Appeddix 30.1 Cago Volume Projection (2010-2020)

Unit: 1,000 tons

	Container Cargo				Non-container Cargo				Total		
Year	SFEA Total Cargo Volume	Volume for Project	HCMC	**Thi-Vai - Vung-Tau Area**	SFEA Total Cargo Volume	Volume for Project	HCMC	Thi-Vai - Vung-Tau Area	SFEA Total Cargo Volume	HCMC	**Thi-Vai - Vung-Tau Area**
2000	8,717		8,701	16	13,926		12,247	1,679	22,643	20,948	1,695
2001	9,594		8,963	631	14,377		12,470	1,907	23,971	21,433	2,538
2002	10,560		9,234	1,326	14,844		12,696	2,148	25,404	21,930	3,474
2003	11,622		9,512	2,110	15,325		12,927	2,398	26,947	22,439	4,508
2004	12,791		9,799	2,992	15,822		13,162	2,660	28,613	22,961	5,652
2005	14,079		10,094	3,985	16,335		13,401	2,934	30,414	23,495	6,919
2006	15,496		10,398	5,098	16,864		13,644	3,220	32,360	24,042	8,318
2007	17,055		10,712	6,343	17,411		13,892	3,519	34,466	24,604	9,862
2008	18,772		11,035	7,737	17,976		14,144	3,832	36,748	25,179	11,569
2009	20,661		11,367	9,294	18,558		14,401	4,157	39,219	25,768	13,451
2010	22,740	2,079	11,710	11,030	19,160	602	14,663	4,497	41,900	26,373	15,527
2011	24,475	3,814	11,949	12,526	20,132	1,574	15,227	4,905	44,607	27,176	17,431
2012	26,342	5,681	12,193	14,149	21,153	2,595	15,814	5,339	47,495	28,007	19,488
2013	28,353	7,692	12,441	15,912	22,226	3,668	16,422	5,804	50,579	28,863	21,716
2014	30,516	9,855	12,695	17,821	23,354	4,796	17,054	6,300	53,870	29,749	24,121
2015	32,845	12,184	12,954	19,891	24,539	5,981	17,711	6,828	57,384	30,665	26,719
2016	35,351	14,690	13,218	22,133	25,784	7,226	18,392	7,392	61,135	31,610	29,525
2017	38,049	17,388	13,488	24,561	27,092	8,534	19,100	7,992	65,141	32,588	32,553
2018	40,952	20,291	13,763	27,189	28,466	9,908	19,836	8,630	69,418	33,599	35,819
2019	44,077	23,416	14,044	30,033	29,911	11,353	20,599	9,312	73,988	34,643	39,345
2020	**47,440**	26,779	14,330	33,110	31,428	12,870	21,392	10,036	78,868	35,722	43,146

Appendix 30.2 Average Waiting Time of Ships in Queue

(Unit: Average Service Time in Day)

	Number of Berthing Point											
Utilization	1	2	3	4	5	6	7	8	9	10	11	12
0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.20	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.25	0.09	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.30	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.35	0.17	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	0.24	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.45	0.30	0.09	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.50	0.39	0.12	0.05	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.55	0.49	0.16	0.07	0.04	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00
0.60	0.63	0.22	0.11	0.06	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
0.65	0.80	0.30	0.16	0.09	0.06	0.05	0.03	0.02	0.01	0.01	0.00	0.00
0.70	1.04	0.41	0.23	0.14	0.10	0.07	0.05	0.04	0.03	0.02	0.00	0.00
0.75	1.38	0.58	0.32	0.21	0.14	0.11	0.08	0.07	0.05	0.03	0.01	0.00
0.80	1.87	0.83	0.46	0.33	0.23	0.19	0.14	0.12	0.09	0.07	0.03	0.01
0.85	2.80	1.30	0.75	0.55	0.39	0.34	0.26	0.22	0.20	0.13	0.08	0.05
0.90	4.36	2.00	1.20	0.92	0.65	0.57	0.44	0.40	0.34	0.25	0.18	0.12
0.95	5.00	3.40	2.80	2.10	2.00	1.75	1.35	0.95	1.02	0.62	0.32	0.30
1.00	6.60	6.00	4.30	3.20	3.10	2.60	2.10	1.80	1.60	1.40	1.10	0.95

Source: E. Page, Queuing Theory in OR (London, Butterworths, 1972) p. 155

Appendix 30.3 (a) Estimated Waiting Time (Saigon)

Saigon Port

Container Cargo Handling

	Basic Data					Without Project Case							
Year	Container Cargo Volume	Average Lot	Annual Container Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	Day	hours	day	US$	US$ Mil.
2000	2441	6100	337	24	8088	5	43800	0.18	0.00	0.00	0	10,700	0.00
2001	2686	6100	440	24	10569	5	43800	0.24	0.00	0.00	0	10,700	0.00
2002	2957	6100	485	24	11633	5	43800	0.27	0.00	0.00	0	10,700	0.00
2003	3254	6100	533	24	12803	5	43800	0.29	0.00	0.00	0	10,700	0.00
2004	3581	6100	587	24	14091	5	43800	0.32	0.00	0.00	0	10,700	0.00
2005	3942	6100	646	24	15510	5	43800	0.35	0.00	0.00	0	10,700	0.00
2006	4339	6100	711	24	17071	5	43800	0.39	0.00	0.00	0	10,700	0.00
2007	4775	6100	783	24	18788	5	43800	0.43	0.01	0.24	8	10,700	0.08
2008	5256	6100	862	24	20680	5	43800	0.47	0.01	0.24	9	10,700	0.09
2009	5785	6100	948	24	22761	5	43800	0.52	0.02	0.48	19	10,700	0.20
2010	6367	6100	1044	24	25051	5	43800	0.57	0.03	0.72	31	10,700	0.34
2011	6853	6100	1123	24	26963	5	43800	0.62	0.05	1.20	56	10,700	0.60
2012	7376	6100	1209	24	29019	5	43800	0.66	0.08	1.92	97	10,700	1.04
2013	7939	6100	1301	24	31235	5	43800	0.71	0.12	2.88	156	10,700	1.67
2014	8544	6100	1401	24	33618	5	43800	0.77	0.16	3.84	224	10,700	2.40
2015	9197	6100	1508	24	36183	5	43800	0.83	0.30	7.20	452	10,700	4.84
2016	9898	6100	1623	24	38944	5	43800	0.89	0.60	14.40	974	10,700	10.42
2017	10654	6100	1747	24	41916	5	43800	0.96	2.00	48.00	3493	10,700	37.38
2018	11467	6100	1880	24	45114	5	43800	1.03	3.10	74.40	5827	10,700	62.35
2019	12342	6100	2023	24	48557	5	43800	1.11	3.10	74.40	6272	10,700	67.11
2020	13283	6100	2178	24	52262	5	43800	1.19	3.10	74.40	6750	10,700	72.23

Non-containerized Cargo

	Basic Data					Without Project Case							
Year	General Cargo Volume	Average Lot	Annual General Cargo Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	hours	hours	day	US$	US$ Mil.
2000	7380	3600	568	24	13632	8	70080	0.19	0.00	0.00	0	10,500	0.00
2001	7619	3600	2116	24	50796	8	70080	0.72	0.05	1.20	106	10,500	1.11
2002	7867	3600	2185	24	52446	8	70080	0.75	0.08	1.92	175	10,500	1.84
2003	8122	3600	2256	24	54145	8	70080	0.77	0.10	2.40	226	10,500	2.37
2004	8385	3600	2329	24	55901	8	70080	0.80	0.12	2.88	280	10,500	2.93
2005	8657	3600	2405	24	57714	8	70080	0.82	0.20	4.80	481	10,500	5.05
2006	8937	3600	2483	24	59583	8	70080	0.85	0.22	5.28	546	10,500	5.73
2007	9227	3600	2563	24	61515	8	70080	0.88	0.35	8.40	897	10,500	9.42
2008	9527	3600	2646	24	63511	8	70080	0.91	0.40	9.60	1059	10,500	11.11
2009	9835	3600	2732	24	65568	10	87600	0.75	0.08	1.92	219	10,500	2.29
2010	10154	3600	2821	24	67695	10	87600	0.77	0.10	2.40	282	10,500	2.96
2011	10669	3600	2964	24	71129	10	87600	0.81	0.13	3.12	385	10,500	4.05
2012	11210	3600	3114	24	74736	10	87600	0.85	0.22	5.28	685	10,500	7.19
2013	11779	3600	3272	24	78527	10	87600	0.90	0.40	9.60	1309	10,500	13.74
2014	12377	3600	3438	24	82513	10	87600	0.94	0.62	14.88	2132	10,500	22.38
2015	13005	3600	3612	24	86699	10	87600	0.99	1.40	33.60	5057	10,500	53.10
2016	13665	3600	3796	24	91098	10	87600	1.04	1.40	33.60	5314	10,500	55.80
2017	14358	3600	3988	24	95719	10	87600	1.09	1.40	33.60	5584	10,500	58.63
2018	15086	3600	4191	24	100574	10	87600	1.15	1.40	33.60	5867	10,500	61.60
2019	15852	3600	4403	24	105679	10	87600	1.21	1.40	33.60	6165	10,500	64.73
2020	16656	3600	4627	24	111039	10	87600	1.27	1.40	33.60	6477	10,500	68.01

Appendix 30.3 (b) Estimated Waiting Time (Tan Cang)

Tan Cang Port

Container Cargo Handling

	Basic Data					Without Project Case							
Year	Container Cargo Volume	Average Lot	Annual Container Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	Day	hours	day	US$	
2000	3278	7400	393	24	9432	3	26280	0.36	0.02	0.5	8	11,000	0.09
2001	3607	7400	487	24	11699	3	26280	0.45	0.02	0.5	10	11000	0.11
2002	3971	7400	537	24	12877	3	26280	0.49	0.02	0.5	11	11000	0.12
2003	4370	7400	591	24	14173	3	26280	0.54	0.06	1.4	35	11000	0.39
2004	4809	7400	650	24	15598	3	26280	0.59	0.10	2.4	65	11000	0.71
2005	5294	7400	715	24	17169	3	26280	0.65	0.16	3.8	114	11000	1.26
2006	5826	7400	787	24	18897	3	26280	0.72	0.25	6.0	197	11000	2.17
2007	6413	7400	867	24	20798	3	26280	0.79	0.45	10.8	390	11000	4.29
2008	7058	7400	954	24	22892	3	26280	0.87	0.80	19.2	763	11000	8.39
2009	7769	7400	1050	24	25195	5	43800	0.58	0.04	1.0	42	11000	0.46
2010	8550	7400	1155	24	27731	5	43800	0.63	0.05	1.2	58	11000	0.64
2011	9203	7400	1244	24	29846	5	43800	0.68	0.08	1.9	99	11000	1.09
2012	9905	7400	1338	24	32123	5	43800	0.73	0.12	2.9	161	11000	1.77
2013	10661	7400	1441	24	34575	5	43800	0.79	0.23	5.5	331	11000	3.64
2014	11474	7400	1551	24	37213	5	43800	0.85	0.39	9.4	605	11000	6.65
2015	12350	7400	1669	24	40053	5	43800	0.91	0.65	15.6	1085	11000	11.93
2016	13292	7400	1796	24	43109	5	43800	0.98	2.00	48.0	3592	11000	39.52
2017	14306	7400	1933	24	46399	5	43800	1.06	2.00	48.0	3867	11000	42.53
2018	15398	7400	2081	24	49939	5	43800	1.14	2.00	48.0	4162	11000	45.78
2019	16573	7400	2240	24	53750	5	43800	1.23	2.00	48.0	4479	11000	49.27
2020	17837	7400	2410	24	57851	5	43800	1.32	2.00	48.0	4821	11000	53.03

Non-containerized Cargo

	Basic Data					Without Project Case							
Year	General Cargo Volume	Average Lot	Annual General Cargo Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	hours	hours	day	US$	US$ Mil.
2000	395	7400	53	24	1282	2	17520	0.07	0.00	0.00	0	9,500	0.00
2001	408	7400	55	24	1324	2	17520	0.08	0.00	0.00	0	9,500	0.00
2002	421	7400	57	24	1367	2	17520	0.08	0.00	0.00	0	9,500	0.00
2003	435	7400	59	24	1411	2	17520	0.08	0.00	0.00	0	9,500	0.00
2004	449	7400	61	24	1457	2	17520	0.08	0.00	0.00	0	9,500	0.00
2005	464	7400	63	24	1504	2	17520	0.09	0.00	0.00	0	9,500	0.00
2006	479	7400	65	24	1553	2	17520	0.09	0.00	0.00	0	9,500	0.00
2007	494	7400	67	24	1603	2	17520	0.09	0.00	0.00	0	9,500	0.00
2008	510	7400	69	24	1655	2	17520	0.09	0.00	0.00	0	9,500	0.00
2009	527	7400	71	24	1709	2	17520	0.10	0.00	0.00	0	9,500	0.00
2010	544	7400	74	24	1764	2	17520	0.10	0.00	0.00	0	9,500	0.00
2011	572	7400	77	24	1854	2	17520	0.11	0.00	0.00	0	9,500	0.00
2012	601	7400	81	24	1948	2	17520	0.11	0.00	0.00	0	9,500	0.00
2013	631	7400	85	24	2047	2	17520	0.12	0.00	0.00	0	9,500	0.00
2014	663	7400	90	24	2150	2	17520	0.12	0.00	0.00	0	9,500	0.00
2015	697	7400	94	24	2260	2	17520	0.13	0.00	0.00	0	9,500	0.00
2016	732	7400	99	24	2374	2	17520	0.14	0.00	0.00	0	9,500	0.00
2017	769	7400	104	24	2495	2	17520	0.14	0.00	0.00	0	9,500	0.00
2018	808	7400	109	24	2621	2	17520	0.15	0.10	2.40	11	9,500	0.10
2019	849	7400	115	24	2754	2	17520	0.16	0.10	2.40	11	9,500	0.11
2020	892	7400	121	24	2894	2	17520	0.17	0.10	2.40	12	9,500	0.11

Appendix 30.3 (c) Estimated Waiting Time (Ben Nghe)

Ben Nghe Port

Container Cargo Handling

	Basic Data					Without Project Case							
Year	Container Cargo Volume	Average Lot	Annual Container Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	Day	hours	day	US$	US$ Mil.
2000	1604	5000	321	24	7699	2	17520	0.44	0.02	0.48	6	10,500	0.07
2001	1765	5000	353	24	8473	2	17520	0.48	0.03	0.72	11	10,500	0.11
2002	1943	5000	389	24	9327	2	17520	0.53	0.03	0.72	12	10,500	0.12
2003	2138	5000	428	24	10265	2	17520	0.59	0.06	1.44	26	10,500	0.27
2004	2354	5000	471	24	11297	2	17520	0.64	0.08	1.92	38	10,500	0.40
2005	2591	5000	518	24	12435	2	17520	0.71	0.10	2.40	52	10,500	0.54
2006	2851	5000	570	24	13686	2	17520	0.78	0.12	2.88	68	10,500	0.72
2007	3138	5000	628	24	15063	2	17520	0.86	0.16	3.84	100	10,500	1.05
2008	3454	5000	691	24	16579	2	17520	0.95	0.22	5.28	152	10,500	1.60
2009	3802	5000	760	24	18248	3	26280	0.69	0.23	5.52	175	10,500	1.84
2010	4184	5000	837	24	20084	3	26280	0.76	0.32	7.68	268	10,500	2.81
2011	4503	5000	901	24	21616	3	26280	0.82	0.50	12.00	450	10,500	4.73
2012	4847	5000	969	24	23265	3	26280	0.89	1.00	24.00	969	10,500	10.18
2013	5217	5000	1043	24	25041	3	26280	0.95	2.80	67.20	2921	10,500	30.68
2014	5615	5000	1123	24	26952	3	26280	1.03	4.30	103.20	4829	10,500	50.70
2015	6043	5000	1209	24	29009	3	26280	1.10	4.30	103.20	5197	10,500	54.57
2016	6505	5000	1301	24	31222	3	26280	1.19	4.30	103.20	5594	10,500	58.74
2017	7001	5000	1400	24	33605	3	26280	1.28	4.30	103.20	6021	10,500	63.22
2018	7535	5000	1507	24	36169	3	26280	1.38	4.30	103.20	6480	10,500	68.04
2019	8110	5000	1622	24	38929	3	26280	1.48	4.30	103.20	6975	10,500	73.23
2020	8729	5000	1746	24	41899	3	26280	1.59	4.30	103.20	7507	10,500	78.82

