Final Report of the Commission for the Study of Alternatives to the Panama Canal

Volume XVII

Financing Scheme, Financial Analysis and Management Arrangements (3)

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Volume 3 of 3:
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DE LAS ALTERNATIVAS
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CURRENT TOLL STRUCTURE AND 100 PERCENT INCREASE IN RATES

Table D-1. Summary of Estimated Revenues by Project Scenario and Year from Current Toll Structure With 100 Percent Increase in Rates (1990 US$millions)

Year and Project Scenario	Laden	Ballast	Total
2020			
Status Quo a/	804	130	934
150,000 DWT	985	138	1,123
200,000 DWT	1,016	153	1,169
250,000 DWT	1,060	155	1,215
2060			
Status Quo a/	973	137	1,110
150,000 DWT	1,398	240	1,638
200,000 DWT	1,461	271	1,732
250,000 DWT	1,499	255	1,754

Note: Toll rates are $4.02 per Panama Canal net ton for laden vessesls and $3.20 per Panama Canal net ton for vessels in ballast.

a/ Status Quo is a 65,000 DWT Scenario.

Source: Nathan Associates Inc., based on "no toll" forecasts of traffic and transportation costs provided by The WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, STATUS QUO SCENARIO, 2020

Table D-2. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,073	404	3,477	11.61	109,208	14,191	123,399	11.50	262,281	22,753	285,034	7.98
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,451	97	53,548	0.18
Full Container Ships	957	350	1,307	26.81	17,031	5,508	22,539	24.44	104,837	15,849	120,686	13.13
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,477	0	11,477	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,289	0	12,289	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	519	175	693	25.19	13,620	6,448	20,068	32.13	36,797	9,290	46,086	20.16
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,873	1,040	96,913	1.07
Total	11,756	988	12,744	7.76	206,731	26,619	233,349	11.41	804,056	50,033	854,090	5.86

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2098 transits and 35979616 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by the WEFA Group.

Table D-3. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	345	30	375	7.98	0	0	0	0.00	23,282	2,019	25,301	7.98
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	1	10	13.13	0	0	0	0.00	533	81	613	13.13
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,556	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	266	67	333	20.16	0	0	0	0.00	15,989	4,037	20,027	20.16
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,356	109	2,465	4.41	0	0	0	0.00	129,853	6,807	136,660	4.98

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by the WEFA Group.

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.42	88.65	90.21	1.75	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.42	93.07	94.62	1.67	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	1.87	4.42	3.43	100.20	101.76	1.56	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.42	49.37	50.93	3.15	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.45	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.41	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.37	93.92	1.69	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

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Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.41	61.48	63.03	2.53	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.40	79.27	80.82	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.77	70.32	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.49	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.36	75.91	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.43	85.09	86.65	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.43	59.46	61.02	2.62	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.67	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.37	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.43	59.27	60.83	2.63	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.88	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.43	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.80	1.93	103.86

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Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.25	59.80	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.86	4.42	3.42	80.88	82.43	1.92	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.47	86.03	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.83	90.38	1.75	87.97
Subtotal	1,325	20,519	73,947	2.41	1.86	4.42	3.42	80.94	82.49	1.92	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,021	2.41	1.35	4.42	2.48	15.05	16.18	7.50	26.10
Africa-Canada W.C.	36	1,354	2,753	2.41	1.32	4.42	2.43	17.69	18.80	6.24	19.77
Africa-S.A.W.C.	5	128	319	2.41	1.35	4.42	2.48	18.05	19.18	6.25	25.10
Africa-U.S.W.C.	7	161	563	2.41	1.31	4.42	2.40	16.45	17.54	6.64	19.23
Asia-C.A.E.C.	21	345	1,478	2.41	1.35	4.42	2.47	18.17	19.29	6.18	22.65
Asia-U.S.E.C.	259	6,345	20,340	2.41	1.32	4.42	2.41	16.82	17.91	6.53	22.26
C.A.W.C.-Africa	1	34	89	2.41	1.34	4.42	2.46	14.93	16.05	7.48	25.81
C.A.W.C.-C.A.E.C.	36	961	2,540	2.41	1.35	4.42	2.47	7.94	9.06	14.14	15.77
C.A.W.C.-Europe	17	462	1,293	2.41	1.33	4.42	2.44	12.42	13.53	8.93	18.24

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Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	41	1,292	2,998	2.41	1.33	4.42	2.44	8.06	9.17	13.79	17.55
Canada E.C.-Asia	75	2,498	5,957	2.41	1.31	4.42	2.41	18.36	19.46	5.96	20.40
Canada E.C.-Oceania	3	58	247	2.41	1.34	4.42	2.46	19.86	20.98	5.63	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.45	12.78	13.90	8.71	14.98
Canada W.C.-Africa	104	3,500	8,129	2.41	1.32	4.42	2.42	17.34	18.44	6.36	19.42
Canada W.C.-C.A.E.C.	5	105	307	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.30
Canada W.C.-Europe	261	9,815	23,032	2.41	1.29	4.42	2.37	15.96	17.04	6.76	21.25
Canada W.C.-U.S.E.C.	66	1,569	4,497	2.41	1.35	4.42	2.48	13.15	14.28	8.58	23.15
C.A.E.C.-Asia	22	639	1,483	2.41	1.35	4.42	2.48	17.95	19.08	6.29	22.30
C.A.E.C.-C.A.W.C.	26	682	1,753	2.41	1.35	4.42	2.48	8.15	9.28	13.84	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	13	313	874	2.41	1.35	4.42	2.48	11.15	12.28	10.12	13.50
C.A.E.C.-U.S.W.C.	9	236	624	2.41	1.35	4.42	2.48	12.05	13.18	9.37	20.30
Europe-C.A.W.C.	32	797	2,147	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.20
Europe-Canada W.C.	12	286	876	2.41	1.33	4.42	2.43	16.94	18.04	6.53	21.24
Europe-U.S.W.C.	126	3,102	9,551	2.41	1.32	4.42	2.43	16.00	17.11	6.90	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	23	661	1,547	2.41	1.35	4.42	2.48	19.95	21.08	5.66	21.25
Oceania-C.A.E.C.	6	166	439	2.41	1.35	4.42	2.48	19.05	20.18	5.92	22.25
S.A.E.C.-Asia	73	2,384	5,576	2.41	1.32	4.42	2.43	17.06	18.17	6.47	18.40
S.A.W.C.-Africa	4	157	319	2.41	1.29	4.42	2.37	14.00	15.08	7.70	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.48	13.15	14.28	8.58	15.50

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	8	144	523	2.41	1.35	4.42	2.48	11.15	12.28	10.12	13.50
S.A.W.C.-U.S.E.C.	56	1,732	3,879	2.41	1.35	4.42	2.47	10.97	12.09	10.23	15.18
U.S.E.C.-Asia	1,108	48,574	108,989	2.41	1.27	4.42	2.33	15.30	16.36	6.93	22.99
U.S.E.C.-C.A.W.C.	212	6,232	14,645	2.41	1.35	4.42	2.47	8.22	9.34	13.68	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.33	4.42	2.44	12.67	13.78	8.76	21.71
U.S.E.C.-Oceania	21	646	1,484	2.41	1.34	4.42	2.46	18.67	19.79	5.99	20.47
U.S.E.C.-S.A.W.C.	54	1,456	3,717	2.41	1.35	4.42	2.47	11.05	12.17	10.18	15.31
U.S.E.C.-U.S.W.C.	1	0	49	2.41	1.35	4.42	2.48	12.15	13.28	9.29	21.30
U.S.W.C.-Africa	133	4,599	11,446	2.41	1.30	4.42	2.38	16.19	17.27	6.68	18.62
U.S.W.C.-Canada E.C.	7	217	516	2.41	1.34	4.42	2.46	13.89	15.01	8.06	21.26
U.S.W.C.-C.A.E.C.	2	48	125	2.41	1.35	4.42	2.48	12.05	13.18	9.36	20.30
U.S.W.C.-Europe	156	6,524	14,790	2.41	1.28	4.42	2.35	14.48	15.55	7.37	17.96
U.S.W.C.-U.S.E.C.	7	183	556	2.41	1.33	4.42	2.43	12.16	13.26	9.10	21.48
Subtotal	3,073	109,208	262,281	2.41	1.30	4.42	2.38	14.92	16.00	7.25	21.11
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	9	302	775	2.41	1.29	4.42	2.37	17.41	18.49	6.19	18.32
Asia-S.A.E.C.	6	152	125	2.41	1.35	4.42	2.48	21.95	23.08	5.14	21.30
C.A.W.C.-S.A.E.C.	10	136	264	2.41	1.35	4.42	2.48	12.15	13.28	9.29	11.65
Europe-S.A.W.C.	12	298	292	2.41	1.35	4.42	2.48	16.05	17.18	7.03	15.50
Oceania-U.S.E.C.	141	6,406	10,837	2.41	1.26	4.42	2.32	15.77	16.83	6.68	16.07
S.A.E.C.-C.A.W.C.	8	247	210	2.41	1.35	4.42	2.48	12.15	13.28	9.29	11.65

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
S.A.E.C.-Canada W.C.	3	66	139	2.41	1.35	4.42	2.48	17.05	18.18	6.62	17.35
S.A.E.C.-U.S.W.C.	31	1,128	631	2.41	1.28	4.42	2.35	13.48	14.55	7.93	12.67
S.A.W.C.-Europe	172	5,176	9,235	2.41	1.34	4.42	2.46	15.62	16.74	7.15	15.96
U.S.W.C.-S.A.E.C.	11	279	244	2.41	1.35	4.42	2.48	16.05	17.18	7.03	15.45
Subtotal	404	14,191	22,753	2.41	1.30	4.42	2.39	15.56	16.64	6.97	15.73
Subtotal	3,477	123,399	285,034	2.41	1.30	4.42	2.38	14.99	16.08	7.22	20.49
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.58	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.74	45.86	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.28	38.40	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	550	2.41	1.34	4.42	2.46	41.66	42.78	2.68	54.44
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.90	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.34	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.54	41.66	2.76	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.87	47.99	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.64	52.76	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.47	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,284	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.76	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.76	45.88	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.70	26.82	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.63	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.80	26.92	4.36	43.41
Subtotal	991	22,838	53,451	2.41	1.34	4.42	2.46	40.10	41.22	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,548	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.35

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	210.85	214.73	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	228	3,885	31,591	2.41	4.69	4.42	8.61	247.19	251.11	1.58	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.03	129.97	133.62	2.81	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.37	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.25	230.54	234.29	1.63	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.18	212.22	215.94	1.75	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.09	217.31	220.99	1.69	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.28	184.21	187.98	2.04	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.50	187.15	191.01	2.07	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.04	154.50	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.12	224.73	228.42	1.64	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	221.09	224.78	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.26	191.66	195.42	1.96	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	275	6,579	37,172	2.41	4.67	4.42	8.57	247.48	251.38	1.58	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.27	163.61	167.37	2.30	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.17	159.01	162.72	2.34	227.84
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.11	221.46	225.15	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.42	145.28	149.11	2.64	222.40
Subtotal	957	17,031	104,837	2.41	4.60	4.42	8.44	227.87	231.70	1.68	244.64
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Europe-U.S.W.C.	167	2,735	6,941	2.41	4.55	4.42	8.35	218.21	222.01	1.74	217.16
U.S.W.C.-Europe	171	2,628	8,434	2.41	4.57	4.42	8.39	219.57	223.39	1.74	219.05
Subtotal	350	5,508	15,849	2.41	4.56	4.42	8.36	219.96	223.76	1.73	219.19
Subtotal	1,307	22,539	120,686	2.41	4.59	4.42	8.42	225.94	229.76	1.69	238.42
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	2	23	76	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-S.A.W.C.	2	35	78	2.41	1.39	4.42	2.55	34.14	35.30	3.39	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.56	35.71	3.35	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.46	4.42	2.68	10.10	11.32	12.05	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.48	27.65	4.43	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.58	25.50	26.67	4.61	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.66	11.45	12.66	10.58	65.61
Canada E.C.-Asia	5	12	217	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.60	28.50	29.68	4.15	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.59	33.28	34.46	3.54	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.67	9.12	10.34	13.29	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.58	20.63	21.80	5.69	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.64	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.50	4.42	2.75	71.00	72.25	1.76	119.28
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.76	32.64

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.65	55.78	56.99	2.16	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	1.39	4.42	2.55	37.09	38.25	3.12	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.63	51.18	52.38	2.33	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	1.40	4.42	2.56	34.56	35.72	3.37	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.65	21.94	23.14	5.50	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	1.40	4.42	2.57	23.26	24.43	5.03	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.89	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.01	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.61	40.73	41.92	2.91	61.78
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.66	47.38	48.59	2.55	52.07
Subtotal	755	7,476	26,260	2.41	1.40	4.42	2.57	28.70	29.87	4.06	41.85

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Diverted Transits (continued)											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.40	4.42	2.57	28.74	29.91	4.06	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	8.57	107.52	111.42	3.62	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	6.96	23.91	27.08	13.23	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.64	66.11	69.13	4.57	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.08	82.65	85.87	3.90	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,477	2.41	3.90	4.42	7.16	41.82	45.11	7.87	84.66

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Passenger Ships (continued)											
Non-Diverted Transits (continued)											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,788	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,289	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.93	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.27	128.09	131.39	2.58	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.17	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.23	89.55	92.84	3.67	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	4.00	96.80
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.25	70.22	73.52	4.69	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.56	135.20	138.64	2.54	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,925	2.41	3.89	4.42	7.13	89.41	92.65	3.63	177.49

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.38	116.06	119.42	2.89	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.78	148.70	152.24	2.38	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.62	123.33	126.80	2.81	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.32	75.06	78.39	4.43	104.68
S.A.W.C.-Europe	928	4,670	35,380	2.41	4.05	4.42	7.43	115.41	118.79	2.93	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,666	2.41	4.02	4.42	7.37	80.58	83.93	4.16	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.36	134.04	137.39	2.50	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.21	56.28	59.56	5.82	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.32	79.55	82.88	4.19	116.03
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.64	126.00	129.47	2.76	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.06	3.25	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.77	121.95	125.48	2.90	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.94	3.22	129.67

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	17.15	278.31	286.11	2.80	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.53	225.40	232.01	2.93	256.05
Asia-U.S.E.C.	40	766	5,338	2.41	7.95	4.42	14.59	237.11	243.75	2.80	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.06	327.47	335.23	2.37	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	17.82	154.90	163.00	5.23	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.84	275.58	282.78	2.61	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	7.75	4.42	14.21	153.28	159.74	4.22	223.78

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.30	203.42	209.92	3.20	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.41	151.24	157.79	4.33	244.92
Subtotal	211	1,731	17,270	2.41	8.60	4.42	15.77	228.26	235.18	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.59	4.42	15.75	228.49	235.40	3.03	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.80	21.86	5.09	22.37
Canada W.C.-U.S.E.C.	6	253	657	2.41	1.29	4.42	2.36	11.44	12.51	9.38	21.15
C.A.E.C.-Asia	7	180	497	2.41	1.29	4.42	2.37	18.67	19.75	5.77	25.59
C.A.E.C.-C.A.W.C.	96	1,762	6,021	2.41	1.27	4.42	2.33	6.05	7.11	17.49	17.83

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.87	11.93	9.73	15.66
C.A.E.C.-U.S.W.C.	17	712	1,706	2.41	1.28	4.42	2.34	9.68	10.74	11.00	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.01	19.07	5.87	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	23.25	24.29	4.47	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.22	24.28	4.56	26.68
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.94	18.00	6.24	21.75
S.A.W.C.-C.A.E.C.	45	1,636	4,043	2.41	1.27	4.42	2.33	8.90	9.96	11.90	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.77	23.83	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,235	2.41	1.27	4.42	2.33	10.31	11.37	10.27	15.73
U.S.E.C.-Asia	82	2,655	6,531	2.41	1.29	4.42	2.36	18.81	19.88	5.70	26.64
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.59	22.65	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,272	2.41	1.27	4.42	2.34	12.30	13.37	8.63	25.53
U.S.W.C.-Africa	8	224	699	2.41	1.33	4.42	2.45	13.43	14.55	8.29	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	840	2.41	1.30	4.42	2.38	9.68	10.76	11.17	18.60
U.S.W.C.-U.S.E.C.	8	226	654	2.41	1.29	4.42	2.36	11.53	12.60	9.32	23.92
Subtotal	519	13,620	36,797	2.41	1.28	4.42	2.34	12.40	13.47	8.58	20.32
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.54	19.97

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Diverted Transits (continued)											
S.A.E.C.-C.A.W.C.	117	4,342	7,395	2.41	1.27	4.42	2.33	9.42	10.48	11.23	9.39
S.A.E.C.-U.S.W.C.	53	1,967	1,649	2.41	1.27	4.42	2.33	15.19	16.25	6.98	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.34	16.40	6.90	15.48
Subtotal	175	6,448	9,290	2.41	1.27	4.42	2.33	11.34	12.40	9.34	11.17
Subtotal	693	20,068	46,086	2.41	1.27	4.42	2.34	12.06	13.12	8.81	17.38
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.36	392.50	416.77	6.18	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.17	437.52	5.89	479.68
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.66	257.39	281.34	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.67	368.26	394.03	7.00	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.92	381.68	406.65	6.54	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	54.42	392.18	416.93	6.31	474.71
Subtotal	615	2,405	95,873	2.41	29.43	4.42	53.98	407.79	432.24	6.00	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.43	453.29	477.59	5.36	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00

(Continued)

Table D-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Diverted Transits (continued)											
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,913	2.41	29.43	4.42	53.97	407.80	432.25	6.00	472.52
Total Non-Diverting	11,756	206,731	804,056	2.41	2.08	4.42	3.81	53.03	54.84	3.42	65.17
Total Diverting	988	26,619	50,033	2.41	1.81	4.42	3.33	58.73	60.41	2.86	58.61

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2098 transits and 35979616 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by the WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, 150,000-DWT SCENARIO, 2020

Table D-5. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,487	394	3,881	10.16	169,946	16,307	186,253	8.76	395,765	29,634	425,399	6.97
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,451	97	53,548	0.18
Full Container Ships	1,239	12	1,251	0.97	24,474	145	24,619	0.59	152,636	474	153,110	0.31
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,477	0	11,477	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,289	0	12,289	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	509	242	751	32.27	13,620	20,596	34,216	60.19	36,726	44,876	81,602	54.99
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,873	1,040	96,913	1.07
Total	12,442	708	13,150	5.39	274,912	37,519	312,431	12.01	985,269	77,126	1,062,395	7.26

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2111 transits and 51867350 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-6. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	372	28	400	6.97	0	0	0	0.00	28,721	2,152	30,873	6.97
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	0	9	0.31	0	0	0	0.00	450	1	452	0.31
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,556	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	192	234	426	54.99	0	0	0	0.00	19,073	23,302	42,375	54.99
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,310	272	2,582	10.55	0	0	0	0.00	138,293	26,125	164,418	15.89

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.42	88.65	90.21	1.75	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.42	93.07	94.62	1.67	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	1.87	4.42	3.43	100.20	101.76	1.56	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.42	49.37	50.93	3.15	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.45	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.41	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.37	93.92	1.69	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.41	61.48	63.03	2.53	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.40	79.27	80.82	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.77	70.32	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.49	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.36	75.91	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.43	85.09	86.65	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.43	59.46	61.02	2.62	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.85	4.42	3.40	91.66	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.37	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.43	59.27	60.83	2.63	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.88	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.43	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.80	1.93	103.86

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.25	59.80	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.86	4.42	3.42	80.88	82.43	1.92	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.47	86.03	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.83	90.38	1.75	87.97
Subtotal	1,325	20,519	73,947	2.41	1.86	4.42	3.42	80.94	82.49	1.92	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,015	2.41	1.35	4.42	2.47	14.85	15.97	7.56	26.10
Africa-Canada W.C.	34	1,354	2,723	2.41	1.31	4.42	2.40	17.28	18.37	6.32	19.77
Africa-S.A.W.C.	5	128	317	2.41	1.35	4.42	2.47	17.80	18.92	6.31	25.10
Africa-U.S.W.C.	7	161	552	2.41	1.30	4.42	2.39	16.19	17.28	6.71	19.23
Asia-Canada E.C.	8	302	752	2.41	1.28	4.42	2.34	17.00	18.06	6.27	18.32
Asia-C.A.E.C.	21	345	1,533	2.41	1.33	4.42	2.44	18.03	19.14	6.16	22.65
Asia-U.S.E.C.	242	6,345	20,475	2.41	1.30	4.42	2.39	16.31	17.40	6.65	22.26
C.A.W.C.-Africa	1	34	91	2.41	1.32	4.42	2.43	14.69	15.80	7.52	25.81
C.A.W.C.-C.A.E.C.	34	961	2,494	2.41	1.33	4.42	2.44	7.81	8.92	14.21	15.77

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Europe	16	462	1,291	2.41	1.31	4.42	2.41	12.08	13.18	9.07	18.24
C.A.W.C.-U.S.E.C.	38	1,292	2,994	2.41	1.32	4.42	2.42	7.83	8.93	14.05	17.55
Canada E.C.-Asia	87	3,754	8,979	2.41	1.26	4.42	2.32	18.86	19.92	5.59	20.40
Canada E.C.-Oceania	3	58	252	2.41	1.33	4.42	2.43	19.62	20.72	5.64	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.43	12.63	13.73	8.77	14.98
Canada W.C.-Africa	96	3,500	8,015	2.41	1.31	4.42	2.40	16.93	18.02	6.44	19.42
Canada W.C.-C.A.E.C.	4	105	306	2.41	1.35	4.42	2.47	12.85	13.97	8.74	21.30
Canada W.C.-Europe	242	11,174	25,764	2.41	1.26	4.42	2.31	16.88	17.93	6.23	21.25
Canada W.C.-U.S.E.C.	64	1,569	4,473	2.41	1.35	4.42	2.47	13.00	14.12	8.64	23.15
C.A.E.C.-Asia	21	639	1,475	2.41	1.35	4.42	2.47	17.70	18.82	6.34	22.30
C.A.E.C.-C.A.W.C.	25	682	1,744	2.41	1.35	4.42	2.47	8.05	9.17	13.95	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	12	313	869	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
C.A.E.C.-U.S.W.C.	9	236	621	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
Columbia-Asia	3	288	599	2.41	1.18	4.42	2.17	17.58	18.57	5.60	24.67
Europe-C.A.W.C.	30	797	2,132	2.41	1.34	4.42	2.46	12.79	13.91	8.76	21.20
Europe-Canada W.C.	11	286	854	2.41	1.31	4.42	2.40	16.30	17.39	6.71	21.24
Europe-U.S.W.C.	116	3,102	9,372	2.41	1.31	4.42	2.40	15.40	16.49	7.09	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	22	661	1,539	2.41	1.35	4.42	2.47	19.70	20.82	5.70	21.25
Oceania-C.A.E.C.	6	166	437	2.41	1.35	4.42	2.47	18.80	19.92	5.97	22.25
S.A.E.C.-Asia	68	2,384	5,524	2.41	1.31	4.42	2.40	16.60	17.69	6.58	18.40

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Africa	4	157	319	2.41	1.29	4.42	2.37	14.00	15.08	7.70	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.48	13.15	14.28	8.58	15.50
S.A.W.C.-C.A.E.C.	7	144	520	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
S.A.W.C.-U.S.E.C.	54	1,732	3,850	2.41	1.34	4.42	2.45	10.81	11.92	10.33	15.18
U.S.E.C.-Asia	1,601	104,329	232,109	2.41	1.22	4.42	2.24	17.29	18.31	5.89	22.99
U.S.E.C.-C.A.W.C.	207	6,232	14,741	2.41	1.34	4.42	2.46	8.12	9.24	13.76	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.32	4.42	2.42	12.36	13.46	8.89	21.71
U.S.E.C.-Oceania	21	646	1,569	2.41	1.33	4.42	2.44	18.34	19.45	6.04	20.47
U.S.E.C.-S.A.W.C.	50	1,456	3,540	2.41	1.34	4.42	2.46	10.90	12.02	10.26	15.31
U.S.E.C.-U.S.W.C.	1	0	48	2.41	1.35	4.42	2.47	12.00	13.12	9.36	21.30
U.S.W.C.-Africa	121	4,599	11,331	2.41	1.28	4.42	2.35	15.62	16.69	6.84	18.62
U.S.W.C.-Canada E.C.	7	217	509	2.41	1.33	4.42	2.44	13.35	14.46	8.30	21.26
U.S.W.C.-C.A.E.C.	2	48	124	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
U.S.W.C.-Europe	140	6,524	14,820	2.41	1.26	4.42	2.31	13.94	14.99	7.55	17.96
U.S.W.C.-U.S.E.C.	7	183	587	2.41	1.31	4.42	2.41	12.05	13.15	9.08	21.48
Venezuela-Asia	15	1,778	3,699	2.41	1.18	4.42	2.17	18.28	19.27	5.39	19.90
Subtotal	3,487	169,946	395,765	2.41	1.25	4.42	2.29	16.31	17.35	6.39	21.71
Dry Bulk Carriers											
Diverted Transits											
Asia-S.A.E.C.	6	152	179	2.41	1.35	4.42	2.47	21.65	22.77	5.19	21.30
C.A.W.C.-S.A.E.C.	10	136	311	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
Canada W.C.-S.A.E.C.	24	1,374	2,469	2.41	1.22	4.42	2.25	10.63	11.66	9.61	10.92

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Europe-S.A.W.C.	12	298	365	2.41	1.35	4.42	2.47	15.85	16.97	7.09	15.50
Oceania-U.S.E.C.	119	6,406	14,791	2.41	1.24	4.42	2.28	15.19	16.23	6.82	16.07
S.A.E.C.-C.A.W.C.	8	247	247	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
S.A.E.C.-Canada W.C.	3	66	160	2.41	1.35	4.42	2.47	16.80	17.92	6.68	17.35
S.A.E.C.-U.S.W.C.	28	1,128	1,383	2.41	1.26	4.42	2.31	12.93	13.98	8.14	12.67
S.A.W.C.-Europe	175	6,221	9,403	2.41	1.31	4.42	2.39	15.85	16.93	6.87	15.96
U.S.W.C.-S.A.E.C.	11	279	326	2.41	1.35	4.42	2.47	15.80	16.92	7.11	15.45
Subtotal	394	16,307	29,634	2.41	1.27	4.42	2.34	14.91	15.98	7.12	15.29
Subtotal	3,881	186,253	425,399	2.41	1.25	4.42	2.30	16.19	17.23	6.45	21.15
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.58	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.74	45.86	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.28	38.40	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	550	2.41	1.34	4.42	2.46	41.66	42.78	2.68	54.44
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.90	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.34	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.54	41.66	2.76	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.87	47.99	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.64	52.76	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.47	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,284	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.76	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.76	45.88	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.70	26.82	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.63	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.80	26.92	4.36	43.41
Subtotal	991	22,838	53,451	2.41	1.34	4.42	2.46	40.10	41.22	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,548	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.35
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	210.85	214.73	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	206	4,485	37,152	2.41	4.76	4.42	8.73	238.55	242.52	1.66	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.03	129.97	133.62	2.81	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.37	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.25	230.54	234.29	1.63	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.18	212.22	215.94	1.75	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.09	217.31	220.99	1.69	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.28	184.21	187.98	2.04	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.50	187.15	191.01	2.07	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.04	154.50	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.12	224.73	228.42	1.64	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Europe-U.S.W.C.	144	2,855	16,066	2.41	4.62	4.42	8.48	209.75	213.61	1.84	217.16
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	221.09	224.78	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.26	191.66	195.42	1.96	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	243	7,139	41,274	2.41	4.74	4.42	8.69	239.88	243.83	1.65	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.27	163.61	167.37	2.30	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.17	159.01	162.72	2.34	227.84
U.S.W.C.-Europe	194	3,428	22,070	2.41	4.64	4.42	8.51	212.59	216.46	1.82	219.05
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.11	221.46	225.15	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.42	145.28	149.11	2.64	222.40
Subtotal	1,239	24,474	152,636	2.41	4.65	4.42	8.52	220.74	224.60	1.75	238.21
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Subtotal	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Subtotal	1,251	24,619	153,110	2.41	4.65	4.42	8.52	220.97	224.83	1.75	238.34

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-C.A.W.C.	2	23	76	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
Africa-S.A.W.C.	2	35	78	2.41	1.39	4.42	2.55	34.14	35.30	3.39	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.56	35.71	3.35	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.46	4.42	2.68	10.10	11.32	12.05	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.48	27.65	4.43	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.58	25.50	26.67	4.61	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.66	11.45	12.66	10.58	65.61
Canada E.C.-Asia	5	12	217	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.60	28.50	29.68	4.15	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.59	33.28	34.46	3.54	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.67	9.12	10.34	13.29	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.58	20.63	21.80	5.69	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.64	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.50	4.42	2.75	71.00	72.25	1.76	119.28

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.76	32.64
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.65	55.78	56.99	2.16	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	1.39	4.42	2.55	37.09	38.25	3.12	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.63	51.18	52.38	2.33	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	1.40	4.42	2.56	34.56	35.72	3.37	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.65	21.94	23.14	5.50	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	1.40	4.42	2.57	23.26	24.43	5.03	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.89	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.01	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.61	40.73	41.92	2.91	61.78

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.66	47.38	48.59	2.55	52.07
Subtotal	755	7,476	26,260	2.41	1.40	4.42	2.57	28.70	29.87	4.06	41.85
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.40	4.42	2.57	28.74	29.91	4.06	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	8.57	107.52	111.42	3.62	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	6.96	23.91	27.08	13.23	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.64	66.11	69.13	4.57	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.08	82.65	85.87	3.90	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,477	2.41	3.90	4.42	7.16	41.82	45.11	7.87	84.66
Passenger Ships											
Non-Diverted Transits											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,788	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,289	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.93	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.27	128.09	131.39	2.58	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.17	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.23	89.55	92.84	3.67	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	4.00	96.80

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.25	70.22	73.52	4.69	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.56	135.20	138.64	2.54	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,925	2.41	3.89	4.42	7.13	89.41	92.65	3.63	177.49
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.38	116.06	119.42	2.89	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.78	148.70	152.24	2.38	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.62	123.33	126.80	2.81	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.32	75.06	78.39	4.43	104.68
S.A.W.C.-Europe	928	4,670	35,380	2.41	4.05	4.42	7.43	115.41	118.79	2.93	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,666	2.41	4.02	4.42	7.37	80.58	83.93	4.16	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.36	134.04	137.39	2.50	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.21	56.28	59.56	5.82	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.32	79.55	82.88	4.19	116.03

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.64	126.00	129.47	2.76	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.06	3.25	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.77	121.95	125.48	2.90	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.94	3.22	129.67
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	17.15	278.31	286.11	2.80	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.53	225.40	232.01	2.93	256.05
Asia-U.S.E.C.	40	766	5,338	2.41	7.95	4.42	14.59	237.11	243.75	2.80	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.06	327.47	335.23	2.37	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	17.82	154.90	163.00	5.23	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.84	275.58	282.78	2.61	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	7.75	4.42	14.21	153.28	159.74	4.22	223.78
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.30	203.42	209.92	3.20	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.41	151.24	157.79	4.33	244.92
Subtotal	211	1,731	17,270	2.41	8.60	4.42	15.77	228.26	235.18	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.59	4.42	15.75	228.49	235.40	3.03	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.80	21.86	5.09	22.37
Canada W.C.-U.S.E.C.	5	253	647	2.41	1.27	4.42	2.32	11.42	12.47	9.25	21.15
C.A.E.C.-Asia	6	180	487	2.41	1.27	4.42	2.32	18.65	19.70	5.66	25.59
C.A.E.C.-C.A.W.C.	93	1,762	6,013	2.41	1.27	4.42	2.32	6.05	7.10	17.47	17.83
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.87	11.93	9.73	15.66
C.A.E.C.-U.S.W.C.	17	712	1,694	2.41	1.27	4.42	2.32	9.67	10.72	10.93	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.01	19.07	5.87	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	23.25	24.29	4.47	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.22	24.28	4.56	26.68
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.94	18.00	6.24	21.75
S.A.W.C.-C.A.E.C.	42	1,636	4,191	2.41	1.27	4.42	2.32	8.64	9.69	12.22	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.77	23.83	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,232	2.41	1.27	4.42	2.33	10.31	11.37	10.26	15.73
U.S.E.C.-Asia	80	2,655	6,435	2.41	1.27	4.42	2.32	18.79	19.84	5.62	26.64
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.59	22.65	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,262	2.41	1.27	4.42	2.33	12.30	13.36	8.60	25.53
U.S.W.C.-Africa	7	224	660	2.41	1.26	4.42	2.31	13.36	14.41	7.87	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	820	2.41	1.26	4.42	2.32	9.64	10.70	10.94	18.60
U.S.W.C.-U.S.E.C.	8	226	643	2.41	1.27	4.42	2.32	11.51	12.56	9.18	23.92
Subtotal	509	13,620	36,726	2.41	1.27	4.42	2.32	12.36	13.42	8.55	20.32
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.54	19.97
S.A.E.C.-Asia	104	14,147	30,305	2.41	1.27	4.42	2.33	13.83	14.89	7.65	14.70
S.A.E.C.-C.A.W.C.	85	4,342	11,987	2.41	1.26	4.42	2.31	8.64	9.69	12.18	9.39
S.A.E.C.-U.S.W.C.	49	1,967	2,339	2.41	1.26	4.42	2.32	14.90	15.96	7.08	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.34	16.40	6.90	15.48
Subtotal	242	20,596	44,876	2.41	1.27	4.42	2.32	12.86	13.91	8.22	13.59
Subtotal	751	34,216	81,602	2.41	1.27	4.42	2.32	12.66	13.72	8.34	16.27
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.36	392.50	416.77	6.18	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.17	437.52	5.89	479.68

(Continued)

Table D-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.66	257.39	281.34	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.67	368.26	394.03	7.00	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.92	381.68	406.65	6.54	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	54.42	392.18	416.93	6.31	474.71
Subtotal	615	2,405	95,873	2.41	29.43	4.42	53.98	407.79	432.24	6.00	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.43	453.29	477.59	5.36	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,913	2.41	29.43	4.42	53.97	407.80	432.25	6.00	472.52
Total Non-Diverting	12,442	274,912	985,269	2.41	1.92	4.42	3.53	49.56	51.25	3.40	60.09
Total Diverting	708	37,519	77,126	2.41	1.31	4.42	2.41	16.09	17.18	6.83	16.65

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2111 transits and 51867350 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine divesion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, 200,000-DWT SCENARIO, 2020

Table D-8. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,481	516	3,997	12.90	170,408	33,030	203,439	16.24	396,749	52,244	448,993	11.64
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,451	97	53,548	0.18
Full Container Ships	1,239	12	1,251	0.97	24,474	145	24,619	0.59	152,636	474	153,110	0.31
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,477	0	11,477	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,289	0	12,289	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	590	139	728	19.06	27,767	6,448	34,216	18.85	66,688	14,571	81,259	17.93
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,873	1,040	96,913	1.07
Total	12,517	726	13,243	5.48	289,522	40,095	329,616	12.16	1,016,215	69,431	1,085,646	6.40

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-9. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	369	49	418	11.64	0	0	0	0.00	28,041	3,694	31,735	11.64
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	0	9	0.31	0	0	0	0.00	454	1	456	0.31
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,556	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	322	70	392	17.93	0	0	0	0.00	34,126	7,456	41,581	17.93
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,437	129	2,566	5.03	0	0	0	0.00	152,670	11,821	164,491	7.19

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.42	88.65	90.21	1.75	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.42	93.07	94.62	1.67	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	1.87	4.42	3.43	100.20	101.76	1.56	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.42	49.37	50.93	3.15	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.45	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.41	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.37	93.92	1.69	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.41	61.48	63.03	2.53	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.40	79.27	80.82	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.77	70.32	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.49	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.36	75.91	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.43	85.09	86.65	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.43	59.46	61.02	2.62	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.67	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.37	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.43	59.27	60.83	2.63	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.88	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.43	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.80	1.93	103.86

