		0.1		198.1	0.7	0.4									
15	1	3742.3	0.6	0.1	0.6	0.3	1.0		0.4	1.0	0.3	0.1	1.3	0.4								
16	1																					
17	1	715.6	0.1		0.3	1.2	0.6	0.3	1.6	0.6	340.2	3.4	0.9	0.1	2.5							
18	1	1735.0	0.1		0.3	0.1	0.3	0.1	0.3	0.3	71.2	0.3			0.1				689.1			
19	1	1704.6	0.6	0.1	0.1		0.1	0.3	0.6		58.7	0.3	0.1	0.1	0.1				277.7	1280.8		
Total		24597.7	682.9	440.8	1,551.1	1,710.6	604.1	851.4	2,812.0	284.6	670.9	1,201.2	2.7	0.5	2.7				966.8	1,280.8		37,660.8

Appendix 4.3.1 (3) O.D. Table of Inter-zonal Passenger Traffic (2003)

Unit: 1,000 persons

O	D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	
1	1																					
2	2	724.4																				
3	3	202.9	157.4																			
4	4	950.2	304.7	370.0																		
5	5	1,034.8	56.2	27.6	191.8																	
6	6	2,875.1	359.0	184.8	1,825.7	1,384.8																
7	7	1,654.2	0.2	0.2	0.6	0.8	0.4															
8	8																					
9	9	1,145.7	4.4	1.2	1.4	4.8	4.1	897.4														
10	10	4,438.4	0.8	0.8	2.9	3.5	4.6	51.6	3,214.2													
11	11	427.2	0.4	0.2	0.4	0.4	8.3			0.4	0.2											
12	12	1,215.2	53.7	24.1	115.7	921.2	613.3	102.9		277.5	2.5	2.5										
13	13	5,484.3	24.1	12.4	47.3	94.2	217.6	147.7		468.9	395.9	0.8	1,686.9									
14	14	2,436.6					0.8					279.4	1.0	0.6								
15	15	6,469.9	0.8	0.2	0.8	0.4	1.5			0.6	1.5	0.4	0.2	1.9	0.6							
16	16																					
17	17	968.5	0.2		0.4	1.7	0.8	0.4		2.3	0.8	479.7	4.8	1.2	0.2	3.5						
18	18	2,349.3	0.2		0.4	0.2	0.4	0.2		0.4	0.4	100.4	0.4			0.2			971.6			
19	19	2,307.6	0.8	0.2	0.2		0.2	0.4		0.8		82.7	0.4	0.2	0.2				391.6	1,806.0		
Total		34,684.3	962.9	621.7	2,187.6	2,412.0	852.0	1,200.6		3,965.3	401.3	945.9	1,693.7	3.9	0.8	3.9			1,363.2	1,806.0		53,105.1

Appendix 4.3.1 (4) Inter-zonal Passenger Traffic Volume (Figure)



Appendix 4.3.2 (1) O.D. Table of Urban Passenger Traffic (1984)

Unit: 1,000 persons

No.	No. Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1001		1004	1007	1011	1013	1015	1017	1020	1022	3001	3010	3012	3014	3015	3017	4552	4003	4004	4005	4007	4008	4008	4009
2	1004	152.8																						
3	1007	810.4	69.9																					
4	1011	376.2	54.1	205.9																				
5	1013	68.4	30.1	5.5	1.6																			
6	1015	235.2	11.6	157.4	14.3	0.7																		
7	1017	428.0	84.7	133.5	41.0	5.7	18.5																	
8	1020	62.0	38.2	39.2	28.4	1.9	17.6	118.6																
9	1022	63.9	24.4	57.4	51.3	1.7	10.6	120.4	222.0															
10	3001	58.5	2.0	88.5	16.3	2.1	7.7	112.6	0.0	4.4														
11	3009	99.2	2.0	8.0	3.5	0.6	1.7	3.1	0.0	1.1	20.2													
12	3010	90.2	0.8	1.5	0.7	0.3	0.5	0.6	2.0	2.1	74.5	31.4												
13	3012	12.5	0.4	0.5	0.2	0.3	0.3	0.2	1.4	1.5	30.5	24.3	8.6											
14	3014	83.9	4.1	3.8	1.6	0.2	1.0	0.7	0.6	0.6	149.8	63.5	3.8	2.0										
15	3015	441.3	15.7	26.4	24.3	0.6	6.3	263.2	0.6	0.6	420.4	259.5	40.8	17.2	10.2									
16	3017	20.7	0.2	0.1	0.1	0.0	0.0	0.8	0.2	0.3	33.3	23.3	2.8	1.1	5.0	78.0								
17	4002	0.0	0.5	0.0	0.4	0.1	0.1	0.4	1.0	1.2	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
18	4003	4.4	0.6	0.4	0.4	0.1	0.2	0.4	1.1	1.3	0.1	0.0	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
19	4004	2.7	0.5	2.7	0.0	0.1	0.1	0.3	0.9	1.1	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	4005	0.1	0.1	0.6	0.2	0.1	0.1	0.2	0.7	0.8	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	4007	0.4	0.0	0.1	0.3	0.1	0.1	0.3	0.9	1.0	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
22	4008	1.3	0.4	1.1	0.4	0.1	0.1	0.3	0.9	1.0	0.1	0.2	0.3	0.3	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
23	4009	3.0	1.7	2.4																				
Total		3017.1	392.0	735.0	185.0	14.7	64.9	623.1	232.3	17.0	729.2	402.8	57.7	22.0	16.2	78.6	0.5	876.9	38.6	19.4	0.9	31.0	29.7	7,583.6

Appendix 4.3.2 (2) O.D. Table of Urban Passenger Traffic for Case I (1991)

Unit: 1,000 persons

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
No. Code	1001	1004	1007	1011	1013	1015	1017	1020	1022	3001	3009	3010	3012	3014	3015	3017	4002	4003	4004	4005	4007	4008	4009	
1	1001																							
2	1004	184.4																						
3	1007	978.0	84.4																					
4	1011	454.0	65.3	248.5																				
5	1013	82.6	36.3	6.6	1.9																			
6	1015	283.8	74.3	189.9	17.2	0.8																		
7	1017	516.5	102.2	161.1	49.4	6.8	22.4																	
8	1020	71.8	44.2	45.4	32.9	2.2	20.4	137.3																
9	1022	74.0	28.2	66.5	59.4	2.0	12.3	139.4	246.7															
10	3001	70.6	2.4	106.8	19.6	2.6	9.8	135.9	0.0	5.0														
11	3009	119.7	2.4	9.7	4.2	0.7	2.1	3.8	0.0	1.2	24.4													
12	3010	108.9	0.9	1.9	0.8	0.4	0.7	0.7	2.4	2.4	89.9	37.9												
13	3012	15.1	0.5	0.6	0.2	0.3	0.3	0.2	1.6	1.7	36.8	29.3	10.4											
14	3014	101.3	4.9	4.6	1.9	0.2	1.2	0.9	0.6	0.7	180.7	76.7	4.5	2.4										
15	3015	532.6	18.9	31.8	29.3	0.7	7.6	317.6	0.7	0.7	507.4	313.1	49.2	20.8	12.3									
16	3017	25.0	0.2	0.1	0.1	0.0	0.1	0.9	0.3	0.3	40.2	28.2	3.4	1.3	6.1	94.1								
17	4002	0.0	0.6	0.0	0.4	0.2	0.2	0.4	1.1	1.3	0.1	0.2	0.4	0.3	0.2	0.2	0.1							
18	4003	5.4	0.7	0.4	0.5	0.2	0.2	0.5	1.3	1.5	0.1	0.2	0.4	0.4	0.2	0.2	0.1	31.2						
19	4004	3.2	0.6	3.3	0.0	0.2	0.2	0.4	1.1	1.3	0.1	0.2	0.4	0.3	0.1	0.1	0.1	69.8	1.7					
20	4005	0.1	0.1	0.7	0.3	0.1	0.1	0.3	0.8	0.9	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.5				
21	4007	0.5	0.0	0.1	0.4	0.1	0.2	0.4	1.0	1.2	0.1	0.2	0.3	0.3	0.1	0.1	0.1	128.4	6.2	1.3	0.0			
22	4008	1.5	1.5	1.3	0.5	0.2	0.2	0.4	1.0	1.1	0.1	0.2	0.4	0.3	0.6	0.1	0.1	401.1	26.2	8.8	0.8	11.6		
23	4009	5.7	1.9	2.8														405.1	11.9	12.3	0.2	24.5	34.0	
Total		3634.7	469.5	882.1	219.0	17.7	77.5	739.0	258.6	19.3	880.0	486.3	69.6	26.3	19.7	94.9	0.5	1035.6	46.0	22.9	1.0	36.1	34.0	3070.3

Appendix 4.3.2 (3) O.D. Table of Urban Passenger Traffic for Case II (1997)

Unit: 1,000 persons

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
No.	1001	1004	1007	1011	1013	1015	1017	1020	1022	3001	3009	3010	3012	3014	3015	3017	4002	4003	4004	4005	4007	4008	4009	
1	1001																							
2	382.1																							
3	2083.6	205.3																						
4	766.6	125.1	514.8																					
5	139.7	65.7	13.0	4.5																				
6	655.2	131.9	363.9	38.9	2.0																			
7	955.0	170.6	273.6	99.2	14.1	50.5																		
8	111.2	72.9	77.9	63.1	4.3	43.2	934.1																	
9	107.5	42.3	103.5	99.2	3.4	21.9	267.1	485.7																
10	162.0	5.2	209.0	34.9	4.6	16.0	218.1	0.0	7.2															
11	326.6	4.6	17.5	7.0	1.1	3.3	5.9	0.0	1.7	75.1														
12	235.4	1.6	3.1	1.3	0.6	1.0	1.1	3.4	3.3	226.0	109.0													
13	26.2	0.8	1.0	0.3	0.5	0.4	0.3	2.3	2.3	83.6	73.5	29.1												
14	167.5	7.3	6.7	2.7	0.3	1.7	1.2	0.9	0.9	366.2	167.0	10.6	6.7											
15	826.2	27.3	45.0	40.3	0.9	10.4	422.3	0.9	0.9	935.8	610.9	107.1	52.1	35.2										
16	37.6	0.3	0.1	0.2	0.1	0.1	1.2	0.4	0.4	69.8	51.1	6.3	2.8	14.4	251.9									
17	0.0	0.9	0.0	0.6	0.2	0.2	0.6	1.5	1.8	0.2	0.3	0.5	0.5	0.2	0.2	0.1	175.4	5.3						
18	8.4	1.1	0.6	0.7	0.3	0.3	0.7	1.8	2.0	0.2	0.3	0.6	0.5	0.2	0.3	0.1	88.9							
19	5.7	1.0	5.2	0.0	0.2	0.2	0.6	1.5	1.7	0.1	0.3	0.5	0.5	0.2	0.2	0.1	175.4	5.3						
20	0.2	0.1	1.1	0.4	0.2	0.1	0.4	1.1	1.2	0.1	0.2	0.4	0.3	0.1	0.2	0.1	9.4	0.0	1.4					
21	0.8	0.0	0.1	0.6	0.2	0.2	0.6	1.5	1.6	0.2	0.3	0.5	0.5	0.2	0.2	0.1	305.7	17.7	3.8	0.0				
22	2.5	0.7	1.9	0.7	0.2	0.2	0.6	1.4	1.5	0.2	0.3	0.6	0.5	1.1	0.2	0.1	942.2	62.3	23.4	1.7	33.2			
23	5.7	1.9	2.8														405.1	11.9	12.3	0.2	24.5	34.0		
Total	7,005.7	866.6	1,640.8	394.6	33.2	149.7	1,254.8	502.4	26.5	1,757.5	1,013.2	156.2	64.4	51.6	253.2	0.6	1,926.7	97.2	40.9	1.9	57.7	34.0	17,329.4	

Appendix 4.3.2 (4) O.D. Table of Urban Passenger Traffic for Case I (2003)

Unit: 1,000 persons

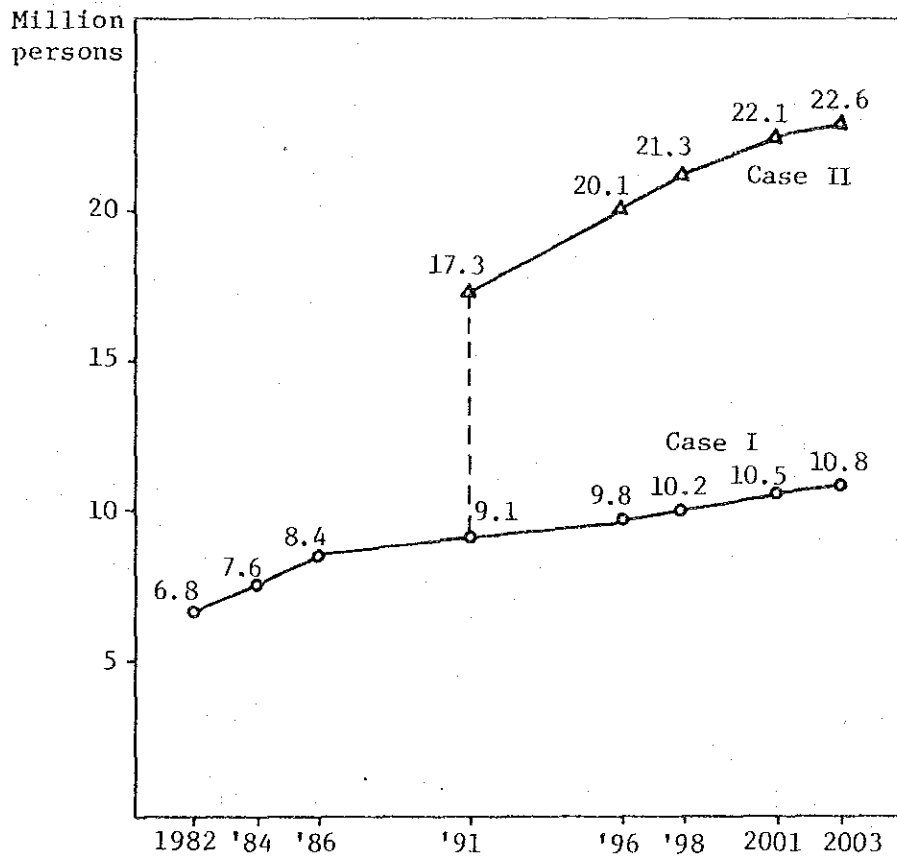
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
No. Code	1001	1004	1007	1011	1013	1015	1017	1020	1022	3001	3009	3010	3012	3014	3015	3017	4002	4003	4004	4005	4007	4008	4009
1	1001																						
2	1004	221.2																					
3	1007	1,173.2	101.9																				
4	1011	544.6	78.9	300.0																			
5	1013	99.1	43.8	7.9	2.3																		
6	1015	340.4	89.8	229.3	20.8	1.0																	
7	1017	617.6	123.4	194.6	59.7	8.2	27.0																
8	1020	80.9	50.1	51.4	37.3	2.5	23.1	155.6															
9	1022	83.3	32.0	75.4	67.3	2.3	14.0	158.0	262.2														
10	3001	84.7	2.9	128.9	23.7	3.1	11.1	164.1	0.0	5.1													
11	3009	143.5	2.9	11.7	5.1	0.8	2.5	4.6	0.0	1.4	29.4												
12	3010	130.6	1.1	2.2	1.0	0.4	0.8	0.9	2.7	2.7	108.6	45.8											
13	3012	18.1	0.6	0.8	0.3	0.4	0.4	0.3	1.9	2.0	44.4	35.4	12.6										
14	3014	121.5	5.9	5.6	2.3	0.2	1.5	1.0	0.7	0.8	218.3	92.6	5.5	2.9									
15	3015	638.9	22.8	38.4	35.4	0.8	9.2	383.5	0.8	0.8	612.7	378.2	59.4	25.1	14.8								
16	3017	30.0	0.3	0.1	0.2	0.1	0.1	1.1	0.3	0.3	48.5	34.0	4.1	1.6	7.3	113.7							
17	4002	0.0	0.7	0.0	0.5	0.2	0.2	0.5	1.3	1.5	0.1	0.2	0.5	0.4	0.2	0.2	0.1						
18	4003	6.4	0.8	0.5	0.6	0.2	0.2	0.6	1.5	1.7	0.1	0.2	0.5	0.5	0.2	0.2	0.1	37.7					
19	4004	3.8	0.7	4.0	0.0	0.2	0.2	0.5	1.2	1.4	0.1	0.2	0.4	0.4	0.2	0.2	0.1	84.3	2.1				
20	4005	0.2	0.1	0.8	0.3	0.1	0.1	0.3	0.9	1.0	0.1	0.1	0.3	0.3	0.1	0.1	0.0	0.0	0.6				
21	4007	0.5	0.0	0.1	0.5	0.2	0.2	0.5	1.2	1.4	0.1	0.2	0.4	0.4	0.2	0.2	0.1	155.0	7.5	1.5	0.0		
22	4008	1.8	0.6	1.5	0.6	1.2	0.2	0.5	1.2	1.3	0.1	0.2	0.5	0.4	0.7	0.2	0.1	484.4	31.6	10.6	1.0	14.0	
23	4009	6.5	2.2	3.2														458.2	13.5	13.9	0.2	27.7	38.4
Total	4,348.8	561.5	1,056.4	257.9	20.9	90.8	872.0	276.0	22.0	1,062.5	587.1	84.2	32.0	23.7	114.8	0.6	1,219.6	54.7	26.6	1.2	41.7	38.4	10,793.4

Appendix 4.3.2 (5) O.D. Table of Urban Passenger Traffic for Case II (2003)