Non-containerized Cargo

	Basic Data					Without Project Case							
Year	General Cargo Volume	Average Lot	Annual General Cargo Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	hours	hours	day	US$	US$ Mil.
2000	3514	3600	976	24	23430	4	35040	0.67	0.09	2.16	88	9,500	0.83
2001	3628	3600	1008	24	24188	4	35040	0.69	0.14	3.36	141	9,500	1.34
2002	3746	3600	1041	24	24974	4	35040	0.71	0.15	3.60	156	9,500	1.48
2003	3868	3600	1074	24	25783	4	35040	0.74	0.20	4.80	215	9,500	2.04
2004	3993	3600	1109	24	26620	4	35040	0.76	0.21	5.04	233	9,500	2.21
2005	4122	3600	1145	24	27483	4	35040	0.78	0.30	7.20	344	9,500	3.26
2006	4256	3600	1182	24	28373	4	35040	0.81	0.35	8.40	414	9,500	3.93
2007	4394	3600	1221	24	29293	4	35040	0.84	0.50	12.00	610	9,500	5.80
2008	4537	3600	1260	24	30244	4	35040	0.86	0.60	14.40	756	9,500	7.18
2009	4683	3600	1301	24	31223	6	52560	0.59	0.90	21.60	1171	9,500	11.12
2010	4835	3600	1343	24	32236	6	52560	0.61	0.03	0.72	40	9,500	0.38
2011	5081	3600	1411	24	33871	6	52560	0.64	0.05	1.20	71	9,500	0.67
2012	5338	3600	1483	24	35589	6	52560	0.68	0.06	1.44	89	9,500	0.85
2013	5609	3600	1558	24	37394	6	52560	0.71	0.08	1.92	125	9,500	1.18
2014	5894	3600	1637	24	39292	6	52560	0.75	0.11	2.64	180	9,500	1.71
2015	6193	3600	1720	24	41285	6	52560	0.79	0.18	4.32	310	9,500	2.94
2016	6507	3600	1808	24	43380	6	52560	0.83	0.25	6.00	452	9,500	4.29
2017	6837	3600	1899	24	45581	6	52560	0.87	0.40	9.60	760	9,500	7.22
2018	7184	3600	1996	24	47892	6	52560	0.91	0.57	13.68	1137	9,500	10.81
2019	7549	3600	2097	24	50323	6	52560	0.96	1.80	43.20	3774	9,500	35.86
2020	7931	3600	2203	24	52876	6	52560	1.01	2.60	62.40	5728	9,500	54.42

Appendix 30.3 (d) Estimated Waiting Time (VICT)

VICT

Container Cargo Handling

	Basic Data					Without Project Case							
Year	Container Cargo Volume	Average Lot	Annual Container Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	Day	hours	day	US$	US$ Mil.
2000	1395	5400	258	24	6199	2	17520	0.35	0.03	0.7	8	10,500	0.08
2001	1535	5400	284	24	6822	2	17520	0.39	0.04	1.0	11	10,500	0.12
2002	1690	5400	313	24	7509	2	17520	0.43	0.06	1.4	19	10,500	0.20
2003	1860	5400	344	24	8265	2	17520	0.47	0.09	2.2	31	10,500	0.33
2004	2047	5400	379	24	9096	2	17520	0.52	0.10	2.4	38	10,500	0.40
2005	2253	5400	417	24	10012	2	17520	0.57	0.14	3.4	58	10,500	0.61
2006	2479	5400	459	24	11019	2	17520	0.63	0.20	4.8	92	10,500	0.96
2007	2729	5400	505	24	12128	2	17520	0.69	0.30	7.2	152	10,500	1.59
2008	3004	5400	556	24	13349	2	17520	0.76	0.44	10.6	245	10,500	2.57
2009	3306	5400	612	24	14692	3	26280	0.56	0.08	1.9	49	10,500	0.51
2010	3638	5400	674	24	16171	3	26280	0.62	0.11	2.6	74	10,500	0.78
2011	3916	5400	725	24	17404	3	26280	0.66	0.18	4.3	131	10,500	1.37
2012	4215	5400	781	24	18732	3	26280	0.71	0.25	6.0	195	10,500	2.05
2013	4536	5400	840	24	20162	3	26280	0.77	0.40	9.6	336	10,500	3.53
2014	4883	5400	904	24	21700	3	26280	0.83	0.70	16.8	633	10,500	6.65
2015	5255	5400	973	24	23356	3	26280	0.89	1.20	28.8	1168	10,500	12.26
2016	5656	5400	1047	24	25138	3	26280	0.96	2.80	67.2	2933	10,500	30.79
2017	6088	5400	1127	24	27057	3	26280	1.03	4.30	103.2	4848	10,500	50.90
2018	6552	5400	1213	24	29121	3	26280	1.11	4.30	103.2	5218	10,500	54.78
2019	7052	5400	1306	24	31344	3	26280	1.19	4.30	103.2	5616	10,500	58.97
2020	7590	5400	1406	24	33735	3	26280	1.28	4.30	103.2	6044	10,500	63.46

Non-containerized Cargo

	Basic Data					Without Project Case							
Year	General Cargo Volume	Average Lot	Annual General Cargo Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	hours	hours	day	US$	US$ Mil.
2000	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2001	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2002	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2003	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2004	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2005	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2006	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2007	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2008	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2009	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2010	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2011	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2012	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2013	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2014	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2015	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2016	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2017	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2018	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2019	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00
2020	0	7400	0	24	0	1	8760	0.00	0.00	0.00	0	9,900	0.00

Appendix 30.3(e) Estimated Waiting Time (Others)

Other Ports

Container Cargo Handling

Year	Basic Data					Without Project Case							
	Container Cargo Volume	Average Lot	Annual Container Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	Day	hours	day	US$	US$ Mil.
2000	0	0	0	0	0	0	0	0.00	0.00	0.0	0	0	0.00
2001	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2002	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2003	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2004	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2005	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2006	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2007	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2008	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2009	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2010	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2011	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2012	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2013	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2014	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2015	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2016	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2017	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2018	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2019	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00
2020	0	0	0	24	0	0	0	0.00	0.00	0.0	0	0	0.00

Non-containerized Cargo

Year	Basic Data					Without Project Case							
	General Cargo Volume	Average Lot	Annual General Cargo Ship-call	Service Time per Day	Annual Service Time	Nos of Berth	Annual Available Time	Berth Utilization Ratio	Average Waiting Time	Waiting Time	Vessel Waiting Time	Value of Ship per Day	Total Cost of Waiting Time
	1000 MT	MT	Nos	hours	hours	Nos	hours	%	hours	hours	day	US$	US$ Mil.
2000	2,636	3000	879	24	21087	5	43800	0.48	0.01	0.24	9	6,000	0.05
2001	2,721	3000	907	24	21770	5	43800	0.50	0.03	0.72	27	6,000	0.16
2002	2,810	3000	937	24	22477	5	43800	0.51	0.03	0.72	28	6,000	0.17
2003	2,901	3000	967	24	23205	5	43800	0.53	0.03	0.72	29	6,000	0.17
2004	2,995	3000	998	24	23958	5	43800	0.55	0.07	1.68	70	6,000	0.42
2005	3,092	3000	1031	24	24734	5	43800	0.56	0.07	1.68	72	6,000	0.43
2006	3,192	3000	1064	24	25535	5	43800	0.58	0.10	2.40	106	6,000	0.64
2007	3,295	3000	1098	24	26364	5	43800	0.60	0.11	2.64	121	6,000	0.73
2008	3,402	3000	1134	24	27219	5	43800	0.62	0.16	3.84	181	6,000	1.09
2009	3,513	3000	1171	24	28100	5	43800	0.64	0.06	1.44	70	6,000	0.42
2010	3,626	3000	1209	24	29012	5	43800	0.66	0.08	1.92	97	6,000	0.58
2011	3,810	3000	1270	24	30484	5	43800	0.70	0.10	2.40	127	6,000	0.76
2012	4,004	3000	1335	24	32030	5	43800	0.73	0.13	3.12	173	6,000	1.04
2013	4,207	3000	1402	24	33655	5	43800	0.77	0.20	4.80	280	6,000	1.68
2014	4,420	3000	1473	24	35363	5	43800	0.81	0.24	5.76	354	6,000	2.12
2015	4,645	3000	1548	24	37157	5	43800	0.85	0.39	9.36	604	6,000	3.62
2016	4,880	3000	1627	24	39042	5	43800	0.89	0.60	14.40	976	6,000	5.86
2017	5,128	3000	1709	24	41023	5	43800	0.94	2.00	48.00	3419	6,000	20.51
2018	5,388	3000	1796	24	43103	5	43800	0.98	2.00	48.00	3592	6,000	21.55
2019	5,661	3000	1887	24	45291	5	43800	1.03	2.00	48.00	3774	6,000	22.65
2020	5,949	3000	1983	24	47588	5	43800	1.09	2.00	48.00	3966	6,000	23.79

Appendix 30.3(f) Projection of Cargo Volume for SFEA

	Total	Container	Non-cont.	Container	Non-cont.
Year	SFEA Volume	Total SFEA Volume	Total SFEA Volume	Total HCMC Volume	Total HCMC Volume
2000	22,643	8,717	13,926	8,701	12,247
2001	23,971	9,594	14,377	8,963	12,470
2002	25,404	10,560	14,844	9,234	12,696
2003	26,947	11,622	15,325	9,512	12,927
2004	28,613	12,791	15,822	9,799	13,162
2005	30,414	14,079	16,335	10,094	13,401
2006	32,360	15,496	16,864	10,398	13,644
2007	34,466	17,055	17,411	10,712	13,892
2008	36,748	18,772	17,976	11,035	14,144
2009	39,219	20,661	18,558	11,367	14,401
2010	**41,900**	**22,740**	**19,160**	11,710	14,663
2011	44,607	24,475	20,132	11,949	15,227
2012	47,495	26,342	21,153	12,193	15,814
2013	50,579	28,353	22,226	12,441	16,422
2014	53,870	30,516	23,354	12,695	17,054
2015	57,384	32,845	24,539	12,954	17,711
2016	61,135	35,351	25,784	13,218	18,392
2017	65,141	38,049	27,092	13,488	19,100
2018	69,418	40,952	28,466	13,763	19,836
2019	73,988	44,077	29,911	14,044	20,599
2020	78,868	47,440	31,428	14,330	21,392

Appendix 30.3(g) Projection of Benefit due to Elimination of Vessel Waiting Time

	Container Cargo				Non-container Cargo				Total		
Year	Annual Container Cargo Volume for SFEA Ports	Container Cargo for Project	Total Saving of Waiting Time of Container	Saving per Ton of Container Cargo	Annual Non-container Cargo Volume for SFEA Ports	Non-container Cargo for Project	Total Saving by Reduction of Waiting Time	Saving per Ton of Non-cont. Cargo	Annual Cargo Volume for SFEA	Annual Cargo Volume for New Ports	Saving per Ton of Cargo
		1000 tons	US$ Mil.	US$/ton		1000 tons	US$ Mil.	US$/ton			
2000	8,717				13,926				22,643		
2001	9,594				14,377				23,971		
2002	10,560				14,844				25,404		
2003	11,622				15,325				26,947		
2004	12,791				15,822				28,613		
2005	14,079				16,335				30,414		
2006	15,496				16,864				32,360		
2007	17,055				17,411				34,466		
2008	18,772				17,976				36,748		
2009	20,661				18,558				39,219		
2010	22,740	2,079	4.56	2.19	19,160	602	3.92	6.52	41,900	2,681	8.49
2011	24,475	3,814	7.79	2.04	20,132	1,574	5.48	3.48	44,607	5,388	13.27
2012	26,342	5,681	15.03	2.65	21,153	2,595	9.08	3.50	47,495	8,276	24.11
2013	28,353	7,692	39.52	5.14	22,226	3,668	16.61	4.53	50,579	11,360	56.13
2014	30,516	9,855	66.40	6.74	23,354	4,796	26.21	5.47	53,870	14,651	92.61
2015	32,845	12,184	83.61	6.86	24,539	5,981	59.67	9.98	57,384	18,165	143.27
2016	35,351	14,690	139.47	9.49	25,784	7,226	65.95	9.13	61,135	21,916	205.41
2017	38,049	17,388	194.03	11.16	27,092	8,534	86.36	10.12	65,141	25,922	280.38
2018	40,952	20,291	230.96	11.38	28,466	9,908	94.06	9.49	69,418	30,199	325.02
2019	44,077	23,416	248.58	10.62	29,911	11,353	123.34	10.86	73,988	34,769	371.92
2020	47,440	26,779	267.55	9.99	31,428	12,870	146.34	11.37	78,868	39,649	413.88