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.25	59.80	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.86	4.42	3.42	80.88	82.43	1.92	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.47	86.03	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.83	90.38	1.75	87.97
Subtotal	1,325	20,519	73,947	2.41	1.86	4.42	3.42	80.94	82.49	1.92	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,015	2.41	1.35	4.42	2.47	14.85	15.97	7.56	26.10
Africa-Canada W.C.	34	1,354	2,723	2.41	1.31	4.42	2.40	17.28	18.37	6.32	19.77
Africa-S.A.W.C.	5	128	317	2.41	1.35	4.42	2.47	17.80	18.92	6.31	25.10
Africa-U.S.W.C.	7	161	552	2.41	1.30	4.42	2.39	16.19	17.28	6.71	19.23
Asia-Canada E.C.	8	302	752	2.41	1.28	4.42	2.34	17.00	18.06	6.27	18.32
Asia-C.A.E.C.	21	345	1,533	2.41	1.33	4.42	2.44	18.03	19.14	6.16	22.65
Asia-U.S.E.C.	242	6,345	20,475	2.41	1.30	4.42	2.39	16.31	17.40	6.65	22.26
C.A.W.C.-Africa	1	34	91	2.41	1.32	4.42	2.43	14.69	15.80	7.52	25.81
C.A.W.C.-C.A.E.C.	34	961	2,494	2.41	1.33	4.42	2.44	7.81	8.92	14.21	15.77

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Europe	16	462	1,291	2.41	1.31	4.42	2.41	12.08	13.18	9.07	18.24
C.A.W.C.-U.S.E.C.	38	1,292	2,994	2.41	1.32	4.42	2.42	7.83	8.93	14.05	17.55
Canada E.C.-Asia	89	4,219	10,064	2.41	1.25	4.42	2.29	18.32	19.36	5.69	20.40
Canada E.C.-Oceania	3	58	252	2.41	1.33	4.42	2.43	19.62	20.72	5.64	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.43	12.63	13.73	8.77	14.98
Canada W.C.-Africa	96	3,500	8,015	2.41	1.31	4.42	2.40	16.93	18.02	6.44	19.42
Canada W.C.-C.A.E.C.	4	105	306	2.41	1.35	4.42	2.47	12.85	13.97	8.74	21.30
Canada W.C.-Europe	238	11,174	25,719	2.41	1.26	4.42	2.31	16.52	17.57	6.36	21.25
Canada W.C.-U.S.E.C.	64	1,569	4,473	2.41	1.35	4.42	2.47	13.00	14.12	8.64	23.15
C.A.E.C.-Asia	21	639	1,475	2.41	1.35	4.42	2.47	17.70	18.82	6.34	22.30
C.A.E.C.-C.A.W.C.	25	682	1,744	2.41	1.35	4.42	2.47	8.05	9.17	13.95	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	12	313	869	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
C.A.E.C.-U.S.W.C.	9	236	621	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
Columbia-Asia	2	295	611	2.41	1.17	4.42	2.15	16.65	17.63	5.88	24.67
Europe-C.A.W.C.	30	797	2,132	2.41	1.34	4.42	2.46	12.79	13.91	8.76	21.20
Europe-Canada W.C.	11	286	854	2.41	1.31	4.42	2.40	16.30	17.39	6.71	21.24
Europe-U.S.W.C.	116	3,102	9,372	2.41	1.31	4.42	2.40	15.40	16.49	7.09	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	22	661	1,539	2.41	1.35	4.42	2.47	19.70	20.82	5.70	21.25
Oceania-C.A.E.C.	6	166	437	2.41	1.35	4.42	2.47	18.80	19.92	5.97	22.25
S.A.E.C.-Asia	68	2,384	5,524	2.41	1.31	4.42	2.40	16.60	17.69	6.58	18.40

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Africa	3	157	313	2.41	1.28	4.42	2.34	13.65	14.71	7.81	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.47	13.00	14.12	8.64	15.50
S.A.W.C.-C.A.E.C.	7	144	520	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
S.A.W.C.-U.S.E.C.	54	1,732	3,850	2.41	1.34	4.42	2.45	10.81	11.92	10.33	15.18
U.S.E.C.-Asia	1,601	104,329	232,109	2.41	1.22	4.42	2.24	17.29	18.31	5.89	22.99
U.S.E.C.-C.A.W.C.	207	6,232	14,741	2.41	1.34	4.42	2.46	8.12	9.24	13.76	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.32	4.42	2.42	12.36	13.46	8.89	21.71
U.S.E.C.-Oceania	21	646	1,569	2.41	1.33	4.42	2.44	18.34	19.45	6.04	20.47
U.S.E.C.-S.A.W.C.	50	1,456	3,540	2.41	1.34	4.42	2.46	10.90	12.02	10.26	15.31
U.S.E.C.-U.S.W.C.	1	0	48	2.41	1.35	4.42	2.47	12.00	13.12	9.36	21.30
U.S.W.C.-Africa	121	4,599	11,331	2.41	1.28	4.42	2.35	15.62	16.69	6.84	18.62
U.S.W.C.-Canada E.C.	7	217	509	2.41	1.33	4.42	2.44	13.35	14.46	8.30	21.26
U.S.W.C.-C.A.E.C.	2	48	124	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
U.S.W.C.-Europe	140	6,524	14,820	2.41	1.26	4.42	2.31	13.94	14.99	7.55	17.96
U.S.W.C.-U.S.E.C.	7	183	587	2.41	1.31	4.42	2.41	12.05	13.15	9.08	21.48
Venezuela-Asia	12	1,768	3,637	2.41	1.17	4.42	2.14	16.47	17.44	5.91	19.90
Subtotal	3,481	170,408	396,749	2.41	1.25	4.42	2.29	16.26	17.30	6.41	21.71
Dry Bulk Carriers											
Diverted Transits											
Asia-S.A.E.C.	6	152	179	2.41	1.35	4.42	2.47	21.65	22.77	5.19	21.30
Brazil-Asia	109	14,866	20,103	2.41	1.17	4.42	2.15	18.03	19.01	5.42	18.14
C.A.W.C.-S.A.E.C.	10	136	311	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Canada W.C.-S.A.E.C.	23	1,374	2,665	2.41	1.22	4.42	2.24	10.51	11.53	9.69	10.92
Europe-S.A.W.C.	12	298	365	2.41	1.35	4.42	2.47	15.85	16.97	7.09	15.50
Oceania-U.S.E.C.	119	6,406	14,791	2.41	1.24	4.42	2.28	15.19	16.23	6.82	16.07
S.A.E.C.-C.A.W.C.	8	247	247	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
S.A.E.C.-Canada W.C.	3	66	160	2.41	1.35	4.42	2.47	16.80	17.92	6.68	17.35
S.A.E.C.-U.S.W.C.	28	1,128	1,383	2.41	1.26	4.42	2.31	12.93	13.98	8.14	12.67
S.A.W.C.-Europe	187	8,078	11,714	2.41	1.27	4.42	2.34	15.87	16.94	6.69	15.96
U.S.W.C.-S.A.E.C.	11	279	326	2.41	1.35	4.42	2.47	15.80	16.92	7.11	15.45
Subtotal	516	33,030	52,244	2.41	1.22	4.42	2.24	16.37	17.39	6.22	16.61
Subtotal	3,997	203,439	448,993	2.41	1.25	4.42	2.28	16.28	17.32	6.38	20.88
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.58	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.74	45.86	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.28	38.40	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	550	2.41	1.34	4.42	2.46	41.66	42.78	2.68	54.44

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.90	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.34	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.54	41.66	2.76	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.87	47.99	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.64	52.76	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.47	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,284	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.76	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.76	45.88	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.70	26.82	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.63	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.80	26.92	4.36	43.41
Subtotal	991	22,838	53,451	2.41	1.34	4.42	2.46	40.10	41.22	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,548	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.35
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	210.85	214.73	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	206	4,485	37,152	2.41	4.76	4.42	8.73	238.55	242.52	1.66	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.03	129.97	133.62	2.81	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.37	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.25	230.54	234.29	1.63	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.18	212.22	215.94	1.75	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.09	217.31	220.99	1.69	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.28	184.21	187.98	2.04	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.50	187.15	191.01	2.07	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.04	154.50	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.12	224.73	228.42	1.64	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Europe-U.S.W.C.	144	2,855	16,066	2.41	4.62	4.42	8.48	209.75	213.61	1.84	217.16
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	221.09	224.78	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.26	191.66	195.42	1.96	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	243	7,139	41,274	2.41	4.74	4.42	8.69	239.88	243.83	1.65	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.27	163.61	167.37	2.30	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.17	159.01	162.72	2.34	227.84
U.S.W.C.-Europe	194	3,428	22,070	2.41	4.64	4.42	8.51	212.59	216.46	1.82	219.05
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.11	221.46	225.15	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.42	145.28	149.11	2.64	222.40
Subtotal	1,239	24,474	152,636	2.41	4.65	4.42	8.52	220.74	224.60	1.75	238.21
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Subtotal	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Subtotal	1,251	24,619	153,110	2.41	4.65	4.42	8.52	220.97	224.83	1.75	238.34

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-C.A.W.C.	2	23	76	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
Africa-S.A.W.C.	2	35	78	2.41	1.39	4.42	2.55	34.14	35.30	3.39	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.56	35.71	3.35	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.46	4.42	2.68	10.10	11.32	12.05	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.48	27.65	4.43	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.58	25.50	26.67	4.61	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.66	11.45	12.66	10.58	65.61
Canada E.C.-Asia	5	12	217	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.60	28.50	29.68	4.15	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.59	33.28	34.46	3.54	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.67	9.12	10.34	13.29	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.58	20.63	21.80	5.69	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.64	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.50	4.42	2.75	71.00	72.25	1.76	119.28

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.76	32.64
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.65	55.78	56.99	2.16	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	1.39	4.42	2.55	37.09	38.25	3.12	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.63	51.18	52.38	2.33	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	1.40	4.42	2.56	34.56	35.72	3.37	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.65	21.94	23.14	5.50	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	1.40	4.42	2.57	23.26	24.43	5.03	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.89	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.01	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.61	40.73	41.92	2.91	61.78

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.66	47.38	48.59	2.55	52.07
Subtotal	755	7,476	26,260	2.41	1.40	4.42	2.57	28.70	29.87	4.06	41.85
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.40	4.42	2.57	28.74	29.91	4.06	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	8.57	107.52	111.42	3.62	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	6.96	23.91	27.08	13.23	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.64	66.11	69.13	4.57	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.08	82.65	85.87	3.90	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,477	2.41	3.90	4.42	7.16	41.82	45.11	7.87	84.66
Passenger Ships											
Non-Diverted Transits											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,788	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,289	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.93	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.27	128.09	131.39	2.58	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.17	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.23	89.55	92.84	3.67	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	4.00	96.80

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.25	70.22	73.52	4.69	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.56	135.20	138.64	2.54	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,925	2.41	3.89	4.42	7.13	89.41	92.65	3.63	177.49
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.38	116.06	119.42	2.89	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.78	148.70	152.24	2.38	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.62	123.33	126.80	2.81	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.32	75.06	78.39	4.43	104.68
S.A.W.C.-Europe	928	4,670	35,380	2.41	4.05	4.42	7.43	115.41	118.79	2.93	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,666	2.41	4.02	4.42	7.37	80.58	83.93	4.16	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.36	134.04	137.39	2.50	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.21	56.28	59.56	5.82	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.32	79.55	82.88	4.19	116.03

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.64	126.00	129.47	2.76	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.06	3.25	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.77	121.95	125.48	2.90	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.94	3.22	129.67
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	17.15	278.31	286.11	2.80	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.53	225.40	232.01	2.93	256.05
Asia-U.S.E.C.	40	766	5,338	2.41	7.95	4.42	14.59	237.11	243.75	2.80	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.06	327.47	335.23	2.37	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	17.82	154.90	163.00	5.23	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.84	275.58	282.78	2.61	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	7.75	4.42	14.21	153.28	159.74	4.22	223.78
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.30	203.42	209.92	3.20	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.41	151.24	157.79	4.33	244.92
Subtotal	211	1,731	17,270	2.41	8.60	4.42	15.77	228.26	235.18	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.59	4.42	15.75	228.49	235.40	3.03	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.80	21.86	5.09	22.37
Canada W.C.-U.S.E.C.	5	253	647	2.41	1.27	4.42	2.32	11.42	12.47	9.25	21.15
C.A.E.C.-Asia	6	180	487	2.41	1.27	4.42	2.32	18.65	19.70	5.66	25.59
C.A.E.C.-C.A.W.C.	93	1,762	6,013	2.41	1.27	4.42	2.32	6.05	7.10	17.47	17.83
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.87	11.93	9.73	15.66
C.A.E.C.-U.S.W.C.	17	712	1,694	2.41	1.27	4.42	2.32	9.67	10.72	10.93	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.01	19.07	5.87	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	23.25	24.29	4.47	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.22	24.28	4.56	26.68
S.A.E.C.-Asia	81	14,147	29,962	2.41	1.27	4.42	2.33	12.89	13.95	8.21	14.70
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.94	18.00	6.24	21.75
S.A.W.C.-C.A.E.C.	42	1,636	4,191	2.41	1.27	4.42	2.32	8.64	9.69	12.22	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.77	23.83	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,232	2.41	1.27	4.42	2.33	10.31	11.37	10.26	15.73
U.S.E.C.-Asia	80	2,655	6,435	2.41	1.27	4.42	2.32	18.79	19.84	5.62	26.64
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.59	22.65	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,262	2.41	1.27	4.42	2.33	12.30	13.36	8.60	25.53
U.S.W.C.-Africa	7	224	660	2.41	1.26	4.42	2.31	13.36	14.41	7.87	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	820	2.41	1.26	4.42	2.32	9.64	10.70	10.94	18.60
U.S.W.C.-U.S.E.C.	8	226	643	2.41	1.27	4.42	2.32	11.51	12.56	9.18	23.92
Subtotal	590	27,767	66,688	2.41	1.27	4.42	2.32	12.63	13.69	8.37	17.46
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.54	19.97
S.A.E.C.-C.A.W.C.	85	4,342	11,987	2.41	1.26	4.42	2.31	8.64	9.69	12.18	9.39
S.A.E.C.-U.S.W.C.	49	1,967	2,339	2.41	1.26	4.42	2.32	14.90	15.96	7.08	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.34	16.40	6.90	15.48
Subtotal	139	6,448	14,571	2.41	1.26	4.42	2.32	10.73	11.78	9.82	11.17
Subtotal	728	34,216	81,259	2.41	1.27	4.42	2.32	12.27	13.33	8.61	16.27
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.36	392.50	416.77	6.18	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.17	437.52	5.89	479.68

(Continued)

Table D-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.66	257.39	281.34	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.67	368.26	394.03	7.00	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.92	381.68	406.65	6.54	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	54.42	392.18	416.93	6.31	474.71
Subtotal	615	2,405	95,873	2.41	29.43	4.42	53.98	407.79	432.24	6.00	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.43	453.29	477.59	5.36	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,913	2.41	29.43	4.42	53.97	407.80	432.25	6.00	472.52
Total Non-Diverting	12,517	289,522	1,016,215	2.41	1.89	4.42	3.47	47.69	49.34	3.47	57.81
Total Diverting	726	40,095	69,431	2.41	1.27	4.42	2.33	17.59	18.66	6.03	17.86

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, 250,000-DWT SCENARIO, 2020

Table D-11. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,624	406	4,030	10.08	191,796	18,164	209,960	8.65	440,751	32,141	472,892	6.80
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,451	97	53,548	0.18
Full Container Ships	1,239	12	1,251	0.97	24,474	145	24,619	0.59	152,636	474	153,110	0.31
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,477	0	11,477	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,289	0	12,289	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	576	139	715	19.42	27,767	6,448	34,216	18.85	66,688	14,571	81,259	17.93
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,873	1,040	96,913	1.07
Total	12,646	617	13,263	4.65	310,909	25,229	336,138	7.51	1,060,217	49,328	1,109,545	4.45

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-12. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	391	29	420	6.80	0	0	0	0.00	30,148	2,200	32,347	6.80
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	0	9	0.31	0	0	0	0.00	454	1	456	0.31
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,556	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	314	68	382	17.93	0	0	0	0.00	34,106	7,451	41,558	17.93
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,451	107	2,558	4.19	0	0	0	0.00	154,757	10,322	165,079	6.25

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.42	88.65	90.21	1.75	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.42	93.07	94.62	1.67	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	1.87	4.42	3.43	100.20	101.76	1.56	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.42	49.37	50.93	3.15	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.45	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.41	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.37	93.92	1.69	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.41	61.48	63.03	2.53	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.40	79.27	80.82	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.77	70.32	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.49	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.36	75.91	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.43	85.09	86.65	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.43	59.46	61.02	2.62	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.67	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.37	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.43	59.27	60.83	2.63	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.88	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.43	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.80	1.93	103.86

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.25	59.80	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.86	4.42	3.42	80.88	82.43	1.92	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.47	86.03	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.83	90.38	1.75	87.97
Subtotal	1,325	20,519	73,947	2.41	1.86	4.42	3.42	80.94	82.49	1.92	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,015	2.41	1.35	4.42	2.47	14.85	15.97	7.56	26.10
Africa-Canada W.C.	34	1,354	2,723	2.41	1.31	4.42	2.40	17.28	18.37	6.32	19.77
Africa-S.A.W.C.	5	128	317	2.41	1.35	4.42	2.47	17.80	18.92	6.31	25.10
Africa-U.S.W.C.	7	161	552	2.41	1.30	4.42	2.39	16.19	17.28	6.71	19.23
Asia-Canada E.C.	8	302	752	2.41	1.28	4.42	2.34	17.00	18.06	6.27	18.32
Asia-C.A.E.C.	21	345	1,533	2.41	1.33	4.42	2.44	18.03	19.14	6.16	22.65
Asia-U.S.E.C.	242	6,345	20,475	2.41	1.30	4.42	2.39	16.31	17.40	6.65	22.26
Brazil-Asia	144	21,387	44,010	2.41	1.17	4.42	2.14	17.13	18.10	5.69	18.14
C.A.W.C.-Africa	1	34	91	2.41	1.32	4.42	2.43	14.69	15.80	7.52	25.81

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	34	961	2,494	2.41	1.33	4.42	2.44	7.81	8.92	14.21	15.77
C.A.W.C.-Europe	16	462	1,291	2.41	1.31	4.42	2.41	12.08	13.18	9.07	18.24
C.A.W.C.-U.S.E.C.	38	1,292	2,994	2.41	1.32	4.42	2.42	7.83	8.93	14.05	17.55
Canada E.C.-Asia	88	4,219	10,057	2.41	1.25	4.42	2.29	18.06	19.10	5.77	20.40
Canada E.C.-Oceania	3	58	252	2.41	1.33	4.42	2.43	19.62	20.72	5.64	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.43	12.63	13.73	8.77	14.98
Canada W.C.-Africa	96	3,500	8,015	2.41	1.31	4.42	2.40	16.93	18.02	6.44	19.42
Canada W.C.-C.A.E.C.	4	105	306	2.41	1.35	4.42	2.47	12.85	13.97	8.74	21.30
Canada W.C.-Europe	238	11,174	25,719	2.41	1.26	4.42	2.31	16.52	17.57	6.36	21.25
Canada W.C.-U.S.E.C.	64	1,569	4,473	2.41	1.35	4.42	2.47	13.00	14.12	8.64	23.15
C.A.E.C.-Asia	21	639	1,475	2.41	1.35	4.42	2.47	17.70	18.82	6.34	22.30
C.A.E.C.-C.A.W.C.	25	682	1,744	2.41	1.35	4.42	2.47	8.05	9.17	13.95	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	12	313	869	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
C.A.E.C.-U.S.W.C.	9	236	621	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
Columbia-Asia	2	295	611	2.41	1.17	4.42	2.15	16.65	17.63	5.88	24.67
Europe-C.A.W.C.	30	797	2,132	2.41	1.34	4.42	2.46	12.79	13.91	8.76	21.20
Europe-Canada W.C.	11	286	854	2.41	1.31	4.42	2.40	16.30	17.39	6.71	21.24
Europe-U.S.W.C.	116	3,102	9,372	2.41	1.31	4.42	2.40	15.40	16.49	7.09	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	22	661	1,539	2.41	1.35	4.42	2.47	19.70	20.82	5.70	21.25
Oceania-C.A.E.C.	6	166	437	2.41	1.35	4.42	2.47	18.80	19.92	5.97	22.25

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	68	2,384	5,524	2.41	1.31	4.42	2.40	16.60	17.69	6.58	18.82
S.A.W.C.-Africa	3	157	313	2.41	1.28	4.42	2.34	13.65	14.71	7.81	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.47	13.00	14.12	8.64	15.50
S.A.W.C.-C.A.E.C.	7	144	520	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
S.A.W.C.-U.S.E.C.	54	1,732	3,850	2.41	1.34	4.42	2.45	10.81	11.92	10.33	15.18
U.S.E.C.-Asia	1,601	104,329	232,109	2.41	1.22	4.42	2.24	17.29	18.31	5.89	22.99
U.S.E.C.-C.A.W.C.	207	6,232	14,741	2.41	1.34	4.42	2.46	8.12	9.24	13.76	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.32	4.42	2.42	12.36	13.46	8.89	21.71
U.S.E.C.-Oceania	21	646	1,569	2.41	1.33	4.42	2.44	18.34	19.45	6.04	20.47
U.S.E.C.-S.A.W.C.	50	1,456	3,540	2.41	1.34	4.42	2.46	10.90	12.02	10.26	15.31
U.S.E.C.-U.S.W.C.	1	0	48	2.41	1.35	4.42	2.47	12.00	13.12	9.36	21.30
U.S.W.C.-Africa	121	4,599	11,331	2.41	1.28	4.42	2.35	15.62	16.69	6.84	18.62
U.S.W.C.-Canada E.C.	7	217	509	2.41	1.33	4.42	2.44	13.35	14.46	8.30	21.26
U.S.W.C.-C.A.E.C.	2	48	124	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
U.S.W.C.-Europe	140	6,524	14,820	2.41	1.26	4.42	2.31	13.94	14.99	7.55	17.96
U.S.W.C.-U.S.E.C.	7	183	587	2.41	1.31	4.42	2.41	12.05	13.15	9.08	21.48
Venezuela-Asia	12	1,768	3,637	2.41	1.17	4.42	2.14	16.47	17.44	5.91	19.90
Subtotal	3,624	191,796	440,751	2.41	1.24	4.42	2.28	16.35	17.38	6.32	21.32
Dry Bulk Carriers											
Diverted Transits											
Asia-S.A.E.C.	6	152	179	2.41	1.35	4.42	2.47	21.65	22.77	5.19	21.30
C.A.W.C.-S.A.E.C.	10	136	311	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Canada W.C.-S.A.E.C.	23	1,374	2,665	2.41	1.22	4.42	2.24	10.51	11.53	9.69	10.92
Europe-S.A.W.C.	12	298	365	2.41	1.35	4.42	2.47	15.85	16.97	7.09	15.50
Oceania-U.S.E.C.	119	6,406	14,791	2.41	1.24	4.42	2.28	15.19	16.23	6.82	16.07
S.A.E.C.-C.A.W.C.	8	247	247	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
S.A.E.C.-Canada W.C.	3	66	160	2.41	1.35	4.42	2.47	16.80	17.92	6.68	17.35
S.A.E.C.-U.S.W.C.	28	1,128	1,383	2.41	1.26	4.42	2.31	12.93	13.98	8.14	12.67
S.A.W.C.-Europe	187	8,078	11,714	2.41	1.27	4.42	2.34	15.87	16.94	6.69	15.96
U.S.W.C.-S.A.E.C.	11	279	326	2.41	1.35	4.42	2.47	15.80	16.92	7.11	15.45
Subtotal	406	18,164	32,141	2.41	1.26	4.42	2.32	15.01	16.07	7.01	15.36
Subtotal	4,030	209,960	472,892	2.41	1.24	4.42	2.28	16.24	17.27	6.38	20.80
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.58	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.74	45.86	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.28	38.40	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	550	2.41	1.34	4.42	2.46	41.66	42.78	2.68	54.44

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.90	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.34	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.54	41.66	2.76	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.87	47.99	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.64	52.76	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.47	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,284	2.41	1.34	4.42	2.46	42.38	43.50	2.64	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.76	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.76	45.88	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.70	26.82	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.63	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.80	26.92	4.36	43.41
Subtotal	991	22,838	53,451	2.41	1.34	4.42	2.46	40.10	41.22	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,548	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.35
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	210.85	214.73	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	206	4,485	37,152	2.41	4.76	4.42	8.73	238.55	242.52	1.66	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.03	129.97	133.62	2.81	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.37	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.25	230.54	234.29	1.63	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.18	212.22	215.94	1.75	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.09	217.31	220.99	1.69	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.28	184.21	187.98	2.04	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.50	187.15	191.01	2.07	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.04	154.50	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.12	224.73	228.42	1.64	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Europe-U.S.W.C.	144	2,855	16,066	2.41	4.62	4.42	8.48	209.75	213.61	1.84	217.16
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	221.09	224.78	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.26	191.66	195.42	1.96	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	243	7,139	41,274	2.41	4.74	4.42	8.69	239.88	243.83	1.65	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.27	163.61	167.37	2.30	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.17	159.01	162.72	2.34	227.84
U.S.W.C.-Europe	194	3,428	22,070	2.41	4.64	4.42	8.51	212.59	216.46	1.82	219.05
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.11	221.46	225.15	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.42	145.28	149.11	2.64	222.40
Subtotal	1,239	24,474	152,636	2.41	4.65	4.42	8.52	220.74	224.60	1.75	238.21
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Subtotal	12	145	474	2.41	4.43	4.42	8.13	259.72	263.42	1.42	259.79
Subtotal	1,251	24,619	153,110	2.41	4.65	4.42	8.52	220.97	224.83	1.75	238.34

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-C.A.W.C.	2	23	76	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
Africa-S.A.W.C.	2	35	78	2.41	1.39	4.42	2.55	34.14	35.30	3.39	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.56	35.71	3.35	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.46	4.42	2.68	10.10	11.32	12.05	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.48	27.65	4.43	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.58	25.50	26.67	4.61	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.66	11.45	12.66	10.58	65.61
Canada E.C.-Asia	5	12	217	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.60	28.50	29.68	4.15	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.59	33.28	34.46	3.54	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.67	9.12	10.34	13.29	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.58	20.63	21.80	5.69	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.64	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.50	4.42	2.75	71.00	72.25	1.76	119.28

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.76	32.64
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.65	55.78	56.99	2.16	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	1.39	4.42	2.55	37.09	38.25	3.12	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.63	51.18	52.38	2.33	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	1.40	4.42	2.56	34.56	35.72	3.37	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.65	21.94	23.14	5.50	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	1.40	4.42	2.57	23.26	24.43	5.03	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.89	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.01	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.61	40.73	41.92	2.91	61.78

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.66	47.38	48.59	2.55	52.07
Subtotal	755	7,476	26,260	2.41	1.40	4.42	2.57	28.70	29.87	4.06	41.85
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.40	4.42	2.57	28.74	29.91	4.06	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	8.57	107.52	111.42	3.62	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	6.96	23.91	27.08	13.23	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.64	66.11	69.13	4.57	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.08	82.65	85.87	3.90	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,477	2.41	3.90	4.42	7.16	41.82	45.11	7.87	84.66
Passenger Ships											
Non-Diverted Transits											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,788	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,289	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.93	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.27	128.09	131.39	2.58	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.17	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.23	89.55	92.84	3.67	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	4.00	96.80

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.25	70.22	73.52	4.69	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.56	135.20	138.64	2.54	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,925	2.41	3.89	4.42	7.13	89.41	92.65	3.63	177.49
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.38	116.06	119.42	2.89	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.78	148.70	152.24	2.38	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.62	123.33	126.80	2.81	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.32	75.06	78.39	4.43	104.68
S.A.W.C.-Europe	928	4,670	35,380	2.41	4.05	4.42	7.43	115.41	118.79	2.93	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,666	2.41	4.02	4.42	7.37	80.58	83.93	4.16	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.36	134.04	137.39	2.50	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.21	56.28	59.56	5.82	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.32	79.55	82.88	4.19	116.03

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.64	126.00	129.47	2.76	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.06	3.25	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.77	121.95	125.48	2.90	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.94	3.22	129.67
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	17.15	278.31	286.11	2.80	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.53	225.40	232.01	2.93	256.05
Asia-U.S.E.C.	40	766	5,338	2.41	7.95	4.42	14.59	237.11	243.75	2.80	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.06	327.47	335.23	2.37	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	17.82	154.90	163.00	5.23	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.84	275.58	282.78	2.61	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	7.75	4.42	14.21	153.28	159.74	4.22	223.78
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.30	203.42	209.92	3.20	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.41	151.24	157.79	4.33	244.92
Subtotal	211	1,731	17,270	2.41	8.60	4.42	15.77	228.26	235.18	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.88	247.35	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.59	4.42	15.75	228.49	235.40	3.03	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.80	21.86	5.09	22.37
Canada W.C.-U.S.E.C.	5	253	647	2.41	1.27	4.42	2.32	11.42	12.47	9.25	21.15
C.A.E.C.-Asia	6	180	487	2.41	1.27	4.42	2.32	18.65	19.70	5.66	25.59
C.A.E.C.-C.A.W.C.	93	1,762	6,013	2.41	1.27	4.42	2.32	6.05	7.10	17.47	17.83
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.87	11.93	9.73	15.66
C.A.E.C.-U.S.W.C.	17	712	1,694	2.41	1.27	4.42	2.32	9.67	10.72	10.93	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.01	19.07	5.87	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	23.25	24.29	4.47	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.22	24.28	4.56	26.68
S.A.E.C.-Asia	67	14,147	29,962	2.41	1.27	4.42	2.33	11.24	12.30	9.41	14.70
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.94	18.00	6.24	21.75
S.A.W.C.-C.A.E.C.	42	1,636	4,191	2.41	1.27	4.42	2.32	8.64	9.69	12.22	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.77	23.83	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,232	2.41	1.27	4.42	2.33	10.31	11.37	10.26	15.73
U.S.E.C.-Asia	80	2,655	6,435	2.41	1.27	4.42	2.32	18.79	19.84	5.62	26.64
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.59	22.65	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,262	2.41	1.27	4.42	2.33	12.30	13.36	8.60	25.53
U.S.W.C.-Africa	7	224	660	2.41	1.26	4.42	2.31	13.36	14.41	7.87	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	820	2.41	1.26	4.42	2.32	9.64	10.70	10.94	18.60
U.S.W.C.-U.S.E.C.	8	226	643	2.41	1.27	4.42	2.32	11.51	12.56	9.18	23.92
Subtotal	576	27,767	66,688	2.41	1.27	4.42	2.32	11.79	12.85	8.97	17.46
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.54	19.97
S.A.E.C.-C.A.W.C.	85	4,342	11,987	2.41	1.26	4.42	2.31	8.64	9.69	12.18	9.39
S.A.E.C.-U.S.W.C.	49	1,967	2,339	2.41	1.26	4.42	2.32	14.90	15.96	7.08	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.34	16.40	6.90	15.48
Subtotal	139	6,448	14,571	2.41	1.26	4.42	2.32	10.73	11.78	9.82	11.17
Subtotal	715	34,216	81,259	2.41	1.27	4.42	2.32	11.59	12.65	9.12	16.27
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.36	392.50	416.77	6.18	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.17	437.52	5.89	479.68

(Continued)

Table D-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.66	257.39	281.34	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.67	368.26	394.03	7.00	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.92	381.68	406.65	6.54	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	54.42	392.18	416.93	6.31	474.71
Subtotal	615	2,405	95,873	2.41	29.43	4.42	53.98	407.79	432.24	6.00	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.43	453.29	477.59	5.36	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,913	2.41	29.43	4.42	53.97	407.80	432.25	6.00	472.52
Total Non-Diverting	12,646	310,909	1,060,217	2.41	1.85	4.42	3.39	45.51	47.11	3.53	55.09
Total Diverting	617	25,229	49,328	2.41	1.32	4.42	2.43	17.34	18.45	6.41	17.69

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, STATUS QUO SCENARIO, 2060

Table D-14. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,310	0	2,310	0.00	34,316	0	34,316	0.00	128,820	0	128,820	0.00
Dry Bulk Carriers	2,552	0	2,552	0.00	112,337	0	112,337	0.00	260,593	0	260,593	0.00
Chemical Tankers	1,183	0	1,183	0.00	32,247	0	32,247	0.00	74,191	0	74,191	0.00
Full Container Ships	960	538	1,498	35.93	18,154	9,906	28,061	35.30	102,941	59,655	162,596	36.69
General Cargo Ships	1,377	6	1,383	0.42	13,319	38	13,357	0.28	46,860	197	47,058	0.42
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,897	0	3,897	0.00	15,828	0	15,828	0.00	181,965	0	181,965	0.00
Roll-On Roll-Off	397	0	397	0.02	2,929	0	2,929	0.01	31,084	3	31,087	0.01
Tankers	266	0	266	0.00	6,016	0	6,016	0.00	16,526	0	16,526	0.00
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,614	1,982	112,596	1.76
Total	14,192	557	14,750	3.78	239,015	9,977	248,993	4.01	973,279	61,837	1,035,116	5.97

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 13 transits and 219227 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 934 transits and 22985287 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by the WEFA Group.

Table D-15. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	57	0	57	0.00	0	0	0	0.00	2,756	0	2,756	0.00
Dry Bulk Carriers	319	0	319	0.00	0	0	0	0.00	24,997	0	24,997	0.00
Chemical Tankers	95	0	95	0.00	0	0	0	0.00	5,270	0	5,270	0.00
Full Container Ships	3	2	5	36.69	0	0	0	0.00	365	212	577	36.69
General Cargo Ships	221	1	222	0.42	0	0	0	0.00	4,793	20	4,813	0.42
Liquid Gas Carriers	65	0	65	0.00	0	0	0	0.00	3,415	0	3,415	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	954	0	954	0.00	0	0	0	0.00	34,134	0	34,134	0.00
Roll-On Roll-Off	56	0	56	0.01	0	0	0	0.00	2,777	0	2,777	0.01
Tankers	125	0	125	0.00	0	0	0	0.00	6,383	0	6,383	0.00
Vehicle Carriers	432	8	440	1.76	0	0	0	0.00	51,016	914	51,930	1.76
Total	2,378	11	2,389	0.44	0	0	0	0.00	137,233	1,146	138,379	0.83

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by the WEFA Group.