Unit: 1,000 persons

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
No. Code	1001	1004	1007	1011	1013	1015	1017	1020	1022	3001	3009	3010	3012	3014	3015	3017	4002	4003	4004	4005	4007	4008	4009	
1	1001																							
2	1004	509.5																						
3	1007	2,698.3	281.0																					
4	1011	989.3	165.8	691.0																				
5	1013	179.6	86.3	17.2	6.2																			
6	1015	816.1	172.7	482.2	53.0	2.7																		
7	1017	1,184.1	221.3	355.8	132.5	19.0	68.7																	
8	1020	132.4	88.2	95.3	78.5	5.4	54.6	432.5																
9	1022	126.9	50.7	124.7	120.6	4.1	26.9	332.2	569.4															
10	3001	223.6	7.1	283.5	46.5	6.0	21.1	284.9	0.0	6.7														
11	3009	422.6	6.3	23.3	9.2	1.5	4.4	7.7	0.0	2.1	113.8													
12	3010	305.4	2.2	4.1	1.7	0.7	1.3	1.4	4.1	3.9	328.7	163.9												
13	3012	34.4	1.0	1.3	0.4	0.6	0.6	0.4	2.7	2.7	118.0	106.0	45.8											
14	3014	217.6	9.4	8.6	3.4	0.4	2.1	1.5	1.0	1.0	504.1	233.4	15.8	10.5										
15	3015	1,065.4	35.0	57.5	51.3	1.2	13.2	533.8	1.0	1.0	1,269.1	838.5	149.8	75.2	52.9									
16	3017	48.0	0.4	0.2	0.2	0.1	0.1	1.5	0.4	0.4	93.1	68.7	8.9	4.0	20.6	371.9								
17	4002	0.0	1.1	0.0	0.8	0.3	0.3	0.7	1.8	2.1	0.2	0.3	0.7	0.6	0.3	0.3	0.1							
18	4003	10.8	1.4	0.8	0.9	0.3	0.4	0.8	2.1	2.4	0.2	0.4	0.8	0.7	0.3	0.3	0.2	24.3						
19	4004	7.4	1.3	6.8	0.0	0.3	0.3	0.7	1.8	2.0	0.2	0.4	0.7	0.6	0.3	0.3	0.1	255.1	8.1					
20	4005	11.2	0.2	1.5	0.6	0.2	0.2	0.5	1.3	1.5	0.1	0.2	0.5	0.4	0.2	0.2	0.1	0.0	0.0	2.2				
21	4007	1.0	0.0	0.2	0.8	0.3	0.3	0.7	1.8	1.9	0.2	0.3	0.7	0.6	0.3	0.3	0.1	435.8	26.3	6.1	0.0			
22	4008	125.0	0.9	2.5	0.9	0.3	0.3	0.7	1.7	1.7	0.2	0.4	0.7	0.6	1.4	0.3	0.1	1,166.1	89.5	34.3	2.3	49.9		
23	4009	6.5	2.2	3.2														458.2	13.5	13.9	0.2	27.7	38.4	
Total		9,115.1	1,134.5	2,159.7	507.7	43.4	194.8	1,600.0	589.1	31.4	2,427.9	1,412.5	224.4	93.2	76.3	573.6	0.7	2,339.5	137.4	56.5	2.5	77.6	38.4	22,636.2

Appendix 4.3.2 (6) Urban Passenger Traffic Volume (Figure)



Appendix 4.3.3 (1) O.D. Table of Inter-zonal Freight Traffic (1984)

Unit: 1,000 persons

O	D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total
1	180.0	108.5	95.5	92.1	166.8	202.8	46.8	223.9	69.3	1.2	250.1	0.5	9.4	21.2	216.3	336.6	2021.0				
2	73.8	0.1	0.4	0.1	0.0	0.1	0.0	0.0	0.0	0.8	32.2	0.1	0.0	0.5	4.1	6.4	119.1				
3	2.5	0.6	2.2	0.2	2.0	0.2	0.2	0.2	0.2	0.3	10.0	0.1	0.0	0.6	6.1	2.7	29.4				
4	73.5	2.7	0.8	0.1	1.4	0.1	0.2	0.4	44.1	1.9	0.5	2.0	18.2	62.1	210.6						
5	79.1	23.9	0.4	5.1	5.9	0.2	0.0	0.3	0.0	0.1	0.1	0.4	0.2	1.8	1.4	30.8	149.7				
6	116.5	4.2	1.3	0.8	5.4	0.1	0.0	0.0	0.0	7.8	204.4	9.7	0.0	33.9	17.2	48.3	450.0				
7	37.2	1.2	0.2	0.2	0.0	0.0	0.2	0.2	5.2	0.4	10.8	15.0	1.2	1.9	11.5	13.4	98.6				
8																					
9	3.3	0.3	0.1	0.1	0.1	0.2	0.7	1.8	2.6	0.4	1.2	2.2	0.0	6.9	4.1	28.5	52.5				
10	19.7	0.4	0.1	0.0	0.1	0.1	0.1	3.3	6.7	0.2	6.4	11.0	0.3	10.2	7.6	41.0	107.2				
11	64.8	0.7	0.1	0.0	1.7	0.4	0.0	0.7	0.4	0.0	5.7	0.1	0.2	0.3	17.4	45.5	138.0				
12	1.3	0.1	0.0	0.1	0.2	0.5	0.4	0.6	0.1	0.1	0.5	0.0	2.3	0.2	0.1	1.2	7.7				
13	1782.4	5.0	11.7	2.3	1.9	5.8	18.2	0.2	42.6	0.5	17.1	0.4	0.0	0.6	5.0	17.7	1911.9				
14	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.2	14.6	18.5	34.1				
15	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.9	0.0	0.1	0.8	0.0	0.0	0.0	0.3	1.6	4.3				
16																					
17	18.1	6.2	1.3	2.2	2.6	6.7	2.2	6.7	2.7	4.3	1.5	2.0	11.1	22.2	64.2	154.1					
18	129.9	6.2	0.4	0.9	1.6	0.4	0.9	7.2	1.4	23.6	0.8	10.2	16.8	80.9	230.3	511.7					
19	58.7	1.2	0.1	0.2	0.7	0.3	1.5	1.2	8.2	1.2	0.2	0.3	1.4	1.0	11.8	88.2					
Total	2,461.4	232.8	125.1	110.1	106.8	190.5	227.5	68.2	282.6	125.5	8.0	578.3	87.4	15.0	337.9	948.8	6,088.1				

Appendix 4.3.3 (2) O.D. Table of Inter-zonal Freight Traffic (1991)

Unit: 1,000 persons

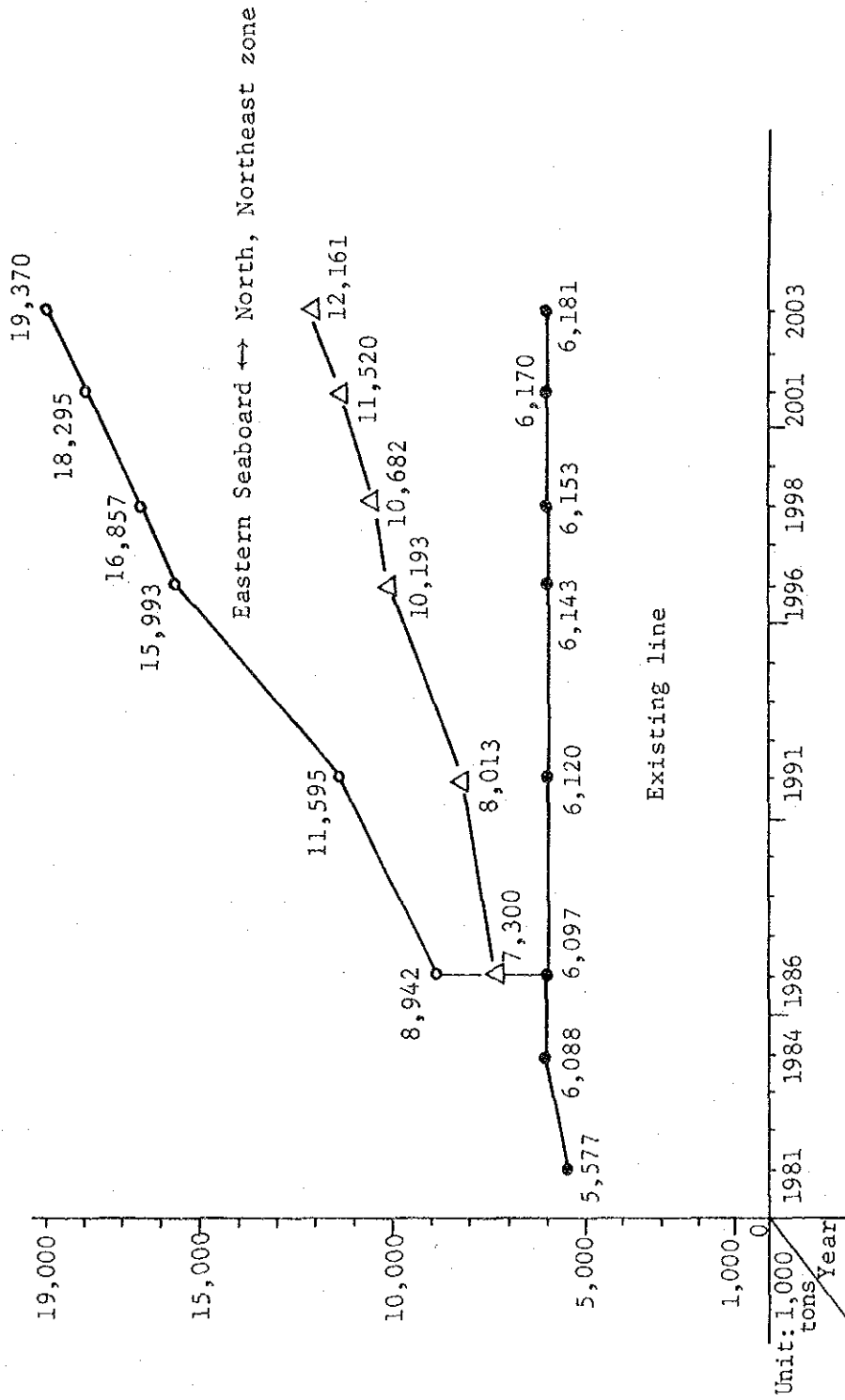
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	
0																					
1	181.0	109.1	96.0	92.6	167.8	203.9			47.1	225.1	69.6	1.1	251.5	0.5	9.5	1312.0	21.4	217.5	338.3	3344.0	
2	74.2		0.0	0.4	0.0	0.0	0.0		0.0	0.0	0.5	0.9	32.3	0.0	0.0	249.8	0.6	4.1	6.5	369.3	
3	2.5	0.6		2.0	0.1	2.0	0.1		0.1	0.5	1.1	0.3	10.0	0.1	0.0	198.2	0.6	6.1	2.8	227.1	
4	73.9	2.8	0.8		0.1	1.5	0.1		0.1	0.5	2.3	0.4	44.3	1.9	0.5	162.9	2.0	18.3	62.4	374.8	
5	79.5	24.0	0.4	5.2		6.0	0.1		0.0	0.3	0.0	0.1	0.1	0.4	0.1	276.9	1.8	1.4	30.9	427.2	
6	117.1	4.3	1.3	0.8	5.5		0.0		0.0	0.1	7.9	0.4	207.0	9.8	0.0	271.5	34.1	17.3	48.6	725.7	
7	37.4	1.1	0.3	0.1	0.0	0.0			0.1	0.1	5.2	0.4	10.9	15.1	1.1	353.0	1.9	11.6	13.5	451.8	
8																					
9	3.4	0.3	0.1	0.0	0.1	0.1	0.8			1.9	2.7	0.3	1.1	2.3	0.0	298.6	7.0	4.2	28.6	351.5	
10	19.8	0.4	0.0	0.0	0.0	0.1	0.0		3.4		6.6	0.1	6.5	11.1	0.3	361.1	10.2	7.6	41.2	468.4	
11	65.1	0.8	0.1	0.0	1.8	0.5	0.0		0.8	0.5	0.0	0.0	5.6	0.0	0.1	0.0	0.3	17.6	45.9	139.1	
12	1.3	0.0	0.0	0.1	0.1	0.6	0.4		0.6	0.0	0.0	0.0	0.5	0.0	2.3	179.2	0.1	0.1	1.1	186.4	
13	1792.0	5.1	11.8	2.4	1.9	5.9	18.3		0.1	42.7	0.5	0.5	17.2	0.0	0.4	363.8	0.6	5.0	17.8	2286.0	
14	0.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.1	0.1	0.0	0.3	0.0	0.0	0.0	0.1	14.8	18.7	34.2	
15	0.5	0.0	0.0	0.1	0.0	0.0	0.0		0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.3	1.7	4.4	
16	558.0	81.9	65.0	53.4	90.8	89.0	115.7		97.9	118.4	0.0	58.7	119.2	0.0	0.0	0.0	0.0	0.0	0.0	1448.0	
17	18.2	6.2	1.3	2.2	2.7	6.7	2.2		6.7	2.7	4.3	1.5	2.0	11.1	0.1	0.0	0.0	22.4	64.5	154.8	
18	130.5	6.2	0.4	0.9	1.6	0.5	0.9		7.3	1.4	23.8	0.9	10.3	16.9	0.1	0.0	81.3	0.0	231.5	514.5	
19	59.0	1.1	0.1	0.1	0.8	0.3	1.5		1.1	8.3	1.1	0.1	0.3	1.4	0.2	0.0	1.0	11.8	88.2		
Total	3032.5	315.8	190.7	163.7	198.1	281.0	344.0		166.2	402.6	125.7	66.6	701.9	87.8	14.7	4027.0	183.0	360.1	954.0	11595.4	

Appendix 4.3.3 (3) O.D. Table of Inter-zonal Freight Traffic (2003)

Unit: 1,000 persons

O.D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total
1	132.8	110.2	97.0	93.5	169.3	205.9	47.5	227.4	70.3	1.2	253.9	0.5	9.6	2633.0	21.6	219.6	341.7	4685.0		
2	75.0	0.1	0.4	0.1	0.0	0.1	0.0	0.0	0.0	0.5	0.8	32.7	0.1	0.0	388.3	0.6	4.1	6.5	509.3	
3	2.6	0.6	2.1	0.2	2.1	0.1	0.2	0.5	1.2	0.3	10.2	0.1	0.0	308.1	0.6	6.2	2.7	337.8		
4	74.6	2.7	0.7	0.1	1.5	0.1	0.2	0.5	2.3	0.4	44.7	1.9	0.5	253.3	2.0	18.4	63.0	466.9		
5	80.3	24.3	0.4	5.2	6.0	0.2	0.0	0.3	0.0	0.1	0.1	0.4	0.2	430.6	1.8	1.4	31.2	582.5		
6	118.4	4.3	1.3	0.8	5.5	0.0	0.0	0.1	7.9	0.4	207.4	9.8	0.0	422.1	34.4	17.4	49.0	878.8		
7	37.8	1.2	0.2	0.1	0.0	0.0	0.2	0.2	5.3	0.4	11.0	15.3	1.1	548.7	1.9	11.7	13.6	648.7		
8																				
9	3.4	0.3	0.1	0.1	0.1	0.1	0.7	1.9	2.7	0.3	1.2	2.3	0.0	464.3	7.1	4.2	28.9	517.7		
10	20.0	0.4	0.1	0.0	0.1	0.1	0.1	3.4	6.7	0.2	6.5	11.1	0.3	561.4	10.3	7.7	41.6	670.0		
11	65.7	0.8	0.1	0.0	1.7	0.5	0.0	0.8	0.5	0.0	5.7	0.1	0.2	0.0	0.3	17.6	46.3	140.3		
12	1.3	0.1	0.0	0.1	0.2	0.6	0.3	0.7	0.1	0.1	0.5	0.0	2.3	278.6	0.2	0.1	1.2	286.4		
13	1809.7	5.1	11.9	2.4	1.9	5.9	18.5	0.2	43.2	0.6	0.5	17.4	0.4	565.6	0.7	5.0	18.0	2507.0		
14	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.3	0.0	0.0	0.0	0.2	14.7	18.8	34.5	
15	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.9	0.0	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.4	1.6	4.4	
16	3375.0	272.3	216.1	177.6	301.9	296.0	384.8	325.6	393.7	0.0	195.4	396.6	0.0	0.0	0.0	0.0	0.0	0.0	6335.0	
17	18.4	6.3	1.3	2.2	2.7	6.8	2.2	6.8	2.7	4.3	1.6	2.0	11.3	0.1	0.0	22.6	65.2	156.5		
18	131.9	6.3	0.4	0.9	1.7	0.5	0.9	7.3	1.4	24.0	0.8	10.4	17.0	0.2	0.0	82.2	233.8	519.7		
19	59.6	1.2	0.1	0.2	0.7	0.3	1.5	1.2	8.3	1.2	0.2	0.3	1.4	0.2	0.0	1.1	12.0	89.5		
Total	5874.3	508.8	343.0	289.2	410.4	489.7	615.4	395.0	680.9	127.4	203.4	983.5	88.7	15.1	5854.0	165.0	363.1	963.1	9370.0	

Appendix 4.3.3 (4) Inter-zonal Freight Traffic Volume



Appendix 5.1.1 Present Conditions of Intermediate-distance
Commuter Train

(1) At present, operating conditions of commuter train arriving at Bangkok station during peak time zone (7:00 to 8:00) are as presented in the table below (surveyed October 7, 1983).