Appendix 30.4 Estimation of VOC in Vietnam

	Variables	Unit	Passenger Car	Van	Medium Bus	Large Bus	Medium Truck	Trailer Truck	Motorcycle
Loading Capacity							8	20	1
Basic Conditions									
Vehicle Life		Year	10	10	7	8	12	12	8
Vehicle Life km		km	250000	250000	700000	800000	960000	960000	120000
Vehicle Life Operating Hours		hours	6000	6000	24000	24000	24000	24000	16000
Vehicle Annual Operating Hours		hours	600	600	3,500	3000	2000	2000	2000
Time Related Fixed Cost									
Body Cost									
Base Body Cost in US$		US$	72300	58100	65700	88800	60000	134400	2200
Economic Conversion Factor		%	40	50	70	70	80	80	85
Economic Body Cost in US$		US$	28920	29050	45990	62160	48000	107520	1870
Depreciation Time Related Share		%	50	50	65	65	65	65	60
Fixed Economic Cost per Minutes		US$	0.0028	0.0028	0.0081	0.0096	0.0049	0.0111	0.0003
Crew Cost									
Driver		Nos	0	1	1	1	1	1	0
Assistant Driver		Nos	0	0	1	1	1	1	0
Financial Cost of Crew Per Hour		US$	0	0.4	0.4	0.4	0.4	0.4	0.4
Economic Conversion Factor		%	80	80	80	80	80	80	80
Economic Cost of Crew per Minutes		US$	0	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Total Time Related Fixed Cost per Minutes		US$	0.0028	0.0081	0.0135	0.0149	**0.0103**	**0.0164**	0.0056
Running Cost per km									
Distance Related Fixed Cost									
Depreciation Distance Related Share		%	50	50	35	35	35	35	40
Economic Body Cost per km		US$	0.0578	0.0581	0.0230	0.0272	0.0175	0.0392	0.0062
Fuel Cost									
Fuel Price/Litter (Market Price)		US$	0.34	0.34	0.25	0.25	0.25	0.25	0.3
Economic Conversion Factor		%	70	70	70	70	70	70	70
Economic Fuel Price per Litter		US$	0.24	0.24	0.18	0.18	0.18	0.18	0.21
Fuel Consumption (Liter per km)		Liter	0.13	0.14	0.18	0.25	0.27	0.30	0.03
Economic Fuel Cost per km		US$	0.0309	0.0333	0.0315	0.0438	0.0473	0.0525	0.0063
Lubricant Cost									
Lubricant Oil Price/Liter (Market Price)		US$	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Economic Conversion Factor		%	70	70	70	70	70	70	70
Lubricant Consumption (Liter per 1000 km)		Liter	2	2	3	3.5	3.5	3.5	0.3
Economic Lubricant Oil Cost per km		US$	0.0018	0.0018	0.0027	0.0032	0.0032	0.0032	0.0003
Tire Cost									
Tire Unit Price		US$	65.8	65.8	120	180	180	180	50
Economic Conversion Factor		%	80	80	80	80	80	80	80
Number of Tires		Nos	4	4	4	6	6	10	2
Tire Life km		km	25000	25000	35000	35000	35000	35000	30000
Economic Tire Life Cost per km		US$	0.0084	0.0084	0.0110	0.0247	0.0247	0.0411	0.0027
Maintenance Cost									
Economic Cost of Spare Parts	7	%	2024	2034	3219	4351	3360	7526	131
Maintenance Labor (Hour/1000km)		Hours	3	5	6	8	12	12	2
Maintenance Labor Cost per Hours		US$	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Maintenance Overhead Cost	20	%	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Maintenance Labor Cost per 1000 km		US$	2.16	3.6	4.32	5.76	8.64	8.64	1.44
Maintenance Labor Cost in Total		US$	540	900	3024	4608	8294	8294	173
Maintenance Cost in Total		US$	2564	2934	6243	8959	11654	15821	304
Economic Maintenance Cost per km		US$	0.0103	0.0117	0.0089	0.0112	0.0121	0.0165	0.0025
Total Economic Running Cost per km		US$	0.1093	0.1134	0.0771	0.1100	**0.1048**	**0.1525**	0.0180

Appendix 30.5 Projection of VOC Cost for Trucking after Year 2010 (Cai Mep + Thi Vai Port Project)

Assumption of VOC Estimation for HCMC Port Group

Without Project Case

Type of Truck			Working Days/Year		Distance		Distance VOC		Ave. Speed/hour		Time/Round		Time VOC	
Containerized Cargo	40'	trailer	350	days	110.0	km	0.1525	per km	30	kph	7.3	hour	0.0164	per min.
Non-containerized Cargo	10	tons truck	350	days	110.0	km	0.1048	per km	30	kph	7.3	hour	0.0103	per min.

Assumption of VOC Estimation for Thi Vai - Cai Mep Port Group

With Project Case

Type of Truck			Working Days/Y		Distance		Distance VOC		Ave. Speed/hour		Time/Round		Time VOC	
Containerized Cargo	40'	trailer	350	days	13.0	km	0.1525	per km	60	kph	0.4	hour	0.0164	per min.
Non-containerized Cargo	10	tons truck	350	days	13.0	km	0.1048	per km	60	kph	0.4	hour	0.0103	per min.

Vehicle Operation Cost (VOC) for Thi Vai Area

Container Cargo	Distance	Time	Total
VOC under Without Project for TVA per Vehicle	16.776	7.222	23.998
VOC under With Project for TVA per Vehicle	1.983	0.427	2.409
Saved VOC per Vehicle			21.589

Non-container Cargo	Distance	Time	Total
VOC under Without Project for TVA per Ton	11.524	4.523	16.047
VOC under With Project for TVA per Ton	1.362	0.267	1.629
Saved VOC per Ton			14.418

Assumption of VOC Estimation for Vung Tau Port Group

With Project Case

Type of Truck			Working Days/Y		Distance		Distance VOC		Ave. Speed/hour		Time/Round		Time VOC	
Containerized Cargo	40'	trailer	350	days	100.0	km	0.1525	per km	60	kph	3.3	hour	0.0164	per min.
Non-containerized Cargo	10	tons truck	350	days	100.0	km	0.1048	per km	60	kph	3.3	hour	0.0103	per min.

Vehicle Operation Cost (VOC) for Vung Tau Port Group

Container Cargo	Distance	Time	Total
VOC under Without Project for TVA per Ton	16.776	7.222	23.998
VOC under With Project for TVA per Ton	15.251	3.283	18.534
Saved VOC per Ton			5.464

Non-container Cargo	Distance	Time	Total
VOC under Without Project for TVA per Ton	11.524	4.523	16.047
VOC under With Project for TVA per Ton	10.476	2.056	12.532
Saved VOC per Ton			3.515

Saved VOC in Thi Vai Area and Vung Tau Area

	Projected Volume for Land Transport								VOC Saved in Thi Vai Area			VOC Saved in Vung Tau Area		
	Container			Vehicle	Non-container			Vehicle	Container	General	Total	Container	General	Total
Year	SFEA	HCMC	Project	Unit	SFEA	HCMC	Project	Unit	US$ Million	US$ Million	US$ Million	US$ Million	US$ Million	US$ Million
2010	22,740	11,710	2,079	104	19,160	14,663	602	60	2.24	0.87	3.11	0.57	0.21	0.78
2011	24,475	11,949	3,814	191	20,132	15,227	1,574	157	4.12	2.27	6.39	1.04	0.55	1.60
2012	26,342	12,193	5,681	284	21,153	15,814	2,595	260	6.13	3.74	9.87	1.55	0.91	2.46
2013	28,353	12,441	7,692	385	22,226	16,422	3,668	367	8.30	5.29	13.59	2.10	1.29	3.39
2014	30,516	12,695	9,855	493	23,354	17,054	4,796	480	10.64	6.91	17.55	2.69	1.69	4.38
2015	32,845	12,954	12,184	609	24,539	17,711	5,981	598	13.15	8.62	21.78	3.33	2.10	5.43
2016	35,351	13,218	14,690	735	25,784	18,392	7,226	723	15.86	10.42	26.28	4.01	2.54	6.55
2017	38,049	13,488	17,388	869	27,092	19,100	8,534	853	18.77	12.30	31.07	4.75	3.00	7.75
2018	40,952	13,763	20,291	1,015	28,466	19,836	9,908	991	21.90	14.29	36.19	5.54	3.48	9.03
2019	44,077	14,044	23,416	1,171	29,911	20,599	11,353	1,135	25.28	16.37	41.64	6.40	3.99	10.39
2020	47,440	14,330	26,779	1,339	31,428	21,392	12,870	1,287	28.91	18.56	47.46	7.32	4.52	11.84

Appendix 30.6 Saving from Reduction of Ship Time for Channel Navigation (Cai Mep + Thi Vai Port Project)

Required Hours for Navigation of Channel (River Mouth = Center of HCMC Port Group)

Container Ship:	7.0	hours	14000 DWT	6600 ton/vessel
Non-container Ship:	8.0	hours	11000 DWT	10000 ton/vessel

	Container							Non-container							Total
Year	Container	Average	Annual	Time	Cost/hour	Cost		Non-cont.	Average	Annual	Time	Cost/hour	Cost		Cost
	Volume	Lot	Call	Hours	US$	US$ Mil.		Volume	Lot	Call	Hours	US$	US$ Mil.		US$ Mil.
2010	2,079	6600	315	2,205	450	0.99		602	10,000	60	482	410	0.20		1.19
2011	3,814	6600	578	4,045	450	1.82		1,574	10,000	157	1,259	410	0.52		2.34
2012	5,681	6600	861	6,025	450	2.71		2,595	10,000	260	2,076	410	0.85		3.56
2013	7,692	6600	1,165	8,158	450	3.67		3,668	10,000	367	2,934	410	1.20		4.87
2014	9,855	6600	1,493	10,452	450	4.70		4,796	10,000	480	3,837	410	1.57		6.28
2015	12,184	6600	1,846	12,922	450	5.82		5,981	10,000	598	4,785	410	1.96		7.78
2016	14,690	6600	2,226	15,580	450	7.01		7,226	10,000	723	5,781	410	2.37		9.38
2017	17,388	6600	2,635	18,442	450	8.30		8,534	10,000	853	6,827	410	2.80		11.10
2018	20,291	6600	3,074	21,521	450	9.68		9,908	10,000	991	7,926	410	3.25		12.93
2019	23,416	6600	3,548	24,835	450	11.18		11,353	10,000	1,135	9,082	410	3.72		14.90
2020	26,779	6600	4,057	28,402	450	12.78		12,870	10,000	1,287	10,296	410	4.22		17.00

Required Hours for Navigation of Channel (River Mouth = Center of Cai Mep)

Container Ship:	2.0	hours	50000 DWT	15000 ton/vessel
Non-container Ship:	2.3	hours	50000 DWT	30000 ton/vessel

	Container							Non-container							Total
Year	Container	Average	Annual	Time	Cost/Hour	Cost	Saved	Non-cont.	Average	Annual	Time	Cost/Hour	Cost	Saved	Saved
	Volume	Lot	Call	Hours	US$	US$ Mil.	Cost	Volume	Lot	Call	Hours	US$	US$ Mil.	Cost	Cost
2010	2,079	15,000	139	277	750	0.21	0.78	602	30,000	20	46	600	0.03	0.17	0.95
2011	3,814	15,000	254	509	750	0.38	1.44	1,574	30,000	52	121	600	0.07	0.44	1.88
2012	5,681	15,000	379	757	750	0.57	2.14	2,595	30,000	87	199	600	0.12	0.73	2.88
2013	7,692	15,000	513	1,026	750	0.77	2.90	3,668	30,000	122	281	600	0.17	1.03	3.94
2014	9,855	15,000	657	1,314	750	0.99	3.72	4,796	30,000	160	368	600	0.22	1.35	5.07
2015	12,184	15,000	812	1,625	750	1.22	4.60	5,981	30,000	199	459	600	0.28	1.69	6.28
2016	14,690	15,000	979	1,959	750	1.47	5.54	7,226	30,000	241	554	600	0.33	2.04	7.58
2017	17,388	15,000	1,159	2,318	750	1.74	6.56	8,534	30,000	284	654	600	0.39	2.41	8.97
2018	20,291	15,000	1,353	2,705	750	2.03	7.66	9,908	30,000	330	760	600	0.46	2.79	10.45
2019	23,416	15,000	1,561	3,122	750	2.34	8.83	11,353	30,000	378	870	600	0.52	3.20	12.04
2020	26,779	15,000	1,785	3,571	750	2.68	10.10	12,870	30,000	429	987	600	0.59	3.63	13.73

Appedix 30.7 Average Annual Damage of Marine Accident

Year	DWT	Oil-Spill Volume	Estimated Damage	Name of Ship	Month
		m3	US$ Mil		
1993	300	15	0.27	Pan Harvest	September
1993	380	19	0.35	Viking Career	October
1994	100	5	0.09	Ham Rong 10	July
1994	80	4	0.07	Lam Son 10	July
1994	50	3	0.05	Phu Quoc 179	July
1995	400	21	0.36	Gegek Extajo	October
1995	250	13	0.23	Andhika Wanadharma	November
1995	200	10	0.18	Sirithorn	November
1995	160	8	0.15	Jenifer	December
1995	500	26	0.46	Memeo Abashidze	December
1996	1560	80	1.42	Mearsk Retrierver	July
2001	17560	900	16.00	Formosa 1	September
Total		1,104	19.63		
Average per Year			2.50		
Period of Record		8	years		

Source: Vung Tau Shipyard

Projection of Average Annual Damage by Type of Cargo (US$ Million)

	Container (1,000 tons)	Non-cont. (1,000 tons)	Total (1,000 tons)	Container	Non-cont.	Amount (US$ Mill.)
2010	2,079	602	2,681	1.94	0.56	2.50
2011	3,814	1,574	5,388	1.77	0.73	2.50
2012	5,681	2,595	8,276	1.72	0.78	2.50
2013	7,692	3,668	11,360	1.69	0.81	2.50
2014	9,855	4,796	14,651	1.68	0.82	2.50
2015	12,184	5,981	18,165	1.68	0.82	2.50
2016	14,690	7,226	21,916	1.68	0.82	2.50
2017	17,388	8,534	25,922	1.68	0.82	2.50
2018	20,291	9,908	30,199	1.68	0.82	2.50
2019	23,416	11,353	34,769	1.68	0.82	2.50
2020	26,779	12,870	39,649	1.69	0.81	2.50

Appendix 30.8 (a) Estimated Total Saved Costs (US$ Million) in Thi Vai Area

	Cargo Volume			Vessel Waiting Time			Channel Navigation			Maritime Accident			Trucking Cost			Total Benefit		
Year	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total
2010	2,079	602	2,681	4.56	3.92	8.49	0.78	0.17	0.95	1.94	0.56	2.50	2.24	0.87	3.11	9.53	5.52	15.05
2011	3,814	1,574	5,388	7.79	5.48	13.27	1.44	0.44	1.88	1.77	0.73	2.50	4.12	2.27	6.39	15.12	8.92	24.04
2012	5,681	2,595	8,276	15.03	9.08	24.11	2.14	0.73	2.88	1.72	0.78	2.50	6.13	3.74	9.87	25.02	14.34	39.36
2013	7,692	3,668	11,360	39.52	16.61	56.13	2.90	1.03	3.94	1.69	0.81	2.50	8.30	5.29	13.59	52.42	23.74	76.16
2014	9,855	4,796	14,651	66.40	26.21	92.61	3.72	1.35	5.07	1.68	0.82	2.50	10.64	6.91	17.55	82.44	35.30	117.74
2015	12,184	5,981	18,165	83.61	59.67	143.27	4.60	1.69	6.28	1.68	0.82	2.50	13.15	8.62	21.78	103.03	70.80	173.83
2016	14,690	7,226	21,916	139.47	65.95	205.41	5.54	2.04	7.58	1.68	0.82	2.50	15.86	10.42	26.28	162.54	79.23	241.77
2017	17,388	8,534	25,922	194.03	86.36	280.38	6.56	2.41	8.97	1.68	0.82	2.50	18.77	12.30	31.07	221.03	101.89	322.92
2018	20,291	9,908	30,199	230.96	94.06	325.02	7.66	2.79	10.45	1.68	0.82	2.50	21.90	14.29	36.19	262.19	111.96	374.16
2019	23,416	11,353	34,769	248.58	123.34	371.92	8.83	3.20	12.04	1.68	0.82	2.50	25.28	16.37	41.64	284.37	143.72	428.10
2020	26,779	12,870	39,649	267.55	146.34	413.88	10.10	3.63	13.73	1.69	0.81	2.50	28.91	18.56	47.46	308.24	169.33	477.58
Total	143,869	69,107	212,976	1,297.5	637.0	1,934.5			73.8			27.5			254.9			2,290.7
Share	68%	32%	100.0%	57%	28%	84.5%			3.2%			1.2%			11.1%			100%

Appendix 30.8 (b) Estimated Benefit per Ton by Type of Cargo (US$) in Thi Vai Area