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.42	93.05	94.61	1.67	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.42	97.20	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.42	51.25	52.81	3.03	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.87	4.42	3.43	65.68	67.24	2.37	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.70	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,703	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	655	2.41	1.87	4.42	3.43	96.31	97.87	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.86	4.42	3.41	64.27	65.82	2.42	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.87	4.42	3.43	90.01	91.57	1.73	104.63
Europe-U.S.W.C.	36	1,115	2,810	2.41	1.85	4.42	3.40	82.41	83.96	1.88	107.84
Oceania-C.A.E.C.	10	99	485	2.41	1.87	4.42	3.43	94.77	96.33	1.65	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.65	73.20	2.17	76.57
S.A.W.C.-Canada E.C.	1	2	58	2.41	1.87	4.42	3.43	69.19	70.75	2.25	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,746	2.41	1.87	4.42	3.43	89.68	91.24	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,925	2.41	1.87	4.42	3.43	62.12	63.68	2.51	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.41	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.24	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,030	2.41	1.87	4.42	3.43	61.84	63.40	2.52	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.43	86.98	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.43	66.46	68.02	2.35	101.57
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.60	85.14	1.85	108.54
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.33	61.88	2.56	102.02
Subtotal	2,310	34,316	128,820	2.41	1.86	4.42	3.42	83.50	85.05	1.86	105.56
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	31	1,201	2,462	2.41	1.31	4.42	2.41	15.51	16.61	7.07	27.11

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
Africa-S.A.W.C.	10	313	757	2.41	1.31	4.42	2.41	18.34	19.44	5.98	26.14
C.A.W.C.-Africa	2	52	145	2.41	1.30	4.42	2.38	15.33	16.41	7.07	27.18
C.A.W.C.-C.A.E.C.	65	2,167	5,431	2.41	1.30	4.42	2.39	7.57	8.66	14.36	16.30
C.A.W.C.-U.S.E.C.	49	1,854	4,299	2.41	1.29	4.42	2.37	7.74	8.82	13.93	18.15
Canada W.C.-C.A.E.C.	9	270	761	2.41	1.31	4.42	2.40	12.66	13.75	8.63	21.54
Canada W.C.-Europe	325	14,976	34,412	2.41	1.26	4.42	2.32	15.62	16.68	6.74	21.21
Canada W.C.-U.S.E.C.	110	3,183	8,833	2.41	1.31	4.42	2.40	13.41	14.50	8.15	23.33
C.A.E.C.-Asia	23	808	1,821	2.41	1.31	4.42	2.41	18.34	19.44	5.98	23.38
C.A.E.C.-C.A.W.C.	52	1,650	4,121	2.41	1.31	4.42	2.41	7.91	9.01	13.85	16.83
C.A.E.C.-Canada W.C.	3	105	253	2.41	1.31	4.42	2.41	12.74	13.84	8.60	21.59
C.A.E.C.-U.S.W.C.	9	286	737	2.41	1.31	4.42	2.41	11.74	12.84	9.33	20.59
Europe-C.A.W.C.	54	1,627	4,259	2.41	1.31	4.42	2.41	12.74	13.84	8.60	22.38
Europe-U.S.W.C.	155	4,679	13,812	2.41	1.29	4.42	2.37	15.94	17.02	6.75	20.80
U.S.E.C.-Asia	1,239	64,706	144,856	2.41	1.25	4.42	2.29	14.89	15.93	6.98	22.61
U.S.E.C.-C.A.W.C.	400	14,003	32,247	2.41	1.31	4.42	2.40	7.94	9.03	13.76	18.73
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.31	4.42	2.41	11.74	12.84	9.33	22.38
U.S.W.C.-Canada E.C.	6	211	482	2.41	1.30	4.42	2.39	14.00	15.09	7.75	22.50
U.S.W.C.-C.A.E.C.	1	30	77	2.41	1.31	4.42	2.40	11.66	12.75	9.38	20.54
U.S.W.C.-U.S.E.C.	9	215	780	2.41	1.29	4.42	2.36	11.95	13.02	8.99	23.13
Subtotal	2,552	112,337	260,593	2.41	1.27	4.42	2.32	13.75	14.80	7.68	21.66
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.00	55.12	2.07	70.82
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.81	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.02	39.14	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.05	43.17	2.66	56.46
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.18	45.30	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.07	40.19	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.04	61.16	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.19	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,441	2.41	1.34	4.42	2.46	41.25	42.37	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.61	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.29	46.41	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.91	4.33	43.90
Subtotal	1,183	32,247	74,191	2.41	1.34	4.42	2.46	39.87	40.99	2.80	55.95
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	8.14	130.00	133.70	2.85	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.35	226.90	230.70	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.26	210.71	214.46	1.78	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.20	213.60	217.33	1.74	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.19	143.12	146.84	2.60	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.15	152.93	156.63	2.42	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.81	227.54	1.67	284.41

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.19	221.92	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	277	7,718	44,403	2.41	4.73	4.42	8.67	242.19	246.13	1.63	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.99	142.96	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.37	159.49	163.29	2.39	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.18	161.25	164.97	2.31	232.70
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	8.20	219.26	222.99	1.70	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.52	141.16	145.03	2.74	224.31
Subtotal	960	18,154	102,941	2.41	4.59	4.42	8.42	213.28	217.11	1.79	237.06
Full Container Ships											
Diverted Transits											
Asia-U.S.E.C. (low inv. cost)	211	4,208	36,530	2.41	4.74	4.42	8.70	241.67	245.63	1.64	245.26
Europe-U.S.W.C.	164	2,963	11,215	2.41	4.60	4.42	8.43	215.04	218.87	1.78	215.66

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
U.S.W.C.-Europe	163	2,735	11,910	2.41	4.62	4.42	8.47	216.86	220.71	1.78	217.65
Subtotal	538	9,906	59,655	2.41	4.68	4.42	8.58	226.86	230.75	1.72	228.78
Subtotal	1,498	28,061	162,596	2.41	4.62	4.42	8.48	218.08	221.93	1.77	234.14
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-C.A.E.C.	127	1,501	5,894	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	1.39	4.42	2.54	38.14	39.29	3.03	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.67	9.72	10.93	12.51	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.65	30.82	3.96	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.58	27.71	28.88	4.24	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.66	12.26	13.47	9.87	74.92
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.60	31.71	32.89	3.73	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	1.41	4.42	2.59	36.39	37.57	3.24	71.10
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.67	8.51	9.73	14.24	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	1.41	4.42	2.58	22.58	23.75	5.19	34.74

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.57	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	68	680	2,981	2.41	1.39	4.42	2.55	33.84	35.00	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.65	62.15	63.36	1.94	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	1	6	27	2.41	1.43	4.42	2.63	57.41	58.61	2.08	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.65	23.90	25.10	5.05	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.57	25.31	26.48	4.62	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	1.39	4.42	2.54	38.38	39.53	3.01	52.66
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.12	60.90
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.61	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.54	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.61	44.83	46.02	2.64	69.85
Subtotal	1,377	13,319	46,860	2.41	1.40	4.42	2.57	30.43	31.59	3.84	46.46
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Diverted Transits (continued)											
Canada W.C.-Middle East	2	13	35	2.41	1.39	4.42	2.55	42.89	44.05	2.70	42.50
Subtotal	6	38	197	2.41	1.39	4.42	2.55	44.88	46.04	2.58	45.13
Subtotal	1,383	13,357	47,058	2.41	1.40	4.42	2.57	30.47	31.63	3.83	46.45
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	8.57	124.16	128.06	3.14	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	6.96	26.91	30.08	11.75	81.65
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.64	75.10	78.12	4.02	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.08	94.04	97.26	3.42	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.45	47.88	7.71	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Passenger Ships (continued)											
Non-Diverted Transits (continued)											
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.23	154.50	157.79	2.13	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.54	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.20	144.92	148.19	2.26	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	295	278	13,808	2.41	3.88	4.42	7.12	119.82	123.06	2.70	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.31	160.43	163.76	2.07	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.71	4.21	107.85
S.A.W.C.-Europe	1,101	6,815	50,209	2.41	3.89	4.42	7.14	119.88	123.13	2.71	127.15
S.A.W.C.-U.S.E.C.	808	3,821	38,023	2.41	3.88	4.42	7.11	82.93	86.16	3.90	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.11	139.10	142.34	2.32	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.09	82.19	85.41	3.92	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.24	134.45	137.74	2.45	190.92
Subtotal	3,897	15,828	181,965	2.41	3.88	4.42	7.12	105.39	108.63	3.08	134.40
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	17.15	298.90	306.70	2.61	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.53	236.83	243.44	2.79	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.59	248.85	255.49	2.67	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.06	355.27	363.03	2.18	370.17

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.70	239.87	248.38	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	17.82	167.54	175.64	4.84	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.84	298.20	305.40	2.42	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.21	160.82	167.28	4.02	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.25	212.68	219.16	3.05	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.45	166.01	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.41	247.39	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00
Subtotal	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00
Subtotal	397	2,929	31,087	2.41	8.68	4.42	15.92	240.41	247.38	2.90	299.62

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.18	12.24	9.46	37.36
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.35	13.76	14.83	7.77	26.23
C.A.E.C.-C.A.W.C.	46	750	2,551	2.41	1.27	4.42	2.33	7.38	8.44	14.34	22.70
C.A.E.C.-U.S.W.C.	5	228	545	2.41	1.28	4.42	2.34	11.94	13.00	8.91	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.01	29.07	3.78	30.35
U.S.E.C.-Asia	92	2,946	7,215	2.41	1.28	4.42	2.36	22.72	23.80	4.71	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-U.S.W.C.	21	601	1,559	2.41	1.27	4.42	2.34	14.06	15.13	7.55	30.95
U.S.W.C.-C.A.E.C.	3	96	269	2.41	1.30	4.42	2.38	11.94	13.02	9.06	23.13
U.S.W.C.-U.S.E.C.	4	102	294	2.41	1.29	4.42	2.36	13.38	14.45	8.03	29.10
Subtotal	266	6,016	16,526	2.41	1.28	4.42	2.34	18.03	19.10	5.91	30.23
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.36	417.18	441.45	5.82	496.39

(Continued)

Table D-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	481	2,251	71,523	2.41	29.20	4.42	53.55	439.57	463.92	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.66	266.36	290.31	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.67	386.38	412.15	6.67	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.92	403.00	427.97	6.20	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	54.42	415.80	440.55	5.95	510.17
Subtotal	711	2,799	110,614	2.41	29.43	4.42	53.97	433.09	457.54	5.65	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.43	484.18	508.48	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.13	457.58	5.65	508.34
Total Non-Diverting	14,192	239,015	973,279	2.41	2.14	4.42	3.92	57.37	59.23	3.23	73.20
Total Diverting	557	9,977	61,837	2.41	4.75	4.42	8.71	226.85	230.79	1.74	228.82

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 13 transits and 219227 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 934 transits and 22985287 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine divesion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by the WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, 150,000-DWT SCENARIO, 2060

Table D-17. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,459	6	2,465	0.23	36,883	113	36,996	0.31	137,143	297	137,439	0.22
Dry Bulk Carriers	4,628	416	5,044	8.26	257,525	16,674	274,199	6.08	567,577	30,934	598,511	5.17
Chemical Tankers	1,223	1	1,224	0.10	32,940	48	32,988	0.15	76,249	104	76,353	0.14
Full Container Ships	1,438	33	1,470	2.24	31,321	465	31,786	1.46	196,721	1,704	198,425	0.86
General Cargo Ships	1,458	6	1,464	0.43	13,946	45	13,991	0.32	50,198	206	50,404	0.41
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,937	46	3,983	1.15	15,968	292	16,260	1.80	183,600	926	184,527	0.50
Roll-On Roll-Off	397	3	400	0.70	2,929	61	2,990	2.05	31,084	188	31,272	0.60
Tankers	394	195	589	33.12	9,634	18,187	27,821	65.37	25,612	42,174	67,786	62.22
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,614	1,982	112,596	1.76
Total	17,184	720	17,904	4.02	405,015	35,918	440,934	8.15	1,398,483	78,514	1,476,997	5.32

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2536 transits and 56215466 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-18. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	67	0	67	0.22	0	0	0	0.00	3,250	7	3,257	0.22
Dry Bulk Carriers	324	18	342	5.17	0	0	0	0.00	20,664	1,127	21,790	5.17
Chemical Tankers	127	0	127	0.14	0	0	0	0.00	6,884	10	6,893	0.14
Full Container Ships	6	0	6	0.86	0	0	0	0.00	516	4	521	0.86
General Cargo Ships	273	1	274	0.41	0	0	0	0.00	6,022	25	6,047	0.41
Liquid Gas Carriers	958	0	958	0.00	0	0	0	0.00	97,360	0	97,360	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	1,064	5	1,069	0.50	0	0	0	0.00	37,777	190	37,967	0.50
Roll-On Roll-Off	58	0	58	0.60	0	0	0	0.00	3,411	21	3,432	0.60
Tankers	115	190	305	62.22	0	0	0	0.00	12,083	19,900	31,983	62.22
Vehicle Carriers	433	8	441	1.76	0	0	0	0.00	51,169	917	52,085	1.76
Total	3,476	222	3,698	6.01	0	0	0	0.00	240,463	22,199	262,663	8.45

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.42	93.05	94.61	1.67	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.42	97.20	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.42	51.25	52.81	3.03	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.87	4.42	3.43	65.68	67.24	2.37	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-Asia	31	815	2,156	2.41	1.85	4.42	3.40	95.14	96.69	1.63	98.29
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.70	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,703	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	655	2.41	1.87	4.42	3.43	96.31	97.87	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.86	4.42	3.41	64.27	65.82	2.42	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.87	4.42	3.43	90.01	91.57	1.73	104.63
Europe-U.S.W.C.	36	1,115	2,810	2.41	1.85	4.42	3.40	82.41	83.96	1.88	107.84
Oceania-C.A.E.C.	10	99	485	2.41	1.87	4.42	3.43	94.77	96.33	1.65	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.65	73.20	2.17	76.57
S.A.E.C.-Canada W.C.	25	335	1,304	2.41	1.87	4.42	3.42	92.79	94.34	1.68	98.78
S.A.E.C.-U.S.W.C.	84	1,260	4,434	2.41	1.87	4.42	3.42	78.16	79.71	1.99	80.87
S.A.W.C.-Africa	3	52	136	2.41	1.87	4.42	3.43	82.90	84.46	1.88	120.48
S.A.W.C.-Canada E.C.	1	2	58	2.41	1.87	4.42	3.43	69.19	70.75	2.25	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,746	2.41	1.87	4.42	3.43	89.68	91.24	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,925	2.41	1.87	4.42	3.43	62.12	63.68	2.51	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.41	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.24	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,030	2.41	1.87	4.42	3.43	61.84	63.40	2.52	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.43	86.98	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.43	66.46	68.02	2.35	101.57

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.60	85.14	1.85	108.54
U.S.W.C.-S.A.E.C.	6	104	293	2.41	1.87	4.42	3.43	79.98	81.54	1.95	82.98
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.33	61.88	2.56	102.02
Subtotal	2,459	36,883	137,143	2.41	1.86	4.42	3.42	83.65	85.20	1.86	104.46
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	2	25	71	2.41	1.87	4.42	3.43	107.65	109.21	1.45	108.63
Oceania-Canada E.C.	4	88	226	2.41	1.85	4.42	3.40	97.85	99.40	1.58	98.00
Subtotal	6	113	297	2.41	1.86	4.42	3.40	100.04	101.59	1.55	100.37
Subtotal	2,465	36,996	137,439	2.41	1.86	4.42	3.42	83.70	85.25	1.86	104.44
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	29	1,201	2,443	2.41	1.30	4.42	2.39	15.34	16.43	7.09	27.11
Africa-Canada W.C.	156	7,645	14,988	2.41	1.28	4.42	2.34	17.82	18.88	5.98	19.99
Africa-S.A.W.C.	9	313	752	2.41	1.30	4.42	2.39	18.13	19.22	6.00	26.14
Africa-U.S.W.C.	10	297	978	2.41	1.27	4.42	2.33	16.17	17.23	6.55	19.94
Asia-C.A.E.C.	29	527	2,527	2.41	1.30	4.42	2.38	18.85	19.93	5.74	24.40
Asia-U.S.E.C.	386	12,134	38,320	2.41	1.27	4.42	2.33	16.62	17.68	6.38	23.16
C.A.W.C.-Africa	2	52	144	2.41	1.29	4.42	2.37	15.32	16.40	7.03	27.18
C.A.W.C.-C.A.E.C.	63	2,167	5,401	2.41	1.30	4.42	2.38	7.57	8.65	14.29	16.30
C.A.W.C.-Europe	19	626	1,741	2.41	1.28	4.42	2.35	12.19	13.26	8.78	18.57

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	47	1,854	4,275	2.41	1.29	4.42	2.36	7.69	8.76	13.96	18.15
Canada E.C.-Asia	120	6,018	13,741	2.41	1.19	4.42	2.19	19.24	20.24	5.17	20.41
Canada E.C.-S.A.W.C.	12	426	1,109	2.41	1.29	4.42	2.36	12.85	13.92	8.36	15.56
Canada W.C.-Africa	175	7,689	17,204	2.41	1.28	4.42	2.36	17.49	18.57	6.12	19.57
Canada W.C.-C.A.E.C.	9	270	757	2.41	1.30	4.42	2.39	12.59	13.68	8.63	21.54
Canada W.C.-Europe	304	15,944	35,601	2.41	1.22	4.42	2.24	16.30	17.32	6.26	21.21
Canada W.C.-U.S.E.C.	105	3,183	8,784	2.41	1.30	4.42	2.39	13.34	14.43	8.15	23.33
C.A.E.C.-Asia	22	808	1,807	2.41	1.30	4.42	2.39	18.13	19.22	6.00	23.38
C.A.E.C.-C.A.W.C.	49	1,650	4,089	2.41	1.30	4.42	2.39	7.82	8.91	13.90	16.83
C.A.E.C.-Canada W.C.	3	105	251	2.41	1.30	4.42	2.39	12.61	13.70	8.62	21.59
C.A.E.C.-Oceania	1	22	69	2.41	1.30	4.42	2.39	19.89	20.98	5.47	22.59
C.A.E.C.-S.A.W.C.	24	734	1,978	2.41	1.30	4.42	2.39	10.61	11.70	10.25	14.07
C.A.E.C.-U.S.W.C.	9	286	731	2.41	1.30	4.42	2.39	11.61	12.70	9.37	20.59
Europe-C.A.W.C.	51	1,627	4,226	2.41	1.30	4.42	2.39	12.61	13.70	8.62	22.38
Europe-Canada W.C.	12	408	1,158	2.41	1.28	4.42	2.34	16.56	17.62	6.44	22.07
Europe-U.S.W.C.	142	4,679	13,586	2.41	1.28	4.42	2.34	15.66	16.72	6.80	20.80
Middle East-S.A.W.C.	2	104	231	2.41	1.25	4.42	2.28	14.08	15.11	7.38	15.83
Oceania-C.A.E.C.	14	469	1,196	2.41	1.30	4.42	2.39	19.09	20.18	5.69	22.54
Oceania-U.S.E.C.	36	2,218	4,934	2.41	1.23	4.42	2.25	15.65	16.67	6.53	17.42
S.A.E.C.-Asia	60	2,563	5,777	2.41	1.28	4.42	2.34	16.77	17.83	6.35	18.82
S.A.W.C.-Africa	5	296	568	2.41	1.25	4.42	2.30	14.34	15.39	7.28	21.40
S.A.W.C.-Canada E.C.	1	24	50	2.41	1.30	4.42	2.39	13.34	14.43	8.15	16.04
S.A.W.C.-C.A.E.C.	12	277	969	2.41	1.30	4.42	2.39	10.59	11.68	10.26	14.04

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-U.S.E.C.	91	3,585	7,710	2.41	1.30	4.42	2.38	11.28	12.36	9.61	15.48
U.S.E.C.-Asia	1,753	139,874	282,862	2.41	1.10	4.42	2.01	17.76	18.67	5.16	22.61
U.S.E.C.-C.A.W.C.	375	14,003	32,164	2.41	1.30	4.42	2.38	7.80	8.88	13.88	18.73
U.S.E.C.-Oceania	23	909	2,047	2.41	1.29	4.42	2.37	19.26	20.34	5.59	20.97
U.S.E.C.-S.A.W.C.	82	2,944	7,057	2.41	1.30	4.42	2.38	11.45	12.53	9.45	15.60
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.30	4.42	2.39	11.61	12.70	9.36	22.38
U.S.W.C.-Africa	198	9,018	21,771	2.41	1.26	4.42	2.30	15.70	16.74	6.67	19.37
U.S.W.C.-Canada E.C.	5	211	479	2.41	1.29	4.42	2.37	13.93	15.01	7.75	22.50
U.S.W.C.-C.A.E.C.	1	30	76	2.41	1.30	4.42	2.39	11.59	12.68	9.38	20.54
U.S.W.C.-Europe	168	9,505	21,131	2.41	1.24	4.42	2.27	14.02	15.05	7.36	18.82
U.S.W.C.-U.S.E.C.	8	215	775	2.41	1.28	4.42	2.35	11.92	12.99	8.96	23.13
Venezuela-Asia	5	615	1,071	2.41	0.99	4.42	1.81	19.49	20.31	4.23	23.70
Subtotal	4,628	257,525	567,577	2.41	1.18	4.42	2.16	16.28	17.25	6.02	21.42
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	15	695	1,732	2.41	1.25	4.42	2.30	17.55	18.60	5.95	18.43
Asia-S.A.E.C.	5	172	202	2.41	1.30	4.42	2.39	21.84	22.93	4.98	21.54
C.A.W.C.-S.A.E.C.	16	268	1,070	2.41	1.30	4.42	2.39	11.59	12.68	9.38	12.04
Canada E.C.-Oceania	7	132	553	2.41	1.29	4.42	2.37	21.09	22.17	5.10	21.80
Canada W.C.-S.A.E.C.	31	1,820	3,401	2.41	1.13	4.42	2.07	11.79	12.73	8.00	12.24
Columbia-Asia	3	352	290	2.41	9.87	4.42	18.11	27.57	35.81	29.87	25.50
Europe-S.A.W.C.	16	514	781	2.41	1.30	4.42	2.39	16.13	17.22	6.74	16.07

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	23	859	1,782	2.41	1.30	4.42	2.39	20.84	21.93	5.22	21.54
S.A.E.C.-C.A.W.C.	12	441	777	2.41	1.30	4.42	2.39	11.61	12.70	9.37	12.07
S.A.E.C.-Canada W.C.	3	97	247	2.41	1.30	4.42	2.39	17.13	18.22	6.35	17.83
S.A.E.C.-U.S.W.C.	34	1,722	2,129	2.41	1.23	4.42	2.26	13.30	14.33	7.73	13.07
S.A.W.C.-Europe	238	9,167	17,460	2.41	1.29	4.42	2.37	15.52	16.60	6.94	16.02
U.S.W.C.-S.A.E.C.	13	436	510	2.41	1.30	4.42	2.39	16.09	17.18	6.75	15.79
Subtotal	416	16,674	30,934	2.41	1.28	4.42	2.36	15.48	16.69	7.81	15.83
Subtotal	5,044	274,199	598,511	2.41	1.18	4.42	2.17	16.23	17.22	6.12	21.08
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.00	55.12	2.07	70.82
Asia-S.A.E.C.	4	23	259	2.41	1.34	4.42	2.46	50.34	51.46	2.22	52.00
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.81	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.02	39.14	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-S.A.W.C.	9	98	222	2.41	1.34	4.42	2.46	58.65	59.77	1.91	62.50
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.05	43.17	2.66	56.46
Oceania-U.S.E.C.	17	494	1,376	2.41	1.34	4.42	2.46	40.63	41.75	2.75	45.24
S.A.E.C.-C.A.W.C.	10	79	201	2.41	1.34	4.42	2.46	50.34	51.46	2.22	54.86
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.18	45.30	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.07	40.19	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.04	61.16	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.19	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,441	2.41	1.34	4.42	2.46	41.25	42.37	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.61	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.29	46.41	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.91	4.33	43.90
Subtotal	1,223	32,940	76,249	2.41	1.34	4.42	2.46	39.97	41.09	2.80	55.80
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	1	43	91	2.41	1.34	4.42	2.46	30.34	31.46	3.68	31.00

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	6	13	2.41	1.34	4.42	2.46	38.34	39.46	2.92	39.00
Subtotal	1	48	104	2.41	1.34	4.42	2.46	31.27	32.39	3.57	31.93
Subtotal	1,224	32,988	76,353	2.41	1.34	4.42	2.46	39.96	41.07	2.80	55.77
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
Asia-U.S.E.C. (low inv. cost)	186	5,208	43,658	2.41	4.92	4.42	9.02	231.70	235.80	1.77	245.26
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	8.14	130.00	133.70	2.85	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.35	226.90	230.70	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.26	210.71	214.46	1.78	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.20	213.60	217.33	1.74	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.19	143.12	146.84	2.60	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.15	152.93	156.63	2.42	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.81	227.54	1.67	284.41
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	140	3,123	17,807	2.41	4.67	4.42	8.56	205.80	209.69	1.89	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.19	221.92	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	234	8,718	51,203	2.41	4.88	4.42	8.95	233.14	237.21	1.75	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.99	142.96	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.37	159.49	163.29	2.39	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.18	161.25	164.97	2.31	232.70
U.S.W.C.-Europe	196	3,835	25,515	2.41	4.68	4.42	8.59	208.75	212.66	1.87	217.65
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	8.20	219.26	222.99	1.70	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.52	141.16	145.03	2.74	224.31
Subtotal	1,438	31,321	196,721	2.41	4.72	4.42	8.66	213.45	217.38	1.84	234.22
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	23	286	1,594	2.41	4.47	4.42	8.20	257.67	261.40	1.45	260.84

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	10	177	108	2.41	4.47	4.42	8.19	251.62	255.34	1.48	248.23
Oceania-S.A.E.C.	0	2	1	2.41	4.49	4.42	8.24	241.87	245.62	1.55	238.38
Subtotal	33	465	1,704	2.41	4.47	4.42	8.20	255.29	259.02	1.46	255.93
Subtotal	1,470	31,786	198,425	2.41	4.72	4.42	8.65	214.06	217.99	1.83	234.53
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-Canada E.C.	0	3	8	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Asia-C.A.E.C.	127	1,501	5,894	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	1.39	4.42	2.54	38.14	39.29	3.03	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.67	9.72	10.93	12.51	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.65	30.82	3.96	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.58	27.71	28.88	4.24	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.66	12.26	13.47	9.87	74.92
Canada E.C.-Asia	10	25	473	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada E.C.-S.A.W.C.	16	148	760	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.60	31.71	32.89	3.73	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	1.41	4.42	2.59	36.39	37.57	3.24	71.10

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.67	8.51	9.73	14.24	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	1.41	4.42	2.58	22.58	23.75	5.19	34.74
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.57	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	73	734	3,215	2.41	1.39	4.42	2.55	33.84	35.00	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.65	62.15	63.36	1.94	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Middle East-U.S.W.C.	7	19	315	2.41	1.39	4.42	2.55	40.94	42.10	2.83	47.45
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	2	9	41	2.41	1.43	4.42	2.63	57.41	58.61	2.08	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.E.C.-Canada W.C.	0	2	13	2.41	1.39	4.42	2.54	35.04	36.19	3.30	38.55
S.A.E.C.-U.S.W.C.	17	77	647	2.41	1.40	4.42	2.56	38.23	39.39	3.04	40.19
S.A.W.C.-Africa	8	149	350	2.41	1.39	4.42	2.55	34.04	35.20	3.40	53.35
S.A.W.C.-Canada E.C.	1	14	39	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.65	23.90	25.10	5.05	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-Middle East	2	25	79	2.41	1.39	4.42	2.55	35.99	37.15	3.22	42.50
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.57	25.31	26.48	4.62	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	1.39	4.42	2.54	38.38	39.53	3.01	52.66

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.12	60.90
U.S.E.C.-Oceania	6	89	270	2.41	1.39	4.42	2.55	40.94	42.10	2.83	46.45
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.61	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.54	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.61	44.83	46.02	2.64	69.85
U.S.W.C.-S.A.E.C.	8	19	136	2.41	1.45	4.42	2.66	53.26	54.47	2.27	59.12
Subtotal	1,458	13,946	50,198	2.41	1.40	4.42	2.57	30.65	31.81	3.81	46.34
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45
Canada E.C.-Oceania	0	7	9	2.41	1.39	4.42	2.55	47.84	49.00	2.42	47.45
Canada W.C.-Middle East	2	13	35	2.41	1.39	4.42	2.55	42.89	44.05	2.70	42.50
Subtotal	6	45	206	2.41	1.39	4.42	2.55	45.34	46.50	2.55	45.49
Subtotal	1,464	13,991	50,404	2.41	1.40	4.42	2.57	30.69	31.86	3.80	46.34
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	8.57	124.16	128.06	3.14	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	6.96	26.91	30.08	11.75	81.65

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.64	75.10	78.12	4.02	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.08	94.04	97.26	3.42	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.45	47.88	7.71	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.23	154.50	157.79	2.13	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Asia-S.A.E.C.	7	5	260	2.41	4.00	4.42	7.34	180.00	183.34	1.85	184.20
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.54	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.20	144.92	148.19	2.26	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40
Europe-S.A.W.C.	295	278	13,808	2.41	3.88	4.42	7.12	119.82	123.06	2.70	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.31	160.43	163.76	2.07	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-Africa	27	111	1,124	2.41	3.94	4.42	7.23	130.08	133.37	2.53	205.85

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.71	4.21	107.85
S.A.W.C.-Europe	1,101	6,815	50,209	2.41	3.89	4.42	7.14	119.88	123.13	2.71	127.15
S.A.W.C.-Middle East	5	18	179	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
S.A.W.C.-U.S.E.C.	808	3,821	38,023	2.41	3.88	4.42	7.11	82.93	86.16	3.90	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.11	139.10	142.34	2.32	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.09	82.19	85.41	3.92	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.24	134.45	137.74	2.45	190.92
U.S.W.C.-S.A.E.C.	2	6	72	2.41	3.98	4.42	7.30	131.22	134.54	2.53	135.82
Subtotal	3,937	15,968	183,600	2.41	3.88	4.42	7.12	105.63	108.88	3.07	134.95
Refrigerated Ships											
Diverted Transits											
Africa-Asia	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	3,983	16,260	184,527	2.41	3.88	4.42	7.12	106.85	110.10	3.04	135.63
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	17.15	298.90	306.70	2.61	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.53	236.83	243.44	2.79	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.59	248.85	255.49	2.67	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.06	355.27	363.03	2.18	370.17
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.70	239.87	248.38	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	17.82	167.54	175.64	4.84	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.84	298.20	305.40	2.42	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.21	160.82	167.28	4.02	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.25	212.68	219.16	3.05	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.45	166.01	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.41	247.39	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Diverted Transits (continued)											
Canada E.C.-Oceania	3	61	184	2.41	7.77	4.42	14.24	251.49	257.96	2.58	249.02
Subtotal	3	61	188	2.41	7.78	4.42	14.26	251.24	257.72	2.58	248.78
Subtotal	400	2,990	31,272	2.41	8.67	4.42	15.90	240.63	247.60	2.89	298.58
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	18.27	19.34	5.81	24.00
Asia-U.S.E.C.	3	77	178	2.41	1.27	4.42	2.33	27.11	28.17	3.90	38.76
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.18	12.24	9.46	37.36
Canada E.C.-Asia	18	707	1,578	2.41	1.27	4.42	2.33	25.06	26.12	4.22	27.21
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.35	13.76	14.83	7.77	26.23
C.A.E.C.-Asia	5	141	390	2.41	1.29	4.42	2.37	22.38	23.46	4.81	31.40
C.A.E.C.-C.A.W.C.	45	750	2,550	2.41	1.27	4.42	2.33	7.38	8.44	14.33	22.70
C.A.E.C.-S.A.W.C.	46	887	2,462	2.41	1.27	4.42	2.33	13.34	14.40	7.93	20.04
C.A.E.C.-U.S.W.C.	5	228	541	2.41	1.27	4.42	2.32	11.93	12.98	8.86	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-S.A.W.C.	4	82	194	2.41	1.27	4.42	2.33	23.34	24.40	4.53	25.18
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
Oceania-U.S.E.C.	9	162	422	2.41	1.27	4.42	2.33	28.05	29.11	3.77	32.60

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Canada E.C.	1	14	36	2.41	1.27	4.42	2.33	20.47	21.53	5.17	27.25
S.A.W.C.-C.A.E.C.	15	557	1,376	2.41	1.27	4.42	2.33	10.99	12.05	9.63	15.42
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.01	29.07	3.78	30.35
S.A.W.C.-U.S.E.C.	17	607	1,461	2.41	1.27	4.42	2.33	11.71	12.77	9.04	18.51
U.S.E.C.-Asia	90	2,946	7,114	2.41	1.27	4.42	2.32	22.71	23.76	4.65	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-S.A.W.C.	3	49	128	2.41	1.27	4.42	2.33	13.63	14.69	7.76	21.94
U.S.E.C.-U.S.W.C.	21	601	1,551	2.41	1.27	4.42	2.33	14.06	15.12	7.52	30.95
U.S.W.C.-Africa	10	334	984	2.41	1.26	4.42	2.31	16.39	17.44	6.41	20.19
U.S.W.C.-C.A.E.C.	3	96	262	2.41	1.26	4.42	2.32	11.90	12.96	8.86	23.13
U.S.W.C.-U.S.E.C.	4	102	289	2.41	1.27	4.42	2.32	13.36	14.41	7.91	29.10
Subtotal	394	9,634	25,612	2.41	1.27	4.42	2.33	17.58	18.64	6.02	27.16
Tankers											
Diverted Transits											
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	1.63	2.67	63.91	0.48
S.A.E.C.-Asia	100	14,050	31,763	2.41	1.27	4.42	2.33	15.32	16.38	6.91	16.31
S.A.E.C.-C.A.W.C.	68	3,130	8,802	2.41	1.26	4.42	2.32	10.89	11.95	9.67	11.68
S.A.E.C.-U.S.W.C.	27	978	1,569	2.41	1.27	4.42	2.33	18.67	19.73	5.66	18.82
U.S.W.C.-S.A.E.C.	1	29	40	2.41	1.27	4.42	2.33	18.76	19.82	5.64	18.90
Subtotal	195	18,187	42,174	2.41	1.27	4.42	2.32	14.74	15.80	7.17	15.65
Subtotal	589	27,821	67,786	2.41	1.27	4.42	2.32	15.72	16.78	6.72	19.64

(Continued)

Table D-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.36	417.18	441.45	5.82	496.39
Asia-U.S.E.C.	481	2,251	71,523	2.41	29.20	4.42	53.55	439.57	463.92	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.66	266.36	290.31	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.67	386.38	412.15	6.67	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.92	403.00	427.97	6.20	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	54.42	415.80	440.55	5.95	510.17
Subtotal	711	2,799	110,614	2.41	29.43	4.42	53.97	433.09	457.54	5.65	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.43	484.18	508.48	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.13	457.58	5.65	508.34
Total Non-Diverting	17,184	405,015	1,398,483	2.41	1.82	4.42	3.34	48.21	49.79	3.28	59.28
Total Diverting	720	35,918	78,514	2.41	1.36	4.42	2.49	20.61	21.82	5.89	21.25

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2536 transits and 56215466 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, 200,000-DWT SCENARIO, 2060

Table D-20. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,459	6	2,465	0.23	36,883	113	36,996	0.31	137,143	297	137,439	0.22
Dry Bulk Carriers	4,515	471	4,986	9.44	260,009	24,956	284,965	8.76	599,994	34,530	634,524	5.44
Chemical Tankers	1,223	1	1,224	0.10	32,940	48	32,988	0.15	76,249	104	76,353	0.14
Full Container Ships	1,438	33	1,470	2.24	31,321	465	31,786	1.46	196,721	1,704	198,425	0.86
General Cargo Ships	1,458	6	1,464	0.43	13,946	45	13,991	0.32	50,198	206	50,404	0.41
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,937	46	3,983	1.15	15,968	292	16,260	1.80	183,600	926	184,527	0.50
Roll-On Roll-Off	397	3	400	0.70	2,929	61	2,990	2.05	31,084	188	31,272	0.60
Tankers	471	95	567	16.79	23,684	4,137	27,821	14.87	55,340	10,411	65,751	15.83
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,614	1,982	112,596	1.76
Total	17,148	674	17,822	3.78	421,549	30,150	451,699	6.67	1,460,629	50,347	1,510,975	3.33

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-21. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	67	0	67	0.22	0	0	0	0.00	3,250	7	3,257	0.22
Dry Bulk Carriers	388	22	410	5.44	0	0	0	0.00	35,935	2,067	38,002	5.44
Chemical Tankers	127	0	127	0.14	0	0	0	0.00	6,884	10	6,893	0.14
Full Container Ships	6	0	6	0.86	0	0	0	0.00	516	4	521	0.86
General Cargo Ships	273	1	274	0.41	0	0	0	0.00	6,022	25	6,047	0.41
Liquid Gas Carriers	958	0	958	0.00	0	0	0	0.00	97,360	0	97,360	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	1,064	5	1,069	0.50	0	0	0	0.00	37,777	190	37,967	0.50
Roll-On Roll-Off	58	0	58	0.60	0	0	0	0.00	3,411	21	3,432	0.60
Tankers	243	46	289	15.83	0	0	0	0.00	27,021	5,082	32,103	15.83
Vehicle Carriers	433	8	441	1.76	0	0	0	0.00	51,169	917	52,085	1.76
Total	3,667	83	3,750	2.21	0	0	0	0.00	270,672	8,322	278,995	2.98