	Train No.	Arrival time at Bangkok	Number of cars per train consist (cars)	Number of alighting passengers (persons)	Loading factor (%)	Remarks
Northern line	222	7:15	8	908	149	(Ban Phachi)
	168	7:25	6	730	160	(Don Muang)
	166	7:45	6	862	189	(Ayutthaya)
	224	8:00	6	625	137	(Lop Buri)
	Subtotal		26	3,125	158	
Eastern line	202	7:30	8	549	90	(Chachoeng Sao)
	182	7:55	4	602	198	(Prachin Buri)
	Subtotal		12	1,151	126	
Total			* 38	4,276	148	* Average 6.2 cars per train

(2) Rate of concentration in the morning rush hour (7:00 to 8:00)
..... 28%

Total number of passengers alighting at Bangkok is 23,971 persons per day, with ridership on express and rapid trains to be 8,580 persons per day.

Thus, the number of passengers on ordinary and commuter trains are 15,391 persons per day, and rate of concentration in peak time (7:00 to 8:00) is

$$\frac{4,276}{15,391} = 0.28.$$

Appendix 5.3.1 Formula to Calculate Track Capacity of
Double-track Section

Track capacity with mixed operation of different kinds of trains could be calculated by the following formula.

$$N = \frac{1,440 \times f}{h V' + (r + u + 1) V} \text{ (per day)}$$

Whereas

N: Track capacity in each direction

h: Headway between high-speed trains operated in succession

r: Minimum headway required between early arriving low-speed train and later arriving high-speed train (3 - 4 min. as standard)

u: Minimum headway required between early departing high-speed train and later departing low-speed train (2.5 min. in general)

V: Ratio of high-speed trains

$$= \frac{\text{the number of high-speed trains (established)}}{\text{the number of trains in each direction (established)}}$$

V': Ratio of low-speed trains

$$= \frac{\text{the number of low-speed trains (established)}}{\text{the number of trains in each direction (established)}}$$

f: Track utilization ratio to be determined in accordance with nature of each line section (0.6 in general)

[Example of calculation]

between Chit-La-DA and Bang Sue (2003 year Case I)

$$V' = \frac{45}{153} = 0.294 \qquad V = \frac{108}{158} = 0.706$$

$$N = \frac{1,440 \times 0.6}{5 \times 0.294 + (4 + 2.5 + 1) \times 0.706}$$

$$= \frac{864}{6.765} = 128 \text{ (per day)}$$

Appendix 5.3.2 Track Capacity of Freight Line

Track capacity of exclusive freight line in the section between Chit-La-Da and Bang Sue, when newly provided, is as follows:

(1) Facility condition is as follows:

- Stations with a passing facility (for train meeting) will be provided at the following location.

Eastern Line	New St. (Rama VI Rd.)	} (Station spacing of approximately 3 km)
Northern Line	Sam Sen St.		
Northern Line	Bang Sue yard		} (Station spacing of approximately 3 km)

- Average operating time of freight trains between above stations is estimated to be about 6 minutes.

Speed limit at turnout : 30 km/h
 Average deceleration : 0.5 km/h/s
 Maximum speed of freight train: 50 km/h

- Route control of trains will be done by CTC.

(2) Thus, track capacity (N) of freight line could be calculated by the following formula:

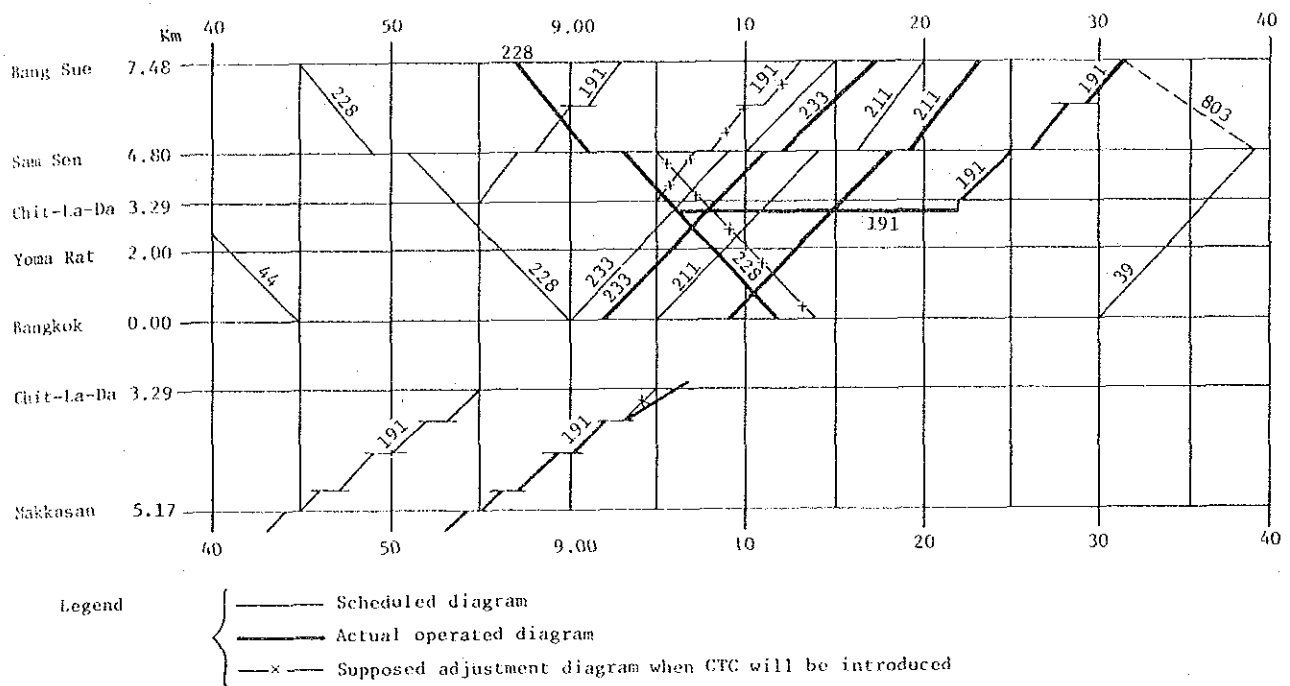
$$N = \frac{1,440 \times f}{t + c} \text{ (per day)}$$

Whereas,

- t: Average operating time between stations (6 min.)
- c: Time required for block handling (automatic block system 1.5 min.)
- f: Track utilization ratio (0.6)

$$N = \frac{1,440 \times 0.6}{6 + 1.5} = \frac{864}{7.5} = 115 \text{ (per day)}$$

Appendix 5.3.3 Example of Obstruction by Rail-rail Grade-crossing
at Chit-La-Da (October 5, 1983)



Explanation (Concerning commuter train No. 191)

- (1) Primary cause is 10 minute delay of Train No. 191 due to speed restrict and awaiting for meeting train No. 203 in the Eastern line.
- (2) Arrived at Chit-La-Da passing track 11 minute late due to 12 minute delay of train No. 228
- (3) Waiting for passing of long distance train No. 233 and No. 211 (waiting for track clearance)
- (4) After waiting for train No. 211 enters into home signal at Bang Sue, departing from Chit-La-Da 27 minute late (16 minute additional delay)
- (5) When CTC is introduced and relative location of trains can be identified in a dispatching room, operation adjustment will be done as indicated by the diagram lines: --x--x--.

Thus train No. 191 is expected to operate with 10 minute delay instead of train No. 228 is 2 minute additional delay.

Appendix 7.1.1 Evaluation of Locomotive Hauling Capacity on Gradient

Type		ALSTHOM	GE	KRUPP
Service weight (kg)		82,500	75,000	55,000
Maximum tractive effort at wheel rim kg (@ adhesion weight)		24,800 (@ 30%)	22,500 (@ 30%)	18,150 (@ 33%)
Minimum continuous tractive effort kg (@ km/h)		20,600 (@ 21 km/h)	17,963 (@ 13 km/h)	15,250 (@ 14.5 km/h)
Maximum output (HP) & (@ RPM)		$\frac{2,400 \text{ HP}}{\text{@ } 1,500 \text{ rpm}}$	$\frac{2 \times 660 \text{ HP}}{\text{@ } 2,000 \text{ rpm}}$	$\frac{1,500 \text{ HP}}{\text{@ } 1,400 \text{ rpm}}$
Present hauling capacity	10°/∞	1,280 tons	1,200 tons	1,200 tons
(1) Capability of starting on gradient (with present hauling capacity)				
Table of Rolling Stock Features (SRT)($\mu=0.30-0.33$)	10°/∞	○	○	○
	12°/∞	○	○	×
JNR calculation method ($\mu=0.285$)	10°/∞	○	○	×
	12°/∞	○	△	×
(2) Acceleration performance when starting on upward gradient (Compared with 0.15 km/h/s)				
Table of Rolling Stock Features (SRT)($\mu=0.30-0.33$)	10°/∞	○	○	×
	12°/∞	△	×	×
JNR calculation method ($\mu=0.285$)	10°/∞	○	△	×
	12°/∞	△	×	×
(3) Deceleration performance When using brakes on downward gradient (Compared with 0.3 km/h/s)				
	10°/∞	○	○	○
	12°/∞	△	△	△

○: Fully capable △: Slightly difficult ×: Incapable

Appendix 9.1.1 Land Use Composition

(Unit: 10³m²)

	Left-Hand Side of Railway from Bangkok						Right-Hand Side of Railway from Bangkok					
	Residential Area	Commercial Area	Industrial Area	Infrastructural Area	Other Area		Residential Area	Commercial Area	Industrial Area	Infrastructural Area	Other Area	
1. Northern Line												
Rama I - Phetburi	6.21(13.5)	22.81(49.6)	0.92 (0.0)	5.52(12.0)	10.54(22.9)		29.96(65.2)	7.28(15.8)	0.00(0.0)	3.28 (7.1)	5.48(11.9)	
Phetburi - Sriyayuchaya	7.21(20.3)	0.00 (0.0)	0.00 (0.0)	4.27(12.1)	23.97(67.6)		8.16(23.0)	5.81(16.4)	0.00(0.0)	9.19(25.9)	12.28(34.7)	
Sriyayuthaya - Ratvithi	38.24(86.1)	0.00 (0.0)	0.00 (0.0)	5.07(11.4)	1.09 (2.5)		0.00 (0.0)	0.00 (0.0)	0.00(0.0)	5.87(13.4)	38.53(87.6)	
Ratvithi - Nakornchaisri	22.80(65.9)	0.84 (2.4)	0.00 (0.0)	5.28(15.3)	5.66(16.4)		6.27(18.1)	2.26 (6.5)	0.00(0.0)	5.99(17.3)	20.08(58.1)	
Nakornchaisri - Setsiri	19.97(61.3)	0.73 (2.2)	0.67 (2.1)	2.97 (9.1)	8.24(25.3)		21.24(65.2)	1.12 (3.4)	0.00(0.0)	10.05(30.9)	0.17 (0.5)	
Setsiri - Ramong	9.17(27.1)	0.00 (0.0)	0.00 (0.0)	1.73 (5.1)	22.90(68.2)		15.92(47.1)	0.96 (2.8)	0.00(0.0)	4.47(13.2)	12.45(36.9)	
Ramong - Pradipet	2.75 (8.6)	0.00 (0.0)	0.00 (0.0)	2.94 (9.2)	26.31(82.2)		22.95(71.7)	1.31 (4.1)	0.00(0.0)	2.91 (9.1)	4.83(15.1)	
Pradipet - Bang Sue st.	7.57(16.4)	2.72 (5.9)	1.76 (3.8)	4.29 (9.3)	29.86(84.6)		26.57(81.5)	2.83 (6.1)	0.00(0.0)	14.91(42.3)	1.89 (4.1)	
2. Western Line												
Rama VI - Phayathai	8.12(15.7)	0.40 (0.8)	0.00 (0.0)	9.92(19.2)	33.17(64.3)		33.51(64.9)	10.21(19.8)	0.00(0.0)	7.20(14.0)	0.67 (1.3)	
Phayathai - Rajaprarop	17.43(37.1)	14.51(31.0)	0.16 (0.3)	8.71(18.5)	6.17(13.1)		22.45(47.7)	16.07(34.2)	0.00(0.0)	2.78 (5.9)	5.72(12.2)	
Rajaprarop - Makkasan st.	21.06(69.3)	0.41 (1.3)	0.00 (0.0)	2.00 (6.6)	6.92(22.8)		8.40(27.6)	19.03(62.6)	0.00(0.0)	1.69 (5.6)	1.28 (4.2)	
3. Mae Nam Line												
Makkasan st - Sukhumvit	20.48(51.2)	10.21(25.5)	0.00 (0.0)	2.55 (6.4)	6.75(16.9)		15.52(38.8)	4.93(12.3)	1.11 (2.8)	5.83(14.6)	12.61(31.5)	
Sukhumvit - Rama IV	33.54(29.5)	10.25 (9.0)	55.21(48.6)	7.19 (6.3)	7.41 (6.6)		55.46(48.7)	6.65 (5.9)	0.65 (0.6)	9.97 (8.8)	40.87(36.0)	
Rama IV - Mae Nam st.	40.32(78.1)	5.00 (9.7)	2.52 (4.9)	3.12 (6.1)	0.64 (1.2)		10.47(20.3)	8.62(16.7)	1.53 (3.0)	22.16(42.9)	8.82(17.1)	

Appendix 10.3.1 Construction Cost of Each Flyover (1)

Northern Line

(Unit: million Baht)

Flyover	Item	Economic Cost			Tax	Total
		F/C	D/C	Total		
No. 1	Construction	38.85	43.94	82.79	10.26	93.05
	Land Acquisition	-	17.00	17.00	-	17.00
	Compensation	-	25.50	25.50	-	25.50
	Sub-Total	38.85	86.44	125.29	10.26	135.55
	Contingencies	6.57	13.71	20.28	1.72	22.00
	Engineering	4.97	4.97	9.94	1.23	11.17
	TOTAL	50.39	105.12	155.51	13.21	168.72
No. 2	Construction	58.18	64.72	122.90	15.22	138.12
	Land Acquisition	-	30.00	30.00	-	30.00
	Compensation	-	2.77	2.77	-	2.77
	Sub-Total	58.18	97.49	155.67	15.22	170.89
	Contingencies	9.83	15.73	25.56	2.56	28.12
	Engineering	7.38	7.38	14.76	1.82	16.58
	TOTAL	75.39	120.60	195.99	19.60	215.59
No. 3	Construction	42.08	47.15	89.23	11.04	100.27
	Land Acquisition	-	34.50	34.50	-	34.50
	Compensation	-	9.90	9.90	-	9.90
	Sub-Total	42.08	91.55	133.63	11.04	144.67
	Contingencies	7.11	14.54	21.65	1.85	23.50
	Engineering	5.35	5.35	10.70	1.32	12.02
	TOTAL	54.54	111.44	165.98	14.21	180.19

Construction Cost of Each Flyover (2)

Northern Line

(Unit: million Baht)

Flyover	Item	Economic Cost			Tax	Total
		F/C	D/C	Total		
No. 4	Construction	10.97	12.39	23.36	2.90	26.26
	Land Acquisition	-	-	-	-	-
	Compensation	-	-	-	-	-
	Sub-Total	10.97	12.39	23.36	2.90	26.26
	Contingencies	1.86	2.07	3.93	0.49	4.42
	Engineering	1.40	1.40	2.80	0.35	3.15
	TOTAL	14.23	15.86	30.09	3.74	33.83
No. 5/6	Construction	30.94	35.33	66.27	8.21	74.48
	Land Acquisition	-	-	-	-	-
	Compensation	-	-	-	-	-
	Sub-Total	30.94	35.33	66.27	8.21	74.48
	Contingencies	5.28	5.90	11.14	1.37	12.51
	Engineering	3.98	3.98	7.96	0.98	8.94
	TOTAL	40.16	45.21	85.37	10.56	95.93
No. 7	Construction	22.78	25.76	48.54	6.02	54.56
	Land Acquisition	-	6.00	6.00	-	6.00
	Compensation	-	15.00	15.00	-	15.00
	Sub-Total	22.78	46.76	69.54	6.02	75.56
	Contingencies	3.85	7.45	11.30	1.01	12.31
	Engineering	2.91	2.91	5.82	0.72	6.54
	TOTAL	29.54	57.12	86.66	7.75	94.41
GRAND TOTAL OF NORTHERN LINE		264.25	455.35	719.60	69.07	<u>788.67</u>

Construction Cost of Each Flyover (3)

Eastern Line

(Unit: million Baht)

Flyover	Item	Economic Cost			Tax	Total
		F/C	D/C	Total		
No. 8	Construction	36.93	40.09	77.02	9.70	86.72
	Land Acquisition	-	-	-	-	-
	Compensation	-	-	-	-	-
	Sub-Total	36.93	40.09	77.02	9.70	86.72
	Contingencies	6.23	6.71	12.94	1.63	14.57
	Engineering	4.63	4.63	9.26	1.14	10.40
	TOTAL	47.79	51.43	99.22	12.47	111.69
No. 9	Construction	52.62	58.77	111.39	13.80	125.19
	Land Acquisition	-	8.12	8.12	-	8.12
	Compensation	-	6.79	6.79	-	6.79
	Sub-Total	52.62	73.68	126.30	13.80	140.10
	Contingencies	8.90	12.05	20.95	2.32	23.27
	Engineering	6.68	6.68	13.36	1.65	15.01
	TOTAL	68.20	92.41	160.61	17.77	178.38
No. 10	Construction	43.82	49.12	92.94	11.51	104.45
	Land Acquisition	-	8.12	8.12	-	8.12
	Compensation	-	6.79	6.79	-	6.79
	Sub-Total	43.82	64.03	107.85	11.51	119.36
	Contingencies	7.41	10.44	17.85	1.93	19.78
	Engineering	5.58	5.58	11.16	1.38	12.54
	TOTAL	56.81	80.05	136.86	14.82	151.68
GRAND TOTAL OF NORTHERN LINE		172.80	223.89	396.69	45.06	<u>441.75</u>

