

For information

**Legislative Council Panel on Transport
Supplementary Information Paper on**

**Island Line Extensions, Route 7
and South Hong Kong Island Line**

INTRODUCTION

At the meeting of the Legislative Council Panel on Transport held on 28 February 2003, Members requested the Administration to provide the following supplementary information:

- (a) job opportunities related to the construction and operation of Route 7 and SIL respectively; and
- (b) examples of economic internal rate of return (EIRR) calculations for Route 7 and SIL.

THE ADMINISTRATION'S RESPONSE

Job Opportunities to be created

2. It is estimated that if a decision is taken to construct the Route 7, an approximate 4 000 jobs might be created for the design and construction work. For the operation of Route 7, approximately 100 to 150 jobs might be created.

3. If a decision is taken to construct the SIL, it is estimated that the SIL would create approximately 3 200 jobs for the design and construction work. The operational phase of the SIL would create approximately 300 jobs.

Examples of EIRR Calculations

4. The Internal Rate of Return (IRR) of a project refers to the annual discount rate which makes the total return from the project over its project life just equal to the total investment. The benefits accrued to transport infrastructure projects generally include savings in travelling time, congestion relief to adjacent roads and reductions in the number of traffic accidents on the adjacent roads. In economic evaluations, these benefits are then cost over an assumed operating period of 40 years. The economic costs of the transport infrastructure projects cover design and construction together with refurbishing, maintenance and operating over the same 40-year period. **Annex A** gives the yearly breakdown of the above benefits and costs for the SIL. With the economic return calculated for each year of the project life, the economic internal rate of return (EIRR) of the SIL can be readily worked out. Similar to the SIL, the EIRR calculation for the coastal alignment option of Route 7 is at **Annex B**.

Environment, Transport and Works Bureau
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EIRR calculation for South Hong Kong Island Line (SIL)

Operating Year	Year	Cost (\$M)			Saving (\$M)					Net Benefit (\$M)
		Capital Cost		Operating Cost of SIL	Public Transport		Road Users		Accident cost	
		Design and Construction	Land Cost		travelling time cost	vehicle operating cost	travelling time cost	vehicle operating cost		
	2006	368	44	0						-412
	2007	1,369	44	0						-1,413
	2008	1,909	0	0						-1,909
	2009	2,915	0	0						-2,915
	2010	3,108	0	0						-3,108
1	2011	0	0	154	1,294	192	156	138	1	1,627
2	2012	0	0	154	1,339	201	158	140	1	1,686
3	2013	0	0	154	1,386	208	162	140	2	1,744
4	2014	0	0	154	1,434	215	165	141	2	1,803
5	2015	0	0	154	1,484	219	169	142	2	1,862
6	2016	0	0	154	1,525	221	173	142	2	1,909
7	2017	0	0	154	1,558	222	176	143	2	1,947
8	2018	0	0	154	1,593	222	179	143	2	1,986
9	2019	0	0	154	1,628	223	181	144	2	2,024
10	2020	0	0	154	1,664	224	184	144	2	2,064
11	2021	0	0	154	1,700	225	186	145	2	2,105
12	2022	0	0	154	1,724	226	189	145	2	2,132
13	2023	0	0	154	1,748	227	191	145	2	2,159
14	2024	0	0	154	1,773	227	193	146	2	2,187
15	2025	0	0	154	1,797	228	195	146	2	2,214
16	2026	0	0	154	1,823	229	197	146	2	2,243
17	2027	0	0	154	1,841	229	199	147	2	2,264
18	2028	0	0	154	1,859	229	201	147	2	2,285
19	2029	0	0	154	1,878	230	203	147	2	2,306
20	2030	60	0	154	1,897	230	205	148	2	2,268
21	2031	60	0	154	1,916	231	207	148	2	2,290
22	2032	0	0	154	1,935	231	209	148	2	2,372
23	2033	0	0	154	1,954	232	211	149	2	2,394
24	2034	0	0	154	1,974	233	213	149	2	2,417
25	2035	1,470	0	154	1,993	233	215	149	2	969
26	2036	1,470	0	154	2,013	234	217	150	2	992
27	2037	0	0	154	2,033	234	219	150	2	2,486
28	2038	0	0	154	2,054	235	222	150	2	2,509
29	2039	0	0	154	2,074	235	224	151	2	2,533
30	2040	0	0	154	2,095	236	226	151	3	2,557
31	2041	0	0	154	2,116	236	228	151	3	2,581
32	2042	0	0	154	2,137	237	231	152	3	2,605
33	2043	0	0	154	2,159	237	233	152	3	2,630
34	2044	0	0	154	2,180	238	235	153	3	2,655
35	2045	0	0	154	2,202	239	238	153	3	2,680
36	2046	0	0	154	2,224	239	240	153	3	2,705
37	2047	0	0	154	2,246	240	242	154	3	2,731
38	2048	0	0	154	2,269	240	245	154	3	2,757
39	2049	0	0	154	2,291	241	247	155	3	2,783
40	2,050	-2,426	0	154	2,314	241	247	155	3	5,233
	TOTAL	10,304	88	6,148	75,124	9,149	8,211	5,903	89	81,936