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.42	93.05	94.61	1.67	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.42	97.20	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.42	51.25	52.81	3.03	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.87	4.42	3.43	65.68	67.24	2.37	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-Asia	31	815	2,156	2.41	1.85	4.42	3.40	95.14	96.69	1.63	98.29
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.70	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,703	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	655	2.41	1.87	4.42	3.43	96.31	97.87	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.86	4.42	3.41	64.27	65.82	2.42	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.87	4.42	3.43	90.01	91.57	1.73	104.63
Europe-U.S.W.C.	36	1,115	2,810	2.41	1.85	4.42	3.40	82.41	83.96	1.88	107.84
Oceania-C.A.E.C.	10	99	485	2.41	1.87	4.42	3.43	94.77	96.33	1.65	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.65	73.20	2.17	76.57
S.A.E.C.-Canada W.C.	25	335	1,304	2.41	1.87	4.42	3.42	92.79	94.34	1.68	98.78
S.A.E.C.-U.S.W.C.	84	1,260	4,434	2.41	1.87	4.42	3.42	78.16	79.71	1.99	80.87
S.A.W.C.-Africa	3	52	136	2.41	1.87	4.42	3.43	82.90	84.46	1.88	120.48
S.A.W.C.-Canada E.C.	1	2	58	2.41	1.87	4.42	3.43	69.19	70.75	2.25	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,746	2.41	1.87	4.42	3.43	89.68	91.24	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,925	2.41	1.87	4.42	3.43	62.12	63.68	2.51	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.41	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.24	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,030	2.41	1.87	4.42	3.43	61.84	63.40	2.52	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.43	86.98	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.43	66.46	68.02	2.35	101.57

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.60	85.14	1.85	108.54
U.S.W.C.-S.A.E.C.	6	104	293	2.41	1.87	4.42	3.43	79.98	81.54	1.95	82.98
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.33	61.88	2.56	102.02
Subtotal	2,459	36,883	137,143	2.41	1.86	4.42	3.42	83.65	85.20	1.86	104.46
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	2	25	71	2.41	1.87	4.42	3.43	107.65	109.21	1.45	108.63
Oceania-Canada E.C.	4	88	226	2.41	1.85	4.42	3.40	97.85	99.40	1.58	98.00
Subtotal	6	113	297	2.41	1.86	4.42	3.40	100.04	101.59	1.55	100.37
Subtotal	2,465	36,996	137,439	2.41	1.86	4.42	3.42	83.70	85.25	1.86	104.44
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	29	1,201	2,443	2.41	1.30	4.42	2.39	15.34	16.43	7.09	27.11
Africa-Canada W.C.	156	7,645	14,988	2.41	1.28	4.42	2.34	17.82	18.88	5.98	19.99
Africa-S.A.W.C.	9	313	752	2.41	1.30	4.42	2.39	18.13	19.22	6.00	26.14
Africa-U.S.W.C.	10	297	978	2.41	1.27	4.42	2.33	16.17	17.23	6.55	19.94
Asia-C.A.E.C.	29	527	2,527	2.41	1.30	4.42	2.38	18.85	19.93	5.74	24.40
Asia-U.S.E.C.	386	12,134	38,320	2.41	1.27	4.42	2.33	16.62	17.68	6.38	23.16
C.A.W.C.-Africa	2	52	144	2.41	1.29	4.42	2.37	15.32	16.40	7.03	27.18
C.A.W.C.-C.A.E.C.	63	2,167	5,401	2.41	1.30	4.42	2.38	7.57	8.65	14.29	16.30
C.A.W.C.-Europe	19	626	1,741	2.41	1.28	4.42	2.35	12.19	13.26	8.78	18.57

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	47	1,854	4,275	2.41	1.29	4.42	2.36	7.69	8.76	13.96	18.15
Canada E.C.-Asia	129	7,535	17,909	2.41	1.22	4.42	2.25	18.78	19.81	5.44	20.41
Canada E.C.-S.A.W.C.	12	426	1,109	2.41	1.29	4.42	2.36	12.85	13.92	8.36	15.56
Canada W.C.-Africa	175	7,689	17,204	2.41	1.28	4.42	2.36	17.49	18.57	6.12	19.57
Canada W.C.-C.A.E.C.	9	270	757	2.41	1.30	4.42	2.39	12.59	13.68	8.63	21.54
Canada W.C.-Europe	301	15,944	36,215	2.41	1.24	4.42	2.28	16.14	17.18	6.43	21.21
Canada W.C.-U.S.E.C.	105	3,183	8,784	2.41	1.30	4.42	2.39	13.34	14.43	8.15	23.33
C.A.E.C.-Asia	22	808	1,807	2.41	1.30	4.42	2.39	18.13	19.22	6.00	23.38
C.A.E.C.-C.A.W.C.	49	1,650	4,089	2.41	1.30	4.42	2.39	7.82	8.91	13.90	16.83
C.A.E.C.-Canada W.C.	3	105	251	2.41	1.30	4.42	2.39	12.61	13.70	8.62	21.59
C.A.E.C.-Oceania	1	22	69	2.41	1.30	4.42	2.39	19.89	20.98	5.47	22.59
C.A.E.C.-S.A.W.C.	24	734	1,978	2.41	1.30	4.42	2.39	10.61	11.70	10.25	14.07
C.A.E.C.-U.S.W.C.	9	286	731	2.41	1.30	4.42	2.39	11.61	12.70	9.37	20.59
Columbia-Asia	2	352	725	2.41	1.17	4.42	2.14	17.07	18.04	5.70	25.50
Europe-C.A.W.C.	51	1,627	4,226	2.41	1.30	4.42	2.39	12.61	13.70	8.62	22.38
Europe-Canada W.C.	12	408	1,158	2.41	1.28	4.42	2.34	16.56	17.62	6.44	22.07
Europe-U.S.W.C.	142	4,679	13,586	2.41	1.28	4.42	2.34	15.66	16.72	6.80	20.80
Middle East-S.A.W.C.	2	104	231	2.41	1.25	4.42	2.28	14.08	15.11	7.38	15.83
Oceania-C.A.E.C.	14	469	1,196	2.41	1.30	4.42	2.39	19.09	20.18	5.69	22.54
Oceania-U.S.E.C.	36	2,218	4,934	2.41	1.23	4.42	2.25	15.65	16.67	6.53	17.42
S.A.E.C.-Asia	60	2,563	5,777	2.41	1.28	4.42	2.34	16.77	17.83	6.35	18.82
S.A.W.C.-Africa	5	296	568	2.41	1.25	4.42	2.30	14.34	15.39	7.28	21.40
S.A.W.C.-Canada E.C.	1	24	50	2.41	1.30	4.42	2.39	13.34	14.43	8.15	16.04

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	12	277	969	2.41	1.30	4.42	2.39	10.59	11.68	10.26	14.04
S.A.W.C.-U.S.E.C.	90	3,585	7,616	2.41	1.30	4.42	2.38	11.28	12.36	9.61	15.48
U.S.E.C.-Asia	1,629	139,874	308,405	2.41	1.20	4.42	2.19	16.99	17.98	5.87	22.61
U.S.E.C.-C.A.W.C.	375	14,003	32,164	2.41	1.30	4.42	2.38	7.80	8.88	13.88	18.73
U.S.E.C.-Oceania	23	909	2,047	2.41	1.29	4.42	2.37	19.26	20.34	5.59	20.97
U.S.E.C.-S.A.W.C.	82	2,944	7,057	2.41	1.30	4.42	2.38	11.45	12.53	9.45	15.60
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.30	4.42	2.39	11.61	12.70	9.36	22.38
U.S.W.C.-Africa	198	9,018	21,771	2.41	1.26	4.42	2.30	15.70	16.74	6.67	19.37
U.S.W.C.-Canada E.C.	5	211	479	2.41	1.29	4.42	2.37	13.93	15.01	7.75	22.50
U.S.W.C.-C.A.E.C.	1	30	76	2.41	1.30	4.42	2.39	11.59	12.68	9.38	20.54
U.S.W.C.-Europe	168	9,505	21,131	2.41	1.24	4.42	2.27	14.02	15.05	7.36	18.82
U.S.W.C.-U.S.E.C.	8	215	775	2.41	1.28	4.42	2.35	11.92	12.99	8.96	23.13
Venezuela-Asia	8	1,231	2,532	2.41	1.17	4.42	2.14	17.07	18.04	5.70	23.70
Subtotal	4,515	260,009	599,994	2.41	1.23	4.42	2.26	15.85	16.88	6.47	21.42
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	15	695	1,732	2.41	1.25	4.42	2.30	17.55	18.60	5.95	18.43
Asia-S.A.E.C.	5	172	202	2.41	1.30	4.42	2.39	21.84	22.93	4.98	21.54
Brazil-Asia	45	6,687	3,885	2.41	1.17	4.42	2.14	18.97	19.94	5.13	18.35
C.A.W.C.-S.A.E.C.	16	268	1,070	2.41	1.30	4.42	2.39	11.59	12.68	9.38	12.04
Canada E.C.-Oceania	7	132	553	2.41	1.29	4.42	2.37	21.09	22.17	5.10	21.80
Canada W.C.-S.A.E.C.	29	1,820	3,810	2.41	1.22	4.42	2.23	11.69	12.70	8.68	12.24

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Europe-S.A.W.C.	16	514	781	2.41	1.30	4.42	2.39	16.13	17.22	6.74	16.07
Oceania-Canada E.C.	23	859	1,782	2.41	1.30	4.42	2.39	20.84	21.93	5.22	21.54
S.A.E.C.-C.A.W.C.	12	441	777	2.41	1.30	4.42	2.39	11.61	12.70	9.37	12.07
S.A.E.C.-Canada W.C.	3	97	247	2.41	1.30	4.42	2.39	17.13	18.22	6.35	17.83
S.A.E.C.-U.S.W.C.	34	1,722	2,129	2.41	1.23	4.42	2.26	13.30	14.33	7.73	13.07
S.A.W.C.-Europe	251	11,113	17,052	2.41	1.27	4.42	2.33	15.85	16.91	6.68	16.02
U.S.W.C.-S.A.E.C.	13	436	510	2.41	1.30	4.42	2.39	16.09	17.18	6.75	15.79
Subtotal	471	24,956	34,530	2.41	1.24	4.42	2.28	16.39	17.42	6.31	16.38
Subtotal	4,986	284,965	634,524	2.41	1.23	4.42	2.26	15.90	16.92	6.46	20.98
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.00	55.12	2.07	70.82
Asia-S.A.E.C.	4	23	259	2.41	1.34	4.42	2.46	50.34	51.46	2.22	52.00
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.81	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.02	39.14	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-S.A.W.C.	9	98	222	2.41	1.34	4.42	2.46	58.65	59.77	1.91	62.50
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.05	43.17	2.66	56.46
Oceania-U.S.E.C.	17	494	1,376	2.41	1.34	4.42	2.46	40.63	41.75	2.75	45.24
S.A.E.C.-C.A.W.C.	10	79	201	2.41	1.34	4.42	2.46	50.34	51.46	2.22	54.86
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.18	45.30	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.07	40.19	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.04	61.16	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.19	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,441	2.41	1.34	4.42	2.46	41.25	42.37	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.61	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.29	46.41	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.91	4.33	43.90
Subtotal	1,223	32,940	76,249	2.41	1.34	4.42	2.46	39.97	41.09	2.80	55.80
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	1	43	91	2.41	1.34	4.42	2.46	30.34	31.46	3.68	31.00

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	6	13	2.41	1.34	4.42	2.46	38.34	39.46	2.92	39.00
Subtotal	1	48	104	2.41	1.34	4.42	2.46	31.27	32.39	3.57	31.93
Subtotal	1,224	32,988	76,353	2.41	1.34	4.42	2.46	39.96	41.07	2.80	55.77
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
Asia-U.S.E.C. (low inv. cost)	186	5,208	43,658	2.41	4.92	4.42	9.02	231.70	235.80	1.77	245.26
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	8.14	130.00	133.70	2.85	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.35	226.90	230.70	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.26	210.71	214.46	1.78	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.20	213.60	217.33	1.74	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.19	143.12	146.84	2.60	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.15	152.93	156.63	2.42	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.81	227.54	1.67	284.41
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	140	3,123	17,807	2.41	4.67	4.42	8.56	205.80	209.69	1.89	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.19	221.92	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	234	8,718	51,203	2.41	4.88	4.42	8.95	233.14	237.21	1.75	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.99	142.96	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.37	159.49	163.29	2.39	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.18	161.25	164.97	2.31	232.70
U.S.W.C.-Europe	196	3,835	25,515	2.41	4.68	4.42	8.59	208.75	212.66	1.87	217.65
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	8.20	219.26	222.99	1.70	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.52	141.16	145.03	2.74	224.31
Subtotal	1,438	31,321	196,721	2.41	4.72	4.42	8.66	213.45	217.38	1.84	234.22
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	23	286	1,594	2.41	4.47	4.42	8.20	257.67	261.40	1.45	260.84

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	10	177	108	2.41	4.47	4.42	8.19	251.62	255.34	1.48	248.23
Oceania-S.A.E.C.	0	2	1	2.41	4.49	4.42	8.24	241.87	245.62	1.55	238.38
Subtotal	33	465	1,704	2.41	4.47	4.42	8.20	255.29	259.02	1.46	255.93
Subtotal	1,470	31,786	198,425	2.41	4.72	4.42	8.65	214.06	217.99	1.83	234.53
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-Canada E.C.	0	3	8	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Asia-C.A.E.C.	127	1,501	5,894	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	1.39	4.42	2.54	38.14	39.29	3.03	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.67	9.72	10.93	12.51	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.65	30.82	3.96	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.58	27.71	28.88	4.24	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.66	12.26	13.47	9.87	74.92
Canada E.C.-Asia	10	25	473	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada E.C.-S.A.W.C.	16	148	760	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.60	31.71	32.89	3.73	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	1.41	4.42	2.59	36.39	37.57	3.24	71.10

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.67	8.51	9.73	14.24	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	1.41	4.42	2.58	22.58	23.75	5.19	34.74
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.57	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	73	734	3,215	2.41	1.39	4.42	2.55	33.84	35.00	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.65	62.15	63.36	1.94	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Middle East-U.S.W.C.	7	19	315	2.41	1.39	4.42	2.55	40.94	42.10	2.83	47.45
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	2	9	41	2.41	1.43	4.42	2.63	57.41	58.61	2.08	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.E.C.-Canada W.C.	0	2	13	2.41	1.39	4.42	2.54	35.04	36.19	3.30	38.55
S.A.E.C.-U.S.W.C.	17	77	647	2.41	1.40	4.42	2.56	38.23	39.39	3.04	40.19
S.A.W.C.-Africa	8	149	350	2.41	1.39	4.42	2.55	34.04	35.20	3.40	53.35
S.A.W.C.-Canada E.C.	1	14	39	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.65	23.90	25.10	5.05	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-Middle East	2	25	79	2.41	1.39	4.42	2.55	35.99	37.15	3.22	42.50
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.57	25.31	26.48	4.62	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	1.39	4.42	2.54	38.38	39.53	3.01	52.66

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.12	60.90
U.S.E.C.-Oceania	6	89	270	2.41	1.39	4.42	2.55	40.94	42.10	2.83	46.45
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.61	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.54	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.61	44.83	46.02	2.64	69.85
U.S.W.C.-S.A.E.C.	8	19	136	2.41	1.45	4.42	2.66	53.26	54.47	2.27	59.12
Subtotal	1,458	13,946	50,198	2.41	1.40	4.42	2.57	30.65	31.81	3.81	46.34
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45
Canada E.C.-Oceania	0	7	9	2.41	1.39	4.42	2.55	47.84	49.00	2.42	47.45
Canada W.C.-Middle East	2	13	35	2.41	1.39	4.42	2.55	42.89	44.05	2.70	42.50
Subtotal	6	45	206	2.41	1.39	4.42	2.55	45.34	46.50	2.55	45.49
Subtotal	1,464	13,991	50,404	2.41	1.40	4.42	2.57	30.69	31.86	3.80	46.34
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	8.57	124.16	128.06	3.14	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	6.96	26.91	30.08	11.75	81.65

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.64	75.10	78.12	4.02	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.08	94.04	97.26	3.42	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.45	47.88	7.71	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.23	154.50	157.79	2.13	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Asia-S.A.E.C.	7	5	260	2.41	4.00	4.42	7.34	180.00	183.34	1.85	184.20
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.54	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.20	144.92	148.19	2.26	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40
Europe-S.A.W.C.	295	278	13,808	2.41	3.88	4.42	7.12	119.82	123.06	2.70	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.31	160.43	163.76	2.07	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-Africa	27	111	1,124	2.41	3.94	4.42	7.23	130.08	133.37	2.53	205.85

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.71	4.21	107.85
S.A.W.C.-Europe	1,101	6,815	50,209	2.41	3.89	4.42	7.14	119.88	123.13	2.71	127.15
S.A.W.C.-Middle East	5	18	179	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
S.A.W.C.-U.S.E.C.	808	3,821	38,023	2.41	3.88	4.42	7.11	82.93	86.16	3.90	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.11	139.10	142.34	2.32	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.09	82.19	85.41	3.92	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.24	134.45	137.74	2.45	190.92
U.S.W.C.-S.A.E.C.	2	6	72	2.41	3.98	4.42	7.30	131.22	134.54	2.53	135.82
Subtotal	3,937	15,968	183,600	2.41	3.88	4.42	7.12	105.63	108.88	3.07	134.95
Refrigerated Ships											
Diverted Transits											
Africa-Asia	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	3,983	16,260	184,527	2.41	3.88	4.42	7.12	106.85	110.10	3.04	135.63
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	17.15	298.90	306.70	2.61	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.53	236.83	243.44	2.79	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.59	248.85	255.49	2.67	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.06	355.27	363.03	2.18	370.17
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.70	239.87	248.38	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	17.82	167.54	175.64	4.84	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.84	298.20	305.40	2.42	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.21	160.82	167.28	4.02	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.25	212.68	219.16	3.05	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.45	166.01	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.41	247.39	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Diverted Transits (continued)											
Canada E.C.-Oceania	3	61	184	2.41	7.77	4.42	14.24	251.49	257.96	2.58	249.02
Subtotal	3	61	188	2.41	7.78	4.42	14.26	251.24	257.72	2.58	248.78
Subtotal	400	2,990	31,272	2.41	8.67	4.42	15.90	240.63	247.60	2.89	298.58
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	18.27	19.34	5.81	24.00
Asia-U.S.E.C.	3	77	178	2.41	1.27	4.42	2.33	27.11	28.17	3.90	38.76
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.18	12.24	9.46	37.36
Canada E.C.-Asia	18	707	1,578	2.41	1.27	4.42	2.33	25.06	26.12	4.22	27.21
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.35	13.76	14.83	7.77	26.23
C.A.E.C.-Asia	5	141	382	2.41	1.27	4.42	2.32	22.36	23.41	4.72	31.40
C.A.E.C.-C.A.W.C.	45	750	2,550	2.41	1.27	4.42	2.33	7.38	8.44	14.33	22.70
C.A.E.C.-S.A.W.C.	46	887	2,462	2.41	1.27	4.42	2.33	13.34	14.40	7.93	20.04
C.A.E.C.-U.S.W.C.	5	228	541	2.41	1.27	4.42	2.32	11.93	12.98	8.86	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-S.A.W.C.	4	82	194	2.41	1.27	4.42	2.33	23.34	24.40	4.53	25.18
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
Oceania-U.S.E.C.	9	162	422	2.41	1.27	4.42	2.33	28.05	29.11	3.77	32.60

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	77	14,050	29,736	2.41	1.27	4.42	2.33	14.13	15.19	7.49	16.31
S.A.W.C.-Canada E.C.	1	14	36	2.41	1.27	4.42	2.33	20.47	21.53	5.17	27.25
S.A.W.C.-C.A.E.C.	15	557	1,376	2.41	1.27	4.42	2.33	10.99	12.05	9.63	15.42
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.01	29.07	3.78	30.35
S.A.W.C.-U.S.E.C.	17	607	1,461	2.41	1.27	4.42	2.33	11.71	12.77	9.04	18.51
U.S.E.C.-Asia	90	2,946	7,114	2.41	1.27	4.42	2.32	22.71	23.76	4.65	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-S.A.W.C.	3	49	128	2.41	1.27	4.42	2.33	13.63	14.69	7.76	21.94
U.S.E.C.-U.S.W.C.	21	601	1,551	2.41	1.27	4.42	2.33	14.06	15.12	7.52	30.95
U.S.W.C.-Africa	10	334	984	2.41	1.26	4.42	2.31	16.39	17.44	6.41	20.19
U.S.W.C.-C.A.E.C.	3	96	262	2.41	1.26	4.42	2.32	11.90	12.96	8.86	23.13
U.S.W.C.-U.S.E.C.	4	102	289	2.41	1.27	4.42	2.32	13.36	14.41	7.91	29.10
Subtotal	471	23,684	55,340	2.41	1.27	4.42	2.33	15.53	16.59	6.81	20.73
Tankers											
Diverted Transits											
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	1.63	2.67	63.91	0.48
S.A.E.C.-C.A.W.C.	68	3,130	8,802	2.41	1.26	4.42	2.32	10.89	11.95	9.67	11.68
S.A.E.C.-U.S.W.C.	27	978	1,569	2.41	1.27	4.42	2.33	18.67	19.73	5.66	18.82
U.S.W.C.-S.A.E.C.	1	29	40	2.41	1.27	4.42	2.33	18.76	19.82	5.64	18.90
Subtotal	95	4,137	10,411	2.41	1.26	4.42	2.32	12.78	13.84	8.25	13.42
Subtotal	567	27,821	65,751	2.41	1.27	4.42	2.32	15.12	16.18	6.99	19.64

(Continued)

Table D-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.36	417.18	441.45	5.82	496.39
Asia-U.S.E.C.	481	2,251	71,523	2.41	29.20	4.42	53.55	439.57	463.92	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.66	266.36	290.31	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.67	386.38	412.15	6.67	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.92	403.00	427.97	6.20	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	54.42	415.80	440.55	5.95	510.17
Subtotal	711	2,799	110,614	2.41	29.43	4.42	53.97	433.09	457.54	5.65	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.43	484.18	508.48	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.13	457.58	5.65	508.34
Total Non-Diverting	17,148	421,549	1,460,629	2.41	1.84	4.42	3.37	46.62	48.21	3.41	57.63
Total Diverting	674	30,150	50,347	2.41	1.34	4.42	2.46	22.41	23.55	5.08	22.52

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

CURRENT TOLL STRUCTURE WITH 100 PERCENT INCREASE IN RATES, 250,000-DWT SCENARIO, 2060

Table D-23. Laden Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,459	6	2,465	0.23	36,883	113	36,996	0.31	137,143	297	137,439	0.22
Dry Bulk Carriers	4,621	436	5,057	8.62	278,550	20,215	298,765	6.77	638,032	35,462	673,493	5.27
Chemical Tankers	1,223	1	1,224	0.10	32,940	48	32,988	0.15	76,249	104	76,353	0.14
Full Container Ships	1,438	33	1,470	2.24	31,321	465	31,786	1.46	196,721	1,704	198,425	0.86
General Cargo Ships	1,458	6	1,464	0.43	13,946	45	13,991	0.32	50,198	206	50,404	0.41
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,937	46	3,983	1.15	15,968	292	16,260	1.80	183,600	926	184,527	0.50
Roll-On Roll-Off	397	3	400	0.70	2,929	61	2,990	2.05	31,084	188	31,272	0.60
Tankers	458	95	553	17.21	23,684	4,137	27,821	14.87	55,340	10,411	65,751	15.83
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,614	1,982	112,596	1.76
Total	17,240	639	17,879	3.57	440,090	25,410	465,499	5.46	1,498,666	51,278	1,549,944	3.31

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-24. Ballast Transits, Tons Carried, and Toll Revenue, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	67	0	67	0.22	0	0	0	0.00	3,250	7	3,257	0.22
Dry Bulk Carriers	324	18	342	5.27	0	0	0	0.00	20,642	1,148	21,790	5.27
Chemical Tankers	127	0	127	0.14	0	0	0	0.00	6,884	10	6,893	0.14
Full Container Ships	6	0	6	0.86	0	0	0	0.00	516	4	521	0.86
General Cargo Ships	273	1	274	0.41	0	0	0	0.00	6,022	25	6,047	0.41
Liquid Gas Carriers	958	0	958	0.00	0	0	0	0.00	97,360	0	97,360	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	1,064	5	1,069	0.50	0	0	0	0.00	37,777	190	37,967	0.50
Roll-On Roll-Off	58	0	58	0.60	0	0	0	0.00	3,411	21	3,432	0.60
Tankers	235	44	279	15.83	0	0	0	0.00	27,001	5,078	32,079	15.83
Vehicle Carriers	433	8	441	1.76	0	0	0	0.00	51,169	917	52,085	1.76
Total	3,595	77	3,672	2.10	0	0	0	0.00	255,359	7,400	262,759	2.82

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.42	93.05	94.61	1.67	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.42	97.20	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.42	51.25	52.81	3.03	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.87	4.42	3.43	65.68	67.24	2.37	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-Asia	31	815	2,156	2.41	1.85	4.42	3.40	95.14	96.69	1.63	98.29
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.70	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,703	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	655	2.41	1.87	4.42	3.43	96.31	97.87	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.86	4.42	3.41	64.27	65.82	2.42	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.87	4.42	3.43	90.01	91.57	1.73	104.63
Europe-U.S.W.C.	36	1,115	2,810	2.41	1.85	4.42	3.40	82.41	83.96	1.88	107.84
Oceania-C.A.E.C.	10	99	485	2.41	1.87	4.42	3.43	94.77	96.33	1.65	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.65	73.20	2.17	76.57
S.A.E.C.-Canada W.C.	25	335	1,304	2.41	1.87	4.42	3.42	92.79	94.34	1.68	98.78
S.A.E.C.-U.S.W.C.	84	1,260	4,434	2.41	1.87	4.42	3.42	78.16	79.71	1.99	80.87
S.A.W.C.-Africa	3	52	136	2.41	1.87	4.42	3.43	82.90	84.46	1.88	120.48
S.A.W.C.-Canada E.C.	1	2	58	2.41	1.87	4.42	3.43	69.19	70.75	2.25	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,746	2.41	1.87	4.42	3.43	89.68	91.24	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,925	2.41	1.87	4.42	3.43	62.12	63.68	2.51	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.41	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.24	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,030	2.41	1.87	4.42	3.43	61.84	63.40	2.52	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.43	86.98	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.43	66.46	68.02	2.35	101.57

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.60	85.14	1.85	108.54
U.S.W.C.-S.A.E.C.	6	104	293	2.41	1.87	4.42	3.43	79.98	81.54	1.95	82.98
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.33	61.88	2.56	102.02
Subtotal	2,459	36,883	137,143	2.41	1.86	4.42	3.42	83.65	85.20	1.86	104.46
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	2	25	71	2.41	1.87	4.42	3.43	107.65	109.21	1.45	108.63
Oceania-Canada E.C.	4	88	226	2.41	1.85	4.42	3.40	97.85	99.40	1.58	98.00
Subtotal	6	113	297	2.41	1.86	4.42	3.40	100.04	101.59	1.55	100.37
Subtotal	2,465	36,996	137,439	2.41	1.86	4.42	3.42	83.70	85.25	1.86	104.44
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	29	1,201	2,443	2.41	1.30	4.42	2.39	15.34	16.43	7.09	27.11
Africa-Canada W.C.	156	7,645	14,988	2.41	1.28	4.42	2.34	17.82	18.88	5.98	19.99
Africa-S.A.W.C.	9	313	752	2.41	1.30	4.42	2.39	18.13	19.22	6.00	26.14
Africa-U.S.W.C.	10	297	978	2.41	1.27	4.42	2.33	16.17	17.23	6.55	19.94
Asia-C.A.E.C.	29	527	2,527	2.41	1.30	4.42	2.38	18.85	19.93	5.74	24.40
Asia-U.S.E.C.	386	12,134	38,320	2.41	1.27	4.42	2.33	16.62	17.68	6.38	23.16
Brazil-Asia	108	18,541	37,979	2.41	1.16	4.42	2.13	17.30	18.27	5.60	18.35
C.A.W.C.-Africa	2	52	144	2.41	1.29	4.42	2.37	15.32	16.40	7.03	27.18
C.A.W.C.-C.A.E.C.	63	2,167	5,401	2.41	1.30	4.42	2.38	7.57	8.65	14.29	16.30

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Europe	19	626	1,741	2.41	1.28	4.42	2.35	12.19	13.26	8.78	18.57
C.A.W.C.-U.S.E.C.	47	1,854	4,275	2.41	1.29	4.42	2.36	7.69	8.76	13.96	18.15
Canada E.C.-Asia	126	7,535	17,884	2.41	1.22	4.42	2.24	18.27	19.29	5.58	20.41
Canada E.C.-S.A.W.C.	12	426	1,109	2.41	1.29	4.42	2.36	12.85	13.92	8.36	15.56
Canada W.C.-Africa	175	7,689	17,204	2.41	1.28	4.42	2.36	17.49	18.57	6.12	19.57
Canada W.C.-C.A.E.C.	9	270	757	2.41	1.30	4.42	2.39	12.59	13.68	8.63	21.54
Canada W.C.-Europe	301	15,944	36,215	2.41	1.24	4.42	2.28	16.14	17.18	6.43	21.21
Canada W.C.-U.S.E.C.	105	3,183	8,784	2.41	1.30	4.42	2.39	13.34	14.43	8.15	23.33
C.A.E.C.-Asia	22	808	1,807	2.41	1.30	4.42	2.39	18.13	19.22	6.00	23.38
C.A.E.C.-C.A.W.C.	49	1,650	4,089	2.41	1.30	4.42	2.39	7.82	8.91	13.90	16.83
C.A.E.C.-Canada W.C.	3	105	251	2.41	1.30	4.42	2.39	12.61	13.70	8.62	21.59
C.A.E.C.-Oceania	1	22	69	2.41	1.30	4.42	2.39	19.89	20.98	5.47	22.59
C.A.E.C.-S.A.W.C.	24	734	1,978	2.41	1.30	4.42	2.39	10.61	11.70	10.25	14.07
C.A.E.C.-U.S.W.C.	9	286	731	2.41	1.30	4.42	2.39	11.61	12.70	9.37	20.59
Columbia-Asia	2	352	724	2.41	1.17	4.42	2.14	17.07	18.04	5.71	25.50
Europe-C.A.W.C.	51	1,627	4,226	2.41	1.30	4.42	2.39	12.61	13.70	8.62	22.38
Europe-Canada W.C.	12	408	1,158	2.41	1.28	4.42	2.34	16.56	17.62	6.44	22.07
Europe-U.S.W.C.	142	4,679	13,586	2.41	1.28	4.42	2.34	15.66	16.72	6.80	20.80
Middle East-S.A.W.C.	2	104	231	2.41	1.25	4.42	2.28	14.08	15.11	7.38	15.83
Oceania-C.A.E.C.	14	469	1,196	2.41	1.30	4.42	2.39	19.09	20.18	5.69	22.54
Oceania-U.S.E.C.	36	2,218	4,934	2.41	1.23	4.42	2.25	15.65	16.67	6.53	17.42
S.A.E.C.-Asia	60	2,563	5,777	2.41	1.28	4.42	2.34	16.77	17.83	6.35	18.93
S.A.W.C.-Africa	5	296	568	2.41	1.25	4.42	2.30	14.34	15.39	7.28	21.40

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Canada E.C.	1	24	50	2.41	1.30	4.42	2.39	13.34	14.43	8.15	16.04
S.A.W.C.-C.A.E.C.	12	277	969	2.41	1.30	4.42	2.39	10.59	11.68	10.26	14.04
S.A.W.C.-U.S.E.C.	91	3,585	7,710	2.41	1.30	4.42	2.38	11.28	12.36	9.61	15.48
U.S.E.C.-Asia	1,629	139,874	308,405	2.41	1.20	4.42	2.19	16.99	17.98	5.87	22.61
U.S.E.C.-C.A.W.C.	375	14,003	32,164	2.41	1.30	4.42	2.38	7.80	8.88	13.88	18.73
U.S.E.C.-Oceania	23	909	2,047	2.41	1.29	4.42	2.37	19.26	20.34	5.59	20.97
U.S.E.C.-S.A.W.C.	82	2,944	7,057	2.41	1.30	4.42	2.38	11.45	12.53	9.45	15.60
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.30	4.42	2.39	11.61	12.70	9.36	22.38
U.S.W.C.-Africa	198	9,018	21,771	2.41	1.26	4.42	2.30	15.70	16.74	6.67	19.37
U.S.W.C.-Canada E.C.	5	211	479	2.41	1.29	4.42	2.37	13.93	15.01	7.75	22.50
U.S.W.C.-C.A.E.C.	1	30	76	2.41	1.30	4.42	2.39	11.59	12.68	9.38	20.54
U.S.W.C.-Europe	168	9,505	21,131	2.41	1.24	4.42	2.27	14.02	15.05	7.36	18.82
U.S.W.C.-U.S.E.C.	8	215	775	2.41	1.28	4.42	2.35	11.92	12.99	8.96	23.13
Venezuela-Asia	7	1,230	2,522	2.41	1.16	4.42	2.13	15.96	16.93	6.08	23.70
Subtotal	4,621	278,550	638,032	2.41	1.23	4.42	2.25	15.93	16.95	6.41	21.22
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	15	695	1,732	2.41	1.25	4.42	2.30	17.55	18.60	5.95	18.43
Asia-S.A.E.C.	5	172	202	2.41	1.30	4.42	2.39	21.84	22.93	4.98	21.54
C.A.W.C.-S.A.E.C.	16	268	1,070	2.41	1.30	4.42	2.39	11.59	12.68	9.38	12.04
Canada E.C.-Oceania	7	132	553	2.41	1.29	4.42	2.37	21.09	22.17	5.10	21.80
Canada W.C.-S.A.E.C.	29	1,820	3,810	2.41	1.22	4.42	2.23	11.69	12.70	8.68	12.24

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Europe-S.A.W.C.	16	514	781	2.41	1.30	4.42	2.39	16.13	17.22	6.74	16.07
Oceania-Canada E.C.	23	859	1,782	2.41	1.30	4.42	2.39	20.84	21.93	5.22	21.54
S.A.E.C.-C.A.W.C.	12	441	777	2.41	1.30	4.42	2.39	11.61	12.70	9.37	12.07
S.A.E.C.-Canada W.C.	3	97	247	2.41	1.30	4.42	2.39	17.13	18.22	6.35	17.83
S.A.E.C.-U.S.W.C.	34	1,722	2,129	2.41	1.23	4.42	2.26	13.30	14.33	7.73	13.07
S.A.W.C.-Europe	262	13,060	21,869	2.41	1.25	4.42	2.30	15.70	16.75	6.66	16.02
U.S.W.C.-S.A.E.C.	13	436	510	2.41	1.30	4.42	2.39	16.09	17.18	6.75	15.79
Subtotal	436	20,215	35,462	2.41	1.26	4.42	2.30	15.39	16.44	6.80	15.70
Subtotal	5,057	298,765	673,493	2.41	1.23	4.42	2.25	15.89	16.92	6.44	20.84
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.00	55.12	2.07	70.82
Asia-S.A.E.C.	4	23	259	2.41	1.34	4.42	2.46	50.34	51.46	2.22	52.00
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.81	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.02	39.14	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-S.A.W.C.	9	98	222	2.41	1.34	4.42	2.46	58.65	59.77	1.91	62.50
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.05	43.17	2.66	56.46
Oceania-U.S.E.C.	17	494	1,376	2.41	1.34	4.42	2.46	40.63	41.75	2.75	45.24
S.A.E.C.-C.A.W.C.	10	79	201	2.41	1.34	4.42	2.46	50.34	51.46	2.22	54.86
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.18	45.30	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.07	40.19	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.04	61.16	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.19	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,441	2.41	1.34	4.42	2.46	41.25	42.37	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.61	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.29	46.41	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.91	4.33	43.90
Subtotal	1,223	32,940	76,249	2.41	1.34	4.42	2.46	39.97	41.09	2.80	55.80
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	1	43	91	2.41	1.34	4.42	2.46	30.34	31.46	3.68	31.00