Construction Cost of Each Flyover (4)

Mae Nam Line

(Unit: million Baht)

Flyover	Item	Economic Cost			Tax	Total
		F/C	D/C	Total		
No. 11	Construction	8.22	9.41	17.63	2.19	19.82
	Land Acquisition	-	-	-	-	-
	Compensation	-	-	-	-	-
	Sub-Total	8.22	9.41	17.63	2.19	19.82
	Contingencies	1.39	1.57	2.96	0.37	3.33
	Engineering	1.06	1.06	2.12	0.26	2.38
	TOTAL	10.67	12.04	22.71	2.82	25.53
No. 12 or 13	Construction	98.03	110.06	208.09	25.97	234.06
	Land Acquisition	-	45.19	45.19	-	45.19
	Compensation	-	31.63	31.63	-	31.63
	Sub-Total	98.03	186.88	284.91	25.97	310.88
	Contingencies	16.59	29.92	46.51	4.36	50.87
	Engineering	12.59	12.59	25.18	3.11	28.29
	TOTAL	217.21	229.39	356.60	33.44	390.04
No. 14	Construction	96.72	108.45	205.17	25.61	230.78
	Land Acquisition	-	0.56	0.56	-	0.56
	Compensation	-	0.39	0.39	-	0.39
	Sub-Total	96.72	109.40	206.12	25.61	231.73
	Contingencies	16.37	18.27	34.64	4.30	38.94
	Engineering	12.42	12.42	24.84	3.07	27.91
	TOTAL	125.51	140.09	265.60	32.98	298.58
GRAND TOTAL OF MAE NAM LINE		390.60	610.91	1,001.51	102.68	<u>1,104.19</u>

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF															-328.3
WITH	252.7				647.1				80.5	561.2			177.4		-2137.4
CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE	252.7				647.1				80.5	561.2			177.4		576.4 2713.8
WITHOUT	252.7				647.1				80.5	561.2			177.4		-1809.1
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	252.7				647.1				80.5	561.2			177.4		576.4 2385.4
MAINT/OPE COST DIFF	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
FACILITY MAINT COST DIFF	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
CIVIL WORK	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
WITH	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
WITHOUT	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
STATION FACILITY	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
WITHOUT	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
SIGNALS & TELECOM	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
WITH	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
WITHOUT	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
ROLLING STOCKS	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.0	30.0	30.0	30.0	30.0	40.4
WITH	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.0	30.0	30.0	30.0	30.0	40.4
WITHOUT	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
ROAD FLYOVER	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
WITH	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
WITHOUT															
OPERATING COST DIFF	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
PSHL COST DIFF	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
WITH	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
WITHOUT															
FUEL COST DIFF	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
WITH	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
WITHOUT	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.9	3.0	3.1	3.3	3.4
TOTAL BENEFIT DIFF	237.6	239.6	241.8	244.0	246.4	248.5	250.7	253.0	255.4	258.0	260.7	263.5	266.5	269.7	273.1
WITH	523.8	541.9	561.0	581.3	602.7	618.1	634.1	650.9	668.5	686.9	706.2	726.3	747.4	769.5	792.7
TIME SAVING BENEFIT BENE OF RAILWAY PSNGR	310.0	327.6	346.4	366.2	387.2	402.4	418.2	434.8	452.1	470.3	489.3	509.3	530.1	552.0	574.9
BENE OF ROAD VEHICLE MOTORCYCLE	310.0	327.6	346.4	366.2	387.2	402.4	418.2	434.8	452.1	470.3	489.3	509.3	530.1	552.0	574.9
SAHLOR	27.6	29.4	31.0	32.8	34.7	36.0	37.4	38.9	40.5	42.1	43.8	45.6	47.4	49.4	51.4
SEDAN	15.9	16.8	17.7	18.8	19.9	20.6	21.4	22.3	23.1	24.1	25.0	26.0	27.1	28.2	29.3
LIGHT BUS	172.7	182.5	193.0	204.1	215.8	224.4	233.4	242.8	252.6	262.9	273.7	285.1	296.9	309.3	322.3
BUS	11.4	12.1	12.7	13.5	14.2	14.8	15.4	16.0	16.6	17.3	18.0	18.7	19.4	20.2	21.1
TRUCK	43.8	46.3	49.0	51.8	54.7	56.8	58.9	61.1	63.4	65.9	68.4	71.0	73.8	76.7	79.8
FUEL SAVING BENEFIT VEHICLE AT CROSSING VEHICLE AT FLYOVER	38.4	40.6	42.9	45.3	47.9	49.7	51.7	53.7	55.9	58.1	60.5	62.9	65.5	68.2	71.0
ACCIDENT AVOIDANCE BENE	14.3	14.7	15.2	15.6	16.0	16.2	16.4	16.7	16.9	17.1	17.3	17.6	17.8	18.0	18.3
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4
WITHOUT	286.3	302.3	319.2	337.2	356.3	369.6	383.5	398.0	413.1	429.0	445.5	462.8	480.9	499.8	519.6
TIME SAVING BENEFIT BENE OF ROAD VEHICLE	273.9	289.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
FUEL SAVING BENEFIT VEHICLE AT CROSSING VEHICLE AT FLYOVER	273.9	289.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
ACCIDENT AVOIDANCE BENE	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.6	11.6	11.7	11.9
NET FLOW EIRR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
NET FLOW	232.0	234.1	236.2	238.5	240.9	243.0	245.1	247.5	249.9	252.4	255.2	258.0	261.0	264.2	595.9
EIRR	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249	16.249

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF															-171.1
WITH	252.7				647.1				80.5	561.2			177.4		-1980.2
CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & CORP ROLLING STOCKS -SALVAGE VALUE	252.7				647.1				80.5	561.2			177.4		576.4 2556.5
WITHOUT	252.7				647.1				80.5	561.2			177.4		-1809.1
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & CORP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	252.7				647.1				80.5	561.2			177.4		576.4 2385.4
MAINT/OP&E COST DIFF	5.5	5.6	5.7	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8
FACILITY MAINT COST DIFF	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
CIVIL WORK	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
WITH	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
WITHOUT	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
STATION FACILITY	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
WITHOUT	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
SIGNALS & TELECOM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
WITHOUT	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
ROLLING STOCKS	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	40.4
WITH	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	40.4
WITHOUT	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
ROAD FLYOVER	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
WITH	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
WITHOUT	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
OPERATING COST DIFF	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
PSNL COST DIFF															
WITH															
WITHOUT															
FUEL COST DIFF	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
WITH	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
WITHOUT															
TOTAL BENEFIT DIFF	183.0	183.2	183.5	183.7	184.0	184.1	184.3	184.4	184.5	184.7	184.8	184.9	185.1	185.2	185.4
WITH	469.2	485.5	502.7	521.0	540.3	553.7	567.7	582.4	597.6	613.6	630.3	647.7	666.0	685.0	705.0
TIME SAVING BENEFIT BENE OF RAILWAY PSNER	273.9	289.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
BENE OF ROAD VEHICLE	273.9	289.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
MOTORCYCLE	23.2	24.6	26.1	27.6	29.2	30.3	31.5	32.7	33.9	35.2	36.6	38.0	39.5	41.1	42.8
SAMUR	14.6	15.5	16.4	17.3	18.4	19.1	19.8	20.5	21.3	22.2	23.0	23.9	24.9	25.9	26.9
SEDAN	152.9	161.9	171.4	181.4	192.1	199.7	207.6	215.9	224.5	233.6	243.0	252.9	263.3	274.1	285.4
LIGHT BUS	10.4	11.0	11.7	12.3	13.1	13.6	14.1	14.6	15.2	15.8	16.4	17.1	17.7	18.5	19.2
BUS	39.5	41.7	44.2	46.7	49.5	51.3	53.2	55.1	57.2	59.3	61.6	63.9	66.3	68.9	71.5
TRUCK	33.3	35.2	37.3	39.4	41.7	43.3	45.0	46.7	48.5	50.4	52.4	54.5	56.7	58.9	61.3
FUEL SAVING BENEFIT VEHICLE AT CROSSING	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
VEHICLE AT FLYOVER	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
ACCIDENT AVOIDANCE BENE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT USAGE OF SPACE	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
FOR COMMERCIAL USE	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3
FOR OTHER USE	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
WITHOUT	286.3	302.3	319.2	337.2	356.3	369.6	383.5	399.0	413.1	429.0	445.5	462.8	480.9	499.8	519.6
TIME SAVING BENEFIT BENE OF ROAD VEHICLE	273.9	289.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
FUEL SAVING BENEFIT VEHICLE AT CROSSING	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
VEHICLE AT FLYOVER	-0.6	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.1
ACCIDENT AVOIDANCE BENE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT USAGE OF SPACE	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
FOR COMMERCIAL USE	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
FOR OTHER USE	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
NET FLOW	177.5	177.6	177.8	178.0	178.2	178.2	178.3	178.3	178.4	178.4	178.4	178.5	178.5	178.5	349.7
EIRR	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417	20.417

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF															-161.3
WITH	268.8				808.1				96.6	561.2			193.5		-2078.4
CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE	268.8				808.1				96.6	561.2			193.5		576.4 2654.7
WITHOUT	268.8				808.1				96.6	561.2			193.5		-1917.0
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	268.8				808.1				96.6	561.2			193.5		576.4 2493.4
MAINT/OPE COST DIFF	5.7	5.7	5.8	5.9	6.0	6.1	6.2	6.2	6.3	6.4	6.5	6.6	6.7	6.9	7.0
FACILITY MAINT COST DIFF	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
CIVIL WORK WITH	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
WITHOUT	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
STATION FACILITY WITH	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITHOUT	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
SIGNALS & TELECOM WITH	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
WITHOUT	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
ROLLING STOCKS WITH	20.2	20.2	20.2	20.2	24.6	24.6	24.6	24.6	24.6	34.1	34.1	34.1	34.1	34.1	43.8
WITHOUT	20.2	20.2	20.2	20.2	24.6	24.6	24.6	24.6	24.6	34.1	34.1	34.1	34.1	34.1	43.8
ROAD FLYOVER WITH	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
WITHOUT	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
OPERATING COST DIFF	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
PSNL COST DIFF WITH WITHOUT															
FUEL COST DIFF WITH	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
WITHOUT	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
TOTAL BENEFIT DIFF	200.2	200.5	200.8	201.0	202.3	202.8	203.4	203.9	204.4	205.0	205.7	206.2	206.8	207.5	208.1
WITH	522.5	540.8	560.2	580.7	603.4	617.8	633.0	648.7	664.9	682.0	699.8	718.2	737.4	757.5	778.3
TIME SAVING BENEFIT BENE OF RAILWAY PSNGR	327.2	345.2	364.4	384.6	407.0	421.3	436.4	451.9	468.0	484.9	502.6	520.8	539.9	559.9	580.5
BENE OF ROAD VEHICLE MOTORCYCLE	17.3	17.3	17.3	17.3	18.3	18.6	19.2	19.5	19.9	20.3	20.9	21.3	21.7	22.3	22.7
SARLOR	309.9	328.0	347.0	367.3	388.7	402.7	417.2	432.3	448.1	464.5	481.7	499.5	518.1	537.6	557.8
SEDAN	26.4	27.9	29.5	31.3	33.1	34.3	35.5	36.7	38.0	39.4	40.8	42.3	43.8	45.4	47.1
LIGHT BUS	16.6	17.5	18.5	19.6	20.8	21.5	22.3	23.1	23.9	24.8	25.7	26.6	27.6	28.6	29.6
GUR	172.8	182.9	193.5	204.8	216.8	224.8	233.1	241.7	250.7	260.2	270.0	280.2	290.8	302.0	313.6
TRUCK	11.8	12.5	13.2	13.9	14.7	15.3	15.8	16.4	17.0	17.6	18.2	18.9	19.6	20.4	21.1
FUEL SAVING BENEFIT VEHICLE AT CROSSING	44.8	47.4	50.1	53.0	56.1	58.0	60.0	62.0	64.2	66.4	68.7	71.1	73.6	76.2	78.9
VEHICLE AT FLYOVER	37.6	39.8	42.1	44.6	47.2	48.9	50.6	52.4	54.3	56.3	58.3	60.5	62.7	65.0	67.5
ACCIDENT AVOIDANCE BENE	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
WITHOUT	322.3	340.3	359.4	379.7	401.1	415.1	429.6	444.7	460.5	477.0	494.1	512.0	530.6	550.0	570.3
TIME SAVING BENEFIT BENE OF ROAD VEHICLE	309.9	328.0	347.0	367.3	388.7	402.7	417.2	432.3	448.1	464.5	481.7	499.5	518.1	537.6	557.8
FUEL SAVING BENEFIT VEHICLE AT CROSSING VEHICLE AT FLYOVER	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
ACCIDENT AVOIDANCE BENE	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
ACCIDENT AVOIDANCE BENE	-8.8	-9.0	-9.3	-9.5	-9.8	-9.9	-10.1	-10.2	-10.3	-10.5	-10.6	-10.8	-10.9	-11.0	-11.2
ACCIDENT AVOIDANCE BENE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
LAND USE BENEFIT USAGE OF SPACE FOR COMMERCIAL USE FOR OTHER USE	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
NET FLOW EBR	194.6	194.7	195.0	195.2	196.3	196.7	197.3	197.7	198.1	198.6	199.2	199.6	200.1	200.7	202.4
NET FLOW EBR	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092	20.092

Appendix 11.4.5 Economic Analysis for Track Elevation Project, State Railway of Thailand (Case-I-3)

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	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
INVESTMENT DIFF	18.4	73.6	302.1	444.6	421.7	313.6	68.5	5.0	-0.1	-0.2	-0.7	110.6	111.3	-10.4	0.4
WITH	33.6	129.2	370.0	496.4	547.2	519.7	512.6	649.9	75.0	24.0	28.3	376.8	127.5	23.4	0.4
CIVIL WORK	25.0	100.1	306.5	460.8	458.4	402.7	192.9	67.7	71.7	20.7	10.6	110.9	121.1	12.7	
STATION FACILITY					1.2	4.1	54.7	1.1			1.1	14.0			
SIGNALS & TELECOM	8.7	29.1	37.5	9.6	87.6	112.8	225.0	5.1	3.3	3.3	16.6	35.2	6.5	10.7	0.4
LAND ACQ & COMP			26.1	26.1											
ROLLING STOCKS								576.1				208.7			
-SALVAGE VALUE															
WITHOUT	15.2	55.6	67.9	51.8	125.5	206.1	424.1	644.9	75.1	24.2	29.0	266.2	16.3	33.8	
RAILWAY	15.2	55.6	67.9	51.8	125.5	206.1	424.1	644.9	75.1	24.2	29.0	266.2	16.3	33.8	
CIVIL WORK	6.6	26.7	5.3	16.6	37.0	92.2	136.5	67.7	71.8	20.9	10.8	7.4	9.2	20.3	
STATION FACILITY					0.6	4.1	66.6	1.1			1.1	14.0			
SIGNALS & TELECOM	8.6	28.9	36.5	9.1	87.9	109.8	221.0		3.3	3.3	17.1	36.1	7.0	13.6	
LAND ACQ & COMP			26.1	26.1											
ROLLING STOCKS								576.1				208.7			
-SALVAGE VALUE															
ROAD FLYOVER															
MAINT/OPE COST DIFF								2.8	2.7	2.5	2.4	2.2	2.0	1.9	2.2
FACILITY MAINT COST DIFF								8.7	8.7	8.7	8.7	8.7	8.7	8.7	9.2
CIVIL WORK								7.8	7.8	7.8	7.8	7.8	7.8	7.8	8.3
WITH								12.8	12.8	12.8	12.8	12.8	12.8	12.8	19.3
WITHOUT								5.0	5.0	5.0	5.0	5.0	5.0	5.0	11.0
STATION FACILITY								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH								0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8
WITHOUT								0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
SIGNALS & TELECOM								0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
WITH								13.4	13.4	13.4	13.4	13.4	13.4	13.4	15.1
WITHOUT								12.7	12.7	12.7	12.7	12.7	12.7	12.7	14.5
ROLLING STOCKS								9.6	9.6	9.6	9.6	12.9	12.9	12.9	12.9
WITH								9.6	9.6	9.6	9.6	12.9	12.9	12.9	12.9
WITHOUT															
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF								-5.9	-6.0	-6.1	-6.3	-6.5	-6.6	-6.8	-7.0
PSNL COST DIFF								-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
WITH	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
WITHOUT	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
FUEL COST DIFF								-4.0	-4.2	-4.3	-4.4	-4.6	-4.8	-4.9	-5.1
WITH	5.5	5.5	5.5	5.5	5.5	5.5	5.5	1.5	1.5	1.6	1.6	1.7	1.8	1.8	1.9
WITHOUT	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.7	5.9	6.1	6.3	6.5	6.7	7.0
TOTAL BENEFIT DIFF								401.8	413.2	425.4	438.2	451.7	466.1	481.3	506.8
WITH								401.8	413.2	425.4	438.2	451.7	466.1	481.3	506.8
TIME SAVING BENEFIT								200.1	211.3	223.1	235.5	248.8	262.8	277.6	293.3
BENE OF RAILWAY PSNGR								200.1	211.3	223.1	235.5	248.8	262.8	277.6	293.3
BENE OF ROAD VEHICLE								18.0	19.0	20.0	21.1	22.3	23.6	24.9	26.3
MOTORCYCLE								10.2	10.8	11.4	12.0	12.7	13.4	14.2	15.0
SAHLOR								111.4	117.6	124.2	131.2	138.5	146.3	154.6	163.4
SEDAN								7.4	7.8	8.2	8.7	9.2	9.7	10.2	10.8
LIGHT BUS								28.3	29.9	31.6	33.3	35.2	37.2	39.3	41.5
BUS								24.8	26.2	27.7	29.2	30.8	32.6	34.4	36.3
TRUCK															
FUEL SAVING BENEFIT								11.5	11.8	12.2	12.5	12.8	13.2	13.6	14.0
VEHICLE AT CROSSING								11.5	11.8	12.2	12.5	12.8	13.2	13.6	14.0
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE								2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
LAND USE BENEFIT								188.4	188.0	188.0	188.0	188.0	188.0	188.0	197.4
USAGE OF SPACE								188.0	188.0	188.0	188.0	188.0	188.0	188.0	197.4
FOR COMMERCIAL USE								178.3	178.3	178.3	178.3	178.3	178.3	178.3	186.8
FOR OTHER USE								9.6	9.6	9.6	9.6	9.6	9.6	9.6	10.7
WITHOUT															
TIME SAVING BENEFIT															
BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT															
VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT															
USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW	-18.4	-73.6	-302.1	-444.6	-421.7	-313.6	-68.5	394.0	410.7	423.0	436.5	330.9	352.8	409.9	504.1
ENRR	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671	17.671