	Cargo Volume			Vessel Waiting Time			Channel Navigation			Maritime Accident			Trucking Cost			Combined Benefit (Thi Vai)			Combined Benefit (Vung Tau		
Year	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total	Container	Non-container	Total
2010	2,079	602	2,681	2.19	6.52	8.71	0.38	0.28	0.66	0.93	0.93	1.86	1.08	1.44	2.52	4.58	9.18	13.76	3.83	8.11	11.94
2011	3,814	1,574	5,388	2.04	3.48	5.52	0.38	0.28	0.66	0.46	0.46	0.93	1.08	1.44	2.52	3.96	5.67	9.63	3.21	4.60	7.81
2012	5,681	2,595	8,276	2.65	3.50	6.14	0.38	0.28	0.66	0.30	0.30	0.60	1.08	1.44	2.52	4.40	5.52	9.93	3.65	4.46	8.11
2013	7,692	3,668	11,360	5.14	4.53	9.67	0.38	0.28	0.66	0.22	0.22	0.44	1.08	1.44	2.52	6.81	6.47	13.29	6.06	5.41	11.46
2014	9,855	4,796	14,651	6.74	5.47	12.20	0.38	0.28	0.66	0.17	0.17	0.34	1.08	1.44	2.52	8.36	7.36	15.73	7.61	6.29	13.90
2015	12,184	5,981	18,165	6.86	9.98	16.84	0.38	0.28	0.66	0.14	0.14	0.28	1.08	1.44	2.52	8.46	11.84	20.29	7.70	10.77	18.47
2016	14,690	7,226	21,916	9.49	9.13	18.62	0.38	0.28	0.66	0.11	0.11	0.23	1.08	1.44	2.52	11.06	10.96	22.03	10.31	9.90	20.21
2017	17,388	8,534	25,922	11.16	10.12	21.28	0.38	0.28	0.66	0.10	0.10	0.19	1.08	1.44	2.52	12.71	11.94	24.65	11.96	10.87	22.83
2018	20,291	9,908	30,199	11.38	9.49	20.88	0.38	0.28	0.66	0.08	0.08	0.17	1.08	1.44	2.52	12.92	11.30	24.22	12.17	10.23	22.40
2019	23,416	11,353	34,769	10.62	10.86	21.48	0.38	0.28	0.66	0.07	0.07	0.14	1.08	1.44	2.52	12.14	12.66	24.80	11.39	11.59	22.98
2020	26,779	12,870	39,649	9.99	11.37	21.36	0.38	0.28	0.66	0.06	0.06	0.13	1.08	1.44	2.52	11.51	13.16	24.67	10.75	12.09	22.85
Total	143,869	69,107	212,976	78.3	84.4	162.7			7.3			5.3			27.7			203.0			
Share	68%	32%	100.0%	39%	42%	80.1%			3.6%			2.6%			13.7%			100%			

Appendix 30.9 (a) Economic Analysis (Case-A) "Lower Cai Mep + Thi Vai International Port Project"

		Capital Investment																				
		Berth			Channel Dredging (Part)				Channel Dredging (Total)				Cargo Handling Equipment			Access Road (Part)			Access Road (Total)			
		TVG1&2	LCC3&4	BS1&2	TVC	TVRAC	VTC	GRB	TVC	TVRAC	VTC	GRB	TVG1&2	LCC3&4	BS1&2	TVG	LCC	BS	TVG	LCC	BS	
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	39%	39%	0%	39%	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	30%	30%	0%	Total	Total	Total	Total
	Base	51.3	66.2	0.0	1.0	9.9	0.0	1.1	2.7	25.5	42.6	2.8	23.5	58.6	0.0	0.1	2.1		0.2	7.0		213.8
	Social																					
	Total	51.3	66.2	0.0	1.0	9.9	0.0	1.1	2.7	25.5	42.6	2.8	23.5	58.6	0.0	0.1	2.1		0.2	7.0	0.0	213.8
SCF	0.9	43.6	56.3	0.0	0.9	8.4	0.0	0.9	2.3	21.6	36.2	2.4	20.0	49.8	0.0	0.1	1.8					181.7
1	2004	6.5	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5					21.2
2	2005	6.6	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4					15.4
3	2006	8.7	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4					17.5
4	2007	10.9	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5					25.5
5	2008	8.6	8.4	0.0	0.4	4.2	0.0	0.5	0.0	0.0	0.0	0.0	6.0	14.7	0.0	0.0	0.0					42.8
6	2009	2.2	2.8	0.0	0.4	4.2	0.0	0.5	0.0	0.0	0.0	0.0	14.0	35.1	0.0	0.0	0.0					59.2
7	2010																					0.0
8	2011																					0.0
9	2012																					0.0
10	2013																					0.0
11	2014																					0.0
12	2015																					0.0
13	2016																					0.0
14	2017																					0.0
15	2018																					0.0
16	2019																					0.0
17	2020																					0.0
18	2021																					0.0
19	2022																					0.0
20	2023																					0.0
21	2024																					0.0
22	2025																					0.0
23	2026																					0.0
24	2027																					0.0
25	2028																					0.0
26	2029																					0.0
27	2030																					0.0
28	2031																					0.0
29	2032																					0.0
30	2033																					0.0
31	2034																					0.0
32	2035																					0.0
33	2036																					0.0
34	2037																					0.0
35	2038																					0.0
36	2039																					0.0
37	2040																					0.0
38	2041																					0.0
39	2042																					0.0
40	2043																					0.0
	Total	43.5	56.3	0.0	0.9	8.4	0.0	0.9	0.0	0.0	0.0	0.0	20.0	49.8	0.0	0.1	1.8	0.0	0.0	0.0	0.0	181.6

Appendix 30.9 (b) Economic Analysis (Case-A) "Lower Cai Mep + Thi Vai International Port Project"

		Maintenance Cost								Cargo Volume		Operation Cost			Cost	Benefit			Net Benefit	Discounted Cost		Discounted Benefit		Net Present Value	
		Civil Engineering Portion			Cargo Handling Equipment			Channel		GC	Container	GC	Container	Total		GC	Container	Total		10%	15%	10%	15%	10%	15%
		TVG1&2	LCC3&4	BS1&2	TVG1&2	LCC3&4	BS1&2					1.6	3.6												
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	Total	Total	1000Tons	1000Tons	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.1																	
1	2004														21.2				-21.2	21.2	21.2			-21.2	-21.2
2	2005														15.4				-15.4	14.0	13.4			-14.0	-13.4
3	2006														17.5				-17.5	14.5	13.3			-14.5	-13.3
4	2007														25.5				-25.5	19.2	16.8			-19.2	-16.8
5	2008														42.8				-42.8	29.3	24.5			-29.3	-24.5
6	2009														59.2				-59.2	36.7	29.4			-36.7	-29.4
7	2010	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1100.0	6000.0	1.8	21.6	23.4	27.9	10.1	27.5	37.6	9.7	15.7	12.1	21.2	16.3	5.5	4.2
8	2011	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1161.8	6127.2	1.9	22.1	23.9	28.4	6.6	24.3	30.9	2.4	14.6	10.7	15.8	11.6	1.3	0.9
9	2012	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1227.1	6257.0	2.0	22.5	24.5	29.0	6.8	27.6	34.3	5.3	13.5	9.5	16.0	11.2	2.5	1.7
10	2013	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1296.0	6389.6	2.1	23.0	25.1	29.6	8.4	43.5	51.9	22.3	12.6	8.4	22.0	14.8	9.5	6.3
11	2014	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1368.8	6525.0	2.2	23.5	25.7	30.2	10.1	54.6	64.7	34.5	11.6	7.5	24.9	16.0	13.3	8.5
12	2015	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1445.7	6663.3	2.3	24.0	26.3	30.8	17.1	56.3	73.5	42.6	10.8	6.6	25.7	15.8	14.9	9.2
13	2016	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1526.9	6804.6	2.4	24.5	26.9	31.5	16.7	75.3	92.0	60.6	10.0	5.9	29.3	17.2	19.3	11.3
14	2017	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1612.7	6948.8	2.6	25.0	27.6	32.1	19.3	88.3	107.6	75.5	9.3	5.2	31.2	17.5	21.9	12.3
15	2018	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1703.3	7096.0	2.7	25.5	28.3	32.8	19.2	91.7	110.9	78.1	8.6	4.6	29.2	15.7	20.6	11.0
16	2019	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1798.9	7246.4	2.9	26.1	29.0	33.5	22.8	88.0	110.8	77.3	8.0	4.1	26.5	13.6	18.5	9.5
17	2020	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	7.4	3.7	24.0	11.8	16.5	8.1
18	2021	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	6.8	3.2	21.8	10.2	15.0	7.1
19	2022	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	6.2	2.8	19.8	8.9	13.7	6.1
20	2023	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	5.6	2.4	18.0	7.7	12.4	5.3
21	2024	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	5.1	2.1	16.4	6.7	11.3	4.6
22	2025	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	4.6	1.8	14.9	5.9	10.3	4.0
23	2026	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	4.2	1.6	13.5	5.1	9.3	3.5
24	2027	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	3.8	1.4	12.3	4.4	8.5	3.1
25	2028	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	3.5	1.2	11.2	3.8	7.7	2.7
26	2029	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	3.2	1.0	10.2	3.3	7.0	2.3
27	2030	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	2.9	0.9	9.2	2.9	6.4	2.0
28	2031	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	2.6	0.8	8.4	2.5	5.8	1.7
29	2032	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	2.4	0.7	7.6	2.2	5.3	1.5
30	2033	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	2.2	0.6	6.9	1.9	4.8	1.3
31	2034	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	2.0	0.5	6.3	1.7	4.4	1.1
32	2035	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.8	0.4	5.7	1.4	4.0	1.0
33	2036	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.6	0.4	5.2	1.3	3.6	0.9
34	2037	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.5	0.3	4.7	1.1	3.3	0.8
35	2038	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.3	0.3	4.3	1.0	3.0	0.7
36	2039	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.2	0.3	3.9	0.8	2.7	0.6
37	2040	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.1	0.2	3.6	0.7	2.5	0.5
38	2041	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	1.0	0.2	3.2	0.6	2.2	0.4
39	2042	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	0.9	0.2	2.9	0.5	2.0	0.4
40	2043	0.4	0.6	0.0	0.8	2.0	0.0	0.7	4.5	1900.0	7400.0	3.0	26.6	29.7	34.2	25.0	85.2	110.2	76.0	0.8	0.1	2.7	0.5	1.8	0.3
	Total	14.8	19.7	0.0	27.2	67.7	0.0	24.2	153.7			95.7								323.2	220.1	479.0	236.7	155.7	16.6

Appendix 30-9 (c) Economic Analysis (Case-B) "Lower Cai Mep Container Port Project"

		Capital Investment																				
		Berth			Channel Dredging (Part)				Channel Dredging (Total)				Cargo Handling Equipment			Access Road (Part)			Access Road (Total)			
		TVG1&2	LCC3&4	BS1&2	TVC	TVRAC	VTC	GRB	TVC	TVRAC	VTC	GRB	TVG1&2	LCC3&4	BS1&2	TVG	LCC	BS	TVG	LCC	BS	
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	0%	39%	0%	39%	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	0%	30%	0%	*Total*	*Total*	*Total*	*Total*
	Base	0.0	66.2	0.0	0.0	9.9	0.0	1.1	0.0	25.5	42.6	2.8	0.0	58.6	0.0	0.0	2.1		0.0	7.0		137.8
	Social																					
	Total	*0.0*	*66.2*	*0.0*	*0.0*	*9.9*	*0.0*	*1.1*	*0.0*	*25.5*	*42.6*	*2.8*	*0.0*	*58.6*	*0.0*	*0.0*	*2.1*	*0.0*	*0.0*	*7.0*	*0.0*	*137.8*
SCF	0.9	0.0	56.3	0.0	0.0	8.4	0.0	0.9	0.0	21.6	36.2	2.4	0.0	49.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	117.2
1	2004	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0				14.6
2	2005	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0				8.8
3	2006	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0				8.8
4	2007	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0				14.6
5	2008	0.0	8.4	0.0	0.0	4.2	0.0	0.5	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0	0.0	0.0				27.8
6	2009	0.0	2.8	0.0	0.0	4.2	0.0	0.5	0.0	0.0	0.0	0.0	0.0	35.1	0.0	0.0	0.0	0.0				42.6
7	2010																					0.0
8	2011																					0.0
9	2012																					0.0
10	2013																					0.0
11	2014																					0.0
12	2015																					0.0
13	2016																					0.0
14	2017																					0.0
15	2018																					0.0
16	2019																					0.0
17	2020																					0.0
18	2021																					0.0
19	2022																					0.0
20	2023																					0.0
21	2024																					0.0
22	2025																					0.0
23	2026																					0.0
24	2027																					0.0
25	2028																					0.0
26	2029																					0.0
27	2030																					0.0
28	2031																					0.0
29	2032																					0.0
30	2033																					0.0
31	2034																					0.0
32	2035																					0.0
33	2036																					0.0
34	2037																					0.0
35	2038																					0.0
36	2039																					0.0
37	2040																					0.0
38	2041																					0.0
39	2042																					0.0
40	2043																					0.0
	Total	0.0	56.3	0.0	0.0	8.4	0.0	0.9	0.0	0.0	0.0	0.0	0.0	49.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	117.2

Appendix 30-9 (d) Economic Analysis (Case-B) "Lower Cai Mep Container Port Project"