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	6	13	2.41	1.34	4.42	2.46	38.34	39.46	2.92	39.00
Subtotal	1	48	104	2.41	1.34	4.42	2.46	31.27	32.39	3.57	31.93
Subtotal	1,224	32,988	76,353	2.41	1.34	4.42	2.46	39.96	41.07	2.80	55.77
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
Asia-U.S.E.C. (low inv. cost)	186	5,208	43,658	2.41	4.92	4.42	9.02	231.70	235.80	1.77	245.26
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	8.14	130.00	133.70	2.85	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.35	226.90	230.70	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.26	210.71	214.46	1.78	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.20	213.60	217.33	1.74	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.19	143.12	146.84	2.60	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.15	152.93	156.63	2.42	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.81	227.54	1.67	284.41
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	140	3,123	17,807	2.41	4.67	4.42	8.56	205.80	209.69	1.89	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.19	221.92	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.24	178.89	182.64	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	234	8,718	51,203	2.41	4.88	4.42	8.95	233.14	237.21	1.75	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.99	142.96	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.37	159.49	163.29	2.39	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.18	161.25	164.97	2.31	232.70
U.S.W.C.-Europe	196	3,835	25,515	2.41	4.68	4.42	8.59	208.75	212.66	1.87	217.65
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	8.20	219.26	222.99	1.70	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.52	141.16	145.03	2.74	224.31
Subtotal	1,438	31,321	196,721	2.41	4.72	4.42	8.66	213.45	217.38	1.84	234.22
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	23	286	1,594	2.41	4.47	4.42	8.20	257.67	261.40	1.45	260.84

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	10	177	108	2.41	4.47	4.42	8.19	251.62	255.34	1.48	248.23
Oceania-S.A.E.C.	0	2	1	2.41	4.49	4.42	8.24	241.87	245.62	1.55	238.38
Subtotal	33	465	1,704	2.41	4.47	4.42	8.20	255.29	259.02	1.46	255.93
Subtotal	1,470	31,786	198,425	2.41	4.72	4.42	8.65	214.06	217.99	1.83	234.53
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-Canada E.C.	0	3	8	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Asia-C.A.E.C.	127	1,501	5,894	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	1.39	4.42	2.54	38.14	39.29	3.03	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.67	9.72	10.93	12.51	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.65	30.82	3.96	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.58	27.71	28.88	4.24	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.66	12.26	13.47	9.87	74.92
Canada E.C.-Asia	10	25	473	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada E.C.-S.A.W.C.	16	148	760	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.60	31.71	32.89	3.73	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	1.41	4.42	2.59	36.39	37.57	3.24	71.10

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.67	8.51	9.73	14.24	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	1.41	4.42	2.58	22.58	23.75	5.19	34.74
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.57	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	73	734	3,215	2.41	1.39	4.42	2.55	33.84	35.00	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.65	62.15	63.36	1.94	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Middle East-U.S.W.C.	7	19	315	2.41	1.39	4.42	2.55	40.94	42.10	2.83	47.45
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	2	9	41	2.41	1.43	4.42	2.63	57.41	58.61	2.08	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.E.C.-Canada W.C.	0	2	13	2.41	1.39	4.42	2.54	35.04	36.19	3.30	38.55
S.A.E.C.-U.S.W.C.	17	77	647	2.41	1.40	4.42	2.56	38.23	39.39	3.04	40.19
S.A.W.C.-Africa	8	149	350	2.41	1.39	4.42	2.55	34.04	35.20	3.40	53.35
S.A.W.C.-Canada E.C.	1	14	39	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.65	23.90	25.10	5.05	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-Middle East	2	25	79	2.41	1.39	4.42	2.55	35.99	37.15	3.22	42.50
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.57	25.31	26.48	4.62	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	1.39	4.42	2.54	38.38	39.53	3.01	52.66

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.12	60.90
U.S.E.C.-Oceania	6	89	270	2.41	1.39	4.42	2.55	40.94	42.10	2.83	46.45
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.61	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.54	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.61	44.83	46.02	2.64	69.85
U.S.W.C.-S.A.E.C.	8	19	136	2.41	1.45	4.42	2.66	53.26	54.47	2.27	59.12
Subtotal	1,458	13,946	50,198	2.41	1.40	4.42	2.57	30.65	31.81	3.81	46.34
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45
Canada E.C.-Oceania	0	7	9	2.41	1.39	4.42	2.55	47.84	49.00	2.42	47.45
Canada W.C.-Middle East	2	13	35	2.41	1.39	4.42	2.55	42.89	44.05	2.70	42.50
Subtotal	6	45	206	2.41	1.39	4.42	2.55	45.34	46.50	2.55	45.49
Subtotal	1,464	13,991	50,404	2.41	1.40	4.42	2.57	30.69	31.86	3.80	46.34
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	8.57	124.16	128.06	3.14	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	6.96	26.91	30.08	11.75	81.65

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.64	75.10	78.12	4.02	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.08	94.04	97.26	3.42	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.45	47.88	7.71	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.23	154.50	157.79	2.13	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Asia-S.A.E.C.	7	5	260	2.41	4.00	4.42	7.34	180.00	183.34	1.85	184.20
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.54	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.20	144.92	148.19	2.26	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40
Europe-S.A.W.C.	295	278	13,808	2.41	3.88	4.42	7.12	119.82	123.06	2.70	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.31	160.43	163.76	2.07	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-Africa	27	111	1,124	2.41	3.94	4.42	7.23	130.08	133.37	2.53	205.85

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.71	4.21	107.85
S.A.W.C.-Europe	1,101	6,815	50,209	2.41	3.89	4.42	7.14	119.88	123.13	2.71	127.15
S.A.W.C.-Middle East	5	18	179	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
S.A.W.C.-U.S.E.C.	808	3,821	38,023	2.41	3.88	4.42	7.11	82.93	86.16	3.90	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.11	139.10	142.34	2.32	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.09	82.19	85.41	3.92	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.24	134.45	137.74	2.45	190.92
U.S.W.C.-S.A.E.C.	2	6	72	2.41	3.98	4.42	7.30	131.22	134.54	2.53	135.82
Subtotal	3,937	15,968	183,600	2.41	3.88	4.42	7.12	105.63	108.88	3.07	134.95
Refrigerated Ships											
Diverted Transits											
Africa-Asia	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	3,983	16,260	184,527	2.41	3.88	4.42	7.12	106.85	110.10	3.04	135.63
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	17.15	298.90	306.70	2.61	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.53	236.83	243.44	2.79	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.59	248.85	255.49	2.67	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.06	355.27	363.03	2.18	370.17
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.70	239.87	248.38	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	17.82	167.54	175.64	4.84	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.84	298.20	305.40	2.42	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.21	160.82	167.28	4.02	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.25	212.68	219.16	3.05	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.45	166.01	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.41	247.39	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Diverted Transits (continued)											
Canada E.C.-Oceania	3	61	184	2.41	7.77	4.42	14.24	251.49	257.96	2.58	249.02
Subtotal	3	61	188	2.41	7.78	4.42	14.26	251.24	257.72	2.58	248.78
Subtotal	400	2,990	31,272	2.41	8.67	4.42	15.90	240.63	247.60	2.89	298.58
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	18.27	19.34	5.81	24.00
Asia-U.S.E.C.	3	77	178	2.41	1.27	4.42	2.33	27.11	28.17	3.90	38.76
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.18	12.24	9.46	37.36
Canada E.C.-Asia	18	707	1,578	2.41	1.27	4.42	2.33	25.06	26.12	4.22	27.21
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.35	13.76	14.83	7.77	26.23
C.A.E.C.-Asia	5	141	382	2.41	1.27	4.42	2.32	22.36	23.41	4.72	31.40
C.A.E.C.-C.A.W.C.	45	750	2,550	2.41	1.27	4.42	2.33	7.38	8.44	14.33	22.70
C.A.E.C.-S.A.W.C.	46	887	2,462	2.41	1.27	4.42	2.33	13.34	14.40	7.93	20.04
C.A.E.C.-U.S.W.C.	5	228	541	2.41	1.27	4.42	2.32	11.93	12.98	8.86	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-S.A.W.C.	4	82	194	2.41	1.27	4.42	2.33	23.34	24.40	4.53	25.18
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
Oceania-U.S.E.C.	9	162	422	2.41	1.27	4.42	2.33	28.05	29.11	3.77	32.60

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	64	14,050	29,736	2.41	1.27	4.42	2.33	12.29	13.35	8.61	16.31
S.A.W.C.-Canada E.C.	1	14	36	2.41	1.27	4.42	2.33	20.47	21.53	5.17	27.25
S.A.W.C.-C.A.E.C.	15	557	1,376	2.41	1.27	4.42	2.33	10.99	12.05	9.63	15.42
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.01	29.07	3.78	30.35
S.A.W.C.-U.S.E.C.	17	607	1,461	2.41	1.27	4.42	2.33	11.71	12.77	9.04	18.51
U.S.E.C.-Asia	90	2,946	7,114	2.41	1.27	4.42	2.32	22.71	23.76	4.65	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-S.A.W.C.	3	49	128	2.41	1.27	4.42	2.33	13.63	14.69	7.76	21.94
U.S.E.C.-U.S.W.C.	21	601	1,551	2.41	1.27	4.42	2.33	14.06	15.12	7.52	30.95
U.S.W.C.-Africa	10	334	984	2.41	1.26	4.42	2.31	16.39	17.44	6.41	20.19
U.S.W.C.-C.A.E.C.	3	96	262	2.41	1.26	4.42	2.32	11.90	12.96	8.86	23.13
U.S.W.C.-U.S.E.C.	4	102	289	2.41	1.27	4.42	2.32	13.36	14.41	7.91	29.10
Subtotal	458	23,684	55,340	2.41	1.27	4.42	2.33	14.44	15.50	7.32	20.73
Tankers											
Diverted Transits											
Middle East-U.S.W.C.	0	0	0	2.41	1.25	4.42	2.29	1.63	2.67	63.91	0.48
S.A.E.C.-C.A.W.C.	68	3,130	8,802	2.41	1.26	4.42	2.32	10.89	11.95	9.67	11.68
S.A.E.C.-U.S.W.C.	27	978	1,569	2.41	1.27	4.42	2.33	18.67	19.73	5.66	18.82
U.S.W.C.-S.A.E.C.	1	29	40	2.41	1.27	4.42	2.33	18.76	19.82	5.64	18.90
Subtotal	95	4,137	10,411	2.41	1.26	4.42	2.32	12.78	13.84	8.25	13.42
Subtotal	553	27,821	65,751	2.41	1.27	4.42	2.32	14.19	15.25	7.45	19.64

(Continued)

Table D-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Current Toll Structure With 100 Percent Increase in Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.36	417.18	441.45	5.82	496.39
Asia-U.S.E.C.	481	2,251	71,523	2.41	29.20	4.42	53.55	439.57	463.92	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.66	266.36	290.31	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.67	386.38	412.15	6.67	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.92	403.00	427.97	6.20	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	54.42	415.80	440.55	5.95	510.17
Subtotal	711	2,799	110,614	2.41	29.43	4.42	53.97	433.09	457.54	5.65	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.43	484.18	508.48	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.13	457.58	5.65	508.34
Total Non-Diverting	17,240	440,090	1,498,666	2.41	1.81	4.42	3.32	45.32	46.88	3.45	55.98
Total Diverting	639	25,410	51,278	2.41	1.37	4.42	2.51	22.74	23.91	5.14	23.12

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Appendix E

OPTIMAL TOLL STRUCTURE AND RATES

Table E-1. Summary of Estimated Revenues by Project Scenario and Year from Optimal Toll Structure and Rates (1990 US$millions)

Year and Project Scenario	Laden	Ballast	Total
2020			
Status Quo a/	804	130	934
150,000 DWT	1,020	155	1,175
200,000 DWT	1,031	155	1,186
250,000 DWT	1,065	156	1,221
2060			
Status Quo a/	973	137	1,110
150,000 DWT	1,398	240	1,638
200,000 DWT	1,461	271	1,732
250,000 DWT	1,499	255	1,754

Note: See Table E-26 for the optimal toll structure and rates.

a/ Status Quo is a 65,000 DWT Scenario. Toll structure and rates were not optimized for the Status Quo Canal but were maintained at the 100 percent increase level.

Source: Nathan Associates Inc., based on "no toll" forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, STATUS QUO SCENARIO, 2020

Table E-2. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,073	404	3,477	11.61	109,208	14,191	123,399	11.50	262,280	22,753	285,033	7.98
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,450	97	53,547	0.18
Full Container Ships	957	350	1,307	26.81	17,031	5,508	22,539	24.44	104,837	15,849	120,686	13.13
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,478	0	11,478	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,290	0	12,290	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	519	175	693	25.19	13,620	6,448	20,068	32.13	36,796	9,290	46,086	20.16
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,874	1,040	96,914	1.07
Total	11,756	988	12,744	7.76	206,731	26,619	233,349	11.41	804,056	50,033	854,089	5.86

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2098 transits and 35979616 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-3. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	345	30	375	7.98	0	0	0	0.00	23,282	2,019	25,301	7.98
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	1	10	13.13	0	0	0	0.00	533	81	613	13.13
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,557	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	266	67	333	20.16	0	0	0	0.00	15,989	4,037	20,027	20.16
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,356	109	2,465	4.41	0	0	0	0.00	129,853	6,807	136,660	4.98

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.41	88.65	90.20	1.74	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.43	93.07	94.63	1.68	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	0.97	4.42	3.43	99.31	101.76	2.47	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.41	49.37	50.92	3.13	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.44	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.40	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.36	93.92	1.68	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.40	61.42	62.96	2.51	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.39	79.20	80.75	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.71	70.26	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.50	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.35	75.90	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.42	85.08	86.64	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.42	59.46	61.02	2.61	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.66	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.36	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.42	59.27	60.82	2.62	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.87	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.42	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.79	1.93	103.86

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.19	59.74	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.83	4.42	3.36	80.86	82.42	1.93	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.55	86.11	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.88	90.43	1.74	87.97
Subtotal	1,325	20,519	73,947	2.41	1.83	4.42	3.36	80.92	82.48	1.93	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,021	2.41	1.35	4.42	2.48	15.05	16.18	7.50	26.10
Africa-Canada W.C.	36	1,354	2,753	2.41	1.32	4.42	2.43	17.70	18.80	6.24	19.77
Africa-S.A.W.C.	5	128	319	2.41	1.35	4.42	2.48	18.05	19.18	6.25	25.10
Africa-U.S.W.C.	7	161	563	2.41	1.31	4.42	2.39	16.45	17.53	6.56	19.23
Asia-C.A.E.C.	21	345	1,478	2.41	1.35	4.42	2.49	18.16	19.31	6.31	22.65
Asia-U.S.E.C.	259	6,345	20,340	2.41	1.32	4.42	2.42	16.82	17.92	6.53	22.26
C.A.W.C.-Africa	1	34	89	2.41	1.34	4.42	2.48	14.92	16.06	7.62	25.81
C.A.W.C.-C.A.E.C.	36	961	2,540	2.41	1.35	4.42	2.46	7.93	9.05	14.10	15.77
C.A.W.C.-Europe	17	462	1,293	2.41	1.33	4.42	2.45	12.42	13.53	8.99	18.24

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	41	1,292	2,998	2.41	1.33	4.42	2.45	8.06	9.18	13.88	17.55
Canada E.C.-Asia	75	2,498	5,957	2.41	1.31	4.42	2.41	18.36	19.46	5.99	20.40
Canada E.C.-Oceania	3	58	247	2.41	1.34	4.42	2.48	19.86	21.00	5.73	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.45	12.78	13.90	8.73	14.98
Canada W.C.-Africa	104	3,500	8,129	2.41	1.32	4.42	2.42	17.34	18.44	6.34	19.42
Canada W.C.-C.A.E.C.	5	105	307	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.30
Canada W.C.-Europe	261	9,815	23,032	2.41	1.29	4.42	2.37	15.97	17.04	6.76	21.25
Canada W.C.-U.S.E.C.	66	1,569	4,497	2.41	1.35	4.42	2.48	13.15	14.28	8.58	23.15
C.A.E.C.-Asia	22	639	1,483	2.41	1.35	4.42	2.48	17.95	19.08	6.29	22.30
C.A.E.C.-C.A.W.C.	26	682	1,753	2.41	1.35	4.42	2.48	8.15	9.28	13.84	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	13	313	874	2.41	1.35	4.42	2.48	11.15	12.28	10.12	13.50
C.A.E.C.-U.S.W.C.	9	236	624	2.41	1.35	4.42	2.48	12.05	13.18	9.37	20.30
Europe-C.A.W.C.	32	797	2,147	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.20
Europe-Canada W.C.	12	286	876	2.41	1.33	4.42	2.42	16.93	18.03	6.45	21.24
Europe-U.S.W.C.	126	3,102	9,551	2.41	1.32	4.42	2.42	16.00	17.10	6.86	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	23	661	1,547	2.41	1.35	4.42	2.48	19.95	21.08	5.66	21.25
Oceania-C.A.E.C.	6	166	439	2.41	1.35	4.42	2.48	19.05	20.18	5.92	22.25
S.A.E.C.-Asia	73	2,384	5,576	2.41	1.32	4.42	2.43	17.07	18.17	6.46	18.40
S.A.W.C.-Africa	4	157	319	2.41	1.29	4.42	2.36	14.00	15.08	7.66	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.48	13.15	14.28	8.58	15.50

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	8	144	523	2.41	1.35	4.42	2.48	11.15	12.28	10.12	13.50
S.A.W.C.-U.S.E.C.	56	1,732	3,879	2.41	1.35	4.42	2.47	10.97	12.09	10.22	15.18
U.S.E.C.-Asia	1,108	48,574	108,990	2.41	1.27	4.42	2.33	15.30	16.37	6.94	22.99
U.S.E.C.-C.A.W.C.	212	6,232	14,645	2.41	1.35	4.42	2.48	8.22	9.35	13.73	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.33	4.42	2.44	12.68	13.79	8.76	21.71
U.S.E.C.-Oceania	21	646	1,484	2.41	1.34	4.42	2.46	18.67	19.79	5.99	20.47
U.S.E.C.-S.A.W.C.	54	1,456	3,718	2.41	1.35	4.42	2.47	11.05	12.18	10.18	15.31
U.S.E.C.-U.S.W.C.	1	0	49	2.41	1.35	4.42	2.48	12.15	13.28	9.29	21.30
U.S.W.C.-Africa	133	4,599	11,446	2.41	1.30	4.42	2.38	16.19	17.27	6.68	18.62
U.S.W.C.-Canada E.C.	7	217	516	2.41	1.34	4.42	2.46	13.89	15.01	8.05	21.26
U.S.W.C.-C.A.E.C.	2	48	125	2.41	1.35	4.42	2.48	12.05	13.18	9.36	20.30
U.S.W.C.-Europe	156	6,524	14,790	2.41	1.28	4.42	2.35	14.48	15.55	7.37	17.96
U.S.W.C.-U.S.E.C.	7	183	556	2.41	1.33	4.42	2.48	12.15	13.31	9.53	21.48
Subtotal	3,073	109,208	262,280	2.41	1.30	4.42	2.38	14.92	16.01	7.26	21.11
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	9	302	775	2.41	1.29	4.42	2.37	17.42	18.50	6.20	18.32
Asia-S.A.E.C.	6	152	125	2.41	1.35	4.42	2.48	21.95	23.08	5.14	21.30
C.A.W.C.-S.A.E.C.	10	136	264	2.41	1.35	4.42	2.48	12.15	13.28	9.29	11.65
Europe-S.A.W.C.	12	298	292	2.41	1.35	4.42	2.48	16.05	17.18	7.03	15.50
Oceania-U.S.E.C.	141	6,406	10,837	2.41	1.26	4.42	2.32	15.77	16.83	6.69	16.07
S.A.E.C.-C.A.W.C.	8	247	210	2.41	1.35	4.42	2.48	12.15	13.28	9.29	11.65

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
S.A.E.C.-Canada W.C.	3	66	139	2.41	1.35	4.42	2.48	17.05	18.18	6.62	17.35
S.A.E.C.-U.S.W.C.	31	1,128	631	2.41	1.28	4.42	2.36	13.49	14.56	7.97	12.67
S.A.W.C.-Europe	172	5,176	9,235	2.41	1.34	4.42	2.46	15.62	16.74	7.16	15.96
U.S.W.C.-S.A.E.C.	11	279	244	2.41	1.35	4.42	2.48	16.05	17.18	7.03	15.45
Subtotal	404	14,191	22,753	2.41	1.30	4.42	2.39	15.55	16.64	6.98	15.73
Subtotal	3,477	123,399	285,033	2.41	1.30	4.42	2.38	15.00	16.08	7.23	20.49
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.57	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.75	45.87	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.26	38.38	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	549	2.41	1.34	4.42	2.46	41.64	42.76	2.68	54.44
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.91	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.35	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.55	41.67	2.77	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.86	47.98	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.37	43.49	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.63	52.75	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.46	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,283	2.41	1.34	4.42	2.46	42.33	43.44	2.63	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.77	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.75	45.87	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.69	26.81	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.64	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.79	26.92	4.36	43.41
Subtotal	991	22,838	53,450	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,547	2.41	1.34	4.42	2.46	40.03	41.14	2.79	55.35

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	211.07	214.95	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	228	3,885	31,591	2.41	4.69	4.42	8.60	247.19	251.10	1.58	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.04	129.84	133.50	2.82	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.36	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.24	230.53	234.27	1.62	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.21	212.43	216.18	1.77	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.13	217.31	221.03	1.71	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.44	184.05	187.98	2.13	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.32	187.32	191.00	1.97	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.05	154.49	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.14	224.75	228.46	1.65	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	220.87	224.56	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.31	191.71	195.52	1.99	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	275	6,579	37,172	2.41	4.67	4.42	8.56	247.48	251.37	1.57	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.28	163.61	167.39	2.31	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.09	159.20	162.84	2.28	227.84
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.12	221.24	224.94	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.44	145.28	149.13	2.65	222.40
Subtotal	957	17,031	104,837	2.41	4.60	4.42	8.44	227.88	231.71	1.68	244.64
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.14	259.72	263.43	1.43	259.79
Europe-U.S.W.C.	167	2,735	6,941	2.41	4.55	4.42	8.36	218.21	222.02	1.75	217.16
U.S.W.C.-Europe	171	2,628	8,434	2.41	4.57	4.42	8.34	219.58	223.35	1.71	219.05
Subtotal	350	5,508	15,849	2.41	4.56	4.42	8.36	219.96	223.75	1.72	219.19
Subtotal	1,307	22,539	120,686	2.41	4.59	4.42	8.42	225.95	229.76	1.69	238.42
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	2	23	77	2.41	0.69	4.42	2.55	27.49	29.35	6.74	50.55

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-S.A.W.C.	2	35	78	2.41	0.69	4.42	2.55	33.44	35.30	5.54	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.55	35.71	3.34	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.03	4.42	2.64	9.66	11.28	16.75	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.51	27.68	4.44	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.61	25.53	26.73	4.69	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.67	11.45	12.67	10.62	65.61
Canada E.C.-Asia	5	12	217	2.41	0.69	4.42	2.55	37.39	39.25	4.95	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.62	28.50	29.70	4.20	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.60	33.28	34.46	3.56	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.66	9.12	10.33	13.25	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.57	20.62	21.79	5.66	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.63	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.39	4.42	2.75	70.89	72.25	1.92	119.28
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.77	32.64

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.70	55.80	57.06	2.26	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	0.69	4.42	2.55	36.39	38.25	5.09	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.62	51.24	52.42	2.31	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	0.72	4.42	2.58	33.85	35.70	5.49	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.67	21.94	23.16	5.57	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	0.75	4.42	2.58	22.61	24.44	8.10	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.86	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.03	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.60	40.73	41.91	2.90	61.78
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.68	47.39	48.62	2.60	52.07
Subtotal	755	7,476	26,260	2.41	1.32	4.42	2.42	28.67	29.87	4.19	41.85

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
General Cargo Ships (continued)											
Diverted Transits (continued)											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.32	4.42	2.42	28.70	29.91	4.19	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	9.13	107.56	112.02	4.15	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	7.18	23.91	27.30	14.16	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.62	66.12	69.12	4.53	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.14	82.61	85.89	3.97	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,478	2.41	3.90	4.42	7.16	41.82	45.29	8.29	84.66

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Passenger Ships (continued)											
Non-Diverted Transits (continued)											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,789	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,290	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.94	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.38	128.08	131.49	2.66	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.18	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.24	89.56	92.86	3.68	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	3.99	96.80
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.23	70.22	73.50	4.68	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.83	135.20	138.91	2.74	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,926	2.41	3.89	4.42	7.23	89.41	92.75	3.74	177.49

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.49	116.06	119.53	2.99	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.87	148.71	152.34	2.44	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.68	123.33	126.86	2.86	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.39	75.06	78.46	4.53	104.68
S.A.W.C.-Europe	928	4,670	35,378	2.41	4.05	4.42	7.44	115.41	118.80	2.94	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,667	2.41	4.02	4.42	7.34	80.58	83.90	4.12	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.44	134.04	137.46	2.55	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.26	56.28	59.61	5.92	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.25	79.55	82.81	4.09	116.03
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.78	126.00	129.62	2.87	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.07	3.26	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.93	121.94	125.63	3.03	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.95	3.24	129.67

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	16.57	278.57	285.79	2.59	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.48	225.39	231.95	2.91	256.05
Asia-U.S.E.C.	40	766	5,339	2.41	7.95	4.42	14.52	237.08	243.64	2.77	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.91	327.50	336.11	2.63	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	16.86	154.90	162.05	4.61	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.95	275.30	282.61	2.66	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	6.43	4.42	14.23	151.96	159.76	5.13	223.78

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.29	203.42	209.91	3.19	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.42	151.24	157.81	4.34	244.92
Subtotal	211	1,731	17,270	2.41	8.58	4.42	15.74	228.22	235.13	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.26	240.87	247.36	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.87	247.36	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.57	4.42	15.72	228.44	235.35	3.02	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.79	21.85	5.09	22.37
Canada W.C.-U.S.E.C.	6	253	657	2.41	1.29	4.42	2.35	11.44	12.50	9.27	21.15
C.A.E.C.-Asia	7	180	497	2.41	1.29	4.42	2.35	18.67	19.73	5.68	25.59
C.A.E.C.-C.A.W.C.	96	1,762	6,021	2.41	1.27	4.42	2.33	6.06	7.12	17.51	17.83

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.89	11.95	9.74	15.66
C.A.E.C.-U.S.W.C.	17	712	1,706	2.41	1.28	4.42	2.34	9.67	10.73	10.97	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.00	19.06	5.88	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.33	23.27	24.33	4.56	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.23	24.28	4.55	26.68
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.93	17.99	6.25	21.75
S.A.W.C.-C.A.E.C.	45	1,636	4,043	2.41	1.27	4.42	2.33	8.91	9.97	11.91	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.79	23.85	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,235	2.41	1.27	4.42	2.33	10.31	11.37	10.27	15.73
U.S.E.C.-Asia	82	2,655	6,530	2.41	1.29	4.42	2.35	18.80	19.87	5.68	26.64
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.58	22.64	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,272	2.41	1.27	4.42	2.33	12.31	13.37	8.60	25.53
U.S.W.C.-Africa	8	224	699	2.41	1.33	4.42	2.45	13.44	14.56	8.32	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	840	2.41	1.30	4.42	2.38	9.67	10.76	11.19	18.60
U.S.W.C.-U.S.E.C.	8	226	654	2.41	1.29	4.42	2.36	11.52	12.59	9.31	23.92
Subtotal	519	13,620	36,796	2.41	1.28	4.42	2.34	12.41	13.47	8.57	20.32
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.53	19.97

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Tankers (continued)											
Diverted Transits (continued)											
S.A.E.C.-C.A.W.C.	117	4,342	7,395	2.41	1.27	4.42	2.33	9.41	10.47	11.24	9.39
S.A.E.C.-U.S.W.C.	53	1,967	1,649	2.41	1.27	4.42	2.33	15.18	16.24	6.97	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.37	16.43	6.90	15.48
Subtotal	175	6,448	9,290	2.41	1.27	4.42	2.33	11.33	12.39	9.34	11.17
Subtotal	693	20,068	46,086	2.41	1.27	4.42	2.34	12.06	13.12	8.80	17.38
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.41	392.51	416.83	6.20	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.15	437.50	5.90	479.68
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.65	257.39	281.33	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.57	368.26	393.94	6.97	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.86	381.66	406.57	6.53	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	53.80	392.19	416.32	6.15	474.71
Subtotal	615	2,405	95,874	2.41	29.43	4.42	53.98	407.77	432.19	5.99	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.47	453.31	477.65	5.37	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00

(Continued)

Table E-4. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Diverted Transits (continued)											
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,914	2.41	29.43	4.42	53.97	407.79	432.20	5.99	472.52
Total Non-Diverting	11,756	206,731	804,056	2.41	2.07	4.42	3.79	53.02	54.84	3.43	65.17
Total Diverting	988	26,619	50,033	2.41	1.81	4.42	3.33	58.73	60.40	2.86	58.61

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2098 transits and 35979616 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, 150,000-DWT SCENARIO, 2020

Table E-5. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,487	394	3,881	10.16	169,946	16,307	186,253	8.76	395,764	29,634	425,398	6.97
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,450	97	53,547	0.18
Full Container Ships	1,239	12	1,251	0.97	24,474	145	24,619	0.59	152,636	474	153,111	0.31
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,478	0	11,478	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,290	0	12,290	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	698	53	751	7.10	32,110	2,106	34,216	6.16	71,179	2,584	73,763	3.50
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,874	1,040	96,914	1.07
Total	12,631	519	13,150	3.95	293,402	19,030	312,431	6.09	1,019,721	34,834	1,054,555	3.30

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2111 transits and 51867350 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-6. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	372	28	400	6.97	0	0	0	0.00	28,721	2,152	30,873	6.97
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	0	9	0.31	0	0	0	0.00	450	1	452	0.31
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,557	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	411	15	426	3.50	0	0	0	0.00	36,076	1,308	37,384	3.50
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,529	53	2,582	2.05	0	0	0	0.00	155,296	4,132	159,428	2.59

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.41	88.65	90.20	1.74	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.43	93.07	94.63	1.68	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	0.97	4.42	3.43	99.31	101.76	2.47	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.41	49.37	50.92	3.13	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.44	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.40	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.36	93.92	1.68	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.40	61.42	62.96	2.51	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.39	79.20	80.75	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.71	70.26	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.50	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.35	75.90	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.42	85.08	86.64	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.42	59.46	61.02	2.61	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.66	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.36	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.42	59.27	60.82	2.62	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.87	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.42	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.79	1.93	103.86

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.19	59.74	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.83	4.42	3.36	80.86	82.42	1.93	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.55	86.11	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.88	90.43	1.74	87.97
Subtotal	1,325	20,519	73,947	2.41	1.83	4.42	3.36	80.92	82.48	1.93	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,015	2.41	1.35	4.42	2.47	14.85	15.97	7.56	26.10
Africa-Canada W.C.	34	1,354	2,723	2.41	1.31	4.42	2.40	17.28	18.37	6.32	19.77
Africa-S.A.W.C.	5	128	317	2.41	1.35	4.42	2.47	17.80	18.92	6.31	25.10
Africa-U.S.W.C.	7	161	552	2.41	1.30	4.42	2.38	16.19	17.27	6.63	19.23
Asia-Canada E.C.	8	302	752	2.41	1.28	4.42	2.35	17.00	18.07	6.28	18.32
Asia-C.A.E.C.	21	345	1,533	2.41	1.33	4.42	2.48	18.03	19.19	6.40	22.65
Asia-U.S.E.C.	242	6,345	20,475	2.41	1.30	4.42	2.39	16.31	17.40	6.68	22.26
C.A.W.C.-Africa	1	34	91	2.41	1.32	4.42	2.46	14.70	15.83	7.72	25.81
C.A.W.C.-C.A.E.C.	34	961	2,494	2.41	1.33	4.42	2.43	7.81	8.91	14.13	15.77

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Europe	16	462	1,291	2.41	1.31	4.42	2.42	12.07	13.18	9.15	18.24
C.A.W.C.-U.S.E.C.	38	1,292	2,994	2.41	1.32	4.42	2.43	7.82	8.93	14.18	17.55
Canada E.C.-Asia	87	3,754	8,979	2.41	1.26	4.42	2.33	18.87	19.93	5.64	20.40
Canada E.C.-Oceania	3	58	252	2.41	1.33	4.42	2.46	19.62	20.75	5.80	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.44	12.63	13.74	8.79	14.98
Canada W.C.-Africa	96	3,500	8,015	2.41	1.31	4.42	2.40	16.94	18.03	6.43	19.42
Canada W.C.-C.A.E.C.	4	105	306	2.41	1.35	4.42	2.47	12.85	13.97	8.74	21.30
Canada W.C.-Europe	242	11,174	25,764	2.41	1.26	4.42	2.31	16.88	17.93	6.24	21.25
Canada W.C.-U.S.E.C.	64	1,569	4,473	2.41	1.35	4.42	2.47	13.00	14.12	8.64	23.15
C.A.E.C.-Asia	21	639	1,475	2.41	1.35	4.42	2.47	17.70	18.82	6.34	22.30
C.A.E.C.-C.A.W.C.	25	682	1,744	2.41	1.35	4.42	2.47	8.05	9.17	13.95	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	12	313	869	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
C.A.E.C.-U.S.W.C.	9	236	621	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
Columbia-Asia	3	288	599	2.41	1.18	4.42	2.17	17.58	18.57	5.60	24.67
Europe-C.A.W.C.	30	797	2,132	2.41	1.34	4.42	2.46	12.79	13.91	8.76	21.20
Europe-Canada W.C.	11	286	854	2.41	1.31	4.42	2.39	16.30	17.38	6.61	21.24
Europe-U.S.W.C.	116	3,102	9,372	2.41	1.31	4.42	2.40	15.41	16.50	7.05	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	22	661	1,539	2.41	1.35	4.42	2.47	19.70	20.82	5.70	21.25
Oceania-C.A.E.C.	6	166	437	2.41	1.35	4.42	2.47	18.80	19.92	5.97	22.25
S.A.E.C.-Asia	68	2,384	5,524	2.41	1.31	4.42	2.40	16.60	17.70	6.58	18.40

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Africa	4	157	319	2.41	1.29	4.42	2.36	14.00	15.08	7.66	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.48	13.15	14.28	8.58	15.50
S.A.W.C.-C.A.E.C.	7	144	520	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
S.A.W.C.-U.S.E.C.	54	1,732	3,850	2.41	1.34	4.42	2.46	10.82	11.93	10.33	15.18
U.S.E.C.-Asia	1,601	104,329	232,106	2.41	1.22	4.42	2.24	17.28	18.30	5.90	22.99
U.S.E.C.-C.A.W.C.	207	6,232	14,741	2.41	1.34	4.42	2.47	8.13	9.25	13.87	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.32	4.42	2.42	12.36	13.46	8.89	21.71
U.S.E.C.-Oceania	21	646	1,569	2.41	1.33	4.42	2.44	18.34	19.45	6.09	20.47
U.S.E.C.-S.A.W.C.	50	1,456	3,540	2.41	1.34	4.42	2.46	10.90	12.02	10.27	15.31
U.S.E.C.-U.S.W.C.	1	0	48	2.41	1.35	4.42	2.47	12.00	13.12	9.36	21.30
U.S.W.C.-Africa	121	4,599	11,331	2.41	1.28	4.42	2.35	15.63	16.70	6.84	18.62
U.S.W.C.-Canada E.C.	7	217	509	2.41	1.33	4.42	2.43	13.35	14.45	8.27	21.26
U.S.W.C.-C.A.E.C.	2	48	124	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
U.S.W.C.-Europe	140	6,524	14,820	2.41	1.26	4.42	2.32	13.95	15.01	7.57	17.96
U.S.W.C.-U.S.E.C.	7	183	587	2.41	1.31	4.42	2.48	12.06	13.23	9.68	21.48
Venezuela-Asia	15	1,778	3,699	2.41	1.18	4.42	2.17	18.28	19.27	5.39	19.90
Subtotal	3,487	169,946	395,764	2.41	1.25	4.42	2.29	16.30	17.35	6.40	21.71
Dry Bulk Carriers											
Diverted Transits											
Asia-S.A.E.C.	6	152	179	2.41	1.35	4.42	2.47	21.65	22.77	5.19	21.30
C.A.W.C.-S.A.E.C.	10	136	311	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
Canada W.C.-S.A.E.C.	24	1,374	2,469	2.41	1.22	4.42	2.25	10.63	11.65	9.62	10.92