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF	=====														
WITH	252.7				647.1				80.5	561.2			177.4		-2137.4
CIVIL WORK ⁺ STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE	252.7				647.1				80.5	561.2			177.4		576.4 2713.8
WITHOUT	252.7				647.1				80.5	561.2			177.4		-1339.5
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	252.7				647.1				80.5	561.2			177.4		576.4 1915.9
MAINT/OPE COST DIFF	2.0	1.8	1.6	1.4	1.2	1.0	0.8	0.6	0.3	0.1	-0.2	-0.4	-0.7	-1.0	-1.3
FACILITY MAINT COST DIFF	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
CIVIL WORK	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
WITH	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
WITHOUT	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
STATION FACILITY	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
WITHOUT	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
SIGNALS & TELECOM	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
WITH	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
WITHOUT	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
ROLLING STOCKS															
WITH	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	30.8	40.4
WITHOUT	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	30.8	40.4
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF	-7.1	-7.3	-7.5	-7.7	-7.9	-8.1	-8.4	-8.6	-8.8	-9.1	-9.3	-9.6	-9.9	-10.1	-10.4
PSNL COST DIFF	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
WITH															
WITHOUT	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
FUEL COST DIFF	-5.3	-5.5	-5.7	-5.9	-6.1	-6.3	-6.5	-6.7	-7.0	-7.2	-7.5	-7.7	-8.0	-8.3	-8.6
WITH	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
WITHOUT	7.2	7.5	7.8	8.1	8.4	8.6	8.9	9.3	9.6	9.9	10.3	10.6	11.0	11.4	11.8
TOTAL BENEFIT DIFF	523.8	541.9	561.0	581.3	602.7	618.1	634.1	650.9	668.5	686.9	706.2	726.3	747.4	769.5	792.7
WITH	523.8	541.9	561.0	581.3	602.7	618.1	634.1	650.9	668.5	686.9	706.2	726.3	747.4	769.5	792.7
TIME SAVING BENEFIT BENE OF RAILWAY PSNR	310.0	327.6	346.4	366.2	387.2	402.4	418.2	434.8	452.1	470.3	489.3	509.3	530.1	552.0	574.9
BENE OF ROAD VEHICLE	310.0	327.6	346.4	366.2	387.2	402.4	418.2	434.8	452.1	470.3	489.3	509.3	530.1	552.0	574.9
MOTORCYCLE	27.8	29.4	31.0	32.8	34.7	36.0	37.4	38.9	40.5	42.1	43.8	45.6	47.4	49.4	51.4
SAHLOR	15.9	16.8	17.7	18.8	19.9	20.6	21.4	22.3	23.1	24.1	25.0	26.0	27.1	28.2	29.3
SEDAN	172.7	182.5	193.0	204.1	215.8	224.4	233.4	242.8	252.6	262.9	273.7	285.1	296.9	309.3	322.3
LIGHT BUS	11.4	12.1	12.7	13.5	14.2	14.8	15.4	16.0	16.6	17.3	18.0	18.7	19.4	20.2	21.1
BUS	43.8	46.3	49.0	51.8	54.7	56.8	58.9	61.1	63.4	65.9	68.4	71.0	73.8	76.7	79.8
TRUCK	30.4	40.6	42.9	45.3	47.9	49.7	51.7	53.7	55.9	58.1	60.5	62.9	65.5	68.2	71.0
FUEL SAVING BENEFIT VEHICLE AT CROSSING	14.3	14.7	15.2	15.6	16.0	16.2	16.4	16.7	16.9	17.1	17.3	17.6	17.8	18.0	18.3
VEHICLE AT FLYOVER	14.3	14.7	15.2	15.6	16.0	16.2	16.4	16.7	16.9	17.1	17.3	17.6	17.8	18.0	18.3
ACCIDENT AVOIDANCE BENE	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
LAND USE BENEFIT USAGE OF SPACE	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4
FOR COMMERCIAL USE	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8
FOR OTHER USE	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
WITHOUT	-----														
TIME SAVING BENEFIT BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW EIRR	521.8 17.671	540.1 17.671	559.4 17.671	579.8 17.671	601.5 17.671	617.1 17.671	633.4 17.671	650.4 17.671	668.2 17.671	686.8 17.671	706.3 17.671	726.8 17.671	748.1 17.671	770.5 17.671	1591.8 17.671

Appendix 11.4.6 Economic Analysis for Track Elevation Project,
State Railway of Thailand (Case-I-2)

(MIL. BANT) PAGE 1 /PART 1

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
INVESTMENT DIFF	15.0	59.7	232.0	344.0	331.1	240.8	66.9	0.1	0.1	-0.1	-0.2	110.8	110.2	-10.2	
WITH	30.2	115.3	299.9	395.8	456.7	446.9	491.0	645.0	75.2	24.1	28.8	377.0	126.5	23.6	
CIVIL WORK	21.3	85.6	237.1	361.2	367.5	332.7	175.1	67.8	71.9	20.8	10.6	118.6	120.8	12.7	
STATION FACILITY					1.3	4.1	94.7	1.1			1.1	14.0			
SIGNALS & TELECOM	8.9	29.7	36.8	8.6	87.9	110.0	221.3		3.3	3.3	17.1	35.7	5.6	10.9	
LAND ACQ & CONP			26.1	26.1											
ROLLING STOCKS								576.1				208.7			
-SALVAGE VALUE															
WITHOUT	15.2	55.6	67.9	51.8	125.5	206.1	424.1	644.9	75.1	24.2	29.0	266.2	16.3	33.8	
RAILWAY	15.2	55.6	67.9	51.8	125.5	206.1	424.1	644.9	75.1	24.2	29.0	266.2	16.3	33.8	
CIVIL WORK	6.6	26.7	5.3	16.6	37.0	92.2	136.5	67.7	71.8	20.9	10.8	7.4	9.2	20.3	
STATION FACILITY					0.6	4.1	66.6	1.1			1.1	14.0			
SIGNALS & TELECOM	8.6	28.9	36.5	9.1	87.9	109.8	221.0		3.3	3.3	17.1	36.1	7.0	13.6	
LAND ACQ & CONP			26.1	26.1											
ROLLING STOCKS								576.1				208.7			
-SALVAGE VALUE															
ROAD FLYOVER															
MAINT/OPE COST DIFF								2.3	2.3	2.2	2.1	2.0	1.9	1.8	2.1
FACILITY MAINT COST DIFF								6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.5
CIVIL WORK								5.6	5.6	5.6	5.6	5.6	5.6	5.6	6.2
WITH								10.6	10.6	10.6	10.6	10.6	10.6	10.6	17.1
WITHOUT								5.0	5.0	5.0	5.0	5.0	5.0	5.0	11.0
STATION FACILITY								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH								0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8
WITHOUT								0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
SIGNALS & TELECOM								0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
WITH								13.0	13.0	13.0	13.0	13.0	13.0	13.0	14.7
WITHOUT								12.7	12.7	12.7	12.7	12.7	12.7	12.7	14.5
ROLLING STOCKS															
WITH								9.6	9.6	9.6	9.6	12.9	12.9	12.9	12.9
WITHOUT								9.6	9.6	9.6	9.6	12.9	12.9	12.9	12.9
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF								-3.8	-3.9	-3.9	-4.0	-4.1	-4.2	-4.3	-4.4
PSHL COST DIFF								-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3
WITH	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
WITHOUT	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
FUEL COST DIFF								-2.4	-2.5	-2.6	-2.7	-2.8	-2.9	-3.0	-3.1
WITH	3.9	3.9	3.9	3.9	3.9	3.9	3.9	1.5	1.5	1.6	1.6	1.7	1.8	1.8	1.9
WITHOUT	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.0	4.2	4.3	4.5	4.7	4.8	5.0
TOTAL BENEFIT DIFF								358.9	369.1	380.0	391.4	403.6	416.4	430.1	453.9
WITH								358.9	369.1	380.0	391.4	403.6	416.4	430.1	453.9
TIME SAVING BENEFIT								174.8	184.9	195.5	206.7	218.6	231.3	244.7	258.9
BEHE OF RAILWAY PSHGR															
BEHE OF ROAD VEHICLE								174.8	184.9	195.5	206.7	218.6	231.3	244.7	258.9
MOTORCYCLE								14.8	15.7	16.6	17.5	18.5	19.6	20.8	22.0
SAHLOR								9.3	9.0	10.4	11.0	11.7	12.3	13.0	13.6
SEDAN								97.5	103.1	109.0	115.3	122.0	129.1	136.6	144.5
LIGHT BUS								6.7	7.1	7.5	7.9	8.3	8.8	9.3	9.9
BUS								25.2	26.7	28.2	29.8	31.5	33.3	35.3	37.3
TRUCK								21.3	22.5	23.8	25.1	26.6	28.1	29.7	31.4
FUEL SAVING BENEFIT								7.5	7.7	7.9	8.1	8.4	8.6	8.8	9.1
VEHICLE AT CROSSING								7.5	7.7	7.9	8.1	8.4	8.6	8.8	9.1
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BEHE								1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT								175.1	175.1	175.1	175.1	175.1	175.1	175.1	184.5
USAGE OF SPACE								175.1	175.1	175.1	175.1	175.1	175.1	175.1	184.5
FOR COMMERCIAL USE								170.8	170.8	170.8	170.8	170.8	170.8	170.8	179.3
FOR OTHER USE								4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.2
WITHOUT															
TIME SAVING BENEFIT															
BEHE OF ROAD VEHICLE															
FUEL SAVING BENEFIT															
VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BEHE															
LAND USE BENEFIT															
USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW	-15.0	-59.7	-232.0	-344.0	-331.1	-240.8	-66.9	356.5	366.0	377.9	389.5	400.8	404.3	438.5	451.8
EIRR	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF															-640.7
WITH	252.7				647.1				80.5	561.2			177.4		-1960.2
CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE	252.7				647.1				80.5	561.2			177.4		576.4 2556.5
WITHOUT	252.7				647.1				80.5	561.2			177.4		-1339.5
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	252.7				647.1				80.5	561.2			177.4		576.4 1915.9
MAINT/OPE COST DIFF	2.0	1.9	1.0	1.6	1.5	1.4	1.3	1.1	1.0	0.8	0.7	0.5	0.4	0.2	
FACILITY MAINT COST DIFF	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
CIVIL WORK	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
WITH	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
WITHOUT	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
STATION FACILITY	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
WITHOUT	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
SIGNALS & TELECOM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
WITHOUT	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
ROLLING STOCKS	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	30.8	40.4
WITH	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	30.8	40.4
WITHOUT	17.1	17.1	17.1	17.1	21.3	21.3	21.3	21.3	21.3	30.8	30.8	30.8	30.8	30.8	40.4
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF	-4.5	-4.7	-4.8	-4.9	-5.0	-5.2	-5.3	-5.4	-5.6	-5.7	-5.9	-6.0	-6.2	-6.3	-6.5
PSHL COST DIFF	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3
WITH	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
WITHOUT	3.2	3.3	3.5	3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.7	4.9	5.0	5.2
FUEL COST DIFF	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
WITH	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.1	7.3	7.6	7.9	8.2	8.4
WITHOUT															
TOTAL BENEFIT DIFF	469.2	485.5	502.7	521.0	540.3	553.7	567.7	582.4	597.6	613.6	630.3	647.7	666.0	685.0	705.0
WITH	469.2	485.5	502.7	521.0	540.3	553.7	567.7	582.4	597.6	613.6	630.3	647.7	666.0	685.0	705.0
WITHOUT															
TIME SAVING BENEFIT	273.9	269.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
BENE OF RAILWAY PSNGR	273.9	269.9	306.9	324.9	343.9	357.2	371.1	385.6	400.7	416.5	433.1	450.4	468.5	487.4	507.1
BENE OF ROAD VEHICLE	23.2	24.6	26.1	27.6	29.2	30.3	31.5	32.7	33.9	35.2	36.6	38.0	39.5	41.1	42.8
MOTORCYCLE	14.6	15.5	16.4	17.3	18.4	19.1	19.8	20.5	21.3	22.2	23.0	23.9	24.9	25.9	26.9
SAHLDR	152.9	161.9	171.4	181.4	192.1	199.7	207.6	215.9	224.5	233.6	243.0	252.9	263.3	274.1	285.4
SLDRH	10.4	11.0	11.7	12.3	13.1	13.6	14.1	14.6	15.2	15.8	16.4	17.1	17.7	18.5	19.2
LIGHT BUS	39.5	41.7	44.2	46.7	49.5	51.3	53.2	55.1	57.2	59.3	61.6	63.9	66.3	68.9	71.5
BUS	33.3	35.2	37.3	39.4	41.7	43.3	45.0	46.7	48.5	50.4	52.4	54.5	56.7	58.9	61.3
TRUCK															
FUEL SAVING BENEFIT	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
VEHICLE AT CROSSING	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
USAGE OF SPACE	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
FOR COMMERCIAL USE	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3
FOR OTHER USE	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
WITHOUT															
TIME SAVING BENEFIT															
BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT															
VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT															
USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW	467.2	483.6	500.9	519.3	538.8	552.3	566.5	581.2	596.7	612.8	629.6	647.2	665.6	684.8	704.6
EIRR	19.330	19.330	19.330	19.330	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338	19.338

Appendix 11.4.7 Economic Analysis for Track Elevation Project,
State Railway of Thailand (Case-II-3)