		Maintenance Cost								Cargo Volume		Operation Cost			Cost	Benefit			Net Benefi	Discounted Cost		Discounted Benefit		Net Present Value	
		Civil Engineering Portion			Cargo Handling Equipment			Channel		GC	Container	GC	Container	Total		GC	Container	Total		10%	15%	10%	15%	10%	15%
		TVG1&2	LCC3&4	BS1&2	TVG1&2	LCC3&4	BS1&2					1.6	3.6												
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	Total	Total	1000Tons	1000Tons	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.
	Base																								
	Social																								
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.1																	
1	2004														14.6				-14.6	14.6	14.6			-14.6	-14.6
2	2005														8.8				-8.8	8.0	7.7			-8.0	-7.7
3	2006														8.8				-8.8	7.3	6.7			-7.3	-6.7
4	2007														14.6				-14.6	11.0	9.6			-11.0	-9.6
5	2008														27.8				-27.8	19.0	15.9			-19.0	-15.9
6	2009														42.6				-42.6	26.4	21.2			-26.4	-21.2
7	2010		0.7			2.3		0.7	3.7		6000.0		21.6	21.6	25.3		27.5	27.5	2.2	14.3	10.9	15.5	11.9	1.2	0.9
8	2011		0.7			2.3		0.7	3.7		6127.2		22.1	22.1	25.8		24.3	24.3	-1.5	13.2	9.7	12.5	9.1	-0.8	-0.6
9	2012		0.7			2.3		0.7	3.7		6257.0		22.5	22.5	26.2		27.6	27.6	1.3	12.2	8.6	12.9	9.0	0.6	0.4
10	2013		0.7			2.3		0.7	3.7		6389.6		23.0	23.0	26.7		43.5	43.5	16.8	11.3	7.6	18.5	12.4	7.1	4.8
11	2014		0.7			2.3		0.7	3.7		6525.0		23.5	23.5	27.2		54.6	54.6	27.4	10.5	6.7	21.0	13.5	10.6	6.8
12	2015		0.7			2.3		0.7	3.7		6663.3		24.0	24.0	27.7		56.3	56.3	28.6	9.7	6.0	19.7	12.1	10.0	6.2
13	2016		0.7			2.3		0.7	3.7		6804.6		24.5	24.5	28.2		75.3	75.3	47.1	9.0	5.3	24.0	14.1	15.0	8.8
14	2017		0.7			2.3		0.7	3.7		6948.8		25.0	25.0	28.7		88.3	88.3	59.6	8.3	4.7	25.6	14.4	17.3	9.7
15	2018		0.7			2.3		0.7	3.7		7096.0		25.5	25.5	29.3		91.7	91.7	62.4	7.7	4.1	24.1	13.0	16.4	8.8
16	2019		0.7			2.3		0.7	3.7		7246.4		26.1	26.1	29.8		88.0	88.0	58.2	7.1	3.7	21.1	10.8	13.9	7.2
17	2020		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	6.6	3.2	18.5	9.1	11.9	5.9
18	2021		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	6.0	2.8	16.9	7.9	10.8	5.1
19	2022		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	5.5	2.5	15.3	6.9	9.9	4.4
20	2023		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	5.0	2.1	13.9	6.0	9.0	3.9
21	2024		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	4.5	1.9	12.7	5.2	8.1	3.3
22	2025		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	4.1	1.6	11.5	4.5	7.4	2.9
23	2026		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	3.7	1.4	10.5	3.9	6.7	2.5
24	2027		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	3.4	1.2	9.5	3.4	6.1	2.2
25	2028		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	3.1	1.1	8.6	3.0	5.6	1.9
26	2029		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	2.8	0.9	7.9	2.6	5.1	1.7
27	2030		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	2.5	0.8	7.1	2.3	4.6	1.4
28	2031		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	2.3	0.7	6.5	2.0	4.2	1.3
29	2032		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	2.1	0.6	5.9	1.7	3.8	1.1
30	2033		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.9	0.5	5.4	1.5	3.5	1.0
31	2034		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.7	0.5	4.9	1.3	3.1	0.8
32	2035		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.6	0.4	4.4	1.1	2.9	0.7
33	2036		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.4	0.3	4.0	1.0	2.6	0.6
34	2037		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.3	0.3	3.7	0.8	2.4	0.5
35	2038		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.2	0.3	3.3	0.7	2.1	0.5
36	2039		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.1	0.2	3.0	0.6	2.0	0.4
37	2040		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	1.0	0.2	2.8	0.6	1.8	0.4
38	2041		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	0.9	0.2	2.5	0.5	1.6	0.3
39	2042		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	0.8	0.1	2.3	0.4	1.5	0.3
40	2043		0.7			2.3		0.7	3.7		7400.0		26.6	26.6	30.4		85.2	85.2	54.8	0.7	0.1	2.1	0.4	1.3	0.2
	Total	0.0	23.2	0.0	0.0	79.7	0.0	23.7	126.6											255.0	166.8	378.1	187.6	123.1	20.7

Appendix 30-9 (e) Economic Analysis (Case-C) "Thi Vai General Port Project"

		Capital Investment																				
		Berth			Channel Dredging (Part)				Channel Dredging (Total)				Cargo Handling Equipment			Access Road (Part)			Access Road (Total)			
		TVG1&2	LCC3&4	BS1&2	TVC	TVRAC	VTC	GRB	TVC	TVRAC	VTC	GRB	TVG1&2	LCC3&4	BS1&2	TVG	LCC	BS	TVG	LCC	BS	
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	34%	39%	0%	39%	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	30%	0%	0%	Total	Total	Total	Total
	Base	51.3	0.0	0.0	0.9	9.9	0.0	1.1	2.7	25.5	42.6	2.8	23.5	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	86.7
	Social																					
	Total	51.3	0.0	0.0	0.9	9.9	0.0	1.1	2.7	25.5	42.6	2.8	23.5	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	86.7
SCF	1	43.6	0.0	0.0	0.8	8.4	0.0	0.9	2.3	21.6	36.2	2.4	20.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	73.7
1	2004	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				6.6
2	2005	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				6.6
3	2006	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				8.7
4	2007	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				10.9
5	2008	8.6	0.0	0.0	0.4	4.2	0.0	0.5	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0				19.6
6	2009	2.2	0.0	0.0	0.4	4.2	0.0	0.5	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0				21.2
7	2010																					0.0
8	2011																					0.0
9	2012																					0.0
10	2013																					0.0
11	2014																					0.0
12	2015																					0.0
13	2016																					0.0
14	2017																					0.0
15	2018																					0.0
16	2019																					0.0
17	2020																					0.0
18	2021																					0.0
19	2022																					0.0
20	2023																					0.0
21	2024																					0.0
22	2025																					0.0
23	2026																					0.0
24	2027																					0.0
25	2028																					0.0
26	2029																					0.0
27	2030																					0.0
28	2031																					0.0
29	2032																					0.0
30	2033																					0.0
31	2034																					0.0
32	2035																					0.0
33	2036																					0.0
34	2037																					0.0
35	2038																					0.0
36	2039																					0.0
37	2040																					0.0
38	2041																					0.0
39	2042																					0.0
40	2043																					0.0
820	80940	43.5	0.0	0.0	0.8	8.4	0.0	0.9	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	73.7

Appendix 30-9 (f) Economic Analysis (Case-C) "Thi Vai General Port Project"

		Maintenance Cost							Cargo Volume			Operation Cost			Cost	Benefit			Net Benefit	Discounted Cost		Discounted Benefit		Net Present Value	
		Civil Engineering Portion		Cargo Handling Equipment				Channel		GC	Container	GC	Container	Total		GC	Container	Total		10%	15%	10%	15%	10%	15%
		TVG1&2	LCC3&4	BS1&2	TVG1&2	LCC3&4	BS1&2					1.6	3.6												
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT		Total	1000Tons	1000Tons	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.
	Base																								
	Social																								
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0																	
SCF	0.9																								
1	2004														6.6				-6.6	6.6	6.6			-6.6	-6.6
2	2005														6.6				-6.6	6.0	5.7			-6.0	-5.7
3	2006														8.7				-8.7	7.2	6.6			-7.2	-6.6
4	2007														10.9				-10.9	8.2	7.2			-8.2	-7.2
5	2008														19.6				-19.6	13.4	11.2			-13.4	-11.2
6	2009														21.2				-21.2	13.2	10.5			-13.2	-10.5
7	2010	0.5			0.9			0.5	1.9	1100.0		1.8		1.8	3.7	10.1		10.1	6.4	2.1	1.6	5.7	4.4	3.6	2.8
8	2011	0.5			0.9			0.5	1.9	1161.8		1.9		1.9	3.8	6.6		6.6	2.8	1.9	1.4	3.4	2.5	1.4	1.1
9	2012	0.5			0.9			0.5	1.9	1227.1		2.0		2.0	3.9	6.8		6.8	2.9	1.8	1.3	3.2	2.2	1.3	0.9
10	2013	0.5			0.9			0.5	1.9	1296.0		2.1		2.1	4.0	8.4		8.4	4.4	1.7	1.1	3.6	2.4	1.9	1.2
11	2014	0.5			0.9			0.5	1.9	1368.8		2.2		2.2	4.1	10.1		10.1	6.0	1.6	1.0	3.9	2.5	2.3	1.5
12	2015	0.5			0.9			0.5	1.9	1445.7		2.3		2.3	4.2	17.1		17.1	12.9	1.5	0.9	6.0	3.7	4.5	2.8
13	2016	0.5			0.9			0.5	1.9	1526.9		2.4		2.4	4.4	16.7		16.7	12.4	1.4	0.8	5.3	3.1	3.9	2.3
14	2017	0.5			0.9			0.5	1.9	1612.7		2.6		2.6	4.5	19.3		19.3	14.7	1.3	0.7	5.6	3.1	4.3	2.4
15	2018	0.5			0.9			0.5	1.9	1703.3		2.7		2.7	4.7	19.2		19.2	14.6	1.2	0.7	5.1	2.7	3.8	2.1
16	2019	0.5			0.9			0.5	1.9	1798.9		2.9		2.9	4.8	22.8		22.8	18.0	1.2	0.6	5.5	2.8	4.3	2.2
17	2020	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	1.1	0.5	5.4	2.7	4.4	2.1
18	2021	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	1.0	0.5	4.9	2.3	4.0	1.9
19	2022	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.9	0.4	4.5	2.0	3.6	1.6
20	2023	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.8	0.3	4.1	1.8	3.3	1.4
21	2024	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.7	0.3	3.7	1.5	3.0	1.2
22	2025	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.7	0.3	3.4	1.3	2.7	1.1
23	2026	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.6	0.2	3.1	1.2	2.5	0.9
24	2027	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.6	0.2	2.8	1.0	2.2	0.8
25	2028	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.5	0.2	2.5	0.9	2.0	0.7
26	2029	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.5	0.2	2.3	0.8	1.8	0.6
27	2030	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.4	0.1	2.1	0.7	1.7	0.5
28	2031	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.4	0.1	1.9	0.6	1.5	0.5
29	2032	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.3	0.1	1.7	0.5	1.4	0.4
30	2033	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.3	0.1	1.6	0.4	1.3	0.3
31	2034	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.3	0.1	1.4	0.4	1.1	0.3
32	2035	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.3	0.1	1.3	0.3	1.0	0.3
33	2036	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.2	0.1	1.2	0.3	0.9	0.2
34	2037	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.2	0.0	1.1	0.2	0.9	0.2
35	2038	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.2	0.0	1.0	0.2	0.8	0.2
36	2039	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.2	0.0	0.9	0.2	0.7	0.2
37	2040	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.2	0.0	0.8	0.2	0.6	0.1
38	2041	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.1	0.0	0.7	0.1	0.6	0.1
39	2042	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.1	0.0	0.7	0.1	0.5	0.1
40	2043	0.5			0.9			0.5	1.9	1900.0		3.0		3.0	5.0	25.0		25.0	20.0	0.1	0.0	0.6	0.1	0.5	0.1
	Total	17.5	0.0	0.0	32.0	0.0	0.0	16.2	65.7	1900.0										81.0	62.0	100.9	49.2	19.9	-12.8

Appendix 30-9 (g) Economic Analysis (Case-D) "Ben Dinh Sao Mai Container Port + Thi Vai International Port Project"

		Capital Investment																				
		Berth			Channel Dredging (Part)				Channel Dredging (Total)				Cargo Handling Equipment			Access Road (Part)			Access Road (Total)			
		TVG1&2	LCC3&4	BS1&2	TVC	TVRAC	VTC	GRB	TVC	TVRAC	VTC	GRB	TVG1&2	LCC3&4	BS1&2	TVG	LCC	BS	TVG	LCC	BS	
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	39%	39%	39%	39%	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	30%	0%	30%	Total	Total	Total	Total
	Base	51.3	0.0	79.7	1.0	9.9	16.5	1.1	2.7	25.5	42.6	2.8	23.5	0.0	58.2	0.1	0.0	0.7	0.2	7.0	2.4	242.0
	Social			16.0																		
	Total	51.3	0.0	95.7	1.0	9.9	16.5	1.1	2.7	25.5	42.6	2.8	23.5	0.0	58.2	0.1	0.0	0.7	0.2	7.0	2.4	258.0
SCF	1	43.6	0.0	81.3	0.9	8.4	14.0	0.9	2.3	21.6	36.2	2.4	20.0	0.0	49.5	0.1	0.0	0.6				219.3
1	2004	6.5	0.0	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3				27.2
2	2005	6.6	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3				19.1
3	2006	8.7	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				20.9
4	2007	10.9	0.0	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				27.2
5	2008	8.6	0.0	16.3	0.4	4.2	7.0	0.5	0.0	0.0	0.0	0.0	6.0	0.0	14.8	0.0	0.0	0.0				57.8
6	2009	2.2	0.0	4.1	0.4	4.2	7.0	0.5	0.0	0.0	0.0	0.0	14.0	0.0	34.6	0.0	0.0	0.0				67.0
7	2010																					0.0
8	2011																					0.0
9	2012																					0.0
10	2013																					0.0
11	2014																					0.0
12	2015																					0.0
13	2016																					0.0
14	2017																					0.0
15	2018																					0.0
16	2019																					0.0
17	2020																					0.0
18	2021																					0.0
19	2022																					0.0
20	2023																					0.0
21	2024																					0.0
22	2025																					0.0
23	2026																					0.0
24	2027																					0.0
25	2028																					0.0
26	2029																					0.0
27	2030																					0.0
28	2031																					0.0
29	2032																					0.0
30	2033																					0.0
31	2034																					0.0
32	2035																					0.0
33	2036																					0.0
34	2037																					0.0
35	2038																					0.0
36	2039																					0.0
37	2040																					0.0
38	2041																					0.0
39	2042																					0.0
40	2043																					0.0
	Total	43.5	0.0	81.3					0.0	0.0	0.0	0.0	20.0	0.0	49.5	0.1	0.0	0.6	0.0	0.0	0.0	195.0

Appendix 30-9 (h) Economic Analysis (Case-D) "Ben Dinh Sao Mai Container Port + Thi Vai International Port Project"

	Maintenance Cost								Cargo Volume			Operation Cost			Cost	Benefit			Net	Discounted Cost		Discounted Benefit		Net Present Value	
	Civil Engineering Portion			Cargo Handling Equipment				Channel	Total	GC	Container	GC	Container	Total		GC	Container	Total	Benefit	10%	15%	10%	15%	10%	15%
		TVG1&2	LCC3&4	BS1&2	TVG1&2	LCC3&4	BS1&2					1.6	3.6												
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	Total		1000Tons	1000Tons	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.
	Base																								
	Social																								
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0																	
SCF	0.9																								
1	2004														27.2				-27.2	27.2	27.2			-27.2	-27.2
2	2005														19.1				-19.1	17.4	16.6			-17.4	-16.6
3	2006														20.9				-20.9	17.3	15.8			-17.3	-15.8
4	2007														27.2				-27.2	20.4	17.9			-20.4	-17.9
5	2008														57.8				-57.8	39.5	33.1			-39.5	-33.1
6	2009														67.0				-67.0	41.6	33.3			-41.6	-33.3
7	2010	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1100.0	6000.0	1.8	21.6	23.4	23.4	8.9	23.0	31.9	8.5	13.2	10.1	18.0	13.8	4.8	3.7
8	2011	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1161.8	6127.2	1.9	22.1	23.9	28.9	5.3	19.7	25.0	-3.9	14.8	10.9	12.8	9.4	-2.0	-1.5
9	2012	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1227.1	6257.0	2.0	22.5	24.5	29.5	5.5	22.8	28.3	-1.2	13.8	9.6	13.2	9.3	-0.6	-0.4
10	2013	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1296.0	6389.6	2.1	23.0	25.1	30.1	7.0	38.7	45.7	15.6	12.8	8.6	19.4	13.0	6.6	4.4
11	2014	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1368.8	6525.0	2.2	23.5	25.7	30.7	8.6	49.6	58.3	27.6	11.8	7.6	22.5	14.4	10.6	6.8
12	2015	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1445.7	6663.3	2.3	24.0	26.3	31.3	15.6	51.3	66.9	35.6	11.0	6.7	23.4	14.4	12.5	7.6
13	2016	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1526.9	6804.6	2.4	24.5	26.9	32.0	15.1	70.1	85.3	53.3	10.2	6.0	27.2	15.9	17.0	10.0
14	2017	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1612.7	6948.8	2.6	25.0	27.6	32.6	17.5	83.1	100.6	68.0	9.4	5.3	29.1	16.4	19.7	11.1
15	2018	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1703.3	7096.0	2.7	25.5	28.3	33.3	17.4	86.3	103.8	70.5	8.8	4.7	27.3	14.7	18.6	10.0
16	2019	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1798.9	7246.4	2.9	26.1	29.0	34.0	20.9	82.5	103.4	69.4	8.1	4.2	24.7	12.7	16.6	8.5
17	2020	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	7.6	3.7	22.3	11.0	14.8	7.3
18	2021	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	6.9	3.2	20.3	9.5	13.4	6.3
19	2022	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	6.2	2.8	18.4	8.3	12.2	5.5
20	2023	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	5.7	2.4	16.8	7.2	11.1	4.8
21	2024	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	5.2	2.1	15.2	6.3	10.1	4.1
22	2025	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	4.7	1.8	13.9	5.4	9.2	3.6
23	2026	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	4.3	1.6	12.6	4.7	8.3	3.1
24	2027	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	3.9	1.4	11.5	4.1	7.6	2.7
25	2028	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	3.5	1.2	10.4	3.6	6.9	2.4
26	2029	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	3.2	1.1	9.5	3.1	6.3	2.1
27	2030	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	2.9	0.9	8.6	2.7	5.7	1.8
28	2031	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	2.6	0.8	7.8	2.4	5.2	1.6
29	2032	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	2.4	0.7	7.1	2.0	4.7	1.4
30	2033	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	2.2	0.6	6.5	1.8	4.3	1.2
31	2034	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	2.0	0.5	5.9	1.5	3.9	1.0
32	2035	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.8	0.5	5.3	1.3	3.5	0.9
33	2036	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.6	0.4	4.9	1.2	3.2	0.8
34	2037	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.5	0.3	4.4	1.0	2.9	0.7
35	2038	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.4	0.3	4.0	0.9	2.7	0.6
36	2039	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.2	0.3	3.6	0.8	2.4	0.5
37	2040	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.1	0.2	3.3	0.7	2.2	0.4
38	2041	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	1.0	0.2	3.0	0.6	2.0	0.4
39	2042	0.4	0.0	0.8	0.8	0.0	2.0	1.0	5.0	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	0.9	0.2	2.7	0.5	1.8	0.3
40	2043	14.4	0.0	27.0	26.4	0.0	65.3	32.3	165.4	1900.0	7400.0	3.0	26.6	29.7	34.7	23.0	79.6	102.6	67.9	0.8	0.1	2.5	0.4	1.6	0.3
	Total																			351.9	245.0	438.3	214.9	86.4	-30.0