EIRR = 16%

EIRR calculation for Route 7 (coastal alignment option)

Operating Year	Year	Cost (\$M)		Saving (\$M)				Accident cost	Net Benefit (\$M)
		Design and Construction	Operating Cost	Public Transport		Road Users			
				travelling time cost	vehicle operating cost	travelling time cost	vehicle operating cost		
	2007	2,500							-2,500
	2008	2,500							-2,500
	2009	2,500							-2,500
	2010	2,500							-2,500
1	2011	0	86	512	171	276	92	1	965
2	2012	0	86	564	188	303	101	1	1,071
3	2013	0	86	615	205	331	110	1	1,177
4	2014	0	86	667	222	359	120	1	1,283
5	2015	0	86	719	240	387	129	1	1,389
6	2016	0	86	770	257	415	138	1	1,495
7	2017	0	86	770	257	415	138	1	1,495
8	2018	0	86	770	257	415	138	1	1,495
9	2019	0	86	770	257	415	138	1	1,495
10	2020	0	86	770	257	415	138	1	1,495
11	2021	0	86	770	257	415	138	1	1,495
12	2022	0	86	770	257	415	138	1	1,495
13	2023	0	86	770	257	415	138	1	1,495
14	2024	0	86	770	257	415	138	1	1,495
15	2025	0	86	770	257	415	138	1	1,495
16	2026	0	86	770	257	415	138	1	1,495
17	2027	0	86	770	257	415	138	1	1,495
18	2028	0	86	770	257	415	138	1	1,495
19	2029	0	86	770	257	415	138	1	1,495
20	2030	0	86	770	257	415	138	1	1,495
21	2031	0	86	770	257	415	138	1	1,495
22	2032	0	86	770	257	415	138	1	1,495
23	2033	0	86	770	257	415	138	1	1,495
24	2034	0	86	770	257	415	138	1	1,495
25	2035	500	86	770	257	415	138	1	995
26	2036	500	86	770	257	415	138	1	995
27	2037	0	86	770	257	415	138	1	1,495
28	2038	0	86	770	257	415	138	1	1,495
29	2039	0	86	770	257	415	138	1	1,495
30	2040	0	86	770	257	415	138	1	1,495
31	2041	0	86	770	257	415	138	1	1,495
32	2042	0	86	770	257	415	138	1	1,495
33	2043	0	86	770	257	415	138	1	1,495
34	2044	0	86	770	257	415	138	1	1,495
35	2045	0	86	770	257	415	138	1	1,495
36	2046	0	86	770	257	415	138	1	1,495
37	2047	0	86	770	257	415	138	1	1,495
38	2048	0	86	770	257	415	138	1	1,495
39	2049	0	86	770	257	415	138	1	1,495
40	2,050	-2,200	86	770	257	415	138	1	3,695
TOTAL		8,800	3,440	30,035	10,012	16,173	5,391	40	49,410

EIRR =	11%
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