(HELL. BAHT) PAGE 1 / PART 1

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
INVESTMENT DIFF	19.6	69.5	302.3	444.2	422.0	294.0	88.9	110.9	107.6	-1.4	17.5	-9.2	-8.3	10.5	
WITH	36.6	132.7	436.6	573.2	652.9	556.5	502.6	907.5	120.2	28.0	31.3	251.0	20.1	24.3	
CIVIL WORK	27.9	102.8	358.6	524.1	529.5	426.4	141.8	136.3	120.2	24.6	23.3	10.1	14.4	13.4	
STATION FACILITY	8.7	29.9	30.0	9.1	94.7	110.5	247.4	34.9		3.3	8.0	16.1	5.6	10.9	
SIGNALS & TELECOM			39.9	39.9											
LAND ACQ & CONP															
ROLLING STOCKS								721.0				224.8			
-SALVAGE VALUE															
WITHOUT	16.9	63.2	134.3	129.0	231.0	261.7	413.7	796.6	12.6	29.3	13.8	260.2	28.4	13.8	
RAILWAY	16.9	63.2	134.3	129.0	231.0	261.7	413.7	796.6	12.6	29.3	13.8	260.2	28.4	13.8	
CIVIL WORK	8.3	33.4	57.7	79.9	108.5	122.9	96.1	21.4	12.6	26.0	5.7	16.7	21.2		
STATION FACILITY					26.7	22.9	75.3	15.4							
SIGNALS & TELECOM	8.6	29.7	36.7	9.1	93.6	115.9	244.3	39.0		3.3	8.0	18.7	7.2	13.8	
LAND ACQ & CONP			39.9	39.9											
ROLLING STOCKS								721.0				224.8			
-SALVAGE VALUE															
ROAD FLYOVER															
MAINT/OPE COST DIFF								1.6	1.4	1.3	1.1	1.0	0.8	1.0	1.2
FACILITY MAINT COST DIFF								7.8	7.8	7.8	7.8	7.8	7.8	8.6	8.6
CIVIL WORK								7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0
WITH								16.6	16.4	16.6	16.6	16.6	16.6	20.7	20.7
WITHOUT								9.5	9.5	9.5	9.5	9.5	9.5	12.8	12.8
STATION FACILITY								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH								1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1
WITHOUT								0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0
SIGNALS & TELECOM								0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5
WITH								14.1	14.1	14.1	14.1	14.1	14.1	15.8	15.8
WITHOUT								13.5	13.5	13.5	13.5	13.5	13.5	15.3	15.3
ROLLING STOCKS								12.1	12.1	12.1	12.1	15.7	15.7	15.7	15.7
WITH								12.1	12.1	12.1	12.1	15.7	15.7	15.7	15.7
WITHOUT															
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF								-6.2	-6.4	-6.5	-6.7	-6.9	-7.0	-7.2	-7.4
PSNL COST DIFF								-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
WITH	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
WITHOUT	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
FUEL COST DIFF								-4.4	-4.5	-4.7	-4.9	-5.0	-5.2	-5.4	-5.6
WITH	6.0	6.0	6.0	6.0	6.0	6.0	6.0	1.6	1.6	1.7	1.8	1.8	1.9	2.0	2.0
WITHOUT	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.2	6.4	6.6	6.8	7.1	7.3	7.6
TOTAL BENEFIT DIFF								438.0	451.3	465.6	480.3	496.0	512.6	539.5	556.9
WITH								438.0	451.3	465.6	480.3	496.0	512.6	539.5	556.9
TIME SAVING BENEFIT								236.4	249.3	263.3	277.6	293.0	309.2	326.4	343.4
BENE OF RAILWAY PSNGR								13.0	13.5	14.3	14.7	15.3	15.9	16.6	16.9
BENE OF ROAD VEHICLE								223.3	235.8	249.0	262.9	277.7	293.3	309.9	327.4
MOTORCYCLE								20.0	21.1	22.3	23.5	24.6	26.2	27.7	29.3
SAMTOR								11.4	12.1	12.8	13.5	14.3	15.1	15.9	16.8
SEOH								124.2	131.2	138.5	146.3	154.5	163.2	172.4	182.2
LIGHT BUS								8.2	8.7	9.2	9.7	10.2	10.8	11.4	12.1
BUS								31.3	33.5	35.4	37.4	39.5	41.7	44.1	46.6
TRUCK								27.7	29.2	30.8	32.5	34.0	36.3	38.3	40.5
FUEL SAVING BENEFIT								11.5	11.8	12.2	12.5	12.8	13.2	13.6	14.0
VEHICLE AT CROSSING								11.5	11.8	12.2	12.5	12.8	13.2	13.6	14.0
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE								2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
LAND USE BENEFIT								188.0	188.0	188.0	188.0	188.0	188.0	188.0	188.0
USAGE OF SPACE								188.0	188.0	188.0	188.0	188.0	188.0	188.0	188.0
FOR COMMERCIAL USE								178.3	178.3	178.3	178.3	178.3	178.3	178.3	178.3
FOR OTHER USE								9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
WITHOUT															
TIME SAVING BENEFIT															
BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT															
VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT															
USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW	-19.6	-69.5	-302.3	-444.2	-422.0	-294.8	-88.9	325.6	342.3	465.6	461.6	504.2	520.1	527.6	555.6
EIRR	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF															-787.6
WITH	268.8				808.1				96.6	561.2			193.5		-2235.0
CIVIL WORK STATION FACILITY SIGNALS & TELECON LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE	268.8				808.1				96.6	561.2			193.5		576.4 2011.4
WITHOUT	268.8				808.1				96.6	561.2			193.5		-1447.5
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECON LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	268.8				808.1				96.6	561.2			193.5		576.4 2023.8
MAINT/OPE COST DIFF	1.0	0.6	0.6	0.4	0.2		-0.2	-0.5	-0.7	-1.0	-1.2	-1.5	-1.7	-2.0	-2.3
FACILITY MAINT COST DIFF	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
CIVIL WORK	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
WITH	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
WITHOUT	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
STATION FACILITY	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
WITHOUT	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
SIGNALS & TELECON	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
WITH	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
WITHOUT	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
ROLLING STOCKS															
WITH	20.2	20.2	20.2	20.2	24.6	24.6	24.6	24.6	24.6	34.1	34.1	34.1	34.1	34.1	43.8
WITHOUT	20.2	20.2	20.2	20.2	24.6	24.6	24.6	24.6	24.6	34.1	34.1	34.1	34.1	34.1	43.8
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF	-7.6	-7.8	-8.0	-8.2	-8.5	-8.7	-8.9	-9.1	-9.4	-9.6	-9.9	-10.1	-10.4	-10.7	-11.0
PSNL COST DIFF	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
WITH															
WITHOUT	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
FUEL COST DIFF	-5.6	-6.0	-6.2	-6.4	-6.6	-6.8	-7.0	-7.3	-7.5	-7.8	-8.0	-8.3	-8.5	-8.8	-9.1
WITH	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
WITHOUT	7.9	8.1	8.4	8.7	9.1	9.3	9.6	10.0	10.3	10.6	11.0	11.4	11.7	12.1	12.5
TOTAL BENEFIT DIFF	577.1	597.2	618.5	641.0	665.8	682.2	699.4	717.2	735.8	755.3	775.7	796.8	818.9	842.0	866.0
WITH	577.1	597.2	618.5	641.0	665.8	682.2	699.4	717.2	735.8	755.3	775.7	796.8	818.9	842.0	866.0
TIME SAVING BENEFIT	363.2	302.9	403.8	425.9	450.3	466.5	483.5	501.1	519.4	536.7	558.8	579.7	601.6	624.5	648.3
BENE OF RAILWAY PASNGR	17.3	17.3	17.3	17.3	18.3	18.6	19.2	19.5	19.9	20.3	20.9	21.3	21.7	22.3	22.7
BENE OF ROAD VEHICLE	346.0	365.7	386.5	408.6	432.0	447.8	464.3	481.5	499.5	518.3	537.9	558.4	579.8	602.2	625.6
MOTORCYCLE	30.9	32.7	34.5	36.5	38.6	40.0	41.4	43.0	44.5	45.2	47.9	49.8	51.7	53.7	55.7
SANLOR	17.8	18.8	19.9	21.1	22.3	23.1	23.9	24.8	25.7	26.6	27.6	28.7	29.7	30.9	32.0
SEDAN	192.6	203.5	215.1	227.5	240.5	249.5	258.9	268.6	278.9	289.5	300.7	312.3	324.5	337.2	350.5
LIGHT BUS	12.8	13.5	14.3	15.1	15.9	16.5	17.1	17.7	18.4	19.1	19.8	20.5	21.3	22.1	23.0
BUS	49.2	52.0	54.9	58.1	61.4	63.5	65.7	68.0	70.4	72.9	75.5	78.3	81.1	84.1	87.2
TRUCK	42.8	45.2	47.7	50.5	53.3	55.3	57.3	59.4	61.6	63.9	66.4	68.9	71.5	74.3	77.2
FUEL SAVING BENEFIT VEHICLE AT CROSSING	14.3	14.7	15.2	15.6	16.0	16.2	16.4	16.7	16.9	17.1	17.3	17.6	17.8	18.0	18.3
VEHICLE AT FLYOVER	14.3	14.7	15.2	15.6	16.0	16.2	16.4	16.7	16.9	17.1	17.3	17.6	17.8	18.0	18.3
ACCIDENT AVOIDANCE BENE	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
LAND USE BENEFIT	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4
USAGE OF SPACE	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4
FOR COMMERCIAL USE	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8	186.8
FOR OTHER USE	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
WITHOUT															
TIME SAVING BENEFIT BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW	576.1	596.3	617.9	640.6	665.6	682.2	699.7	717.7	736.5	756.2	776.9	798.3	820.6	844.1	868.9
EIPR	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592	18.592

Appendix 11.4.8 Economic Analysis for Track Elevation Project,
State Railway of Thailand (Case-II-2)

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	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
INVESTMENT DIFF	16.0	56.3	231.7	343.9	329.5	219.1	63.0	114.8	115.7	7.6	-0.5	-3.6	-1.4	-2.7	
WITH	32.9	119.4	366.0	472.9	560.4	460.8	476.7	911.5	128.3	37.0	13.2	256.6	27.0	11.1	
CIVIL WORK	24.1	88.9	289.3	424.4	438.6	358.5	123.3	136.1	120.3	33.6	5.7	16.7	21.3		
STATION FACILITY					28.7	11.6	113.3	15.4							
SIGNALS & TELECOM	8.9	30.5	36.8	8.6	93.1	112.7	240.2	39.1		3.3	7.5	15.1	5.7	11.1	
LAND ACQ & COMP			39.9	39.9											
ROLLING STOCKS								721.0				224.8			
-SALVAGE VALUE															
WITHOUT	16.9	63.2	134.3	129.0	231.0	261.7	413.7	796.6	12.6	29.3	13.8	260.2	28.4	13.8	
RAILWAY	16.9	63.2	134.3	129.0	231.0	261.7	413.7	796.6	12.6	29.3	13.8	260.2	28.4	13.8	
CIVIL WORK	8.3	33.4	57.7	79.9	108.5	122.9	94.1	21.4	12.6	26.0	5.7	16.7	21.2		
STATION FACILITY					28.7	22.9	75.3	15.4							
SIGNALS & TELECOM	8.6	29.7	36.7	9.1	93.8	115.9	244.3	39.0		3.3	8.0	18.7	7.2	13.8	
LAND ACQ & COMP			39.9	39.9											
ROLLING STOCKS								721.0				224.8			
-SALVAGE VALUE															
ROAD FLYOVER															
MAINT/OPE COST DIFF								1.1	1.0	0.9	0.8	0.7	0.6	1.9	1.8
FACILITY MAINT COST DIFF								5.1	5.1	5.1	5.1	5.1	5.1	6.5	6.5
CIVIL WORK								4.8	4.8	4.8	4.8	4.8	4.8	6.4	6.4
WITH								14.4	14.4	14.4	14.4	14.4	14.4	19.2	19.2
WITHOUT								9.5	9.5	9.5	9.5	9.5	9.5	12.8	12.8
STATION FACILITY								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WITH								1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1
WITHOUT								0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0
SIGNALS & TELECOM								0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WITH								13.6	13.6	13.6	13.6	13.6	13.6	15.2	15.2
WITHOUT								13.5	13.5	13.5	13.5	13.5	13.5	15.3	15.3
ROLLING STOCKS								12.1	12.1	12.1	12.1	15.7	15.7	15.7	15.7
WITH								12.1	12.1	12.1	12.1	15.7	15.7	15.7	15.7
WITHOUT								12.1	12.1	12.1	12.1	15.7	15.7	15.7	15.7
ROAD FLYOVER															
WITH															
WITHOUT															
OPERATING COST DIFF								-4.0	-4.1	-4.2	-4.3	-4.4	-4.5	-4.6	-4.7
PSNL COST DIFF								-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3
WITH	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
WITHOUT	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
FUEL COST DIFF								-2.7	-2.8	-2.9	-3.0	-3.1	-3.2	-3.3	-3.4
WITH	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
WITHOUT	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
TOTAL BENEFIT DIFF								395.2	407.2	420.2	433.5	447.8	462.9	488.3	504.0
WITH								395.2	407.2	420.2	433.5	447.8	462.9	488.3	504.0
TIME SAVING BENEFIT								211.1	222.9	235.7	248.8	262.8	277.7	293.5	309.0
BENE OF RAILWAY PSNCR								13.0	13.5	14.3	14.7	15.3	15.9	16.6	16.0
BENE OF ROAD VEHICLE								198.0	209.4	221.4	234.1	247.5	261.8	276.9	293.0
MOTORCYCLE								16.8	17.8	18.8	19.9	21.0	22.3	23.5	24.9
SAMUR								10.6	11.2	11.8	12.5	13.2	14.0	14.8	15.7
SEDAN								110.3	116.6	123.3	130.4	137.9	145.9	154.4	163.3
LIGHT BUS								7.6	8.0	8.4	8.9	9.4	10.0	10.5	11.1
BUS								28.7	30.3	32.1	33.9	35.8	37.9	40.1	42.4
TRUCK								24.1	25.5	26.9	28.5	30.1	31.8	33.7	35.6
FUEL SAVING BENEFIT								7.5	7.7	7.9	8.1	8.4	8.6	8.8	9.1
VEHICLE AT CROSSING								7.5	7.7	7.9	8.1	8.4	8.6	8.8	9.1
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE								1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT								175.1	175.1	175.1	175.1	175.1	175.1	184.5	184.5
USAGE OF SPACE								175.1	175.1	175.1	175.1	175.1	175.1	184.5	184.5
FOR COMMERCIAL USE								170.8	170.8	170.8	170.8	170.8	170.8	179.3	179.3
FOR OTHER USE								4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.2
WITHOUT															
TIME SAVING BENEFIT															
BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT															
VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT															
USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
NET FLOW	-16.0	-56.3	-231.7	-343.9	-329.5	-219.1	-63.0	279.2	290.5	411.6	433.3	450.7	463.7	469.1	502.2
IRR	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
INVESTMENT DIFF															-630.9
WITH	268.0				808.1				96.6	561.2			193.5		-2078.4
CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE	268.0				808.1				96.6	561.2			193.5		576.4 2654.7
WITHOUT	268.8				808.1				96.6	561.2			193.5		-1447.5
RAILWAY CIVIL WORK STATION FACILITY SIGNALS & TELECOM LAND ACQ & COMP ROLLING STOCKS -SALVAGE VALUE ROAD FLYOVER	268.6				808.1				96.6	561.2			193.5		576.4 2023.8
MAINT/OPR COST DIFF	1.7	1.6	1.5	1.3	1.2	1.1	0.9	0.8	0.6	0.5	0.3	0.2		-0.1	-0.3
FACILITY MAINT COST DIFF	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
CIVIL WORK WITH	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
WITHOUT	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
STATION FACILITY WITH	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
WITHOUT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SIGNALS & TELECOM WITH	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
WITHOUT	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ROLLING STOCKS WITH	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
WITHOUT	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
ROAD FLYOVER WITH	20.2	20.2	20.2	20.2	24.6	24.6	24.6	24.6	24.6	34.1	34.1	34.1	34.1	34.1	43.8
WITHOUT	20.2	20.2	20.2	20.2	24.6	24.6	24.6	24.6	24.6	34.1	34.1	34.1	34.1	34.1	43.8
OPERATING COST DIFF	-4.0	-5.0	-5.1	-5.2	-5.3	-5.5	-5.6	-5.7	-5.9	-6.0	-6.2	-6.3	-6.5	-6.7	-6.9
PSNL COST DIFF WITH	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3
WITHOUT	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
FUEL COST DIFF WITH	-3.5	-3.6	-3.8	-3.9	-4.0	-4.2	-4.3	-4.4	-4.6	-4.7	-4.9	-5.0	-5.2	-5.4	-5.5
WITHOUT	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
TOTAL BENEFIT DIFF	522.5	540.8	550.2	550.7	603.4	617.8	633.0	648.7	664.9	682.0	699.8	718.2	737.4	757.5	778.3
WITH	522.5	540.8	550.2	550.7	603.4	617.8	633.0	648.7	664.9	682.0	699.8	718.2	737.4	757.5	778.3
TIME SAVING BENEFIT BENE OF RAILWAY PSNGR	327.2	345.2	344.4	304.3	407.0	421.3	436.4	451.9	468.0	484.9	502.6	520.8	539.9	559.9	580.5
BENE OF ROAD VEHICLE MOTORCYCLE	17.3	17.3	17.3	17.3	18.3	18.6	19.2	19.5	19.9	20.3	20.9	21.3	21.7	22.3	22.7
SAMTOR	329.9	328.0	347.0	367.3	388.7	402.7	417.2	432.3	448.1	464.5	481.7	499.5	518.1	537.6	567.8
SEDAN	26.4	27.9	29.5	31.3	33.1	34.3	35.5	36.7	38.0	39.4	40.8	42.3	43.8	45.4	47.1
LIGHT BUS	16.6	17.5	18.5	19.6	20.8	21.5	22.3	23.1	23.9	24.8	25.7	26.6	27.6	28.6	29.6
BUS	172.0	182.9	193.5	204.8	216.8	224.8	233.1	241.7	250.7	260.2	270.0	280.2	290.8	302.0	313.6
TRUCK	11.8	12.5	13.2	13.9	14.7	15.3	15.8	16.4	17.0	17.6	18.2	18.9	19.6	20.4	21.1
FUEL SAVING BENEFIT VEHICLE AT CROSSING	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
VEHICLE AT FLYOVER	9.3	9.6	9.9	10.1	10.4	10.6	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
ACCIDENT AVOIDANCE BENE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAND USE BENEFIT USAGE OF SPACE	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
FOR COMMERCIAL USE	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
FOR OTHER USE	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3	179.3
WITHOUT	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
TIME SAVING BENEFIT BENE OF ROAD VEHICLE															
FUEL SAVING BENEFIT VEHICLE AT CROSSING															
VEHICLE AT FLYOVER															
ACCIDENT AVOIDANCE BENE															
LAND USE BENEFIT USAGE OF SPACE															
FOR COMMERCIAL USE															
FOR OTHER USE															
KEY FLOW EIRR	520.8	539.2	558.7	579.4	602.2	616.8	632.1	647.9	664.3	681.5	699.5	718.0	737.4	757.7	1409.5
	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377	20.377

Appendix 12.5.1 Financial Analysis for Track Elevation Project, State Railway of Thailand (Case-I-2)