Appendix 30-9 (i) Economic Analysis (Case-E) "Ben Dinh Sao Mai Container Port Project"

		Capital Investment																				
		Berth		Channel Dredging (Part)				Channel Dredging (Total)				Cargo Handling Equipment			Access Road (Part)			Access Road (Total)				
		TVG1&2	LCC3&4	BS1&2	TVC	TVRAC	VTC	GRB	TVC	TVRAC	VTC	GRB	TVG1&2	LCC3&4	BS1&2	TVG	LCC	BS	TVG	LCC	BS	
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	0%	0%	50%	39%	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	0%	0%	30%	Total	Total	Total	Total
	Base	0.0	0.0	79.7	0.0	0.0	21.3	1.1	2.7	25.5	42.6	2.8	0.0	0.0	50.0	0.0	0.0	2.1	0.2	7.0	7.0	154.1
	Social			16.0																		
	Total	0.0	0.0	95.7	0.0	0.0	21.3	1.1	2.7	25.5	42.6	2.8	0.0	0.0	50.0	0.0	0.0	2.1	0.2	7.0	7.0	170.1
SCF	0.9	0.0	0.0	81.3	0.0	0.0	18.1	0.9	2.3	21.6	36.2	2.4	0.0	0.0	42.5	0.0	0.0	1.8				144.6
1	2004	0.0	0.0	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9				21.2
2	2005	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9				13.1
3	2006	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				12.2
4	2007	0.0	0.0	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				16.3
5	2008	0.0	0.0	16.3	0.0	0.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	0.0				38.5
6	2009	0.0	0.0	4.1	0.0	0.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	29.8	0.0	0.0	0.0				43.3
7	2010																					0.0
8	2011																					0.0
9	2012																					0.0
10	2013																					0.0
11	2014																					0.0
12	2015																					0.0
13	2016																					0.0
14	2017																					0.0
15	2018																					0.0
16	2019																					0.0
17	2020																					0.0
18	2021																					0.0
19	2022																					0.0
20	2023																					0.0
21	2024																					0.0
22	2025																					0.0
23	2026																					0.0
24	2027																					0.0
25	2028																					0.0
26	2029																					0.0
27	2030																					0.0
28	2031																					0.0
29	2032																					0.0
30	2033																					0.0
31	2034																					0.0
32	2035																					0.0
33	2036																					0.0
34	2037																					0.0
35	2038																					0.0
36	2039																					0.0
37	2040																					0.0
38	2041																					0.0
39	2042																					0.0
40	2043																					0.0
	Total	0.0	0.0	81.3					0.0	0.0	0.0	0.0	0.0	0.0	42.5	0.0	0.0	1.8	0.0	0.0	0.0	125.6

Appendix 30-9 (j) Economic Analysis (Case-E) "Ben Dinh Sao Mai Container Port Project"

		Maintenance Cost								Cargo Volume		Operation Cost			Cost	Benefit			Net Benefi	Discounted Cost		Discounted Benefit		Net Present Value	
		Civil Engineering Portion		Cargo Handling Equipment				Channel		GC	Container	GC	Container	Total		GC	Container	Total		10%	15%	10%	15%	10%	15%
		TVG1&2	LCC3&4	BS1&2	TVG1&2	LCC3&4	BS1&2					1.6	3.6												
Year	Calendar	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	50^3DWT	Total	Total	1000Tons	1000Tons	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.	US$ Mil.
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0																	
1.0	2004.0														21.2				-21.2	21.2	21.2			-21.2	-21.2
2.0	2005.0														13.1				-13.1	11.9	11.4			-11.9	-11.4
3.0	2006.0														12.2				-12.2	10.1	9.2			-10.1	-9.2
4.0	2007.0														16.3				-16.3	12.2	10.7			-12.2	-10.7
5.0	2008.0														38.5				-38.5	26.3	22.0			-26.3	-22.0
6.0	2009.0														43.3				-43.3	26.9	21.5			-26.9	-21.5
7.0	2010.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6000.0		21.6	21.6	24.9		23.0	23.0	-1.9	14.0	10.8	13.0	9.9	-1.1	-0.8
8.0	2011.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6127.2		22.1	22.1	25.3		19.7	19.7	-5.7	13.0	9.5	10.1	7.4	-2.9	-2.1
9.0	2012.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6257.0		22.5	22.5	25.8		22.8	22.8	-3.0	12.0	8.4	10.6	7.5	-1.4	-1.0
10.0	2013.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6389.6		23.0	23.0	26.3		38.7	38.7	12.4	11.1	7.5	16.4	11.0	5.3	3.5
11.0	2014.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6525.0		23.5	23.5	26.8		49.6	49.6	22.9	10.3	6.6	19.1	12.3	8.8	5.7
12.0	2015.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6663.3		24.0	24.0	27.3		51.3	51.3	24.0	9.6	5.9	18.0	11.0	8.4	5.2
13.0	2016.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6804.6		24.5	24.5	27.8		70.1	70.1	42.4	8.9	5.2	22.4	13.1	13.5	7.9
14.0	2017.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		6948.8		25.0	25.0	28.3		83.1	83.1	54.8	8.2	4.6	24.1	13.5	15.9	8.9
15.0	2018.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7096.0		25.5	25.5	28.8		86.3	86.3	57.5	7.6	4.1	22.7	12.2	15.1	8.1
16.0	2019.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7246.4		26.1	26.1	29.4		82.5	82.5	53.2	7.0	3.6	19.8	10.1	12.7	6.5
17.0	2020.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	6.5	3.2	17.3	8.5	10.8	5.3
18.0	2021.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	5.9	2.8	15.7	7.4	9.8	4.6
19.0	2022.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	5.4	2.4	14.3	6.4	8.9	4.0
20.0	2023.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	4.9	2.1	13.0	5.6	8.1	3.5
21.0	2024.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	4.4	1.8	11.8	4.9	7.4	3.0
22.0	2025.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	4.0	1.6	10.8	4.2	6.7	2.6
23.0	2026.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	3.7	1.4	9.8	3.7	6.1	2.3
24.0	2027.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	3.3	1.2	8.9	3.2	5.5	2.0
25.0	2028.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	3.0	1.0	8.1	2.8	5.0	1.7
26.0	2029.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	2.8	0.9	7.3	2.4	4.6	1.5
27.0	2030.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	2.5	0.8	6.7	2.1	4.2	1.3
28.0	2031.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	2.3	0.7	6.1	1.8	3.8	1.1
29.0	2032.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	2.1	0.6	5.5	1.6	3.4	1.0
30.0	2033.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.9	0.5	5.0	1.4	3.1	0.9
31.0	2034.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.7	0.5	4.6	1.2	2.8	0.7
32.0	2035.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.6	0.4	4.1	1.0	2.6	0.7
33.0	2036.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.4	0.3	3.8	0.9	2.4	0.6
34.0	2037.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.3	0.3	3.4	0.8	2.1	0.5
35.0	2038.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.2	0.3	3.1	0.7	1.9	0.4
36.0	2039.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.1	0.2	2.8	0.6	1.8	0.4
37.0	2040.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	1.0	0.2	2.6	0.5	1.6	0.3
38.0	2041.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	0.9	0.2	2.3	0.5	1.5	0.3
39.0	2042.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	0.8	0.1	2.1	0.4	1.3	0.2
40.0	2043.0	0.0	0.0	0.8	0.0	0.0	1.7	0.8	3.3		7400.0		26.6	26.6	29.9		79.6	79.6	49.7	0.7	0.1	1.9	0.3	1.2	0.2
	Total	0.0	0.0	28.3	0.0	0.0	57.8	25.6	111.7										1303.7	274.8	185.9	347.3	171.0	72.5	-14.9

Appendix 30.10 (a) Sensitivity Analysis for Case-A "Lower Cai Mep + Thi Vai International Port Project"

EIRR	16.1%

ENPV at 10%	155.7
ENPV at 15%	16.6

BCR at 10%	1.48
BCR at 11%	1.08

	Year	Initial Capital Investment	Maintenance	Operation	Total Cost	Benefit	Net Benefit	Discounted Cost		Discounted Benefit		Net Present Value	
	Variation	0.0	0.0	0.0		0.0							
		181.7						10%	15%	10%	15%	10%	15%
1	2004	21.2			21.2		-21.2	21.2	21.2			-21.2	-21.2
2	2005	15.4			15.4		-15.4	14.0	13.4			-14.0	-13.4
3	2006	17.5			17.5		-17.5	14.5	13.3			-14.5	-13.3
4	2007	25.5			25.5		-25.5	19.2	16.8			-19.2	-16.8
5	2008	42.8			42.8		-42.8	29.3	24.5			-29.3	-24.5
6	2009	59.2			59.2		-59.2	36.7	29.4			-36.7	-29.4
7	2010	0.0	4.5	23.4	27.9	37.6	9.7	15.7	12.1	21.2	16.3	5.5	4.2
8	2011	0.0	4.5	23.9	28.4	30.9	2.4	14.6	10.7	15.8	11.6	1.3	0.9
9	2012	0.0	4.5	24.5	29.0	34.3	5.3	13.5	9.5	16.0	11.2	2.5	1.7
10	2013	0.0	4.5	25.1	29.6	51.9	22.3	12.6	8.4	22.0	14.8	9.5	6.3
11	2014	0.0	4.5	25.7	30.2	64.7	34.5	11.6	7.5	24.9	16.0	13.3	8.5
12	2015	0.0	4.5	26.3	30.8	73.5	42.6	10.8	6.6	25.7	15.8	14.9	9.2
13	2016	0.0	4.5	26.9	31.5	92.0	60.6	10.0	5.9	29.3	17.2	19.3	11.3
14	2017	0.0	4.5	27.6	32.1	107.6	75.5	9.3	5.2	31.2	17.5	21.9	12.3
15	2018	0.0	4.5	28.3	32.8	110.9	78.1	8.6	4.6	29.2	15.7	20.6	11.0
16	2019	0.0	4.5	29.0	33.5	110.8	77.3	8.0	4.1	26.5	13.6	18.5	9.5
17	2020	0.0	4.5	29.7	34.2	110.2	76.0	7.4	3.7	24.0	11.8	16.5	8.1
18	2021	0.0	4.5	29.7	34.2	110.2	76.0	6.8	3.2	21.8	10.2	15.0	7.1
19	2022	0.0	4.5	29.7	34.2	110.2	76.0	6.2	2.8	19.8	8.9	13.7	6.1
20	2023	0.0	4.5	29.7	34.2	110.2	76.0	5.6	2.4	18.0	7.7	12.4	5.3
21	2024	0.0	4.5	29.7	34.2	110.2	76.0	5.1	2.1	16.4	6.7	11.3	4.6
22	2025	0.0	4.5	29.7	34.2	110.2	76.0	4.6	1.8	14.9	5.9	10.3	4.0
23	2026	0.0	4.5	29.7	34.2	110.2	76.0	4.2	1.6	13.5	5.1	9.3	3.5
24	2027	0.0	4.5	29.7	34.2	110.2	76.0	3.8	1.4	12.3	4.4	8.5	3.1
25	2028	0.0	4.5	29.7	34.2	110.2	76.0	3.5	1.2	11.2	3.8	7.7	2.7
26	2029	0.0	4.5	29.7	34.2	110.2	76.0	3.2	1.0	10.2	3.3	7.0	2.3
27	2030	0.0	4.5	29.7	34.2	110.2	76.0	2.9	0.9	9.2	2.9	6.4	2.0
28	2031	0.0	4.5	29.7	34.2	110.2	76.0	2.6	0.8	8.4	2.5	5.8	1.7
29	2032	0.0	4.5	29.7	34.2	110.2	76.0	2.4	0.7	7.6	2.2	5.3	1.5
30	2033	0.0	4.5	29.7	34.2	110.2	76.0	2.2	0.6	6.9	1.9	4.8	1.3
31	2034	0.0	4.5	29.7	34.2	110.2	76.0	2.0	0.5	6.3	1.7	4.4	1.1
32	2035	0.0	4.5	29.7	34.2	110.2	76.0	1.8	0.4	5.7	1.4	4.0	1.0
33	2036	0.0	4.5	29.7	34.2	110.2	76.0	1.6	0.4	5.2	1.3	3.6	0.9
34	2037	0.0	4.5	29.7	34.2	110.2	76.0	1.5	0.3	4.7	1.1	3.3	0.8
35	2038	0.0	4.5	29.7	34.2	110.2	76.0	1.3	0.3	4.3	1.0	3.0	0.7
36	2039	0.0	4.5	29.7	34.2	110.2	76.0	1.2	0.3	3.9	0.8	2.7	0.6
37	2040	0.0	4.5	29.7	34.2	110.2	76.0	1.1	0.2	3.6	0.7	2.5	0.5
38	2041	0.0	4.5	29.7	34.2	110.2	76.0	1.0	0.2	3.2	0.6	2.2	0.4
39	2042	0.0	4.5	29.7	34.2	110.2	76.0	0.9	0.2	2.9	0.5	2.0	0.4
40	2043	0.0	4.5	29.7	34.2	110.2	76.0	0.8	0.1	2.7	0.5	1.8	0.3
	Total	181.6	153.7	972.9	1308.3	3358.5	2050.2	323.2	220.1	479.0	236.7	155.7	16.6

Appendix 30.10 (b) Sensitivity Analysis for Case-A "Lower Cai Mep + Thi Vai International Port Project"