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Europe-S.A.W.C.	12	298	365	2.41	1.35	4.42	2.47	15.85	16.97	7.09	15.50
Oceania-U.S.E.C.	119	6,406	14,791	2.41	1.24	4.42	2.28	15.18	16.22	6.81	16.07
S.A.E.C.-C.A.W.C.	8	247	247	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
S.A.E.C.-Canada W.C.	3	66	160	2.41	1.35	4.42	2.47	16.80	17.92	6.68	17.35
S.A.E.C.-U.S.W.C.	28	1,128	1,383	2.41	1.26	4.42	2.32	12.93	13.99	8.19	12.67
S.A.W.C.-Europe	175	6,221	9,403	2.41	1.31	4.42	2.40	15.84	16.93	6.88	15.96
U.S.W.C.-S.A.E.C.	11	279	326	2.41	1.35	4.42	2.47	15.80	16.92	7.11	15.45
Subtotal	394	16,307	29,634	2.41	1.27	4.42	2.34	14.91	15.97	7.13	15.29
Subtotal	3,881	186,253	425,398	2.41	1.25	4.42	2.30	16.18	17.23	6.46	21.15
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.57	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.75	45.87	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.26	38.38	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	549	2.41	1.34	4.42	2.46	41.64	42.76	2.68	54.44
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.91	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.35	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.55	41.67	2.77	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.86	47.98	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.37	43.49	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.63	52.75	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.46	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,283	2.41	1.34	4.42	2.46	42.33	43.44	2.63	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.77	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.75	45.87	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.69	26.81	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.64	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.79	26.92	4.36	43.41
Subtotal	991	22,838	53,450	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,547	2.41	1.34	4.42	2.46	40.03	41.14	2.79	55.35
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	211.07	214.95	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	206	4,485	37,152	2.41	4.76	4.42	8.73	238.55	242.52	1.66	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.04	129.84	133.50	2.82	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.36	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.24	230.53	234.27	1.62	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.21	212.43	216.18	1.77	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.13	217.31	221.03	1.71	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.44	184.05	187.98	2.13	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.32	187.32	191.00	1.97	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.05	154.49	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.14	224.75	228.46	1.65	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Europe-U.S.W.C.	144	2,855	16,066	2.41	4.62	4.42	8.49	209.75	213.62	1.84	217.16
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	220.87	224.56	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.31	191.71	195.52	1.99	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	243	7,139	41,275	2.41	4.74	4.42	8.67	239.88	243.81	1.64	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.28	163.61	167.39	2.31	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.09	159.20	162.84	2.28	227.84
U.S.W.C.-Europe	194	3,428	22,070	2.41	4.64	4.42	8.45	212.59	216.40	1.79	219.05
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.12	221.24	224.94	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.44	145.28	149.13	2.65	222.40
Subtotal	1,239	24,474	152,636	2.41	4.65	4.42	8.52	220.74	224.60	1.75	238.21
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.14	259.72	263.43	1.43	259.79
Subtotal	12	145	474	2.41	4.43	4.42	8.13	259.72	263.43	1.43	259.79
Subtotal	1,251	24,619	153,111	2.41	4.65	4.42	8.52	220.97	224.83	1.75	238.34

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-C.A.W.C.	2	23	77	2.41	0.69	4.42	2.55	27.49	29.35	6.74	50.55
Africa-S.A.W.C.	2	35	78	2.41	0.69	4.42	2.55	33.44	35.30	5.54	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.55	35.71	3.34	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.03	4.42	2.64	9.66	11.28	16.75	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.51	27.68	4.44	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.61	25.53	26.73	4.69	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.67	11.45	12.67	10.62	65.61
Canada E.C.-Asia	5	12	217	2.41	0.69	4.42	2.55	37.39	39.25	4.95	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.62	28.50	29.70	4.20	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.60	33.28	34.46	3.56	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.66	9.12	10.33	13.25	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.57	20.62	21.79	5.66	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.63	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.39	4.42	2.75	70.89	72.25	1.92	119.28

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.77	32.64
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.70	55.80	57.06	2.26	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	0.69	4.42	2.55	36.39	38.25	5.09	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.62	51.24	52.42	2.31	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	0.72	4.42	2.58	33.85	35.70	5.49	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.67	21.94	23.16	5.57	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	0.75	4.42	2.58	22.61	24.44	8.10	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.86	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.03	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.60	40.73	41.91	2.90	61.78

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.68	47.39	48.62	2.60	52.07
Subtotal	755	7,476	26,260	2.41	1.32	4.42	2.42	28.67	29.87	4.19	41.85
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.32	4.42	2.42	28.70	29.91	4.19	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	9.13	107.56	112.02	4.15	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	7.18	23.91	27.30	14.16	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.62	66.12	69.12	4.53	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.14	82.61	85.89	3.97	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,478	2.41	3.90	4.42	7.16	41.82	45.29	8.29	84.66
Passenger Ships											
Non-Diverted Transits											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,789	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,290	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.94	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.38	128.08	131.49	2.66	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.18	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.24	89.56	92.86	3.68	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	3.99	96.80

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.23	70.22	73.50	4.68	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.83	135.20	138.91	2.74	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,926	2.41	3.89	4.42	7.23	89.41	92.75	3.74	177.49
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.49	116.06	119.53	2.99	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.87	148.71	152.34	2.44	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.68	123.33	126.86	2.86	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.39	75.06	78.46	4.53	104.68
S.A.W.C.-Europe	928	4,670	35,378	2.41	4.05	4.42	7.44	115.41	118.80	2.94	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,667	2.41	4.02	4.42	7.34	80.58	83.90	4.12	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.44	134.04	137.46	2.55	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.26	56.28	59.61	5.92	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.25	79.55	82.81	4.09	116.03

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.78	126.00	129.62	2.87	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.07	3.26	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.93	121.94	125.63	3.03	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.95	3.24	129.67
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	16.57	278.57	285.79	2.59	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.48	225.39	231.95	2.91	256.05
Asia-U.S.E.C.	40	766	5,339	2.41	7.95	4.42	14.52	237.08	243.64	2.77	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.91	327.50	336.11	2.63	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	16.86	154.90	162.05	4.61	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.95	275.30	282.61	2.66	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	6.43	4.42	14.23	151.96	159.76	5.13	223.78
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.29	203.42	209.91	3.19	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.42	151.24	157.81	4.34	244.92
Subtotal	211	1,731	17,270	2.41	8.58	4.42	15.74	228.22	235.13	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.26	240.87	247.36	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.87	247.36	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.57	4.42	15.72	228.44	235.35	3.02	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.79	21.85	5.09	22.37
Canada W.C.-U.S.E.C.	5	253	617	2.41	1.27	4.24	2.26	11.42	12.42	8.74	21.15
C.A.E.C.-Asia	6	180	457	2.41	1.27	4.18	2.24	18.65	19.62	5.24	25.59
C.A.E.C.-C.A.W.C.	93	1,762	5,832	2.41	1.27	4.30	2.26	6.05	7.05	16.44	17.83
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.89	11.95	9.74	15.66
C.A.E.C.-U.S.W.C.	17	712	1,660	2.41	1.27	4.34	2.28	9.66	10.68	10.50	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.00	19.06	5.88	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.33	23.27	24.33	4.56	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.23	24.28	4.55	26.68
S.A.E.C.-Asia	104	14,147	24,657	2.41	1.27	3.71	1.95	13.83	14.51	4.94	14.70
S.A.E.C.-C.A.W.C.	85	4,342	10,822	2.41	1.26	3.87	2.02	8.63	9.39	8.82	9.39
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.93	17.99	6.25	21.75
S.A.W.C.-C.A.E.C.	42	1,636	3,955	2.41	1.27	4.19	2.21	8.65	9.60	10.93	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.79	23.85	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,225	2.41	1.27	4.41	2.32	10.31	11.36	10.23	15.73
U.S.E.C.-Asia	80	2,655	6,161	2.41	1.27	4.25	2.25	18.78	19.76	5.21	26.64

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.58	22.64	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,231	2.41	1.27	4.37	2.31	12.30	13.34	8.46	25.53
U.S.W.C.-Africa	7	224	547	2.41	1.26	3.73	1.94	13.36	14.04	5.05	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	761	2.41	1.26	4.13	2.17	9.64	10.54	9.34	18.60
U.S.W.C.-U.S.E.C.	8	226	611	2.41	1.27	4.22	2.22	11.50	12.46	8.31	23.92
Subtotal	698	32,110	71,179	2.41	1.27	4.01	2.11	12.50	13.33	6.63	16.37
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.53	19.97
S.A.E.C.-U.S.W.C.	49	1,967	2,339	2.41	1.26	4.12	2.18	14.91	15.82	6.11	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.37	16.43	6.90	15.48
Subtotal	53	2,106	2,584	2.41	1.26	4.14	2.17	15.03	15.95	6.12	14.83
Subtotal	751	34,216	73,763	2.41	1.27	4.02	2.11	12.66	13.50	6.60	16.27
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.41	392.51	416.83	6.20	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.15	437.50	5.90	479.68

(Continued)

Table E-7. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.65	257.39	281.33	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.57	368.26	393.94	6.97	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.86	381.66	406.57	6.53	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	53.80	392.19	416.32	6.15	474.71
Subtotal	615	2,405	95,874	2.41	29.43	4.42	53.98	407.77	432.19	5.99	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.47	453.31	477.65	5.37	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,914	2.41	29.43	4.42	53.97	407.79	432.20	5.99	472.52
Total Non-Diverting	12,631	293,402	1,019,721	2.41	1.88	4.39	3.42	47.23	48.85	3.44	57.15
Total Diverting	519	19,030	34,834	2.41	1.35	4.39	2.47	19.46	20.58	5.77	19.75

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2111 transits and 51867350 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, 200,000-DWT SCENARIO, 2020

Table E-8. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,590	406	3,997	10.16	185,274	18,164	203,439	8.93	407,003	32,141	439,144	7.32
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,450	97	53,547	0.18
Full Container Ships	1,239	12	1,251	0.97	24,474	145	24,619	0.59	152,636	474	153,111	0.31
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,478	0	11,478	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,290	0	12,290	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	675	53	728	7.32	32,110	2,106	34,216	6.16	71,179	2,584	73,763	3.50
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,874	1,040	96,914	1.07
Total	12,712	531	13,243	4.01	308,730	20,886	329,616	6.34	1,030,960	37,341	1,068,301	3.50

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-9. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	387	31	418	7.32	0	0	0	0.00	28,856	2,279	31,135	7.32
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	0	9	0.31	0	0	0	0.00	454	1	456	0.31
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,557	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	378	14	392	3.50	0	0	0	0.00	35,290	1,280	36,569	3.50
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,511	55	2,566	2.13	0	0	0	0.00	154,649	4,230	158,879	2.66

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.41	88.65	90.20	1.74	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.43	93.07	94.63	1.68	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	0.97	4.42	3.43	99.31	101.76	2.47	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.41	49.37	50.92	3.13	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.44	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.40	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.36	93.92	1.68	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.40	61.42	62.96	2.51	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.39	79.20	80.75	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.71	70.26	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.50	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.35	75.90	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.42	85.08	86.64	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.42	59.46	61.02	2.61	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.66	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.36	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.42	59.27	60.82	2.62	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.87	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.42	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.79	1.93	103.86

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.19	59.74	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.83	4.42	3.36	80.86	82.42	1.93	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.55	86.11	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.88	90.43	1.74	87.97
Subtotal	1,325	20,519	73,947	2.41	1.83	4.42	3.36	80.92	82.48	1.93	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,015	2.41	1.35	4.42	2.47	14.85	15.97	7.56	26.10
Africa-Canada W.C.	34	1,354	2,723	2.41	1.31	4.42	2.40	17.28	18.37	6.32	19.77
Africa-S.A.W.C.	5	128	317	2.41	1.35	4.42	2.47	17.80	18.92	6.31	25.10
Africa-U.S.W.C.	7	161	552	2.41	1.30	4.42	2.38	16.19	17.27	6.63	19.23
Asia-Canada E.C.	8	302	752	2.41	1.28	4.42	2.35	17.00	18.07	6.28	18.32
Asia-C.A.E.C.	21	345	1,533	2.41	1.33	4.42	2.48	18.03	19.19	6.40	22.65
Asia-U.S.E.C.	242	6,345	20,475	2.41	1.30	4.42	2.39	16.31	17.40	6.68	22.26
Brazil-Asia	109	14,866	17,045	2.41	1.17	2.63	1.28	18.03	18.14	0.60	18.14
C.A.W.C.-Africa	1	34	91	2.41	1.32	4.42	2.46	14.70	15.83	7.72	25.81

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	34	961	2,494	2.41	1.33	4.42	2.43	7.81	8.91	14.13	15.77
C.A.W.C.-Europe	16	462	1,291	2.41	1.31	4.42	2.42	12.07	13.18	9.15	18.24
C.A.W.C.-U.S.E.C.	38	1,292	2,994	2.41	1.32	4.42	2.43	7.82	8.93	14.18	17.55
Canada E.C.-Asia	89	4,219	8,196	2.41	1.25	3.67	1.94	18.33	19.03	3.78	20.40
Canada E.C.-Oceania	3	58	252	2.41	1.33	4.42	2.46	19.62	20.75	5.80	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.44	12.63	13.74	8.79	14.98
Canada W.C.-Africa	96	3,500	8,015	2.41	1.31	4.42	2.40	16.94	18.03	6.43	19.42
Canada W.C.-C.A.E.C.	4	105	306	2.41	1.35	4.42	2.47	12.85	13.97	8.74	21.30
Canada W.C.-Europe	238	11,174	23,261	2.41	1.26	4.04	2.11	16.52	17.37	5.17	21.25
Canada W.C.-U.S.E.C.	64	1,569	4,473	2.41	1.35	4.42	2.47	13.00	14.12	8.64	23.15
C.A.E.C.-Asia	21	639	1,475	2.41	1.35	4.42	2.47	17.70	18.82	6.34	22.30
C.A.E.C.-C.A.W.C.	25	682	1,744	2.41	1.35	4.42	2.47	8.05	9.17	13.95	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	12	313	869	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
C.A.E.C.-U.S.W.C.	9	236	621	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
Columbia-Asia	2	295	418	2.41	1.17	3.15	1.53	16.66	17.02	2.16	24.67
Europe-C.A.W.C.	30	797	2,132	2.41	1.34	4.42	2.46	12.79	13.91	8.76	21.20
Europe-Canada W.C.	11	286	854	2.41	1.31	4.42	2.39	16.30	17.38	6.61	21.24
Europe-U.S.W.C.	116	3,102	9,372	2.41	1.31	4.42	2.40	15.41	16.50	7.05	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	22	661	1,539	2.41	1.35	4.42	2.47	19.70	20.82	5.70	21.25
Oceania-C.A.E.C.	6	166	437	2.41	1.35	4.42	2.47	18.80	19.92	5.97	22.25

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	68	2,384	5,524	2.41	1.31	4.42	2.40	16.60	17.70	6.58	18.40
S.A.W.C.-Africa	3	157	313	2.41	1.28	4.42	2.34	13.64	14.70	7.77	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.47	13.00	14.12	8.64	15.50
S.A.W.C.-C.A.E.C.	7	144	520	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
S.A.W.C.-U.S.E.C.	54	1,732	3,850	2.41	1.34	4.42	2.46	10.82	11.93	10.33	15.18
U.S.E.C.-Asia	1,601	104,329	232,106	2.41	1.22	4.42	2.24	17.28	18.30	5.90	22.99
U.S.E.C.-C.A.W.C.	207	6,232	14,741	2.41	1.34	4.42	2.47	8.13	9.25	13.87	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.32	4.42	2.42	12.36	13.46	8.89	21.71
U.S.E.C.-Oceania	21	646	1,569	2.41	1.33	4.42	2.44	18.34	19.45	6.09	20.47
U.S.E.C.-S.A.W.C.	50	1,456	3,540	2.41	1.34	4.42	2.46	10.90	12.02	10.27	15.31
U.S.E.C.-U.S.W.C.	1	0	48	2.41	1.35	4.42	2.47	12.00	13.12	9.36	21.30
U.S.W.C.-Africa	121	4,599	11,331	2.41	1.28	4.42	2.35	15.63	16.70	6.84	18.62
U.S.W.C.-Canada E.C.	7	217	509	2.41	1.33	4.42	2.43	13.35	14.45	8.27	21.26
U.S.W.C.-C.A.E.C.	2	48	124	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
U.S.W.C.-Europe	140	6,524	14,820	2.41	1.26	4.42	2.32	13.95	15.01	7.57	17.96
U.S.W.C.-U.S.E.C.	7	183	587	2.41	1.31	4.42	2.48	12.06	13.23	9.68	21.48
Venezuela-Asia	12	1,768	1,366	2.41	1.17	1.91	0.93	16.47	16.23	-1.47	19.90
Subtotal	3,590	185,274	407,003	2.41	1.24	4.23	2.18	16.40	17.33	5.71	21.42
Dry Bulk Carriers											
Diverted Transits											
Asia-S.A.E.C.	6	152	179	2.41	1.35	4.42	2.47	21.65	22.77	5.19	21.30
C.A.W.C.-S.A.E.C.	10	136	311	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Canada W.C.-S.A.E.C.	23	1,374	2,665	2.41	1.22	3.71	1.88	10.51	11.17	6.31	10.92
Europe-S.A.W.C.	12	298	365	2.41	1.35	4.42	2.47	15.85	16.97	7.09	15.50
Oceania-U.S.E.C.	119	6,406	14,791	2.41	1.24	4.42	2.28	15.18	16.22	6.81	16.07
S.A.E.C.-C.A.W.C.	8	247	247	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
S.A.E.C.-Canada W.C.	3	66	160	2.41	1.35	4.42	2.47	16.80	17.92	6.68	17.35
S.A.E.C.-U.S.W.C.	28	1,128	1,383	2.41	1.26	4.42	2.32	12.93	13.99	8.19	12.67
S.A.W.C.-Europe	187	8,078	11,714	2.41	1.27	3.89	2.05	15.86	16.64	4.93	15.96
U.S.W.C.-S.A.E.C.	11	279	326	2.41	1.35	4.42	2.47	15.80	16.92	7.11	15.45
Subtotal	406	18,164	32,141	2.41	1.26	4.13	2.17	15.00	15.90	6.01	15.36
Subtotal	3,997	203,439	439,144	2.41	1.25	4.22	2.18	16.27	17.20	5.73	20.88
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.57	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.75	45.87	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.26	38.38	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	549	2.41	1.34	4.42	2.46	41.64	42.76	2.68	54.44

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.91	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.35	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.55	41.67	2.77	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.86	47.98	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.37	43.49	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.63	52.75	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.46	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,283	2.41	1.34	4.42	2.46	42.33	43.44	2.63	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.77	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.75	45.87	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.69	26.81	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.64	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.79	26.92	4.36	43.41
Subtotal	991	22,838	53,450	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,547	2.41	1.34	4.42	2.46	40.03	41.14	2.79	55.35
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	211.07	214.95	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	206	4,485	37,152	2.41	4.76	4.42	8.73	238.55	242.52	1.66	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.04	129.84	133.50	2.82	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.36	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.24	230.53	234.27	1.62	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.21	212.43	216.18	1.77	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.13	217.31	[illegible] 03	1.71	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.44	184.05	187.98	2.13	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.32	187.32	191.00	1.97	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.05	154.49	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.14	224.75	228.46	1.65	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Europe-U.S.W.C.	144	2,855	16,066	2.41	4.62	4.42	8.49	209.75	213.62	1.84	217.16
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	220.87	224.56	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.31	191.71	195.52	1.99	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	243	7,139	41,275	2.41	4.74	4.42	8.67	239.88	243.81	1.64	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.28	163.61	167.39	2.31	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.09	159.20	162.84	2.28	227.84
U.S.W.C.-Europe	194	3,428	22,070	2.41	4.64	4.42	8.45	212.59	216.40	1.79	219.05
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.12	221.24	224.94	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.44	145.28	149.13	2.65	222.40
Subtotal	1,239	24,474	152,636	2.41	4.65	4.42	8.52	220.74	224.60	1.75	238.21
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.14	259.72	263.43	1.43	259.79
Subtotal	12	145	474	2.41	4.43	4.42	8.13	259.72	263.43	1.43	259.79
Subtotal	1,251	24,619	153,111	2.41	4.65	4.42	8.52	220.97	224.83	1.75	238.34

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-C.A.W.C.	2	23	77	2.41	0.69	4.42	2.55	27.49	29.35	6.74	50.55
Africa-S.A.W.C.	2	35	78	2.41	0.69	4.42	2.55	33.44	35.30	5.54	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.55	35.71	3.34	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.03	4.42	2.64	9.66	11.28	16.75	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.51	27.68	4.44	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.61	25.53	26.73	4.69	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.67	11.45	12.67	10.62	65.61
Canada E.C.-Asia	5	12	217	2.41	0.69	4.42	2.55	37.39	39.25	4.95	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.62	28.50	29.70	4.20	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.60	33.28	34.46	3.56	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.66	9.12	10.33	13.25	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.57	20.62	21.79	5.66	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.63	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.39	4.42	2.75	70.89	72.25	1.92	119.28

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.77	32.64
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.70	55.80	57.06	2.26	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	0.69	4.42	2.55	36.39	38.25	5.09	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.62	51.24	52.42	2.31	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	0.72	4.42	2.58	33.85	35.70	5.49	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.67	21.94	23.16	5.57	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	0.75	4.42	2.58	22.61	24.44	8.10	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.86	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.03	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.60	40.73	41.91	2.90	61.78

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.68	47.39	48.62	2.60	52.07
Subtotal	755	7,476	26,260	2.41	1.32	4.42	2.42	28.67	29.87	4.19	41.85
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.32	4.42	2.42	28.70	29.91	4.19	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	9.13	107.56	112.02	4.15	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	7.18	23.91	27.30	14.16	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.62	66.12	69.12	4.53	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.14	82.61	85.89	3.97	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,478	2.41	3.90	4.42	7.16	41.82	45.29	8.29	84.66
Passenger Ships											
Non-Diverted Transits											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,789	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,290	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.94	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.38	128.08	131.49	2.66	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.18	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.24	89.56	92.86	3.68	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	3.99	96.80

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.23	70.22	73.50	4.68	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.83	135.20	138.91	2.74	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,926	2.41	3.89	4.42	7.23	89.41	92.75	3.74	177.49
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.49	116.06	119.53	2.99	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.87	148.71	152.34	2.44	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.68	123.33	126.86	2.86	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.39	75.06	78.46	4.53	104.68
S.A.W.C.-Europe	928	4,670	35,378	2.41	4.05	4.42	7.44	115.41	118.80	2.94	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,667	2.41	4.02	4.42	7.34	80.58	83.90	4.12	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.44	134.04	137.46	2.55	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.26	56.28	59.61	5.92	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.25	79.55	82.81	4.09	116.03

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.78	126.00	129.62	2.87	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.07	3.26	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.93	121.94	125.63	3.03	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.95	3.24	129.67
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	16.57	278.57	285.79	2.59	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.48	225.39	231.95	2.91	256.05
Asia-U.S.E.C.	40	766	5,339	2.41	7.95	4.42	14.52	237.08	243.64	2.77	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.91	327.50	336.11	2.63	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	16.86	154.90	162.05	4.61	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.95	275.30	282.61	2.66	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	6.43	4.42	14.23	151.96	159.76	5.13	223.78
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.29	203.42	209.91	3.19	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.42	151.24	157.81	4.34	244.92
Subtotal	211	1,731	17,270	2.41	8.58	4.42	15.74	228.22	235.13	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.26	240.87	247.36	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.87	247.36	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.57	4.42	15.72	228.44	235.35	3.02	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.79	21.85	5.09	22.37
Canada W.C.-U.S.E.C.	5	253	617	2.41	1.27	4.24	2.26	11.42	12.42	8.74	21.15
C.A.E.C.-Asia	6	180	457	2.41	1.27	4.18	2.24	18.65	19.62	5.24	25.59
C.A.E.C.-C.A.W.C.	93	1,762	5,832	2.41	1.27	4.30	2.26	6.05	7.05	16.44	17.83
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.89	11.95	9.74	15.66
C.A.E.C.-U.S.W.C.	17	712	1,660	2.41	1.27	4.34	2.28	9.66	10.68	10.50	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.00	19.06	5.88	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.33	23.27	24.33	4.56	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.23	24.28	4.55	26.68
S.A.E.C.-Asia	81	14,147	24,657	2.41	1.27	3.71	1.95	12.89	13.57	5.30	14.70
S.A.E.C.-C.A.W.C.	85	4,342	10,822	2.41	1.26	3.87	2.02	8.63	9.39	8.82	9.39
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.93	17.99	6.25	21.75
S.A.W.C.-C.A.E.C.	42	1,636	3,955	2.41	1.27	4.19	2.21	8.65	9.60	10.93	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.79	23.85	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,225	2.41	1.27	4.41	2.32	10.31	11.36	10.23	15.73
U.S.E.C.-Asia	80	2,655	6,161	2.41	1.27	4.25	2.25	18.78	19.76	5.21	26.64

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.58	22.64	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,231	2.41	1.27	4.37	2.31	12.30	13.34	8.46	25.53
U.S.W.C.-Africa	7	224	547	2.41	1.26	3.73	1.94	13.36	14.04	5.05	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	761	2.41	1.26	4.13	2.17	9.64	10.54	9.34	18.60
U.S.W.C.-U.S.E.C.	8	226	611	2.41	1.27	4.22	2.22	11.50	12.46	8.31	23.92
Subtotal	675	32,110	71,179	2.41	1.27	4.01	2.11	12.09	12.92	6.86	16.37
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.53	19.97
S.A.E.C.-U.S.W.C.	49	1,967	2,339	2.41	1.26	4.12	2.18	14.91	15.82	6.11	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.37	16.43	6.90	15.48
Subtotal	53	2,106	2,584	2.41	1.26	4.14	2.17	15.03	15.95	6.12	14.83
Subtotal	728	34,216	73,763	2.41	1.27	4.02	2.11	12.27	13.11	6.81	16.27
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.41	392.51	416.83	6.20	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.15	437.50	5.90	479.68

(Continued)

Table E-10. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.65	257.39	281.33	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.57	368.26	393.94	6.97	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.86	381.66	406.57	6.53	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	53.80	392.19	416.32	6.15	474.71
Subtotal	615	2,405	95,874	2.41	29.43	4.42	53.98	407.77	432.19	5.99	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.47	453.31	477.65	5.37	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,914	2.41	29.43	4.42	53.97	407.79	432.20	5.99	472.52
Total Non-Diverting	12,712	308,730	1,030,960	2.41	1.84	4.31	3.30	45.70	47.23	3.35	55.22
Total Diverting	531	20,886	37,341	2.41	1.34	4.16	2.31	19.14	20.11	5.11	19.42

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, 250,000-DWT SCENARIO, 2020

Table E-11. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	1,314	10	1,325	0.79	20,365	155	20,519	0.75	73,753	194	73,947	0.26
Dry Bulk Carriers	3,624	406	4,030	10.08	191,796	18,164	209,960	8.65	440,750	32,141	472,891	6.80
Chemical Tankers	991	2	994	0.24	22,838	87	22,925	0.38	53,450	97	53,547	0.18
Full Container Ships	1,239	12	1,251	0.97	24,474	145	24,619	0.59	152,636	474	153,111	0.31
General Cargo Ships	755	3	758	0.42	7,476	22	7,499	0.30	26,260	88	26,348	0.33
Liquid Gas Carriers	172	0	172	0.00	1,947	0	1,947	0.00	11,478	0	11,478	0.00
Passenger Ships	336	0	336	0.00	0	0	0	0.00	12,290	0	12,290	0.00
Refrigerated Ships	2,813	35	2,847	1.21	10,110	156	10,266	1.52	109,768	614	110,383	0.56
Roll-On Roll-Off	211	1	213	0.67	1,731	31	1,762	1.78	17,270	108	17,378	0.62
Tankers	661	53	715	7.46	32,110	2,106	34,216	6.16	71,179	2,584	73,763	3.50
Vehicle Carriers	615	8	623	1.24	2,405	19	2,424	0.76	95,874	1,040	96,914	1.07
Total	12,732	531	13,263	4.00	315,251	20,886	336,138	6.21	1,064,707	37,341	1,102,048	3.39

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-12. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	41	0	41	0.26	0	0	0	0.00	2,033	5	2,039	0.26
Dry Bulk Carriers	391	29	420	6.80	0	0	0	0.00	30,147	2,200	32,347	6.80
Chemical Tankers	82	0	82	0.18	0	0	0	0.00	3,510	6	3,517	0.18
Full Container Ships	9	0	9	0.31	0	0	0	0.00	454	1	456	0.31
General Cargo Ships	140	0	140	0.33	0	0	0	0.00	3,052	10	3,062	0.33
Liquid Gas Carriers	128	0	128	0.00	0	0	0	0.00	7,460	0	7,460	0.00
Passenger Ships	11	0	11	0.00	0	0	0	0.00	262	0	262	0.00
Refrigerated Ships	927	5	932	0.56	0	0	0	0.00	27,402	154	27,557	0.56
Roll-On Roll-Off	30	0	30	0.62	0	0	0	0.00	1,586	10	1,596	0.62
Tankers	369	13	382	3.50	0	0	0	0.00	35,271	1,279	36,550	3.50
Vehicle Carriers	379	4	383	1.07	0	0	0	0.00	44,743	484	45,227	1.07
Total	2,506	52	2,558	2.04	0	0	0	0.00	155,921	4,150	160,071	2.59

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	3	77	159	2.41	1.85	4.42	3.40	68.56	70.11	2.25	113.26
Africa-Canada W.C.	0	2	8	2.41	1.87	4.42	3.42	88.16	89.71	1.77	100.93
Africa-U.S.W.C.	1	9	40	2.41	1.87	4.42	3.43	89.16	90.72	1.75	102.87
Asia-Canada E.C.	0	4	22	2.41	1.86	4.42	3.41	88.65	90.20	1.74	96.19
Asia-C.A.E.C.	91	837	4,778	2.41	1.87	4.42	3.43	93.07	94.63	1.68	107.91
Asia-S.A.E.C.	27	175	1,377	2.41	0.97	4.42	3.43	99.31	101.76	2.47	102.23
Asia-U.S.E.C.	82	1,031	4,586	2.41	1.86	4.42	3.41	94.52	96.07	1.64	116.80
C.A.W.C.-Africa	3	70	174	2.41	1.87	4.42	3.43	73.06	74.62	2.13	120.56
C.A.W.C.-C.A.E.C.	7	118	395	2.41	1.86	4.42	3.41	49.37	50.92	3.13	87.53
C.A.W.C.-Europe	15	110	783	2.41	1.87	4.42	3.42	63.64	65.19	2.44	91.28
C.A.W.C.-S.A.E.C.	12	6	617	2.41	1.87	4.42	3.43	69.19	70.75	2.25	74.19
C.A.W.C.-U.S.E.C.	3	19	161	2.41	1.87	4.42	3.43	55.40	56.96	2.81	91.85
Canada E.C.-Asia	14	367	971	2.41	1.85	4.42	3.40	90.68	92.23	1.70	93.83
Canada E.C.-C.A.W.C.	1	9	46	2.41	1.87	4.42	3.43	54.09	55.65	2.88	92.29
Canada E.C.-S.A.W.C.	1	10	30	2.41	1.85	4.42	3.40	62.78	64.33	2.46	75.85
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.85	4.42	3.40	69.71	71.26	2.22	105.87
Canada W.C.-Africa	8	179	460	2.41	1.85	4.42	3.40	88.66	90.21	1.74	100.74
Canada W.C.-Europe	63	1,844	4,553	2.41	1.85	4.42	3.40	77.86	79.40	1.98	104.01
Canada W.C.-S.A.E.C.	11	210	541	2.41	1.87	4.42	3.43	71.19	72.75	2.19	108.72
Canada W.C.-U.S.E.C.	8	149	430	2.41	1.85	4.42	3.40	64.85	66.40	2.38	102.00
C.A.E.C.-Asia	9	196	475	2.41	1.87	4.42	3.42	92.36	93.92	1.68	107.04
C.A.E.C.-C.A.W.C.	7	27	361	2.41	1.87	4.42	3.43	50.30	51.86	3.10	90.29
C.A.E.C.-Canada W.C.	2	31	105	2.41	1.87	4.42	3.43	63.73	65.29	2.44	101.08

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	1	20	63	2.41	1.87	4.42	3.43	90.16	91.72	1.73	107.72
C.A.E.C.-S.A.W.C.	18	144	950	2.41	1.87	4.42	3.43	61.88	63.44	2.52	76.44
C.A.E.C.-U.S.W.C.	4	73	210	2.41	1.86	4.42	3.40	61.42	62.96	2.51	93.18
Europe-C.A.W.C.	22	137	1,139	2.41	1.87	4.42	3.43	64.73	66.29	2.41	112.66
Europe-Canada W.C.	4	123	332	2.41	1.85	4.42	3.40	80.14	81.69	1.93	103.29
Europe-S.A.W.C.	91	752	4,697	2.41	1.87	4.42	3.43	85.37	86.93	1.82	99.08
Europe-U.S.W.C.	24	732	1,842	2.41	1.85	4.42	3.39	79.20	80.75	1.95	103.43
Oceania-C.A.E.C.	4	42	206	2.41	1.87	4.42	3.43	90.85	92.41	1.72	108.64
S.A.E.C.-C.A.W.C.	9	141	471	2.41	1.87	4.42	3.42	68.71	70.26	2.26	73.69
S.A.E.C.-Canada W.C.	11	152	591	2.41	1.87	4.42	3.42	87.94	89.50	1.77	93.92
S.A.E.C.-U.S.W.C.	38	572	2,013	2.41	1.87	4.42	3.42	74.35	75.90	2.09	77.06
S.A.W.C.-Canada E.C.	1	2	49	2.41	1.87	4.42	3.43	66.27	67.83	2.35	81.06
S.A.W.C.-C.A.E.C.	13	108	669	2.41	1.87	4.42	3.43	62.27	63.83	2.50	77.06
S.A.W.C.-Europe	191	3,350	9,749	2.41	1.87	4.42	3.42	85.08	86.64	1.83	101.37
S.A.W.C.-U.S.E.C.	108	1,055	5,376	2.41	1.87	4.42	3.42	59.46	61.02	2.61	77.72
U.S.E.C.-Asia	172	4,347	11,356	2.41	1.86	4.42	3.40	91.66	93.21	1.69	113.24
U.S.E.C.-C.A.W.C.	10	201	534	2.41	1.86	4.42	3.42	46.17	47.73	3.36	88.94
U.S.E.C.-S.A.W.C.	160	1,595	8,270	2.41	1.87	4.42	3.42	59.27	60.82	2.62	77.44
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.40	56.86	58.40	2.72	94.00
U.S.W.C.-Africa	9	143	709	2.41	1.85	4.42	3.40	82.33	83.87	1.88	98.63
U.S.W.C.-Canada E.C.	2	40	89	2.41	1.85	4.42	3.40	66.85	68.40	2.31	100.00
U.S.W.C.-C.A.E.C.	9	63	446	2.41	1.87	4.42	3.42	63.58	65.14	2.45	96.80
U.S.W.C.-Europe	38	1,010	2,685	2.41	1.85	4.42	3.40	80.25	81.79	1.93	103.86

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	4	79	221	2.41	1.87	4.42	3.43	76.06	77.62	2.05	79.06
U.S.W.C.-U.S.E.C.	0	3	16	2.41	1.85	4.42	3.40	58.19	59.74	2.65	96.88
Subtotal	1,314	20,365	73,753	2.41	1.83	4.42	3.36	80.86	82.42	1.93	100.73
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	1	13	26	2.41	1.87	4.42	3.43	102.74	104.30	1.52	102.93
Oceania-Canada E.C.	2	46	119	2.41	1.85	4.42	3.40	93.85	95.40	1.65	94.00
Oceania-S.A.E.C.	7	95	48	2.41	1.86	4.42	3.42	84.55	86.11	1.84	82.99
Subtotal	10	155	194	2.41	1.86	4.42	3.41	88.88	90.43	1.74	87.97
Subtotal	1,325	20,519	73,947	2.41	1.83	4.42	3.36	80.92	82.48	1.93	100.64
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	15	483	1,015	2.41	1.35	4.42	2.47	14.85	15.97	7.56	26.10
Africa-Canada W.C.	34	1,354	2,723	2.41	1.31	4.42	2.40	17.28	18.37	6.32	19.77
Africa-S.A.W.C.	5	128	317	2.41	1.35	4.42	2.47	17.80	18.92	6.31	25.10
Africa-U.S.W.C.	7	161	552	2.41	1.30	4.42	2.38	16.19	17.27	6.63	19.23
Asia-Canada E.C.	8	302	752	2.41	1.28	4.42	2.35	17.00	18.07	6.28	18.32
Asia-C.A.E.C.	21	345	1,533	2.41	1.33	4.42	2.48	18.03	19.19	6.40	22.65
Asia-U.S.E.C.	242	6,345	20,475	2.41	1.30	4.42	2.39	16.31	17.40	6.68	22.26
Brazil-Asia	144	21,387	44,010	2.41	1.17	4.42	2.14	17.12	18.10	5.69	18.14
C.A.W.C.-Africa	1	34	91	2.41	1.32	4.42	2.46	14.70	15.83	7.72	25.81