(MIL. BAHT) PAGE 1 /PART 1

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		
PROFIT & LOSS STATEMENT																	
=====																	
REVENUE								143.6	151.6	160.2	169.6	179.8	190.9	203.0	218.8		
OPERATING INCOME								115.1	123.0	131.7	141.0	151.2	162.4	174.5	187.7		
PASSENGER								84.0	88.1	92.4	96.9	101.7	106.6	111.8	117.3		
FREIGHT								31.0	34.9	39.2	44.1	49.6	55.7	62.7	70.4		
RENT INCOME								28.6	28.6	28.6	28.6	28.6	28.6	28.6	31.1		
OPERATING EXPENSE								518.9	526.3	517.3	509.8	534.6	511.3	487.8	479.3		
WORKING COST								83.9	85.9	87.9	98.4	113.6	102.4	105.1	117.2		
MAINTENANCE COST								41.9	41.9	41.9	50.1	60.1	46.4	46.4	55.7		
PERSONNEL COST								4.9	4.9	4.9	4.9	7.8	7.8	7.8	7.8		
ENERGY COST								37.1	39.1	41.1	43.3	45.7	48.2	50.9	53.7		
INTEREST PAYMENT								336.5	341.9	330.8	312.9	308.8	296.7	270.6	239.6		
DEPRECIATION								98.5	98.5	98.5	98.5	112.2	112.2	112.2	122.4		
OPERATING PROFIT								-375.3	-374.7	-357.1	-340.2	-354.8	-320.3	-284.8	-260.5		
NET INCOME BEFORE TAX								-375.3	-374.7	-357.1	-340.2	-354.8	-320.3	-284.8	-260.5		
INCOME TAX PAYABLE																	
NET INCOME AFTER TAX								-375.3	-374.7	-357.1	-340.2	-354.8	-320.3	-284.8	-260.5		
=====																	
INVESTMENT PLANNING																	
=====																	
CIVIL WORK	25.2	101.3	276.4	420.8	427.8	383.0	195.2	76.1	79.7	23.3	11.9	138.2	140.7	14.1			
FOREIGN CURRENCY	11.3	45.1	71.9	110.1	113.2	124.4	99.4	35.6	45.2	9.9	5.3	36.7	38.1	8.0			
LOCAL CURRENCY	14.0	56.1	204.5	310.7	314.5	258.6	95.8	40.5	34.4	13.4	6.6	101.5	102.6	6.1			
STATION FACILITY					1.4	4.8	109.1	1.3			1.3	16.2					
FOREIGN CURRENCY					0.4	1.4	32.1	0.4			0.4	4.8					
LOCAL CURRENCY					1.0	3.4	77.0	0.9			0.9	11.4					
SIGNALS & TELECOM	10.3	34.4	43.7	9.6	106.4	133.3	260.3		3.8	3.8	20.3	42.0	6.7	12.7			
FOREIGN CURRENCY	4.5	15.1	23.4	4.4	63.1	79.5	159.2		1.7	1.7	12.2	25.4	4.0	7.9			
LOCAL CURRENCY	5.8	19.3	20.3	5.2	43.3	53.8	109.1		2.1	2.1	8.1	16.6	2.7	4.8			
LAND ACQ & COMP			26.1	26.1													
LOCAL CURRENCY			26.1	26.1													
ROLLING STOCK								702.8				254.6					
FOREIGN CURRENCY								576.1				208.7					
LOCAL CURRENCY								126.7				45.9					
TOTAL INVESTMENT	35.5	135.7	346.2	456.5	535.6	521.1	572.6	780.2	83.5	27.1	33.5	451.0	147.4	26.8			
FOREIGN TOTAL	15.8	60.2	95.3	114.5	176.7	205.3	290.8	612.0	46.9	11.6	17.9	275.5	42.1	15.9			
LOCAL TOTAL	19.8	75.4	250.8	342.0	358.8	315.7	281.9	168.1	36.5	15.5	15.6	175.5	105.3	10.9			
-SALVAGE VALUE																	
INT DURING CONST.	2.2	11.4	40.7	88.0	146.8	210.2	278.4										
FINANCE TOTAL																	
BORROWING	37.7	147.1	386.9	544.5	682.4	731.3	851.0	780.2	83.5	27.1	33.5	451.0	147.4	26.8			
REPAYMENT						2.2	10.7	39.4	81.6	130.8	182.3	238.6	260.4	270.2	281.2		
BALANCE	37.7	184.8	571.7	1116.2	1798.7	2527.8	3368.1	4188.9	4110.8	4007.1	3858.2	4070.6	3957.6	3714.3	3433.0		
INTEREST								336.5	341.9	330.8	312.9	308.8	296.7	270.6	239.6		
FINANCE IN FOREIGN CCY																	
BORROWING	16.1	62.1	99.8	122.4	189.8	224.8	319.0	612.0	46.9	11.6	17.9	275.5	42.1	15.9			
REPAYMENT											0.8	3.9	8.9	15.0	24.5		
BALANCE	16.1	78.2	170.0	300.5	490.3	715.1	1034.1	1646.1	1693.1	1704.6	1721.7	1993.3	2026.5	2027.4	2002.9		
INTEREST								44.8	50.4	51.1	51.5	57.8	63.5	60.8	60.3		
FINANCE IN LOCAL CCY 1																	
BORROWING																	
REPAYMENT																	
BALANCE																	
INTEREST																	
FINANCE IN LOCAL CCY 2																	
BORROWING	21.6	85.0	287.1	422.1	492.6	506.4	532.1	168.1	36.5	15.5	15.6	175.5	105.3	10.9			
REPAYMENT																	
BALANCE	21.6	106.6	393.7	815.8	1308.4	1812.7	2334.0	2462.8	2417.8	2302.4	2136.5	2077.3	1931.1	1686.9	1439.2		
INTEREST								291.7	291.5	279.8	261.4	251.1	236.1	209.8	179.3		
CASHFLOW STATEMENT																	
=====																	
CASH IN	37.7	147.1	386.9	544.5	682.4	731.3	851.0	503.4	-192.7	-231.5	-208.2	208.4	-60.8	-145.8	-138.0		
NET INCOME AFTER TAX								-375.3	-374.7	-357.1	-340.2	-354.8	-320.3	-284.8	-260.5		
DEPRECIATION								98.5	98.5	98.5	98.5	112.2	112.2	112.2	122.4		
BORROWING	37.7	147.1	386.9	544.5	682.4	731.3	851.0	780.2	83.5	27.1	33.5	451.0	147.4	26.8			
CASH OUT	37.7	147.1	386.9	544.5	682.4	733.4	861.7	819.5	165.1	157.9	215.8	689.6	407.8	297.0	281.2		
INVESTMENT	35.5	135.7	346.2	456.5	535.6	521.1	572.6	700.2	83.5	27.1	33.5	451.0	147.4	26.8			
INT DURING CONST. REPAYMENT	2.2	11.4	40.7	88.0	146.8	210.2	278.4										
NET CASHFLOW								-2.2	-10.7	-316.1	-357.8	-389.4	-423.9	-481.2	-468.6	-442.8	-419.3
CUM NET CASHFLOW								-2.2	-12.8	-328.9	-686.7	-1076.1	-1500.0	-1981.2	-2449.8	-2892.6	-3311.9

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
PROFIT & LOSS STATEMENT															
REVENUE	229.4	240.7	252.8	265.6	279.3	291.1	303.5	316.6	330.4	344.9	360.2	376.3	393.2	411.1	429.9
OPERATING INCOME	190.3	209.7	221.7	234.5	248.2	260.0	272.5	285.6	299.3	313.8	329.1	345.2	362.2	380.0	398.9
PASSENGER	122.0	126.9	132.0	137.2	142.7	147.7	152.8	158.1	163.6	169.3	175.2	181.3	187.6	194.1	200.8
FREIGHT	76.4	82.8	89.7	97.3	105.5	112.3	119.6	127.4	135.7	144.5	153.9	163.9	174.6	185.9	193.0
RENT INCOME	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
OPERATING EXPENSE	486.3	468.1	431.2	406.4	423.4	413.2	405.5	400.9	397.5	470.8	475.3	475.7	473.9	474.9	553.8
WORKING COST	128.0	132.1	135.5	139.2	151.9	155.4	159.2	163.2	167.4	193.5	198.3	203.4	208.8	214.6	242.7
MAINTENANCE COST	61.3	61.3	61.3	61.3	66.9	66.9	66.9	66.9	66.9	78.7	78.7	78.7	78.7	78.7	90.9
PERSONNEL COST	10.7	10.7	10.7	10.7	13.8	13.8	13.8	13.8	13.8	23.5	23.5	23.5	23.5	23.5	33.3
ENERGY COST	56.8	60.0	63.5	67.2	71.2	74.7	78.5	82.5	86.7	91.2	96.0	101.1	106.6	112.4	118.5
INTEREST PAYMENT	218.5	189.1	156.7	128.2	116.1	102.4	90.9	82.3	74.6	90.4	90.0	83.3	78.1	73.2	91.4
DEPRECIATION	138.9	138.9	138.9	138.9	155.4	155.4	155.4	155.4	155.4	187.0	187.0	187.0	187.0	187.0	219.7
OPERATING PROFIT	-256.9	-219.4	-178.4	-140.8	-144.1	-122.1	-101.9	-84.3	-67.1	-125.9	-115.1	-97.4	-80.7	-63.8	-123.9
NET INCOME BEFORE TAX	-256.9	-219.4	-178.4	-140.8	-144.1	-122.1	-101.9	-84.3	-67.1	-125.9	-115.1	-97.4	-80.7	-63.8	-123.9
INCOME TAX PAYABLE															
NET INCOME AFTER TAX	-256.9	-219.4	-178.4	-140.8	-144.1	-122.1	-101.9	-84.3	-67.1	-125.9	-115.1	-97.4	-80.7	-63.8	-123.9
INVESTMENT PLANNING															
CIVIL WORK															
FOREIGN CURRENCY															
LOCAL CURRENCY															
STATION FACILITY															
FOREIGN CURRENCY															
LOCAL CURRENCY															
SIGNALS & TELECOM															
FOREIGN CURRENCY															
LOCAL CURRENCY															
LAND ACQ & COMP															
LOCAL CURRENCY															
ROLLING STOCK	308.2				789.5				98.2	684.7			216.4		703.1
FOREIGN CURRENCY	252.7				667.1				80.5	561.2			177.4		576.4
LOCAL CURRENCY	55.6				142.4				17.7	123.5			39.0		126.8
TOTAL INVESTMENT	308.2				789.5				98.2	684.7			216.4		703.1
FOREIGN TOTAL	252.7				667.1				80.5	561.2			177.4		576.4
LOCAL TOTAL	55.6				142.4				17.7	123.5			39.0		126.8
-SALVAGE VALUE															3051.4
INT DURING CONST.															
FINANCE PROGRAM															
FINANCE TOTAL															
BORROWING	308.2				308.2					684.7					703.1
REPAYMENT	291.9	316.8	329.3	290.5	241.8	197.6	158.2	143.5	140.6	144.6	155.7	138.2	127.6	126.6	151.5
BALANCE	3449.4	3132.6	2803.3	2512.8	2579.2	2381.6	2223.4	2079.9	1939.2	2479.3	2323.5	2165.4	2057.7	1931.2	2482.8
INTEREST	218.5	189.1	156.7	128.2	116.1	102.4	90.9	82.3	74.6	90.4	90.0	83.3	78.1	73.2	91.4
FINANCE IN FOREIGN CCY															
BORROWING	252.7				252.7					561.2					576.4
REPAYMENT	35.8	51.7	82.3	84.7	85.2	86.1	99.9	102.0	102.8	102.8	115.4	115.4	115.4	115.4	128.1
BALANCE	2219.8	2168.1	2085.8	2001.1	2168.5	2062.4	1982.5	1880.5	1777.7	2236.1	2120.7	2005.2	1889.8	1774.4	2222.6
INTEREST	65.0	65.4	63.2	60.7	63.8	63.2	69.2	57.2	54.1	63.6	64.5	61.0	57.6	54.1	63.3
FINANCE IN LOCAL CCY 1															
BORROWING															
REPAYMENT															
BALANCE															
INTEREST															
FINANCE IN LOCAL CCY 2															
BORROWING	55.6				55.6					123.5					126.8
REPAYMENT	256.1	265.1	247.0	205.9	156.6	111.5	58.3	41.5	37.8	41.8	40.3	22.7	12.2	11.1	23.5
BALANCE	1229.6	964.5	717.5	511.7	410.7	299.2	240.9	199.4	161.5	243.2	202.9	188.1	167.9	156.8	280.1
INTEREST	153.6	123.7	93.5	67.6	52.3	39.2	30.7	25.2	20.5	26.7	25.6	22.3	20.5	19.2	28.1
CASHFLOW STATEMENT															
CASH IN	190.3	-80.5	-39.5	-1.9	319.5	33.3	53.5	71.1	88.4	745.7	71.9	89.6	106.4	123.3	798.9
NET INCOME AFTER TAX	-256.9	-219.4	-178.4	-140.8	-144.1	-122.1	-101.9	-84.3	-67.1	-125.9	-115.1	-97.4	-80.7	-63.8	-123.9
DEPRECIATION	138.9	138.9	138.9	138.9	155.4	155.4	155.4	155.4	155.4	187.0	187.0	187.0	187.0	187.0	219.7
BORROWING	308.2				308.2					684.7					703.1
CASH OUT	600.1	316.8	329.3	290.5	1831.3	197.6	158.2	143.5	238.8	829.3	155.7	138.2	364.0	126.6	856.7
INVESTMENT	308.2				789.5				98.2	684.7			216.4		703.1
INT DURING CONST.															
REPAYMENT	291.9	316.8	329.3	290.5	241.8	197.6	158.2	143.5	140.6	144.6	155.7	138.2	127.6	126.6	151.5
NET CASHFLOW	-409.8	-397.3	-368.7	-292.4	-711.8	-164.3	-104.7	-72.4	-150.5	-83.6	-83.8	-48.6	-237.7	-3.3	-55.7
COM NET CASHFLOW	-3721.7	-4119.0	-4487.7	-4780.1	-5491.9	-5856.2	-5760.9	-5833.3	-5903.0	-6067.4	-6151.2	-6199.7	-6437.4	-6440.7	-6496.4

Appendix 12.5.2 Financial Analysis for Track Elevation Project,
State Railway of Thailand (Case-II-3)

(MIL. BAHT) PAGE 1 / PART 1

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PROFIT & LOSS STATEMENT															
=====															
REVENUE								177.1	186.0	195.8	206.3	217.6	230.0	245.9	260.4
OPERATING INCOME								139.5	148.5	158.2	168.7	180.1	192.4	205.8	220.4
PASSENGER								108.4	113.6	119.0	124.6	130.5	136.7	143.1	149.9
FREIGHT								31.0	34.9	39.2	44.1	49.6	55.7	62.7	70.4
RENT INCOME								37.6	37.6	37.6	37.6	37.6	37.6	40.1	40.1
OPERATING EXPENSE								689.4	692.1	680.2	665.6	672.4	627.6	604.9	565.2
WORKING COST								116.7	105.9	108.2	119.2	134.1	123.8	133.5	136.5
MAINTENANCE COST								66.5	53.5	53.5	62.2	71.4	58.4	65.1	65.1
PERSONNEL COST								5.9	5.9	5.9	5.9	9.0	9.0	9.0	9.0
ENERGY COST								44.3	46.4	48.7	51.1	53.7	56.4	59.3	62.4
INTEREST PAYMENT								446.7	460.1	445.9	420.3	397.1	362.4	321.0	278.2
DEPRECIATION								126.1	126.1	126.1	126.1	141.3	141.3	150.5	150.5
OPERATING PROFIT								-512.3	-506.0	-484.4	-459.3	-454.8	-397.6	-359.0	-304.8
NET INCOME BEFORE TAX								-512.3	-506.0	-484.4	-459.3	-454.8	-397.6	-359.0	-304.8
INCOME TAX PAYABLE															
NET INCOME AFTER TAX								-512.3	-506.0	-484.4	-459.3	-454.8	-397.6	-359.0	-304.8
=====															
INVESTMENT PLANNING															
=====															
CIVIL WORK	33.0	121.6	416.7	609.5	614.7	690.6	158.4	158.1	141.1	28.5	24.0	12.2	16.8	13.4	
FOREIGN CURRENCY	14.7	54.1	120.2	172.3	182.4	174.9	83.1	48.9	35.7	11.3	20.2	2.4	6.6	13.4	
LOCAL CURRENCY	18.3	67.5	296.5	437.2	432.3	315.8	75.2	109.2	105.5	17.2	3.9	9.8	10.2		
STATION FACILITY					33.1	13.4	130.5	17.7							
FOREIGN CURRENCY					10.0	4.0	39.4	5.3							
LOCAL CURRENCY					23.1	9.4	91.1	12.4							
SIGNALS & TELECOM	10.1	34.7	45.4	10.2	114.4	143.4	299.5	41.0		3.8	9.2	19.3	6.7	12.7	
FOREIGN CURRENCY	4.4	15.2	24.4	4.7	67.2	84.6	177.3	25.5		1.7	5.7	11.6	4.0	7.9	
LOCAL CURRENCY	5.7	19.5	21.0	5.5	47.2	58.8	122.2	15.5		2.1	3.5	7.9	2.7	4.8	
LAND ACQ & CONP			39.9	39.9											
LOCAL CURRENCY			39.9	39.9											
ROLLING STOCK							879.6					274.3			
FOREIGN CURRENCY								721.0				224.8			
LOCAL CURRENCY								158.6				49.5			
TOTAL INVESTMENT	43.1	156.3	502.0	659.6	762.2	647.4	588.3	1096.3	141.1	32.3	33.2	305.7	23.5	26.1	
FOREIGN TOTAL	19.1	69.3	144.6	177.0	259.6	263.5	299.8	800.7	35.7	13.0	25.9	238.6	10.6	21.3	
LOCAL TOTAL	24.0	87.0	357.4	482.6	502.6	383.9	288.6	295.7	105.5	19.3	7.4	67.1	12.9	4.8	
-SALVAGE VALUE															
INT DURING CONST.	2.6	13.4	54.2	121.1	203.7	286.3	366.6								
=====															
FINANCE PROGRAM															
=====															
FINANCE TOTAL															
BORROWING	45.7	169.6	556.2	780.8	966.0	933.7	955.0	1096.3	141.1	32.3	33.2	305.7	23.5		
REPAYMENT						2.6	12.4	53.0	112.2	181.0	246.3	311.7	348.8	368.7	364.6
BALANCE	45.7	215.4	771.6	1552.4	2518.4	3449.5	4392.0	5435.4	5464.3	5315.5	5102.5	5096.6	4771.3	4402.6	4016.0
INTEREST								446.7	460.1	445.9	420.3	397.1	362.4	321.0	278.2
FINANCE IN FOREIGN CCY															
BORROWING	19.5	71.5	150.6	186.3	278.5	290.9	336.8	800.7	35.7	13.0	25.9	238.6	10.6		
REPAYMENT											1.0	4.5	12.1	21.5	35.4
BALANCE	19.5	91.0	241.6	429.9	706.4	999.2	1336.0	2136.7	2172.3	2185.3	2210.2	2444.3	2442.0	2421.3	2385.9
INTEREST								58.1	64.9	65.5	66.1	71.6	73.3	72.8	71.0
FINANCE IN LOCAL CCY 1															
BORROWING															
REPAYMENT															
BALANCE															
INTEREST															
FINANCE IN LOCAL CCY 2															
BORROWING	26.2	98.2	405.6	592.4	687.5	642.9	618.2	295.7	105.5	19.3	7.4	67.1	12.9		
REPAYMENT															
BALANCE	26.2	124.4	530.0	1122.5	1810.0	2450.2	3056.0	3298.7	3291.9	3130.2	2892.3	2652.3	2326.5	1781.3	1632.2
INTEREST								338.6	395.2	300.5	354.2	325.5	289.1	249.2	206.3
=====															
CASHFLOW STATEMENT															
=====															
CASH IN	45.7	169.6	556.2	780.8	966.0	933.7	955.0	710.0	-238.8	-326.1	-300.1	-7.8	-232.8	-208.6	-154.3
NET INCOME AFTER TAX								-512.3	-506.0	-484.4	-459.3	-454.8	-397.6	-359.0	-304.8
DEPRECIATION								126.1	126.1	126.1	126.1	141.3	141.3	150.5	150.5
BORROWING	45.7	169.6	556.2	780.8	966.0	933.7	955.0	1096.3	141.1	32.3	33.2	305.7	23.5		
CASH OUT	45.7	169.6	556.2	780.8	966.0	936.4	967.4	1149.3	253.4	213.3	279.5	617.4	372.3	394.8	384.6
INVESTMENT	43.1	156.3	502.0	659.6	762.2	647.4	588.3	1096.3	141.1	32.3	33.2	305.7	23.5	26.1	
INT DURING CONST.	2.6	13.4	54.2	121.1	203.7	2.6	12.4	53.0	112.2	181.0	246.3	311.7	348.8	368.7	364.6
REPAYMENT															
NET CASHFLOW						-2.6	-12.4	-439.3	-492.2	-519.3	-579.6	-625.1	-605.8	-603.4	-538.9
CUM NET CASHFLOW						-2.6	-15.1	-454.4	-946.6	-1465.9	-2065.5	-2690.6	-3295.7	-3899.1	-4437.9