EIRR	15%

ENPV at 10%	142.2
ENPV at 15%	4.7

BCR at 10%	1.42
BCR at 11%	1.02

	Year	Initial Capital Investment	Maintenance	Operation	Total Cost	Benefit	Net Benefit	Discounted Cost		Discounted Benefit		Net Present Value	
	Variation	1.1	0.0	0.0		0.0							
		0.0						10%	15%	10%	15%	10%	15%
1	2004	23.3			23.3		-23.3	23.3	23.3			-23.3	-23.3
2	2005	17.0			17.0		-17.0	15.4	14.7			-15.4	-14.7
3	2006	19.3			19.3		-19.3	15.9	14.6			-15.9	-14.6
4	2007	28.1			28.1		-28.1	21.1	18.5			-21.1	-18.5
5	2008	47.1			47.1		-47.1	32.2	26.9			-32.2	-26.9
6	2009	65.1			65.1		-65.1	40.4	32.4			-40.4	-32.4
7	2010	0.0	4.5	23.4	27.9	37.6	9.7	15.7	12.1	21.2	16.3	5.5	4.2
8	2011	0.0	4.5	23.9	28.4	30.9	2.4	14.6	10.7	15.8	11.6	1.3	0.9
9	2012	0.0	4.5	24.5	29.0	34.3	5.3	13.5	9.5	16.0	11.2	2.5	1.7
10	2013	0.0	4.5	25.1	29.6	51.9	22.3	12.6	8.4	22.0	14.8	9.5	6.3
11	2014	0.0	4.5	25.7	30.2	64.7	34.5	11.6	7.5	24.9	16.0	13.3	8.5
12	2015	0.0	4.5	26.3	30.8	73.5	42.6	10.8	6.6	25.7	15.8	14.9	9.2
13	2016	0.0	4.5	26.9	31.5	92.0	60.6	10.0	5.9	29.3	17.2	19.3	11.3
14	2017	0.0	4.5	27.6	32.1	107.6	75.5	9.3	5.2	31.2	17.5	21.9	12.3
15	2018	0.0	4.5	28.3	32.8	110.9	78.1	8.6	4.6	29.2	15.7	20.6	11.0
16	2019	0.0	4.5	29.0	33.5	110.8	77.3	8.0	4.1	26.5	13.6	18.5	9.5
17	2020	0.0	4.5	29.7	34.2	110.2	76.0	7.4	3.7	24.0	11.8	16.5	8.1
18	2021	0.0	4.5	29.7	34.2	110.2	76.0	6.8	3.2	21.8	10.2	15.0	7.1
19	2022	0.0	4.5	29.7	34.2	110.2	76.0	6.2	2.8	19.8	8.9	13.7	6.1
20	2023	0.0	4.5	29.7	34.2	110.2	76.0	5.6	2.4	18.0	7.7	12.4	5.3
21	2024	0.0	4.5	29.7	34.2	110.2	76.0	5.1	2.1	16.4	6.7	11.3	4.6
22	2025	0.0	4.5	29.7	34.2	110.2	76.0	4.6	1.8	14.9	5.9	10.3	4.0
23	2026	0.0	4.5	29.7	34.2	110.2	76.0	4.2	1.6	13.5	5.1	9.3	3.5
24	2027	0.0	4.5	29.7	34.2	110.2	76.0	3.8	1.4	12.3	4.4	8.5	3.1
25	2028	0.0	4.5	29.7	34.2	110.2	76.0	3.5	1.2	11.2	3.8	7.7	2.7
26	2029	0.0	4.5	29.7	34.2	110.2	76.0	3.2	1.0	10.2	3.3	7.0	2.3
27	2030	0.0	4.5	29.7	34.2	110.2	76.0	2.9	0.9	9.2	2.9	6.4	2.0
28	2031	0.0	4.5	29.7	34.2	110.2	76.0	2.6	0.8	8.4	2.5	5.8	1.7
29	2032	0.0	4.5	29.7	34.2	110.2	76.0	2.4	0.7	7.6	2.2	5.3	1.5
30	2033	0.0	4.5	29.7	34.2	110.2	76.0	2.2	0.6	6.9	1.9	4.8	1.3
31	2034	0.0	4.5	29.7	34.2	110.2	76.0	2.0	0.5	6.3	1.7	4.4	1.1
32	2035	0.0	4.5	29.7	34.2	110.2	76.0	1.8	0.4	5.7	1.4	4.0	1.0
33	2036	0.0	4.5	29.7	34.2	110.2	76.0	1.6	0.4	5.2	1.3	3.6	0.9
34	2037	0.0	4.5	29.7	34.2	110.2	76.0	1.5	0.3	4.7	1.1	3.3	0.8
35	2038	0.0	4.5	29.7	34.2	110.2	76.0	1.3	0.3	4.3	1.0	3.0	0.7
36	2039	0.0	4.5	29.7	34.2	110.2	76.0	1.2	0.3	3.9	0.8	2.7	0.6
37	2040	0.0	4.5	29.7	34.2	110.2	76.0	1.1	0.2	3.6	0.7	2.5	0.5
38	2041	0.0	4.5	29.7	34.2	110.2	76.0	1.0	0.2	3.2	0.6	2.2	0.4
39	2042	0.0	4.5	29.7	34.2	110.2	76.0	0.9	0.2	2.9	0.5	2.0	0.4
40	2043	0.0	4.5	29.7	34.2	110.2	76.0	0.8	0.1	2.7	0.5	1.8	0.3
	Total	199.8	153.7	972.9	1326.4	3358.5	2032.0	336.7	232.0	479.0	236.7	142.2	4.7

Appendix 30.10 (c) Sensitivity Analysis for Case-A "Lower Cai Mep + Thi Vai International Port Project"

EIRR	13.7%

ENPV at 10%	94.3
ENPV at 15%	-19.0

BCR at 10%	1.28
BCR at 11%	0.92

	Year	Initial Capital Investment	Maintenance	Operation	Total Cost	Benefit	Net Benefit	Discounted Cost		Discounted Benefit		Net Present Value	
	Variation	1.1	0.0	0.0		0.9							
								10%	15%	10%	15%	10%	15%
1	2004	23.3			23.3		-23.3	23.3	23.3			-23.3	-23.3
2	2005	17.0			17.0		-17.0	15.4	14.7			-15.4	-14.7
3	2006	19.3			19.3		-19.3	15.9	14.6			-15.9	-14.6
4	2007	28.1			28.1		-28.1	21.1	18.5			-21.1	-18.5
5	2008	47.1			47.1		-47.1	32.2	26.9			-32.2	-26.9
6	2009	65.1			65.1		-65.1	40.4	32.4			-40.4	-32.4
7	2010	0.0	4.5	23.4	27.9	33.8	6.0	15.7	12.1	19.1	14.6	3.4	2.6
8	2011	0.0	4.5	23.9	28.4	27.8	-0.6	14.6	10.7	14.3	10.4	-0.3	-0.2
9	2012	0.0	4.5	24.5	29.0	30.9	1.9	13.5	9.5	14.4	10.1	0.9	0.6
10	2013	0.0	4.5	25.1	29.6	46.7	17.1	12.6	8.4	19.8	13.3	7.3	4.9
11	2014	0.0	4.5	25.7	30.2	58.2	28.0	11.6	7.5	22.4	14.4	10.8	6.9
12	2015	0.0	4.5	26.3	30.8	66.1	35.3	10.8	6.6	23.2	14.2	12.4	7.6
13	2016	0.0	4.5	26.9	31.5	82.8	51.4	10.0	5.9	26.4	15.5	16.4	9.6
14	2017	0.0	4.5	27.6	32.1	96.8	64.7	9.3	5.2	28.0	15.7	18.7	10.5
15	2018	0.0	4.5	28.3	32.8	99.8	67.1	8.6	4.6	26.3	14.1	17.7	9.5
16	2019	0.0	4.5	29.0	33.5	99.7	66.2	8.0	4.1	23.9	12.3	15.9	8.1
17	2020	0.0	4.5	29.7	34.2	99.2	65.0	7.4	3.7	21.6	10.6	14.1	6.9
18	2021	0.0	4.5	29.7	34.2	99.2	65.0	6.8	3.2	19.6	9.2	12.9	6.0
19	2022	0.0	4.5	29.7	34.2	99.2	65.0	6.2	2.8	17.8	8.0	11.7	5.2
20	2023	0.0	4.5	29.7	34.2	99.2	65.0	5.6	2.4	16.2	7.0	10.6	4.6
21	2024	0.0	4.5	29.7	34.2	99.2	65.0	5.1	2.1	14.7	6.1	9.7	4.0
22	2025	0.0	4.5	29.7	34.2	99.2	65.0	4.6	1.8	13.4	5.3	8.8	3.5
23	2026	0.0	4.5	29.7	34.2	99.2	65.0	4.2	1.6	12.2	4.6	8.0	3.0
24	2027	0.0	4.5	29.7	34.2	99.2	65.0	3.8	1.4	11.1	4.0	7.3	2.6
25	2028	0.0	4.5	29.7	34.2	99.2	65.0	3.5	1.2	10.1	3.5	6.6	2.3
26	2029	0.0	4.5	29.7	34.2	99.2	65.0	3.2	1.0	9.2	3.0	6.0	2.0
27	2030	0.0	4.5	29.7	34.2	99.2	65.0	2.9	0.9	8.3	2.6	5.5	1.7
28	2031	0.0	4.5	29.7	34.2	99.2	65.0	2.6	0.8	7.6	2.3	5.0	1.5
29	2032	0.0	4.5	29.7	34.2	99.2	65.0	2.4	0.7	6.9	2.0	4.5	1.3
30	2033	0.0	4.5	29.7	34.2	99.2	65.0	2.2	0.6	6.3	1.7	4.1	1.1
31	2034	0.0	4.5	29.7	34.2	99.2	65.0	2.0	0.5	5.7	1.5	3.7	1.0
32	2035	0.0	4.5	29.7	34.2	99.2	65.0	1.8	0.4	5.2	1.3	3.4	0.9
33	2036	0.0	4.5	29.7	34.2	99.2	65.0	1.6	0.4	4.7	1.1	3.1	0.7
34	2037	0.0	4.5	29.7	34.2	99.2	65.0	1.5	0.3	4.3	1.0	2.8	0.6
35	2038	0.0	4.5	29.7	34.2	99.2	65.0	1.3	0.3	3.9	0.9	2.5	0.6
36	2039	0.0	4.5	29.7	34.2	99.2	65.0	1.2	0.3	3.5	0.7	2.3	0.5
37	2040	0.0	4.5	29.7	34.2	99.2	65.0	1.1	0.2	3.2	0.6	2.1	0.4
38	2041	0.0	4.5	29.7	34.2	99.2	65.0	1.0	0.2	2.9	0.6	1.9	0.4
39	2042	0.0	4.5	29.7	34.2	99.2	65.0	0.9	0.2	2.7	0.5	1.7	0.3
40	2043	0.0	4.5	29.7	34.2	99.2	65.0	0.8	0.1	2.4	0.4	1.6	0.3
	Total	199.8	153.7	972.9	1326.4	3022.6	1696.2	336.7	232.0	431.1	213.0	94.3	-19.0

Appendix 30.10 (d) Sensitivity Analysis for Case-A "Lower Cai Mep + Thi Vai International Port Project"

EIRR	12.9%

ENPV at 10%	76.8
ENPV at 15%	-33.5

BCR at 10%	1.22
BCR at 11%	0.86

	Year	Initial Capital Investment	Maintenance	Operation	Total Cost	Benefit	Net Benefit	Discounted Cost		Discounted Benefit		Net Present Value	
	Variation	1.1	1.1	0.0		0.9							
								10%	15%	10%	15%	10%	15%
1	2004	25.6			25.6		-25.6	25.6	25.6			-25.6	-25.6
2	2005	18.6			18.6		-18.6	17.0	16.2			-17.0	-16.2
3	2006	21.2			21.2		-21.2	17.5	16.0			-17.5	-16.0
4	2007	30.9			30.9		-30.9	23.2	20.3			-23.2	-20.3
5	2008	51.8			51.8		-51.8	35.4	29.6			-35.4	-29.6
6	2009	71.6			71.6		-71.6	44.5	35.6			-44.5	-35.6
7	2010	0.0	5.0	23.4	28.3	33.8	5.5	16.0	12.2	19.1	14.6	3.1	2.4
8	2011	0.0	5.0	23.9	28.9	27.8	-1.1	14.8	10.9	14.3	10.4	-0.6	-0.4
9	2012	0.0	5.0	24.5	29.5	30.9	1.4	13.7	9.6	14.4	10.1	0.7	0.5
10	2013	0.0	5.0	25.1	30.0	46.7	16.7	12.7	8.5	19.8	13.3	7.1	4.7
11	2014	0.0	5.0	25.7	30.7	58.2	27.5	11.8	7.6	22.4	14.4	10.6	6.8
12	2015	0.0	5.0	26.3	31.3	66.1	34.8	11.0	6.7	23.2	14.2	12.2	7.5
13	2016	0.0	5.0	26.9	31.9	82.8	50.9	10.2	6.0	26.4	15.5	16.2	9.5
14	2017	0.0	5.0	27.6	32.6	96.8	64.3	9.4	5.3	28.0	15.7	18.6	10.4
15	2018	0.0	5.0	28.3	33.2	99.8	66.6	8.8	4.7	26.3	14.1	17.5	9.4
16	2019	0.0	5.0	29.0	33.9	99.7	65.8	8.1	4.2	23.9	12.3	15.7	8.1
17	2020	0.0	5.0	29.7	34.7	99.2	64.5	7.5	3.7	21.6	10.6	14.0	6.9
18	2021	0.0	5.0	29.7	34.7	99.2	64.5	6.9	3.2	19.6	9.2	12.8	6.0
19	2022	0.0	5.0	29.7	34.7	99.2	64.5	6.2	2.8	17.8	8.0	11.6	5.2
20	2023	0.0	5.0	29.7	34.7	99.2	64.5	5.7	2.4	16.2	7.0	10.5	4.5
21	2024	0.0	5.0	29.7	34.7	99.2	64.5	5.2	2.1	14.7	6.1	9.6	3.9
22	2025	0.0	5.0	29.7	34.7	99.2	64.5	4.7	1.8	13.4	5.3	8.7	3.4
23	2026	0.0	5.0	29.7	34.7	99.2	64.5	4.3	1.6	12.2	4.6	7.9	3.0
24	2027	0.0	5.0	29.7	34.7	99.2	64.5	3.9	1.4	11.1	4.0	7.2	2.6
25	2028	0.0	5.0	29.7	34.7	99.2	64.5	3.5	1.2	10.1	3.5	6.5	2.3
26	2029	0.0	5.0	29.7	34.7	99.2	64.5	3.2	1.1	9.2	3.0	6.0	2.0
27	2030	0.0	5.0	29.7	34.7	99.2	64.5	2.9	0.9	8.3	2.6	5.4	1.7
28	2031	0.0	5.0	29.7	34.7	99.2	64.5	2.6	0.8	7.6	2.3	4.9	1.5
29	2032	0.0	5.0	29.7	34.7	99.2	64.5	2.4	0.7	6.9	2.0	4.5	1.3
30	2033	0.0	5.0	29.7	34.7	99.2	64.5	2.2	0.6	6.3	1.7	4.1	1.1
31	2034	0.0	5.0	29.7	34.7	99.2	64.5	2.0	0.5	5.7	1.5	3.7	1.0
32	2035	0.0	5.0	29.7	34.7	99.2	64.5	1.8	0.5	5.2	1.3	3.4	0.8
33	2036	0.0	5.0	29.7	34.7	99.2	64.5	1.6	0.4	4.7	1.1	3.1	0.7
34	2037	0.0	5.0	29.7	34.7	99.2	64.5	1.5	0.3	4.3	1.0	2.8	0.6
35	2038	0.0	5.0	29.7	34.7	99.2	64.5	1.4	0.3	3.9	0.9	2.5	0.6
36	2039	0.0	5.0	29.7	34.7	99.2	64.5	1.2	0.3	3.5	0.7	2.3	0.5
37	2040	0.0	5.0	29.7	34.7	99.2	64.5	1.1	0.2	3.2	0.6	2.1	0.4
38	2041	0.0	5.0	29.7	34.7	99.2	64.5	1.0	0.2	2.9	0.6	1.9	0.4
39	2042	0.0	5.0	29.7	34.7	99.2	64.5	0.9	0.2	2.7	0.5	1.7	0.3
40	2043	0.0	5.0	29.7	34.7	99.2	64.5	0.8	0.1	2.4	0.4	1.6	0.3
	Total	219.8	169.1	972.9	1361.8	3022.6	1660.8	354.3	246.5	431.1	213.0	76.8	-33.5

Appendix 32 Preliminary Environmental Impact Assessment (Pre-EIA)

Additional Environmental Condition Surveys

In this section, the results of additional environmental surveys are presented. These were implemented to supplement the above information with more specific ones in the state of local eco-system.