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	34	961	2,494	2.41	1.33	4.42	2.43	7.81	8.91	14.13	15.77
C.A.W.C.-Europe	16	462	1,291	2.41	1.31	4.42	2.42	12.07	13.18	9.15	18.24
C.A.W.C.-U.S.E.C.	38	1,292	2,994	2.41	1.32	4.42	2.43	7.82	8.93	14.18	17.55
Canada E.C.-Asia	88	4,219	10,057	2.41	1.25	4.42	2.30	18.08	19.13	5.83	20.40
Canada E.C.-Oceania	3	58	252	2.41	1.33	4.42	2.46	19.62	20.75	5.80	21.08
Canada E.C.-S.A.W.C.	6	163	433	2.41	1.33	4.42	2.44	12.63	13.74	8.79	14.98
Canada W.C.-Africa	96	3,500	8,015	2.41	1.31	4.42	2.40	16.94	18.03	6.43	19.42
Canada W.C.-C.A.E.C.	4	105	306	2.41	1.35	4.42	2.47	12.85	13.97	8.74	21.30
Canada W.C.-Europe	238	11,174	25,718	2.41	1.26	4.42	2.31	16.52	17.57	6.36	21.25
Canada W.C.-U.S.E.C.	64	1,569	4,473	2.41	1.35	4.42	2.47	13.00	14.12	8.64	23.15
C.A.E.C.-Asia	21	639	1,475	2.41	1.35	4.42	2.47	17.70	18.82	6.34	22.30
C.A.E.C.-C.A.W.C.	25	682	1,744	2.41	1.35	4.42	2.47	8.05	9.17	13.95	16.45
C.A.E.C.-Canada W.C.	2	55	135	2.41	1.35	4.42	2.48	13.05	14.18	8.65	21.60
C.A.E.C.-Oceania	1	11	36	2.41	1.35	4.42	2.48	19.95	21.08	5.66	22.60
C.A.E.C.-S.A.W.C.	12	313	869	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
C.A.E.C.-U.S.W.C.	9	236	621	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
Columbia-Asia	2	295	611	2.41	1.17	4.42	2.15	16.66	17.64	5.88	24.67
Europe-C.A.W.C.	30	797	2,132	2.41	1.34	4.42	2.46	12.79	13.91	8.76	21.20
Europe-Canada W.C.	11	286	854	2.41	1.31	4.42	2.39	16.30	17.38	6.61	21.24
Europe-U.S.W.C.	116	3,102	9,372	2.41	1.31	4.42	2.40	15.41	16.50	7.05	20.10
Middle East-S.A.W.C.	1	52	118	2.41	1.27	4.42	2.32	14.27	15.32	7.40	16.00
Oceania-Canada E.C.	22	661	1,539	2.41	1.35	4.42	2.47	19.70	20.82	5.70	21.25
Oceania-C.A.E.C.	6	166	437	2.41	1.35	4.42	2.47	18.80	19.92	5.97	22.25

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	68	2,384	5,524	2.41	1.31	4.42	2.40	16.60	17.70	6.58	18.82
S.A.W.C.-Africa	3	157	313	2.41	1.28	4.42	2.34	13.64	14.70	7.77	20.54
S.A.W.C.-Canada E.C.	0	10	22	2.41	1.35	4.42	2.47	13.00	14.12	8.64	15.50
S.A.W.C.-C.A.E.C.	7	144	520	2.41	1.35	4.42	2.47	11.00	12.12	10.21	13.50
S.A.W.C.-U.S.E.C.	54	1,732	3,850	2.41	1.34	4.42	2.46	10.82	11.93	10.33	15.18
U.S.E.C.-Asia	1,601	104,329	232,106	2.41	1.22	4.42	2.24	17.28	18.30	5.90	22.99
U.S.E.C.-C.A.W.C.	207	6,232	14,741	2.41	1.34	4.42	2.47	8.13	9.25	13.87	18.25
U.S.E.C.-Canada W.C.	1	30	65	2.41	1.32	4.42	2.42	12.36	13.46	8.89	21.71
U.S.E.C.-Oceania	21	646	1,569	2.41	1.33	4.42	2.44	18.34	19.45	6.09	20.47
U.S.E.C.-S.A.W.C.	50	1,456	3,540	2.41	1.34	4.42	2.46	10.90	12.02	10.27	15.31
U.S.E.C.-U.S.W.C.	1	0	48	2.41	1.35	4.42	2.47	12.00	13.12	9.36	21.30
U.S.W.C.-Africa	121	4,599	11,331	2.41	1.28	4.42	2.35	15.63	16.70	6.84	18.62
U.S.W.C.-Canada E.C.	7	217	509	2.41	1.33	4.42	2.43	13.35	14.45	8.27	21.26
U.S.W.C.-C.A.E.C.	2	48	124	2.41	1.35	4.42	2.47	11.85	12.97	9.48	20.30
U.S.W.C.-Europe	140	6,524	14,820	2.41	1.26	4.42	2.32	13.95	15.01	7.57	17.96
U.S.W.C.-U.S.E.C.	7	183	587	2.41	1.31	4.42	2.48	12.06	13.23	9.68	21.48
Venezuela-Asia	12	1,768	3,637	2.41	1.17	4.42	2.14	16.47	17.44	5.91	19.90
Subtotal	3,624	191,796	440,750	2.41	1.24	4.42	2.28	16.35	17.38	6.34	21.32
Dry Bulk Carriers											
Diverted Transits											
Asia-S.A.E.C.	6	152	179	2.41	1.35	4.42	2.47	21.65	22.77	5.19	21.30
C.A.W.C.-S.A.E.C.	10	136	311	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Canada W.C.-S.A.E.C.	23	1,374	2,665	2.41	1.22	4.42	2.24	10.51	11.53	9.70	10.92
Europe-S.A.W.C.	12	298	365	2.41	1.35	4.42	2.47	15.85	16.97	7.09	15.50
Oceania-U.S.E.C.	119	6,406	14,791	2.41	1.24	4.42	2.28	15.18	16.22	6.81	16.07
S.A.E.C.-C.A.W.C.	8	247	247	2.41	1.35	4.42	2.47	12.00	13.12	9.36	11.65
S.A.E.C.-Canada W.C.	3	66	160	2.41	1.35	4.42	2.47	16.80	17.92	6.68	17.35
S.A.E.C.-U.S.W.C.	28	1,128	1,383	2.41	1.26	4.42	2.32	12.93	13.99	8.19	12.67
S.A.W.C.-Europe	187	8,078	11,714	2.41	1.27	4.42	2.33	15.86	16.92	6.69	15.96
U.S.W.C.-S.A.E.C.	11	279	326	2.41	1.35	4.42	2.47	15.80	16.92	7.11	15.45
Subtotal	406	18,164	32,141	2.41	1.26	4.42	2.32	15.00	16.05	7.01	15.36
Subtotal	4,030	209,960	472,891	2.41	1.24	4.42	2.28	16.23	17.27	6.39	20.80
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	1	32	69	2.41	1.34	4.42	2.46	42.34	43.46	2.64	58.00
Asia-C.A.E.C.	3	34	91	2.41	1.34	4.42	2.46	52.46	53.57	2.13	69.37
Asia-S.A.E.C.	3	16	178	2.41	1.34	4.42	2.46	49.34	50.46	2.26	51.00
Asia-U.S.E.C.	32	537	1,488	2.41	1.34	4.42	2.46	44.75	45.87	2.50	60.33
C.A.W.C.-C.A.E.C.	23	139	351	2.41	1.34	4.42	2.46	36.34	37.46	3.07	77.00
C.A.W.C.-Europe	8	126	279	2.41	1.34	4.42	2.46	37.26	38.38	3.00	55.50
C.A.W.C.-U.S.E.C.	38	470	1,144	2.41	1.34	4.42	2.46	28.06	29.18	3.98	58.14
Canada W.C.-Europe	4	87	223	2.41	1.34	4.42	2.46	41.34	42.46	2.70	55.00
Canada W.C.-U.S.E.C.	32	744	2,098	2.41	1.34	4.42	2.46	31.74	32.86	3.52	52.80
C.A.E.C.-Asia	9	248	549	2.41	1.34	4.42	2.46	41.64	42.76	2.68	54.44

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-C.A.W.C.	9	207	576	2.41	1.34	4.42	2.46	21.34	22.46	5.23	41.00
C.A.E.C.-S.A.W.C.	11	186	477	2.41	1.34	4.42	2.46	31.03	32.15	3.60	40.27
C.A.E.C.-U.S.W.C.	1	10	22	2.41	1.34	4.42	2.46	51.34	52.46	2.17	90.00
Europe-C.A.W.C.	6	30	95	2.41	1.34	4.42	2.46	56.34	57.46	1.98	86.00
Europe-S.A.W.C.	6	60	137	2.41	1.34	4.42	2.46	55.91	57.02	2.00	59.35
Europe-U.S.W.C.	9	182	423	2.41	1.34	4.42	2.46	42.35	43.46	2.64	56.41
Oceania-U.S.E.C.	18	455	1,295	2.41	1.34	4.42	2.46	40.55	41.67	2.77	45.36
S.A.E.C.-C.A.W.C.	8	61	154	2.41	1.34	4.42	2.46	46.86	47.98	2.38	51.82
S.A.W.C.-C.A.E.C.	22	79	502	2.41	1.34	4.42	2.46	42.37	43.49	2.64	56.49
S.A.W.C.-Europe	8	92	214	2.41	1.34	4.42	2.46	51.63	52.75	2.16	54.68
S.A.W.C.-U.S.E.C.	7	47	194	2.41	1.34	4.42	2.46	38.35	39.46	2.91	53.28
U.S.E.C.-Asia	565	15,828	34,283	2.41	1.34	4.42	2.46	42.33	43.44	2.63	56.99
U.S.E.C.-C.A.W.C.	18	146	378	2.41	1.34	4.42	2.46	33.25	34.37	3.36	70.02
U.S.E.C.-Canada W.C.	5	36	83	2.41	1.34	4.42	2.46	55.77	56.88	2.00	96.33
U.S.E.C.-Oceania	17	409	933	2.41	1.34	4.42	2.46	44.75	45.87	2.50	50.35
U.S.E.C.-S.A.W.C.	45	434	1,113	2.41	1.34	4.42	2.46	39.65	40.77	2.82	55.15
U.S.E.C.-U.S.W.C.	50	1,635	4,132	2.41	1.35	4.42	2.47	25.69	26.81	4.38	43.31
U.S.W.C.-C.A.E.C.	2	38	126	2.41	1.34	4.42	2.46	29.34	30.46	3.81	48.00
U.S.W.C.-Europe	16	215	577	2.41	1.34	4.42	2.46	45.64	46.75	2.45	61.31
U.S.W.C.-U.S.E.C.	15	256	1,266	2.41	1.35	4.42	2.47	25.79	26.92	4.36	43.41
Subtotal	991	22,838	53,450	2.41	1.34	4.42	2.46	40.06	41.18	2.79	55.45
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	2	84	90	2.41	1.35	4.42	2.48	30.35	31.48	3.71	30.00

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	3	8	2.41	1.34	4.42	2.46	37.34	38.46	2.99	38.00
Subtotal	2	87	97	2.41	1.35	4.42	2.48	30.63	31.75	3.68	30.32
Subtotal	994	22,925	53,547	2.41	1.34	4.42	2.46	40.03	41.14	2.79	55.35
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	2	8	2.41	4.48	4.42	8.22	246.46	250.20	1.52	281.72
Asia-Canada E.C.	35	682	4,160	2.41	4.65	4.42	8.53	211.07	214.95	1.84	223.41
Asia-S.A.E.C.	2	7	87	2.41	4.48	4.42	8.22	274.32	278.06	1.36	278.74
Asia-U.S.E.C. (low inv. cost)	206	4,485	37,152	2.41	4.76	4.42	8.73	238.55	242.52	1.66	251.75
C.A.W.C.-C.A.E.C.	1	5	47	2.41	4.38	4.42	8.04	129.84	133.50	2.82	209.77
C.A.W.C.-Europe	2	22	148	2.41	4.36	4.42	7.99	153.30	156.93	2.37	206.86
C.A.W.C.-S.A.E.C.	0	4	23	2.41	4.38	4.42	8.03	163.77	167.42	2.23	170.68
C.A.W.C.-U.S.E.C.	0	3	15	2.41	4.48	4.42	8.22	157.98	161.72	2.36	250.90
Canada E.C.-Asia	32	561	2,830	2.41	4.50	4.42	8.24	230.53	234.27	1.62	235.78
Canada E.C.-U.S.W.C.	5	136	754	2.41	4.73	4.42	8.68	160.73	164.68	2.46	225.00
Canada W.C.-Europe	32	491	2,319	2.41	4.46	4.42	8.21	212.43	216.18	1.77	275.57
C.A.E.C.-Asia	8	99	683	2.41	4.41	4.42	8.13	217.31	221.03	1.71	245.58
C.A.E.C.-C.A.W.C.	1	3	23	2.41	4.51	4.42	8.44	184.05	187.98	2.13	324.09
C.A.E.C.-Oceania	0	3	15	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
C.A.E.C.-S.A.W.C.	6	6	117	2.41	4.64	4.42	8.32	187.32	191.00	1.97	226.38
C.A.E.C.-U.S.W.C.	1	12	72	2.41	4.38	4.42	8.05	154.49	158.16	2.37	220.28
Europe-C.A.W.C.	0	1	7	2.41	4.36	4.42	8.00	153.30	156.94	2.37	244.84

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	24	311	1,579	2.41	4.43	4.42	8.14	224.75	228.46	1.65	283.75
Europe-S.A.W.C.	51	731	4,699	2.41	4.36	4.42	7.99	194.28	197.91	1.87	223.86
Europe-U.S.W.C.	144	2,855	16,066	2.41	4.62	4.42	8.49	209.75	213.62	1.84	217.16
Middle East-U.S.W.C.	8	116	566	2.41	4.42	4.42	8.11	220.87	224.56	1.67	248.07
Oceania-C.A.E.C.	2	24	101	2.41	4.48	4.42	8.22	248.46	252.20	1.50	293.66
S.A.E.C.-C.A.W.C.	0	4	22	2.41	4.48	4.42	8.22	193.78	197.52	1.93	205.16
S.A.E.C.-U.S.W.C.	1	9	41	2.41	4.48	4.42	8.22	179.84	183.58	2.08	217.10
S.A.W.C.-C.A.E.C.	0	1	6	2.41	4.50	4.42	8.31	191.71	195.52	1.99	232.72
S.A.W.C.-Europe	103	1,966	9,602	2.41	4.36	4.42	8.00	194.27	197.91	1.87	223.85
S.A.W.C.-U.S.E.C.	46	483	2,334	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-Asia (low inv. cost)	243	7,139	41,275	2.41	4.74	4.42	8.67	239.88	243.81	1.64	252.86
U.S.E.C.-C.A.W.C.	6	55	321	2.41	4.48	4.42	8.22	136.10	139.84	2.75	250.90
U.S.E.C.-S.A.W.C.	57	487	2,891	2.41	4.48	4.42	8.22	170.90	174.64	2.19	219.08
U.S.E.C.-U.S.W.C.	1	26	153	2.41	4.71	4.42	8.64	144.82	148.75	2.71	220.39
U.S.W.C.-Africa	0	0	0	2.41	5.04	4.42	9.25	197.04	201.25	2.13	228.00
U.S.W.C.-Canada E.C.	0	5	32	2.41	4.51	4.42	8.28	163.61	167.39	2.31	231.49
U.S.W.C.-C.A.E.C.	7	42	297	2.41	4.46	4.42	8.09	159.20	162.84	2.28	227.84
U.S.W.C.-Europe	194	3,428	22,070	2.41	4.64	4.42	8.45	212.59	216.40	1.79	219.05
U.S.W.C.-Middle East	8	103	585	2.41	4.42	4.42	8.12	221.24	224.94	1.67	229.44
U.S.W.C.-U.S.E.C.	13	168	1,536	2.41	4.59	4.42	8.44	145.28	149.13	2.65	222.40
Subtotal	1,239	24,474	152,636	2.41	4.65	4.42	8.52	220.74	224.60	1.75	238.21
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	12	145	474	2.41	4.43	4.42	8.14	259.72	263.43	1.43	259.79
Subtotal	12	145	474	2.41	4.43	4.42	8.13	259.72	263.43	1.43	259.79
Subtotal	1,251	24,619	153,111	2.41	4.65	4.42	8.52	97	224.83	1.75	238.34

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Africa-C.A.W.C.	2	23	77	2.41	0.69	4.42	2.55	27.49	29.35	6.74	50.55
Africa-S.A.W.C.	2	35	78	2.41	0.69	4.42	2.55	33.44	35.30	5.54	49.55
Asia-Canada E.C.	0	2	4	2.41	1.39	4.42	2.55	38.09	39.25	3.04	41.65
Asia-C.A.E.C.	71	844	3,314	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
Asia-U.S.E.C.	26	339	1,240	2.41	1.39	4.42	2.54	34.55	35.71	3.34	47.75
C.A.W.C.-Africa	5	94	228	2.41	1.39	4.42	2.55	28.19	29.35	4.11	50.55
C.A.W.C.-C.A.E.C.	25	109	386	2.41	1.03	4.42	2.64	9.66	11.28	16.75	52.77
C.A.W.C.-Europe	21	120	627	2.41	1.41	4.42	2.58	26.51	27.68	4.44	46.59
C.A.W.C.-S.A.E.C.	8	51	229	2.41	1.41	4.42	2.61	25.53	26.73	4.69	29.62
C.A.W.C.-U.S.E.C.	10	51	161	2.41	1.45	4.42	2.67	11.45	12.67	10.62	65.61
Canada E.C.-Asia	5	12	217	2.41	0.69	4.42	2.55	37.39	39.25	4.95	41.65
Canada E.C.-C.A.W.C.	1	15	42	2.41	1.39	4.42	2.55	19.29	20.45	6.00	37.65
Canada E.C.-S.A.W.C.	6	53	275	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
Canada W.C.-C.A.E.C.	6	45	153	2.41	1.42	4.42	2.62	28.50	29.70	4.20	62.09
Canada W.C.-Europe	1	12	26	2.41	1.39	4.42	2.55	34.09	35.25	3.40	47.55
Canada W.C.-S.A.E.C.	6	58	174	2.41	1.41	4.42	2.60	33.28	34.46	3.56	62.32
C.A.E.C.-Asia	22	415	1,000	2.41	1.39	4.42	2.55	34.09	35.25	3.40	44.60
C.A.E.C.-C.A.W.C.	25	89	393	2.41	1.45	4.42	2.66	9.12	10.33	13.25	56.51
C.A.E.C.-Oceania	0	7	22	2.41	1.39	4.42	2.55	37.09	38.25	3.12	44.60
C.A.E.C.-S.A.W.C.	24	218	710	2.41	1.41	4.42	2.57	20.62	21.79	5.66	31.22
C.A.E.C.-U.S.W.C.	9	28	91	2.41	1.51	4.42	2.77	30.51	31.77	4.13	102.00
Europe-C.A.W.C.	44	300	1,543	2.41	1.40	4.42	2.57	25.47	26.63	4.58	53.48
Europe-Canada W.C.	2	9	27	2.41	1.39	4.42	2.75	70.89	72.25	1.92	119.28

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	39	385	1,686	2.41	1.39	4.42	2.55	30.83	31.99	3.77	32.64
Europe-U.S.W.C.	2	11	43	2.41	1.44	4.42	2.70	55.80	57.06	2.26	93.53
Middle East-S.A.W.C.	4	2	46	2.41	1.50	4.42	2.75	64.45	65.70	1.94	89.22
Middle East-U.S.W.C.	2	4	73	2.41	0.69	4.42	2.55	36.39	38.25	5.09	42.65
Oceania-C.A.E.C.	0	3	21	2.41	1.39	4.42	2.55	36.09	37.25	3.21	44.60
Oceania-U.S.E.C.	1	7	30	2.41	1.43	4.42	2.62	51.24	52.42	2.31	61.38
S.A.E.C.-C.A.W.C.	7	148	334	2.41	1.39	4.42	2.55	23.19	24.35	4.99	24.80
S.A.E.C.-Canada W.C.	0	1	5	2.41	1.39	4.42	2.55	32.14	33.30	3.60	34.70
S.A.E.C.-U.S.W.C.	8	36	302	2.41	0.72	4.42	2.58	33.85	35.70	5.49	36.22
S.A.W.C.-Africa	4	81	191	2.41	1.39	4.42	2.55	31.14	32.30	3.72	47.60
S.A.W.C.-Canada E.C.	0	6	16	2.41	1.39	4.42	2.55	25.19	26.35	4.60	31.75
S.A.W.C.-C.A.E.C.	41	177	707	2.41	1.45	4.42	2.67	21.94	23.16	5.57	42.95
S.A.W.C.-Europe	98	1,601	4,534	2.41	1.39	4.42	2.55	30.14	31.30	3.84	31.75
S.A.W.C.-Middle East	2	23	72	2.41	1.39	4.42	2.55	32.14	33.30	3.60	37.70
S.A.W.C.-U.S.E.C.	27	205	857	2.41	0.75	4.42	2.58	22.61	24.44	8.10	36.08
U.S.E.C.-Asia	48	782	2,249	2.41	1.39	4.42	2.54	34.72	35.87	3.33	47.99
U.S.E.C.-C.A.W.C.	48	352	1,000	2.41	1.43	4.42	2.62	13.42	14.61	8.86	53.82
U.S.E.C.-Oceania	3	46	141	2.41	1.39	4.42	2.55	37.09	38.25	3.12	41.65
U.S.E.C.-S.A.W.C.	86	605	2,626	2.41	1.41	4.42	2.58	23.39	24.56	5.03	36.70
U.S.E.C.-U.S.W.C.	1	0	8	2.41	1.50	4.42	2.75	32.50	33.75	3.85	107.05
U.S.W.C.-Africa	2	25	104	2.41	1.39	4.42	2.55	34.09	35.25	3.40	42.60
U.S.W.C.-C.A.E.C.	1	0	16	2.41	1.50	4.42	2.75	29.71	30.96	4.21	96.69
U.S.W.C.-Europe	3	31	76	2.41	1.42	4.42	2.60	40.73	41.91	2.90	61.78

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	6	15	106	2.41	1.45	4.42	2.68	47.39	48.62	2.60	52.07
Subtotal	755	7,476	26,260	2.41	1.32	4.42	2.42	28.67	29.87	4.19	41.85
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	2	13	83	2.41	1.39	4.42	2.55	41.09	42.25	2.82	41.65
Canada E.C.-Oceania	0	4	4	2.41	1.39	4.42	2.55	43.04	44.20	2.69	42.65
Canada W.C.-Middle East	1	6	1	2.41	1.39	4.42	2.55	39.04	40.20	2.97	37.70
Subtotal	3	22	88	2.41	1.39	4.42	2.55	40.86	42.02	2.83	40.76
Subtotal	758	7,499	26,348	2.41	1.32	4.42	2.42	28.70	29.91	4.19	41.84
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	4	18	91	2.41	7.30	4.42	13.39	49.30	55.39	12.35	170.00
C.A.E.C.-Asia	15	82	589	2.41	4.67	4.42	9.13	107.56	112.02	4.15	152.78
C.A.E.C.-C.A.W.C.	96	1,270	7,339	2.41	3.79	4.42	7.18	23.91	27.30	14.16	71.88
C.A.E.C.-S.A.W.C.	8	119	627	2.41	3.83	4.42	7.02	40.83	44.02	7.81	61.00
C.A.E.C.-U.S.W.C.	1	12	60	2.41	3.83	4.42	7.02	45.83	49.02	6.96	95.00
Europe-C.A.W.C.	2	5	33	2.41	7.30	4.42	13.39	110.30	116.39	5.52	197.00
Europe-S.A.W.C.	0	1	3	2.41	3.82	4.42	7.01	67.82	71.01	4.70	72.00
Oceania-U.S.E.C.	6	91	572	2.41	3.62	4.42	6.62	66.12	69.12	4.53	75.48
S.A.E.C.-Asia	2	27	139	2.41	3.83	4.42	7.02	78.83	82.02	4.05	94.00
S.A.E.C.-C.A.W.C.	11	31	243	2.41	7.30	4.42	13.39	99.30	105.39	6.13	112.00

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-Asia	23	273	1,657	2.41	3.86	4.42	7.14	82.61	85.89	3.97	121.83
U.S.E.C.-C.A.W.C.	1	2	16	2.41	7.30	4.42	13.39	57.30	63.39	10.63	191.00
U.S.E.C.-Oceania	1	11	66	2.41	3.83	4.42	7.02	86.83	90.02	3.67	100.00
U.S.E.C.-S.A.W.C.	2	6	43	2.41	7.30	4.42	13.39	94.30	100.39	6.46	153.00
Subtotal	172	1,947	11,478	2.41	3.90	4.42	7.16	41.82	45.29	8.29	84.66
Passenger Ships											
Non-Diverted Transits											
North-Bound	153	0	4,501	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	183	0	7,789	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	336	0	12,290	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	6	2.41	4.27	4.42	7.84	113.87	117.44	3.13	208.00
Africa-S.A.W.C.	9	9	333	2.41	4.15	4.42	7.62	133.94	137.40	2.59	196.56
Asia-C.A.E.C.	20	71	812	2.41	3.97	4.42	7.38	128.08	131.49	2.66	173.29
Asia-U.S.E.C.	0	0	14	2.41	4.28	4.42	7.84	140.48	144.04	2.54	198.20
C.A.W.C.-Africa	1	3	33	2.41	4.28	4.42	7.84	113.88	117.44	3.13	208.00
C.A.W.C.-Canada E.C.	0	2	12	2.41	4.28	4.42	7.84	76.48	80.04	4.66	152.00
C.A.W.C.-C.A.E.C.	20	132	873	2.41	3.88	4.42	7.11	50.94	54.18	6.35	124.12
C.A.W.C.-Europe	219	987	9,047	2.41	3.94	4.42	7.24	89.56	92.86	3.68	143.20
C.A.W.C.-S.A.E.C.	1	4	30	2.41	4.28	4.42	7.84	89.28	92.84	3.99	96.80

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	1	2	31	2.41	4.28	4.42	7.84	61.68	65.24	5.78	149.80
Canada E.C.-Asia	12	63	403	2.41	4.28	4.42	7.84	155.08	158.64	2.30	169.60
Canada E.C.-C.A.W.C.	5	10	188	2.41	3.95	4.42	7.23	70.22	73.50	4.68	142.12
Canada W.C.-Europe	3	28	124	2.41	4.12	4.42	7.55	131.88	135.31	2.60	187.18
C.A.E.C.-Asia	10	32	367	2.41	4.12	4.42	7.83	135.20	138.91	2.74	182.25
C.A.E.C.-C.A.W.C.	23	5	1,002	2.41	3.87	4.42	7.10	50.87	54.10	6.35	124.00
C.A.E.C.-S.A.W.C.	54	42	2,355	2.41	3.87	4.42	7.10	71.87	75.10	4.50	101.00
Europe-C.A.W.C.	160	13	6,926	2.41	3.89	4.42	7.23	89.41	92.75	3.74	177.49
Europe-Canada W.C.	1	1	28	2.41	4.28	4.42	7.84	136.48	140.04	2.61	189.40
Europe-S.A.W.C.	169	145	6,564	2.41	4.02	4.42	7.49	116.06	119.53	2.99	121.88
Europe-U.S.W.C.	14	10	455	2.41	4.28	4.42	7.84	126.88	130.44	2.81	178.40
Middle East-S.A.W.C.	2	3	56	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
Oceania-C.A.E.C.	3	18	94	2.41	4.28	4.42	7.84	147.28	150.84	2.42	182.40
Oceania-U.S.E.C.	33	116	1,100	2.41	4.24	4.42	7.87	148.71	152.34	2.44	169.13
S.A.E.C.-Asia	11	50	370	2.41	4.28	4.42	7.84	137.48	141.04	2.59	159.80
S.A.W.C.-Africa	14	50	502	2.41	4.15	4.42	7.68	123.33	126.86	2.86	191.96
S.A.W.C.-C.A.E.C.	21	111	846	2.41	3.99	4.42	7.39	75.06	78.46	4.53	104.68
S.A.W.C.-Europe	928	4,670	35,378	2.41	4.05	4.42	7.44	115.41	118.80	2.94	121.08
S.A.W.C.-Middle East	5	17	174	2.41	4.28	4.42	7.84	129.48	133.04	2.75	153.80
S.A.W.C.-U.S.E.C.	607	2,226	23,667	2.41	4.02	4.42	7.34	80.58	83.90	4.12	117.32
U.S.E.C.-Asia	32	114	1,236	2.41	4.01	4.42	7.44	134.04	137.46	2.55	189.83
U.S.E.C.-C.A.W.C.	27	66	1,108	2.41	3.93	4.42	7.26	56.28	59.61	5.92	139.70
U.S.E.C.-S.A.W.C.	282	434	11,191	2.41	3.99	4.42	7.25	79.55	82.81	4.09	116.03

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	126	672	4,440	2.41	4.17	4.42	7.78	126.00	129.62	2.87	177.24
Subtotal	2,813	10,110	109,768	2.41	4.02	4.42	7.37	103.69	107.07	3.26	129.19
Refrigerated Ships											
Diverted Transits											
Africa-Asia	29	151	398	2.41	4.28	4.42	7.84	162.08	165.64	2.20	160.80
Asia-S.A.E.C.	5	3	188	2.41	4.28	4.42	7.84	168.08	171.64	2.12	171.60
U.S.W.C.-S.A.E.C.	1	3	28	2.41	4.24	4.42	7.93	121.94	125.63	3.03	124.71
Subtotal	35	156	614	2.41	4.27	4.42	7.84	161.54	165.11	2.21	160.43
Subtotal	2,847	10,266	110,383	2.41	4.02	4.42	7.37	104.57	107.95	3.24	129.67
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	2	8	107	2.41	9.35	4.42	16.57	278.57	285.79	2.59	298.63
Asia-C.A.E.C.	24	473	3,303	2.41	7.92	4.42	14.48	225.39	231.95	2.91	256.05
Asia-U.S.E.C.	40	766	5,339	2.41	7.95	4.42	14.52	237.08	243.64	2.77	288.42
C.A.W.C.-Europe	12	64	946	2.41	8.66	4.42	15.88	181.66	188.88	3.98	257.00
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.67	4.42	15.90	193.67	200.90	3.73	203.00
C.A.W.C.-U.S.E.C.	1	1	96	2.41	8.66	4.42	15.88	155.66	162.88	4.64	251.00
Canada E.C.-Asia	8	41	490	2.41	9.30	4.42	17.91	327.50	336.11	2.63	336.67
Canada W.C.-C.A.E.C.	0	0	9	2.41	10.19	4.42	18.70	224.84	233.35	3.78	359.54
C.A.E.C.-C.A.W.C.	0	1	25	2.41	9.72	4.42	16.86	154.90	162.05	4.61	273.04
C.A.E.C.-Oceania	2	7	196	2.41	8.66	4.42	15.88	252.66	259.88	2.86	297.00

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	46	81	2,153	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
Europe-C.A.W.C.	18	112	1,405	2.41	8.66	4.42	15.88	181.66	188.88	3.98	311.00
Europe-S.A.W.C.	0	0	3	2.41	8.67	4.42	15.90	240.67	247.90	3.00	275.00
Europe-U.S.W.C.	0	2	32	2.41	8.66	4.42	15.88	241.66	248.88	2.99	311.00
Oceania-C.A.E.C.	0	0	1	2.41	8.01	4.42	14.69	223.21	229.89	2.99	261.95
S.A.W.C.-C.A.E.C.	12	23	542	2.41	10.19	4.42	18.70	217.90	226.41	3.90	266.26
S.A.W.C.-Europe	1	3	78	2.41	8.66	4.42	15.88	240.66	247.88	3.00	281.00
S.A.W.C.-U.S.E.C.	6	13	286	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.E.C.-Asia	8	56	679	2.41	8.64	4.42	15.95	275.30	282.61	2.66	337.50
U.S.E.C.-C.A.W.C.	2	3	151	2.41	8.66	4.42	15.88	132.66	139.88	5.45	251.00
U.S.E.C.-S.A.W.C.	26	45	1,199	2.41	10.19	4.42	18.70	210.96	219.47	4.03	275.20
U.S.W.C.-Canada E.C.	1	2	40	2.41	10.20	4.42	18.70	245.70	254.20	3.46	375.45
U.S.W.C.-C.A.E.C.	1	23	154	2.41	6.43	4.42	14.23	151.96	159.76	5.13	223.78
U.S.W.C.-Europe	0	0	3	2.41	7.80	4.42	14.29	203.42	209.91	3.19	256.35
U.S.W.C.-U.S.E.C.	0	5	32	2.41	7.86	4.42	14.42	151.24	157.81	4.34	244.92
Subtotal	211	1,731	17,270	2.41	8.58	4.42	15.74	228.22	235.13	3.03	279.97
Roll-On Roll-Off											
Diverted Transits											
Canada E.C.-Oceania	1	31	108	2.41	7.77	4.42	14.26	240.87	247.36	2.69	239.11
Subtotal	1	31	108	2.41	7.77	4.42	14.24	240.87	247.36	2.69	239.11
Subtotal	213	1,762	17,378	2.41	8.57	4.42	15.72	228.44	235.35	3.02	279.24
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	15.27	16.34	6.96	20.00

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	1	30	69	2.41	1.27	4.42	2.33	22.15	23.21	4.78	31.82
C.A.W.C.-Africa	0	0	2	2.41	1.27	4.42	2.33	37.27	38.33	2.84	80.00
C.A.W.C.-Canada E.C.	0	4	9	2.41	1.27	4.42	2.33	10.23	11.29	10.35	23.86
C.A.W.C.-C.A.E.C.	14	85	536	2.41	1.27	4.42	2.33	8.68	9.74	12.19	28.70
C.A.W.C.-Europe	3	70	179	2.41	1.27	4.42	2.33	14.19	15.25	7.46	23.86
C.A.W.C.-U.S.E.C.	7	53	248	2.41	1.27	4.42	2.33	9.70	10.76	10.91	30.45
Canada E.C.-Asia	10	393	876	2.41	1.27	4.42	2.33	20.79	21.85	5.09	22.37
Canada W.C.-U.S.E.C.	5	253	617	2.41	1.27	4.24	2.26	11.42	12.42	8.74	21.15
C.A.E.C.-Asia	6	180	457	2.41	1.27	4.18	2.24	18.65	19.62	5.24	25.59
C.A.E.C.-C.A.W.C.	93	1,762	5,832	2.41	1.27	4.30	2.26	6.05	7.05	16.44	17.83
C.A.E.C.-S.A.W.C.	41	879	2,447	2.41	1.27	4.42	2.33	10.89	11.95	9.74	15.66
C.A.E.C.-U.S.W.C.	17	712	1,660	2.41	1.27	4.34	2.28	9.66	10.68	10.50	18.88
Europe-C.A.W.C.	12	54	208	2.41	1.27	4.42	2.33	20.41	21.47	5.18	36.30
Europe-U.S.W.C.	6	196	463	2.41	1.27	4.42	2.33	18.00	19.06	5.88	25.98
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.33	23.27	24.33	4.56	28.00
Oceania-U.S.E.C.	9	153	398	2.41	1.27	4.42	2.33	23.23	24.28	4.55	26.68
S.A.E.C.-Asia	67	14,147	24,657	2.41	1.27	3.71	1.95	11.24	11.93	6.08	14.70
S.A.E.C.-C.A.W.C.	85	4,342	10,822	2.41	1.26	3.87	2.02	8.63	9.39	8.82	9.39
S.A.W.C.-Canada E.C.	2	36	93	2.41	1.27	4.42	2.33	16.93	17.99	6.25	21.75
S.A.W.C.-C.A.E.C.	42	1,636	3,955	2.41	1.27	4.19	2.21	8.65	9.60	10.93	12.32
S.A.W.C.-Europe	12	106	258	2.41	1.27	4.42	2.33	22.79	23.85	4.65	24.13
S.A.W.C.-U.S.E.C.	47	1,758	4,225	2.41	1.27	4.41	2.32	10.31	11.36	10.23	15.73
U.S.E.C.-Asia	80	2,655	6,161	2.41	1.27	4.25	2.25	18.78	19.76	5.21	26.64