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
PROFIT & LOSS STATEMENT															
REVENUE	271.6	283.4	295.9	309.3	323.4	335.8	348.8	362.5	376.9	392.0	407.8	424.5	442.0	460.5	479.9
OPERATING INCOME	231.5	243.3	255.9	269.2	283.3	295.7	308.8	322.4	336.8	351.9	367.8	384.4	402.0	420.4	439.8
PASSENGER	195.1	160.5	166.1	171.9	177.9	183.4	189.1	195.0	201.1	207.4	213.8	220.5	227.4	234.5	241.8
FREIGHT	76.4	82.8	89.7	97.3	105.5	112.3	119.6	127.4	135.7	144.5	153.9	163.9	174.6	185.9	198.0
RENT INCOME	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1	40.1
OPERATING EXPENSE	564.0	528.0	491.1	460.5	476.9	465.0	456.6	452.8	451.1	426.5	532.9	532.2	532.1	532.4	610.7
WORKING COST	149.0	152.4	156.2	160.1	173.6	177.2	181.0	185.0	189.3	215.5	220.3	225.5	231.0	236.8	265.0
MAINTENANCE COST	71.1	71.1	71.1	71.1	77.1	77.1	77.1	77.1	77.1	88.9	88.9	88.9	88.9	88.9	101.0
PERSONNEL COST	12.2	12.2	12.2	12.2	15.4	15.4	15.4	15.4	15.4	25.2	25.2	25.2	25.2	25.2	35.0
ENERGY COST	65.7	69.2	72.9	78.9	81.1	89.7	88.5	92.6	96.9	101.4	106.3	111.4	116.9	122.7	128.9
INTEREST PAYMENT	246.4	288.9	166.3	131.0	116.6	101.1	89.0	81.0	75.0	92.7	94.2	88.4	82.6	77.3	94.8
DEPRECIATION	168.6	168.6	168.6	168.6	186.7	186.7	186.7	186.7	166.7	218.3	218.3	218.3	218.3	218.3	251.0
OPERATING PROFIT	-292.4	-244.6	-195.1	-151.3	-153.5	-129.2	-107.7	-90.3	-74.2	-134.6	-125.1	-107.7	-90.1	-71.9	-130.9
NET INCOME BEFORE TAX	-292.4	-244.6	-195.1	-151.3	-153.5	-129.2	-107.7	-90.3	-74.2	-134.6	-125.1	-107.7	-90.1	-71.9	-130.9
INCOME TAX PAYABLE															
NET INCOME AFTER TAX	-292.4	-244.6	-195.1	-151.3	-153.5	-129.2	-107.7	-90.3	-74.2	-134.6	-125.1	-107.7	-90.1	-71.9	-130.9
INVESTMENT PLANNING															
CIVIL WORK															
FOREIGN CURRENCY															
LOCAL CURRENCY															
STATION FACILITY															
FOREIGN CURRENCY															
LOCAL CURRENCY															
SIGNALS & TELECOM															
FOREIGN CURRENCY															
LOCAL CURRENCY															
LAND ACQ & COMP															
LOCAL CURRENCY															
ROLLING STOCK	327.9				985.9				117.9	684.7			236.0		703.1
FOREIGN CURRENCY	268.8				608.1				96.6	561.2			193.5		576.4
LOCAL CURRENCY	59.1				177.8				21.3	123.5			42.6		126.8
TOTAL INVESTMENT	327.9				985.9				117.9	684.7			236.0		703.1
FOREIGN TOTAL	268.8				608.1				96.6	561.2			193.5		576.4
LOCAL TOTAL	59.1				177.8				21.3	123.5			42.6		126.8
-SALVAGE VALUE															3350.6
INT DURING CONST.															
FINANCE PROGRAM															
FINANCE TOTAL															
BORROWING	327.9				327.9					684.7					703.1
REPAYMENT	397.2	411.0	411.7	354.3	286.2	229.1	179.2	150.1	139.6	143.6	156.3	149.6	148.3	140.3	174.1
BALANCE	3946.7	3537.7	3126.0	2771.7	2813.4	2584.4	2405.2	2295.0	2115.4	2656.5	2500.2	2350.7	2202.4	2054.1	2583.2
INTEREST	246.4	206.9	166.3	131.8	116.6	101.1	88.6	81.0	75.0	92.7	94.2	88.4	82.6	77.3	94.8
FINANCE IN FOREIGN CCY															
BORROWING	268.8				268.8					561.2					576.4
REPAYMENT	59.0	66.8	106.8	108.6	109.3	110.6	122.5	123.0	123.0	123.0	136.5	136.5	136.5	136.5	149.9
BALANCE	2604.7	2537.9	2431.0	2322.4	2481.9	2371.3	2248.8	2125.8	2002.8	2441.0	2304.5	2168.1	2031.6	1895.2	2321.6
INTEREST	76.5	76.6	71.7	70.5	73.3	72.0	68.4	64.7	61.0	69.9	70.2	66.1	62.0	57.9	66.4
FINANCE IN LOCAL CCY 1															
BORROWING															
REPAYMENT															
BALANCE															
INTEREST															
FINANCE IN LOCAL CCY 2															
BORROWING	59.1				59.1					123.5					126.8
REPAYMENT	347.3	344.2	304.9	245.6	176.9	118.5	56.7	27.1	16.6	20.6	19.8	13.1	11.8	11.8	24.2
BALANCE	1344.0	999.9	695.0	449.3	331.6	213.0	156.3	129.2	112.6	215.5	195.7	182.6	170.8	159.9	261.6
INTEREST	169.9	130.3	92.5	61.3	43.3	29.1	20.5	16.3	14.0	22.8	24.1	22.3	20.8	19.4	28.3
CASHFLOW STATEMENT															
CASH IN	204.1	-76.0	-26.5	17.3	361.1	57.6	79.0	96.4	112.5	768.4	93.3	110.7	128.3	146.4	823.3
NET INCOME AFTER TAX	-292.4	-244.6	-195.1	-151.3	-153.5	-129.2	-107.7	-90.3	-74.2	-134.6	-125.1	-107.7	-90.1	-71.9	-130.9
DEPRECIATION	168.6	168.6	168.6	168.6	186.7	186.7	186.7	186.7	166.7	218.3	218.3	218.3	218.3	218.3	251.0
BORROWING	327.9				985.9				117.9	684.7			236.0		703.1
CASH OUT	725.1	411.0	411.7	354.3	1272.0	229.1	179.2	150.1	257.5	820.2	156.3	149.6	354.3	148.3	877.2
INVESTMENT	327.9				985.9				117.9	684.7			236.0		703.1
INT DURING CONST.															
REPAYMENT	397.2	411.0	411.7	354.3	286.2	229.1	179.2	150.1	139.6	143.6	156.3	149.6	148.3	148.3	174.1
NET CASHFLOW	-521.0	-487.0	-438.2	-336.9	-910.9	-171.5	-100.2	-53.7	-144.9	-59.8	-63.0	-38.9	-256.0	-1.9	-53.9
CUM NET CASHFLOW	-4989.0	-5446.0	-5884.2	-6221.1	-7132.0	-7303.5	-7403.7	-7457.4	-7602.9	-7662.2	-7725.2	-7764.1	-8020.1	-8022.0	-8075.9

Appendix 12.5.3 Net Cash Flow by Finance Plan (Case-I-2)

(Unit: Million Baht)

Year	Finance Plan No. 1				Finance Plan No. 2				Finance Plan No. 3			
	Subsidies to 50% of Domestic Currency Portion				Subsidies to 100% of Domestic Currency Portion				Subsidies to 100% of Domestic Currency Portion plus Subsidies to Interest on Foreign Currency Borrowing			
	(1) Net Cash Flow	(2) Subsidies	(1)-(2) Net Cash Flow	Accumulated Net Cash Flow	(3) Subsidies	(1)-(3) Net Cash Flow	Accumulated Net Cash Flow	(4) Subsidies	(1)-(4) Net Cash Flow	Accumulated Net Cash Flow		
1991	-328.9	171.9	-157.0	-157.0	343.8	+14.9	+14.9	388.6	+59.7	+59.7		
92	-357.8	186.6	-171.2	-328.3	373.1	+15.3	+30.2	423.5	+65.7	+125.4		
93	-389.4	205.3	-184.1	-512.3	410.6	+21.2	+51.4	461.7	+72.3	+197.7		
94	-423.9	221.4	-202.5	-714.8	442.8	+18.9	+70.3	494.3	+70.4	+268.2		
95	-481.2	242.8	-238.4	-953.2	485.7	+4.5	+74.9	543.5	+62.3	+350.4		
96	-468.6	243.8	-224.8	-1,178.0	487.6	+19.0	+93.9	548.2	+79.6	+410.0		
97	-442.8	232.5	-210.3	-1,388.3	464.9	+22.1	+116.0	525.7	+82.9	+492.9		
98	-419.3	218.0	-201.3	-1,589.6	436.1	+16.8	+132.8	496.3	+77.0	+570.0		
99	-409.8	204.8	-205.0	-1,794.5	409.7	-0.1	+132.6	474.6	+64.8	+634.8		
2000	-397.3	194.4	-202.9	-1,997.4	388.8	-8.5	+124.2	454.3	+57.0	+691.8		
01	-368.7	170.2	-198.5	-2,195.5	340.4	-28.3	+95.9	403.6	+34.9	+726.7		
02	-292.4	136.7	-155.7	-2,351.6	273.4	-19.0	+76.9	334.1	+41.7	+768.4		
03	-711.8	104.5	-607.3	-2,958.6	208.9	-502.9	-425.9	272.7	-439.1	+329.3		
04	-164.3	75.4	-88.9	-3,047.8	150.7	-13.6	-439.5	213.9	+49.6	+378.9		
05	-104.7	44.5	-60.2	-3,108.1	88.9	-15.8	-455.3	149.2	+44.5	+423.3		
06	-72.4	33.3	-39.1	-3,147.2	66.7	-5.7	-461.0	123.8	+51.4	+474.8		
07	-150.5	29.2	-121.3	-3,268.5	58.4	-92.1	-553.1	112.5	-38.0	+436.8		
08	-83.6	34.3	-49.3	-3,317.7	68.6	-15.0	-568.1	132.3	+48.7	+485.4		
09	-83.8	32.9	-50.9	-3,368.6	65.8	-18.0	-586.1	130.3	+46.5	+531.9		
10	-48.6	22.5	-26.1	-3,394.7	45.1	-3.5	-589.6	106.1	+57.5	+589.4		
11	-237.7	16.4	-221.3	-3,616.0	32.8	-204.9	-794.6	90.3	-147.4	+442.0		
12	-3.3	15.1	+11.8	-3,604.1	30.3	+27.0	-767.6	84.4	+81.1	+523.1		
13	-55.7	25.7	-30.0	-3,634.1	51.5	-4.2	-771.7	114.9	+59.2	+582.3		
Total	-6,496.4	2,862.3	-3,634.1	-3,634.1	5,724.6	-771.7	-771.7	7,078.7		+582.3		

Appendix 12.5.4 Net Cash Flow by Finance Plan (Case-II-3)

(Unit: Million Baht)

Year	Finance Plan No. 1				Finance Plan No. 2				Finance Plan No. 3			
	Subsidies to 50% of Domestic Currency Portion				Subsidies to 100% of Domestic Currency Portion				Subsidies to 100% of Domestic Currency Portion plus Subsidies to Interest on Foreign Currency Borrowing			
	Net Cash Flow (1)	(2) Subsidies	(1)-(2) Net Cash Flow	Accumulated Net Cash Flow	(3) Subsidies	(1)-(3) Net Cash Flow	Accumulated Net Cash Flow	(4) Subsidies	(1)-(4) Net Cash Flow	Accumulated Net Cash Flow		
1991	-454.4	228.4	-226.0	-226.0	456.7	+2.3	+2.3	514.8	+60.4	+60.4		
92	-492.9	254.4	-238.5	-464.5	508.2	+15.3	+17.5	573.1	+80.2	+140.5		
93	-539.3	280.7	-258.6	-723.1	561.4	+22.1	+39.7	626.9	+87.6	+228.1		
94	-579.6	299.8	-279.8	-1,002.9	599.5	+19.9	+59.6	665.7	+86.1	+314.2		
95	-625.1	316.3	-308.8	-1,311.8	632.5	+7.4	+67.0	704.1	+79.0	+393.2		
96	-605.0	312.9	-292.1	-1,603.9	625.8	+20.8	+87.8	699.1	+94.1	+487.3		
97	-603.4	297.7	-305.7	-1,909.6	595.4	-8.0	+79.8	668.2	+64.8	+552.1		
98	-538.9	277.8	-261.1	-2,170.8	555.5	+16.6	+96.4	627.4	+88.5	+640.5		
99	-521.0	258.6	-262.4	-2,433.2	517.2	-3.8	+92.6	593.7	+72.7	+713.2		
2000	-487.0	237.3	-249.7	-2,682.9	474.5	-12.5	+80.1	551.1	+64.1	+777.3		
01	-438.2	198.7	-239.5	-2,922.4	397.4	-40.8	+39.3	471.1	+32.9	+810.2		
02	-336.9	153.4	-183.5	-3,105.9	306.9	-30.0	+9.3	377.4	+40.5	+850.7		
03	-910.9	110.1	-800.8	-3,906.7	220.2	-690.7	-681.4	293.5	-617.4	+233.3		
04	-171.5	73.8	-97.7	-4,004.4	147.6	-23.9	-705.3	219.6	+48.1	+281.4		
05	-100.2	38.6	-61.6	-4,066.0	77.2	-23.0	-728.3	145.6	+45.4	+326.7		
06	-53.7	21.7	-32.0	-4,098.0	43.4	-10.3	-738.6	108.1	+54.4	+381.2		
07	-144.9	15.3	-129.6	-4,227.6	30.6	-114.3	-852.9	91.6	-53.3	+327.9		
08	-59.8	21.6	-38.2	-4,265.8	43.3	-16.5	-869.4	113.3	+53.5	+381.3		
09	-63.0	21.9	-41.1	-4,306.9	43.9	-19.1	-888.5	114.0	+51.0	+432.4		
10	-38.9	17.7	-21.2	-4,328.1	35.4	-3.5	-892.0	101.5	+62.6	+494.9		
11	-256.0	16.3	-239.7	-4,567.8	32.6	-223.4	-1,115.4	94.6	-161.4	+333.5		
12	-1.9	15.6	+13.7	-4,554.0	31.3	+29.4	-1,086.0	89.1	+87.2	+420.8		
13	-53.9	26.2	-27.7	-4,581.7	52.5	-1.4	-1,087.4	118.9	+65.0	+485.8		
Total	-8,075.9	3,494.2		-4,581.7	6,988.5		-1,087.4	8,561.7		+485.8		