Purposes of the surveys are:

(1) Water current survey in mangrove swamp

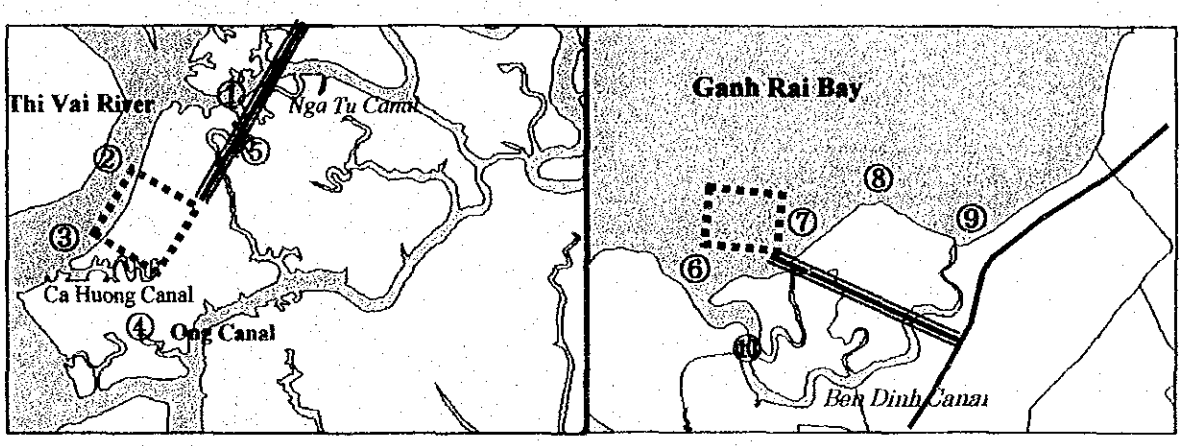
In order to avoid an interruption of complex surface water exchange in the mangrove swamp due to the partial reclamation work in Cai Mep site, the changes of water current in spring tide including direction, speed, temperature, salinity and phenyl, were measured at five points as shown in Figure A32.1 (1).

Based on the result of this survey, preferable structures and layouts of the port facilities and access roads in terms of preservation of remaining mangrove swamp will be recommended.

(2) Benthos survey in mangrove swamp and coastal mud-land

In order to collect a baseline data on diversity of aquatic eco-system in Cai Mep and Ben Dinh-Sao Mai site, five samples were collected at each site as shown in Figure A32.1 (1) and (2).

Based on the result of this study, proper monitoring plan will be recommended.



(1) Cai Mep Site (2) Ben Dinh-Sao Mai Site

Legend: **Planned Port Site** **Planned Access Road** **①...⑩ Survey Point**

Figure A32.1 Location of Survey Points

Primary findings of the surveys are:

(1) Water current survey in mangrove swamp

- Surface water exchange accompanied by the tidal change of water level in Ganh Rai Bay were observed at all survey points. (Refer to Figure A32.2 (1) and (2))
- The change of water level during flood tide at the survey points ②,③and④ delays about two hours from the change in Ganh Rai Bay. (Refer to Figure A32.2 (1) and (2))
- Surface water in the survey point ④ is exchanged through the Ong canal, behind the planned port site. (Refer to Figure A32.2 (2))
- Directions of surface water current in the survey points ① and ⑤ change about two hours earlier than those of other survey points. It means that the surface water in these points is exchanged through both Nga Tu canal and Ong canal. (Refer to Figure A32.2 (2))
- The change in salinity in the survey points ① and ⑤ are smaller than those of other survey points. This result means that the function of surface water exchange in those points is also lower than others. (Refer to Figure A32.2 (3))

(2) Benthos Survey in Mangrove Swamp and Coastal Mud-land

- 27 species of zoo-benthos were collected in Cai Mep site, some species of which indicate the possibility of nutrient and chemical substance pollution.
- 20 species of zoo-benthos were collected in Ben Dinh-Sao Mai site, some species of which indicate the possibility of chemical substance pollution.
- According to the calculated diversity index of the sites, Cai Mep site is richer than that of Ben Dinh-Sao Mai site in terms of bio-diversity.

The inventory of benthos in the sites is shown in Table A32.1.

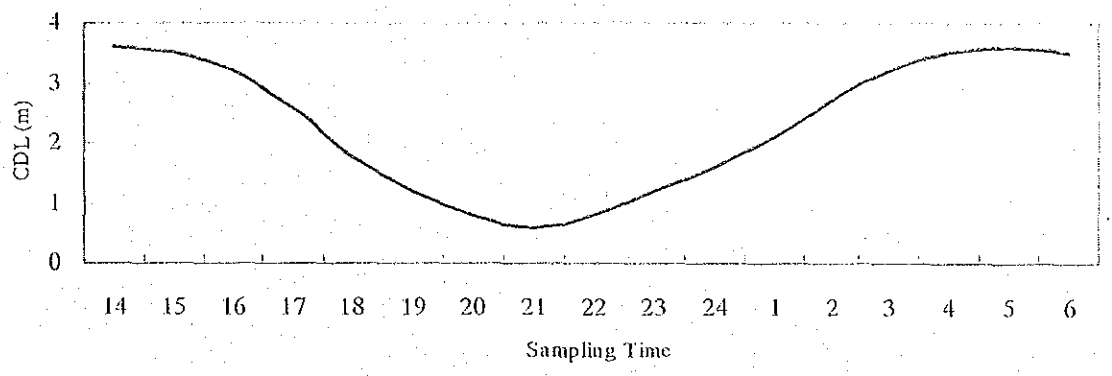


Figure A32.2 (1) Water Level in Ganh Rai Bay

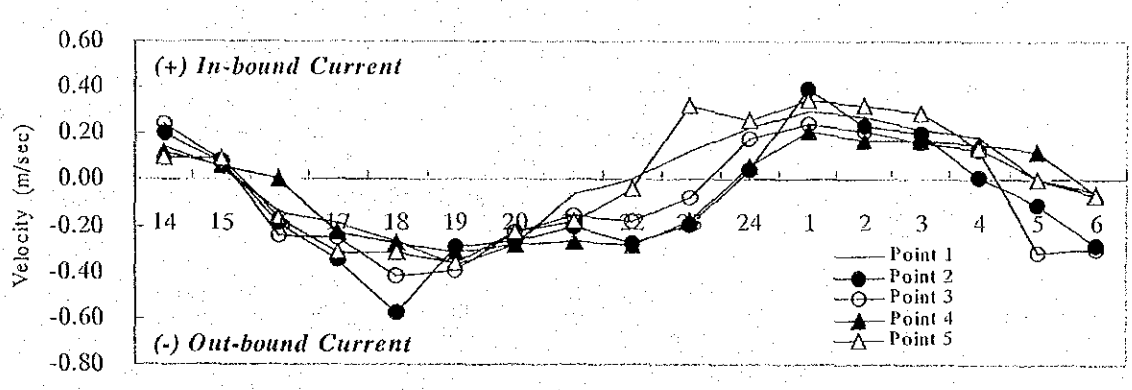


Figure A32.2 (2) Water Flow Velocity in Cai Mep

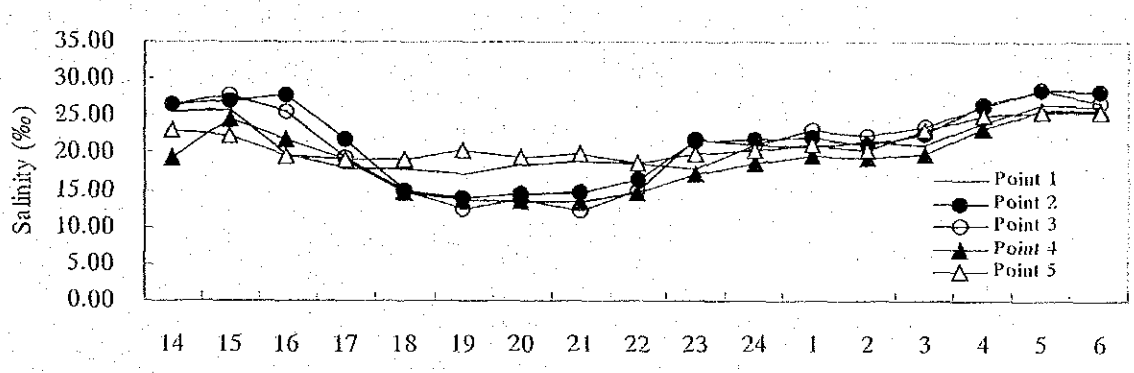


Figure A32.2 (3) Salinity in Cai Mep

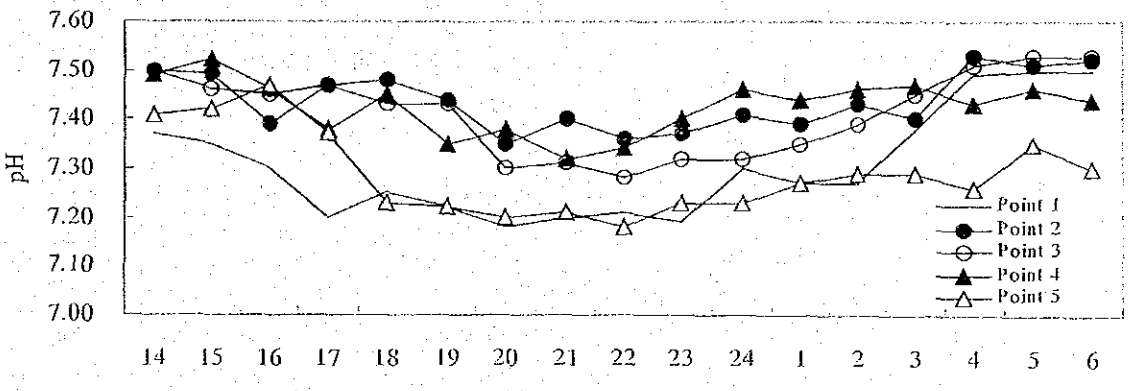


Figure A32.2 (4) Phenyl in Cai Mep

Table A32.1 (1) Inventory of Benthos

No.	Scientific name	Survey points																			
		①-1	①-2	②-1	②-2	③-1	③-2	④-1	④-2	⑤-1	⑤-2	⑥-1	⑥-2	⑦-1	⑦-2	⑧-1	⑧-2	⑨-1	⑨-2	⑩-1	⑩-2
	POLYCHAETA																				
	Errantia																				
	Nephthydidae																				
1	Nephthys polybranchia (Southern)	2					1	4		6	3			2			2	3	4	3	
	Nereidae																				
2	Nereis sp.			2					4				3								
3	Dendronereides aestuarina Southern									4											
	Syllidae																				
4	Pionosyllis compacta Malmgren																		2		
	Phyllodocidae																				
5	Eulalia sp.		2					2													
	Hesionidae																				
6	Hesione sp.												2								
	Glyceridae																				
7	Goniada sp.	3	3		5						1						5				
	Eunicidae																				
8	Diopatra neapolitana (Delle Chiaje)	1		1		2					1	2									
	Lumbrineridae																				
9	Lumbriconereis heteropoda Marenzeller						4					3									
10	Lumrineris shiinoi													2	2						
	Sedentaria																				
	Ariccidae																				
11	Scoloplos armiger (O. F. Muller)						1											3	1		
	Spionidae																				
12	Pseudopolydora kempi Southern													1			3				
13	Paraprionospio pinnata (Ehlers)		2			2									3	7	11	4	5		1
	Disomidae																				

Note: Two samples were taken from each survey point

Table A32.1 (2) Inventory of Benthos

No.	Scientific name	Survey points																			
		①-1	①-2	②-1	②-2	③-1	③-2	④-1	④-2	⑤-1	⑤-2	⑥-1	⑥-2	⑦-1	⑦-2	⑧-1	⑧-2	⑨-1	⑨-2	⑩-1	⑩-2
14	Disoma carica Birula	2																			
	Sternaspidae																				
15	Sternaspis scutata (Ranzani)		2	2				2	5								2	3			1
	Cirratulidae																				
16	Cirratulus sp.	2															2			1	
	Maldanidae																				
17	Maldane sarsi Malmgren		2			7		12	19	9	3			5	2		15	5	14		2
	Sabellidae																				
18	Bispira polymorpha Johnson										2										
	MOLLUSCA																				
	Bivalvia																				
	Psammobiidae																				
19	Sanguinolaria sp.		1	2						2											
	Aloididae																				
20	Aloidis sp.						1														
	Solenidae																				
21	Solen sp.					3															
	ECHINODERMATA																				
	Ophiuroidea																				
	Amphiuroidea																				
22	Amphioplus laevis Koehler			2		1	7	1													
	CRUSTACEA																				
	Amphipoda																				
	Gammaridae																				
23	Melita sp.	2					4		3								2				
	Corophiidae																				
24	Grandidierella lignorum Barnard			3							4										

Note: Two samples were taken from each survey point

Table A32.1 (3) Inventory of Benthos

No.	Scientific name	Survey points																			
		①-1	①-2	②-1	②-2	③-1	③-2	④-1	④-2	⑤-1	⑤-2	⑥-1	⑥-2	⑦-1	⑦-2	⑧-1	⑧-2	⑨-1	⑨-2	⑩-1	⑩-2
25	Kamaka sp		2								2				12						
	Isopoda																				
	Anthuridae																				
26	Cyathura truncata Dang		1						2								3	10	11		
	Corallanidae																				
27	Tachaea chinensis Thielemann	6															3				
	Tanaidaecea																				
	Apseudidae																				
28	Apseudes vietnamensis Dang			2	2						2										
	Decapoda Macrura																				
	Alpheidae																				
29	Alpheus bisincisus deHaan					1			2	1	1					2					
30	Alpheus gracilis Heller																		1		
	Stomapoda																				
	Squillidae																				
31	Oratosquilla oratoria (deHaan)				1	1				2											
	Total species	7	8	7	3	7	6	5	6	6	9	2	2	4	4	2	10	6	7	2	3
	Quantity/m2	180	150	140	80	170	180	210	350	240	190	50	50	100	190	90	480	280	380	40	40

Note: Two samples were taken from each survey point

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