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	33	614	1,886	2.41	1.27	4.42	2.33	8.14	9.20	13.00	23.15
U.S.E.C.-Canada W.C.	1	4	69	2.41	1.27	4.42	2.33	15.19	16.25	6.97	28.84
U.S.E.C.-Oceania	6	192	467	2.41	1.27	4.42	2.33	21.58	22.64	4.90	24.75
U.S.E.C.-S.A.W.C.	8	147	383	2.41	1.27	4.42	2.33	12.12	13.18	8.73	18.87
U.S.E.C.-U.S.W.C.	30	877	2,231	2.41	1.27	4.37	2.31	12.30	13.34	8.46	25.53
U.S.W.C.-Africa	7	224	547	2.41	1.26	3.73	1.94	13.36	14.04	5.05	17.15
U.S.W.C.-Canada E.C.	1	21	49	2.41	1.27	4.42	2.33	16.19	17.25	6.53	27.84
U.S.W.C.-C.A.E.C.	8	301	761	2.41	1.26	4.13	2.17	9.64	10.54	9.34	18.60
U.S.W.C.-U.S.E.C.	8	226	611	2.41	1.27	4.22	2.22	11.50	12.46	8.31	23.92
Subtotal	661	32,110	71,179	2.41	1.27	4.01	2.11	11.37	12.20	7.30	16.37
Tankers											
Diverted Transits											
Europe-S.A.W.C.	2	52	124	2.41	1.27	4.42	2.33	19.11	20.17	5.53	19.97
S.A.E.C.-U.S.W.C.	49	1,967	2,339	2.41	1.26	4.12	2.18	14.91	15.82	6.11	14.66
U.S.W.C.-S.A.E.C.	2	87	121	2.41	1.27	4.42	2.33	15.37	16.43	6.90	15.48
Subtotal	53	2,106	2,584	2.41	1.26	4.14	2.17	15.03	15.95	6.12	14.83
Subtotal	715	34,216	73,763	2.41	1.27	4.02	2.11	11.59	12.43	7.21	16.27
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	33	1,703	2.41	29.09	4.42	53.41	392.51	416.83	6.20	459.78
Asia-U.S.E.C.	419	1,959	62,256	2.41	29.20	4.42	53.55	413.15	437.50	5.90	479.68

(Continued)

Table E-13. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2020, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-C.A.E.C.	1	1	103	2.41	28.71	4.42	52.65	257.39	281.33	9.30	407.18
C.A.E.C.-C.A.W.C.	4	1	558	2.41	29.22	4.42	53.59	263.22	287.59	9.26	385.00
C.A.E.C.-Oceania	1	0	143	2.41	29.22	4.42	53.59	409.22	433.59	5.96	448.00
Europe-Canada W.C.	5	11	992	2.41	30.90	4.42	56.57	368.26	393.94	6.97	430.05
Europe-U.S.W.C.	149	285	25,985	2.41	29.95	4.42	54.86	381.66	406.57	6.53	429.50
S.A.W.C.-C.A.E.C.	0	0	7	2.41	28.69	4.42	52.62	307.69	331.62	7.78	354.00
U.S.E.C.-Asia	25	114	4,127	2.41	29.67	4.42	53.80	392.19	416.32	6.15	474.71
Subtotal	615	2,405	95,874	2.41	29.43	4.42	53.98	407.77	432.19	5.99	472.90
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	4	2.41	29.13	4.42	53.47	453.31	477.65	5.37	435.60
Canada E.C.-Asia	0	1	10	2.41	29.22	4.42	53.59	437.22	461.59	5.57	425.00
U.S.E.C.-Oceania	7	18	1,026	2.41	29.22	4.42	53.59	408.22	432.59	5.97	423.00
Subtotal	8	19	1,040	2.41	29.22	4.42	53.59	410.00	434.37	5.94	423.22
Subtotal	623	2,424	96,914	2.41	29.43	4.42	53.97	407.79	432.20	5.99	472.52
Total Non-Diverting	12,732	315,251	1,064,707	2.41	1.83	4.39	3.33	44.99	46.57	3.51	54.46
Total Diverting	531	20,886	37,341	2.41	1.34	4.39	2.44	19.14	20.24	5.80	19.42

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 18 transits and 179803 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 1981 transits and 37003606 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATE, STATUS QUO SCENARIO, 2060

Table E-14. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,310	0	2,310	0.00	34,316	0	34,316	0.00	128,821	0	128,821	0.00
Dry Bulk Carriers	2,552	0	2,552	0.00	112,337	0	112,337	0.00	260,594	0	260,594	0.00
Chemical Tankers	1,183	0	1,183	0.00	32,247	0	32,247	0.00	74,191	0	74,191	0.00
Full Container Ships	1,124	374	1,498	24.97	21,117	6,943	28,061	24.74	119,423	48,440	167,862	28.86
General Cargo Ships	1,377	6	1,383	0.42	13,319	38	13,357	0.28	46,859	232	47,091	0.49
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,897	0	3,897	0.00	15,828	0	15,828	0.00	181,965	0	181,965	0.00
Roll-On Roll-Off	397	0	397	0.02	2,929	0	2,929	0.01	31,084	3	31,087	0.01
Tankers	266	0	266	0.00	6,016	0	6,016	0.00	16,526	0	16,526	0.00
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,615	1,982	112,596	1.76
Total	14,356	393	14,750	2.67	241,978	7,014	248,993	2.82	989,762	50,657	1,040,419	4.87

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 13 transits and 219227 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 934 transits and 22985287 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-15. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	57	0	57	0.00	0	0	0	0.00	2,756	0	2,756	0.00
Dry Bulk Carriers	319	0	319	0.00	0	0	0	0.00	24,997	0	24,997	0.00
Chemical Tankers	95	0	95	0.00	0	0	0	0.00	5,270	0	5,270	0.00
Full Container Ships	4	1	5	28.86	0	0	0	0.00	410	167	577	28.86
General Cargo Ships	221	1	222	0.49	0	0	0	0.00	4,790	24	4,813	0.49
Liquid Gas Carriers	65	0	65	0.00	0	0	0	0.00	3,415	0	3,415	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	954	0	954	0.00	0	0	0	0.00	34,136	0	34,136	0.00
Roll-On Roll-Off	56	0	56	0.01	0	0	0	0.00	2,777	0	2,777	0.01
Tankers	125	0	125	0.00	0	0	0	0.00	6,383	0	6,383	0.00
Vehicle Carriers	432	8	440	1.76	0	0	0	0.00	51,016	914	51,930	1.76
Total	2,379	10	2,389	0.43	0	0	0	0.00	137,277	1,104	138,381	0.80

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.41	93.05	94.60	1.66	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.43	97.19	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C	16	247	825	2.41	1.86	4.42	3.41	51.25	52.80	3.02	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.03	4.42	3.42	64.85	67.23	3.68	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.71	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,702	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	654	2.41	1.87	4.42	3.42	96.30	97.86	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.01	4.42	3.41	63.36	65.76	3.79	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.01	4.42	3.43	89.15	91.57	2.71	104.63
Europe-U.S.W.C.	36	1,115	2,809	2.41	1.85	4.42	3.40	82.34	83.88	1.87	107.84
Oceania-C.A.E.C.	10	99	485	2.41	0.97	4.42	3.43	93.87	96.33	2.62	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.58	73.14	2.17	76.57
S.A.W.C.-Canada E.C.	1	2	58	2.41	0.97	4.42	3.43	68.29	70.75	3.59	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,747	2.41	1.87	4.42	3.42	89.68	91.23	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,924	2.41	1.87	4.42	3.42	62.12	63.68	2.50	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.40	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.23	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,031	2.41	1.87	4.42	3.42	61.84	63.40	2.51	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.44	86.99	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.42	66.46	68.02	2.34	101.57
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.59	85.14	1.85	108.54
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.28	61.82	2.56	102.02
Subtotal	2,310	34,316	128,821	2.41	1.72	4.42	3.16	83.45	85.05	1.92	105.56
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	31	1,201	2,462	2.41	1.31	4.42	2.41	15.51	16.61	7.07	27.11

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
Africa-S.A.W.C.	10	313	757	2.41	1.31	4.42	2.41	18.34	19.44	5.98	26.14
C.A.W.C.-Africa	2	52	145	2.41	1.30	4.42	2.41	15.34	16.45	7.24	27.18
C.A.W.C.-C.A.E.C.	65	2,167	5,431	2.41	1.30	4.42	2.39	7.57	8.65	14.30	16.30
C.A.W.C.-U.S.E.C.	49	1,854	4,299	2.41	1.29	4.42	2.38	7.74	8.83	14.03	18.15
Canada W.C.-C.A.E.C.	9	270	761	2.41	1.31	4.42	2.40	12.66	13.75	8.63	21.54
Canada W.C.-Europe	325	14,976	34,411	2.41	1.26	4.42	2.32	15.62	16.67	6.75	21.21
Canada W.C.-U.S.E.C.	110	3,183	8,833	2.41	1.31	4.42	2.40	13.41	14.50	8.15	23.33
C.A.E.C.-Asia	23	808	1,821	2.41	1.31	4.42	2.41	18.34	19.44	5.98	23.38
C.A.E.C.-C.A.W.C.	52	1,650	4,121	2.41	1.31	4.42	2.41	7.91	9.01	13.85	16.83
C.A.E.C.-Canada W.C.	3	105	253	2.41	1.31	4.42	2.41	12.74	13.84	8.60	21.59
C.A.E.C.-U.S.W.C.	9	286	737	2.41	1.31	4.42	2.41	11.74	12.84	9.33	20.59
Europe-C.A.W.C.	54	1,627	4,259	2.41	1.31	4.42	2.41	12.74	13.84	8.60	22.38
Europe-U.S.W.C.	155	4,679	13,812	2.41	1.29	4.42	2.36	15.94	17.01	6.71	20.80
U.S.E.C.-Asia	1,239	64,706	144,857	2.41	1.25	4.42	2.29	14.89	15.93	6.98	22.61
U.S.E.C.-C.A.W.C.	400	14,003	32,248	2.41	1.31	4.42	2.41	7.94	9.04	13.82	18.73
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.31	4.42	2.41	11.74	12.84	9.33	22.38
U.S.W.C.-Canada E.C.	6	211	482	2.41	1.30	4.42	2.38	14.00	15.09	7.73	22.50
U.S.W.C.-C.A.E.C.	1	30	77	2.41	1.31	4.42	2.40	11.66	12.75	9.37	20.54
U.S.W.C.-U.S.E.C.	9	215	780	2.41	1.29	4.42	2.42	11.95	13.08	9.50	23.13
Subtotal	2,552	112,337	260,594	2.41	1.27	4.42	2.32	13.75	14.80	7.69	21.66
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.02	55.13	2.07	70.82
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.82	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.01	39.13	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.06	43.17	2.66	56.46
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.16	45.28	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.11	40.23	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.03	61.15	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.20	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,440	2.41	1.34	4.42	2.46	41.26	42.38	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.60	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.31	46.43	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.90	4.33	43.90
Subtotal	1,183	32,247	74,191	2.41	1.34	4.42	2.46	39.87	40.99	2.80	55.95
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	*,***.**	*,***.**	*,***.**	***.**	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.33	226.88	230.66	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.28	210.68	214.46	1.79	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.24	213.60	217.37	1.76	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.21	143.25	146.99	2.61	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.16	152.93	156.64	2.43	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.80	227.53	1.67	284.41

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	164	2,963	16,481	2.41	4.60	4.42	*,***.**	*,***.**	*,***.**	***.**	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.20	221.93	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	277	7,718	44,403	2.41	4.73	4.42	8.65	242.18	246.11	1.62	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.98	142.95	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.39	159.47	163.29	2.40	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.19	161.25	164.97	2.31	232.70
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	*,***.**	*,***.**	*,***.**	***.**	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.54	141.16	145.05	2.76	224.31
Subtotal	1,124	21,117	119,423	2.41	4.59	4.42	8.42	*,***.**	*,***.**	***.**	234.06
Full Container Ships											
Diverted Transits											
Asia-U.S.E.C. (low inv. cost)	211	4,208	36,530	2.41	4.74	4.42	8.70	241.68	245.63	1.64	245.26

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
U.S.W.C.-Europe	163	2,735	11,910	2.41	4.62	4.42	8.41	216.64	220.43	1.75	217.65
Subtotal	374	6,943	48,440	2.41	4.70	4.42	8.62	231.82	235.70	1.68	234.38
Subtotal	1,498	28,061	167,862	2.41	4.62	4.42	8.48	*,***.**	*,***.**	***.**	234.14
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-C.A.E.C.	127	1,501	5,893	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	0.69	4.42	2.54	37.44	39.29	4.93	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.64	9.72	10.90	12.17	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.68	30.85	3.97	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.60	27.74	28.93	4.32	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.67	12.26	13.48	9.91	74.92
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.61	31.72	32.91	3.77	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	0.78	4.42	2.60	35.76	37.57	5.07	71.10
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.66	8.51	9.72	14.18	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	0.76	4.42	2.57	21.92	23.74	8.27	34.74

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.56	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	68	680	2,981	2.41	1.39	4.42	2.55	33.84	35.01	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.70	62.17	63.43	2.02	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	1	6	27	2.41	1.43	4.42	2.61	57.48	58.66	2.06	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.67	23.90	25.12	5.11	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.58	25.31	26.48	4.64	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	0.69	4.42	2.54	37.69	39.53	4.90	52.66
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.10	60.90
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.62	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.53	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.60	44.83	46.01	2.63	69.85
Subtotal	1,377	13,319	46,859	2.41	1.21	4.42	2.21	30.30	31.59	4.27	46.46
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Diverted Transits (continued)											
Canada W.C.-Middle East	2	13	70	2.41	0.69	4.42	2.55	42.19	44.05	4.39	42.50
Subtotal	6	38	232	2.41	1.07	4.42	1.97	44.65	46.04	3.11	45.13
Subtotal	1,383	13,357	47,091	2.41	1.21	4.42	2.21	30.34	31.64	4.26	46.45
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	9.13	124.20	128.66	3.59	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	7.18	26.92	30.31	12.58	81.65
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.62	75.12	78.12	3.99	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.14	93.99	97.27	3.49	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.46	48.07	8.12	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried: Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Passenger Ships (continued)											
Non-Diverted Transits (continued)											
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.51	154.50	158.06	2.31	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.53	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.35	144.93	148.35	2.36	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Europe-S.A.W.C.	295	278	13,807	2.41	3.88	4.42	7.14	119.82	123.09	2.72	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.37	160.44	163.83	2.11	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.70	4.22	107.85
S.A.W.C.-Europe	1,101	6,815	50,210	2.41	3.89	4.42	7.14	119.89	123.14	2.71	127.15
S.A.W.C.-U.S.E.C.	808	3,821	38,022	2.41	3.88	4.42	7.11	82.93	86.16	3.89	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.12	139.10	142.35	2.33	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.08	82.19	85.41	3.91	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.32	134.44	137.80	2.50	190.92
Subtotal	3,897	15,828	181,965	2.41	3.88	4.42	7.12	105.40	108.64	3.08	134.40
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	16.57	299.18	306.40	2.41	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.48	236.82	243.38	2.77	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.52	248.81	255.38	2.64	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.91	355.30	363.91	2.42	370.17

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.69	239.87	248.37	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	16.87	167.55	174.70	4.27	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.95	297.89	305.21	2.45	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.23	160.82	167.30	4.03	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.24	212.68	219.15	3.04	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.46	166.02	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.38	247.34	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00
Subtotal	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00
Subtotal	397	2,929	31,087	2.41	8.68	4.42	15.92	240.38	247.34	2.90	299.62

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.19	12.24	9.46	37.36
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.34	13.77	14.82	7.69	26.23
C.A.E.C.-C.A.W.C.	46	750	2,551	2.41	1.27	4.42	2.32	7.37	8.43	14.32	22.70
C.A.E.C.-U.S.W.C.	5	228	545	2.41	1.28	4.42	2.34	11.94	13.00	8.90	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.03	29.09	3.78	30.35
U.S.E.C.-Asia	92	2,946	7,215	2.41	1.28	4.42	2.35	22.73	23.80	4.71	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-U.S.W.C.	21	601	1,559	2.41	1.27	4.42	2.33	14.06	15.12	7.53	30.95
U.S.W.C.-C.A.E.C.	3	96	269	2.41	1.30	4.42	2.38	11.94	13.02	9.07	23.13
U.S.W.C.-U.S.E.C.	4	102	294	2.41	1.29	4.42	2.36	13.38	14.45	8.02	29.10
Subtotal	266	6,016	16,526	2.41	1.28	4.42	2.34	18.04	19.10	5.90	30.23
Vehicle Carriers											
Non-Diverted Transits											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.41	417.19	441.51	5.83	496.39

(Continued)

Table E-16. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, Status Quo Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-U.S.E.C.	481	2,251	71,524	2.41	29.20	4.42	53.55	439.54	463.89	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.65	266.35	290.29	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.57	386.38	412.05	6.64	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.86	402.97	427.88	6.18	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	53.80	415.81	439.94	5.80	510.17
Subtotal	711	2,799	110,615	2.41	29.43	4.42	53.97	433.06	457.47	5.64	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.46	484.21	508.53	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.10	457.51	5.64	508.34
Total Non-Diverting	14,356	241,978	989,762	2.41	2.11	4.42	3.87	*,***.**	*,***.**	***.**	74.95
Total Diverting	393	7,014	50,657	2.41	4.77	4.42	8.75	231.75	235.72	1.71	234.38

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 13 transits and 219227 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 934 transits and 22985287 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, 150,000-DWT SCENARIO, 2060

Table E-17. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,459	6	2,465	0.23	36,883	113	36,996	0.31	137,143	297	137,440	0.22
Dry Bulk Carriers	4,628	416	5,044	8.26	257,525	16,674	274,199	6.08	567,575	30,934	598,509	5.17
Chemical Tankers	1,223	1	1,224	0.10	32,940	48	32,988	0.15	76,249	104	76,353	0.14
Full Container Ships	1,438	33	1,470	2.24	31,321	465	31,786	1.46	196,721	1,704	198,425	0.86
General Cargo Ships	1,458	6	1,464	0.43	13,946	45	13,991	0.32	50,197	240	50,438	0.48
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,937	46	3,983	1.15	15,968	292	16,260	1.80	183,600	926	184,527	0.50
Roll-On Roll-Off	397	3	400	0.70	2,929	61	2,990	2.05	31,084	188	31,272	0.60
Tankers	394	195	589	33.12	9,634	18,187	27,821	65.37	25,611	42,174	67,785	62.22
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,615	1,982	112,596	1.76
Total	17,184	720	17,904	4.02	405,015	35,918	440,934	8.15	1,398,481	78,548	1,477,030	5.32

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2536 transits and 56215466 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-18. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	67	0	67	0.22	0	0	0	0.00	3,250	7	3,257	0.22
Dry Bulk Carriers	325	18	343	5.17	0	0	0	0.00	20,719	1,130	21,849	5.17
Chemical Tankers	127	0	127	0.14	0	0	0	0.00	6,884	10	6,893	0.14
Full Container Ships	6	0	6	0.86	0	0	0	0.00	516	4	521	0.86
General Cargo Ships	273	1	274	0.48	0	0	0	0.00	6,018	29	6,047	0.48
Liquid Gas Carriers	958	0	958	0.00	0	0	0	0.00	97,360	0	97,360	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	1,064	5	1,069	0.50	0	0	0	0.00	37,778	190	37,968	0.50
Roll-On Roll-Off	58	0	58	0.60	0	0	0	0.00	3,411	21	3,432	0.60
Tankers	115	190	305	62.22	0	0	0	0.00	12,083	19,900	31,983	62.22
Vehicle Carriers	433	8	441	1.76	0	0	0	0.00	51,169	917	52,086	1.76
Total	3,476	223	3,699	6.02	0	0	0	0.00	240,516	22,207	262,723	8.45

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.41	93.05	94.60	1.66	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.43	97.19	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.41	51.25	52.80	3.02	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.03	4.42	3.42	64.85	67.23	3.68	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-Asia	31	815	2,156	2.41	1.85	4.42	3.40	95.14	96.69	1.63	98.29
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.71	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,702	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	654	2.41	1.87	4.42	3.42	96.30	97.86	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.01	4.42	3.41	63.36	65.76	3.79	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.01	4.42	3.43	89.15	91.57	2.71	104.63
Europe-U.S.W.C.	36	1,115	2,809	2.41	1.85	4.42	3.40	82.34	83.88	1.87	107.84
Oceania-C.A.E.C.	10	99	485	2.41	0.97	4.42	3.43	93.87	96.33	2.62	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.58	73.14	2.17	76.57
S.A.E.C.-Canada W.C.	25	335	1,304	2.41	1.01	4.42	3.42	91.94	94.35	2.63	98.78
S.A.E.C.-U.S.W.C.	84	1,260	4,434	2.41	1.87	4.42	3.42	78.16	79.71	1.99	80.87
S.A.W.C.-Africa	3	52	136	2.41	1.87	4.42	3.43	82.90	84.46	1.88	120.48
S.A.W.C.-Canada E.C.	1	2	58	2.41	0.97	4.42	3.43	68.29	70.75	3.59	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,747	2.41	1.87	4.42	3.42	89.68	91.23	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,924	2.41	1.87	4.42	3.42	62.12	63.68	2.50	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.40	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.23	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,031	2.41	1.87	4.42	3.42	61.84	63.40	2.51	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.44	86.99	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.42	66.46	68.02	2.34	101.57

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.59	85.14	1.85	108.54
U.S.W.C.-S.A.E.C.	6	104	293	2.41	1.87	4.42	3.43	79.98	81.54	1.95	82.98
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.28	61.82	2.56	102.02
Subtotal	2,459	36,883	137,143	2.41	1.72	4.42	3.15	83.59	85.20	1.92	104.46
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	2	25	71	2.41	1.87	4.42	3.43	107.65	109.21	1.45	108.63
Oceania-Canada E.C.	4	88	226	2.41	1.85	4.42	3.40	97.85	99.40	1.58	98.00
Subtotal	6	113	297	2.41	1.86	4.42	3.40	100.04	101.59	1.55	100.37
Subtotal	2,465	36,996	137,440	2.41	1.72	4.42	3.15	83.64	85.25	1.92	104.44
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	29	1,201	2,443	2.41	1.30	4.42	2.39	15.34	16.43	7.09	27.11
Africa-Canada W.C.	156	7,645	14,988	2.41	1.28	4.42	2.34	17.82	18.88	5.98	19.99
Africa-S.A.W.C.	9	313	752	2.41	1.30	4.42	2.39	18.13	19.22	6.00	26.14
Africa-U.S.W.C.	10	297	978	2.41	1.27	4.42	2.32	16.17	17.22	6.48	19.94
Asia-C.A.E.C.	29	527	2,527	2.41	1.30	4.42	2.43	18.87	20.00	6.00	24.40
Asia-U.S.E.C.	386	12,134	38,319	2.41	1.27	4.42	2.33	16.62	17.68	6.40	23.16
C.A.W.C.-Africa	2	52	144	2.41	1.29	4.42	2.40	15.33	16.44	7.24	27.18
C.A.W.C.-C.A.E.C.	63	2,167	5,401	2.41	1.30	4.42	2.37	7.56	8.64	14.21	16.30
C.A.W.C.-Europe	19	626	1,741	2.41	1.28	4.42	2.37	12.21	13.29	8.86	18.57

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	47	1,854	4,275	2.41	1.29	4.42	2.37	7.68	8.77	14.08	18.15
Canada E.C.-Asia	120	6,018	13,741	2.41	1.19	4.42	2.20	19.24	20.25	5.23	20.41
Canada E.C.-S.A.W.C.	12	426	1,109	2.41	1.29	4.42	2.37	12.86	13.94	8.41	15.56
Canada W.C.-Africa	175	7,689	17,204	2.41	1.28	4.42	2.35	17.50	18.57	6.11	19.57
Canada W.C.-C.A.E.C.	9	270	757	2.41	1.30	4.42	2.39	12.59	13.68	8.63	21.54
Canada W.C.-Europe	304	15,944	35,601	2.41	1.22	4.42	2.25	16.31	17.33	6.27	21.21
Canada W.C.-U.S.E.C.	105	3,183	8,784	2.41	1.30	4.42	2.39	13.34	14.43	8.15	23.33
C.A.E.C.-Asia	22	808	1,807	2.41	1.30	4.42	2.39	18.13	19.22	6.00	23.38
C.A.E.C.-C.A.W.C.	49	1,650	4,089	2.41	1.30	4.42	2.39	7.82	8.91	13.90	16.83
C.A.E.C.-Canada W.C.	3	105	251	2.41	1.30	4.42	2.39	12.61	13.70	8.62	21.59
C.A.E.C.-Oceania	1	22	69	2.41	1.30	4.42	2.39	19.89	20.98	5.47	22.59
C.A.E.C.-S.A.W.C.	24	734	1,978	2.41	1.30	4.42	2.39	10.61	11.70	10.25	14.07
C.A.E.C.-U.S.W.C.	9	286	731	2.41	1.30	4.42	2.39	11.61	12.70	9.37	20.59
Europe-C.A.W.C.	51	1,627	4,226	2.41	1.30	4.42	2.39	12.61	13.70	8.62	22.38
Europe-Canada W.C.	12	408	1,158	2.41	1.28	4.42	2.33	16.57	17.62	6.36	22.07
Europe-U.S.W.C.	142	4,679	13,586	2.41	1.28	4.42	2.33	15.65	16.70	6.74	20.80
Middle East-S.A.W.C.	2	104	231	2.41	1.25	4.42	2.28	14.08	15.11	7.38	15.83
Oceania-C.A.E.C.	14	469	1,196	2.41	1.30	4.42	2.39	19.09	20.18	5.69	22.54
Oceania-U.S.E.C.	36	2,218	4,934	2.41	1.23	4.42	2.25	15.65	16.67	6.53	17.42
S.A.E.C.-Asia	60	2,563	5,777	2.41	1.28	4.42	2.34	16.76	17.82	6.34	18.82
S.A.W.C.-Africa	5	296	568	2.41	1.25	4.42	2.29	14.34	15.39	7.26	21.40
S.A.W.C.-Canada E.C.	1	24	50	2.41	1.30	4.42	2.39	13.34	14.43	8.15	16.04
S.A.W.C.-C.A.E.C.	12	277	969	2.41	1.30	4.42	2.39	10.59	11.68	10.26	14.04

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-U.S.E.C.	91	3,585	7,710	2.41	1.30	4.42	2.38	11.28	12.36	9.60	15.48
U.S.E.C.-Asia	1,753	139,874	282,862	2.41	1.10	4.42	2.02	17.74	18.66	5.18	22.61
U.S.E.C.-C.A.W.C.	375	14,003	32,163	2.41	1.30	4.42	2.39	7.80	8.89	13.96	18.73
U.S.E.C.-Oceania	23	909	2,047	2.41	1.29	4.42	2.37	19.26	20.34	5.61	20.97
U.S.E.C.-S.A.W.C.	82	2,944	7,057	2.41	1.30	4.42	2.38	11.43	12.52	9.46	15.60
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.30	4.42	2.39	11.61	12.70	9.36	22.38
U.S.W.C.-Africa	198	9,018	21,771	2.41	1.26	4.42	2.30	15.70	16.75	6.67	19.37
U.S.W.C.-Canada E.C.	5	211	479	2.41	1.29	4.42	2.37	13.93	15.01	7.72	22.50
U.S.W.C.-C.A.E.C.	1	30	76	2.41	1.30	4.42	2.39	11.59	12.68	9.38	20.54
U.S.W.C.-Europe	168	9,505	21,131	2.41	1.24	4.42	2.27	14.02	15.05	7.37	18.82
U.S.W.C.-U.S.E.C.	8	215	775	2.41	1.28	4.42	2.42	11.92	13.06	9.54	23.13
Venezuela-Asia	5	615	1,071	2.41	0.99	4.42	1.81	19.49	20.31	4.23	23.70
Subtotal	4,628	257,525	567,575	2.41	1.18	4.42	2.16	16.27	17.25	6.03	21.42
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	15	695	1,732	2.41	1.25	4.42	2.30	17.56	18.60	5.96	18.43
Asia-S.A.E.C.	5	172	202	2.41	1.30	4.42	2.39	21.84	22.93	4.98	21.54
C.A.W.C.-S.A.E.C.	16	268	1,070	2.41	1.30	4.42	2.39	11.59	12.68	9.38	12.04
Canada E.C.-Oceania	7	132	553	2.41	1.29	4.42	2.40	21.11	22.22	5.28	21.80
Canada W.C.-S.A.E.C.	31	1,820	3,401	2.41	1.13	4.42	2.08	11.80	12.75	8.05	12.24
Columbia-Asia	3	352	290	2.41	9.87	4.42	18.11	27.57	35.81	29.87	25.50
Europe-S.A.W.C.	16	514	781	2.41	1.30	4.42	2.39	16.13	17.22	6.74	16.07

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	23	859	1,782	2.41	1.30	4.42	2.39	20.84	21.93	5.22	21.54
S.A.E.C.-C.A.W.C.	12	441	777	2.41	1.30	4.42	2.39	11.61	12.70	9.36	12.07
S.A.E.C.-Canada W.C.	3	97	247	2.41	1.30	4.42	2.39	17.13	18.22	6.35	17.83
S.A.E.C.-U.S.W.C.	34	1,722	2,129	2.41	1.23	4.42	2.27	13.30	14.33	7.77	13.07
S.A.W.C.-Europe	238	9,167	17,460	2.41	1.29	4.42	2.37	15.51	16.59	6.93	16.02
U.S.W.C.-S.A.E.C.	13	436	510	2.41	1.30	4.42	2.39	16.09	17.18	6.75	15.79
Subtotal	416	16,674	30,934	2.41	1.28	4.42	2.36	15.48	16.69	7.81	15.83
Subtotal	5,044	274,199	598,509	2.41	1.18	4.42	2.17	16.22	17.21	6.14	21.08
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.02	55.13	2.07	70.82
Asia-S.A.E.C.	4	23	259	2.41	1.34	4.42	2.46	50.34	51.46	2.22	52.00
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.82	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.01	39.13	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-S.A.W.C.	9	98	222	2.41	1.34	4.42	2.46	58.65	59.77	1.90	62.50
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.06	43.17	2.66	56.46
Oceania-U.S.E.C.	17	494	1,376	2.41	1.34	4.42	2.46	40.62	41.74	2.75	45.24
S.A.E.C.-C.A.W.C.	10	79	201	2.41	1.34	4.42	2.46	50.33	51.45	2.22	54.86
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.16	45.28	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.11	40.23	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.03	61.15	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.20	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,440	2.41	1.34	4.42	2.46	41.26	42.38	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.60	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.31	46.43	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.90	4.33	43.90
Subtotal	1,223	32,940	76,249	2.41	1.34	4.42	2.46	39.97	41.09	2.80	55.80
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	1	43	91	2.41	1.34	4.42	2.46	30.34	31.46	3.68	31.00

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	6	13	2.41	1.34	4.42	2.46	38.34	39.46	2.92	39.00
Subtotal	1	48	104	2.41	1.34	4.42	2.46	31.27	32.39	3.57	31.93
Subtotal	1,224	32,988	76,353	2.41	1.34	4.42	2.46	39.96	41.07	2.80	55.77
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
Asia-U.S.E.C. (low inv. cost)	186	5,208	43,658	2.41	4.92	4.42	9.02	231.47	235.57	1.77	245.26
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	*,***.**	*,***.**	*,***.**	***.**	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.33	226.88	230.66	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.28	210.68	214.46	1.79	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.24	213.60	217.37	1.76	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.21	143.25	146.99	2.61	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.16	152.93	156.64	2.43	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.80	227.53	1.67	284.41
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	140	3,123	17,807	2.41	4.67	4.42	*,***.**	*,***.**	*,***.**	***.**	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.20	221.93	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	234	8,718	51,202	2.41	4.88	4.42	8.96	233.14	237.21	1.75	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.98	142.95	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.39	159.47	163.29	2.40	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.19	161.25	164.97	2.31	232.70
U.S.W.C.-Europe	196	3,835	25,515	2.41	4.68	4.42	8.53	208.77	212.62	1.84	217.65
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	*,***.**	*,***.**	*,***.**	***.**	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.54	141.16	145.05	2.76	224.31
Subtotal	1,438	31,321	196,721	2.41	4.72	4.42	8.66	*,***.**	*,***.**	***.**	234.22
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	23	286	1,594	2.41	4.47	4.42	8.21	257.66	261.39	1.45	260.84

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	10	177	108	2.41	4.47	4.42	8.19	251.63	255.36	1.48	248.23
Oceania-S.A.E.C.	0	2	1	2.41	4.49	4.42	8.23	241.87	245.61	1.55	238.38
Subtotal	33	465	1,704	2.41	4.47	4.42	8.20	255.29	259.02	1.46	255.93
Subtotal	1,470	31,786	198,425	2.41	4.72	4.42	8.65	*,***.**	*,***.**	***.**	234.53
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-Canada E.C.	0	3	8	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Asia-C.A.E.C.	127	1,501	5,893	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	0.69	4.42	2.54	37.44	39.29	4.93	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.64	9.72	10.90	12.17	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.68	30.85	3.97	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.60	27.74	28.93	4.32	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.67	12.26	13.48	9.91	74.92
Canada E.C.-Asia	10	25	473	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada E.C.-S.A.W.C.	16	148	760	2.41	0.69	4.42	2.55	27.39	29.25	6.76	35.55
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.61	31.72	32.91	3.77	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	0.78	4.42	2.60	35.76	37.57	5.07	71.10

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.66	8.51	9.72	14.18	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	0.76	4.42	2.57	21.92	23.74	8.27	34.74
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.56	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	73	734	3,216	2.41	1.39	4.42	2.55	33.84	35.01	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.70	62.17	63.43	2.02	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Middle East-U.S.W.C.	7	19	315	2.41	1.39	4.42	2.55	40.94	42.10	2.83	47.45
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	2	9	41	2.41	1.43	4.42	2.61	57.48	58.66	2.06	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.E.C.-Canada W.C.	0	2	13	2.41	1.39	4.42	2.55	35.04	36.20	3.30	38.55
S.A.E.C.-U.S.W.C.	17	77	647	2.41	1.40	4.42	2.58	38.18	39.36	3.09	40.19
S.A.W.C.-Africa	8	149	350	2.41	1.39	4.42	2.55	34.04	35.20	3.40	53.35
S.A.W.C.-Canada E.C.	1	14	39	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.67	23.90	25.12	5.11	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-Middle East	2	25	79	2.41	1.39	4.42	2.55	35.99	37.15	3.22	42.50
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.58	25.31	26.48	4.64	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	0.69	4.42	2.54	37.69	39.53	4.90	52.66

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.10	60.90
U.S.E.C.-Oceania	6	89	270	2.41	1.39	4.42	2.55	40.94	42.10	2.83	46.45
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.62	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.53	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.60	44.83	46.01	2.63	69.85
U.S.W.C.-S.A.E.C.	8	19	136	2.41	1.45	4.42	2.68	53.26	54.49	2.31	59.12
Subtotal	1,458	13,946	50,197	2.41	1.20	4.42	2.20	30.52	31.81	4.24	46.34
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45
Canada E.C.-Oceania	0	7	9	2.41	1.39	4.42	2.55	47.84	49.00	2.42	47.45
Canada W.C.-Middle East	2	13	70	2.41	0.69	4.42	2.55	42.19	44.05	4.39	42.50
Subtotal	6	45	240	2.41	1.09	4.42	2.00	45.15	46.50	3.00	45.49
Subtotal	1,464	13,991	50,438	2.41	1.20	4.42	2.20	30.57	31.86	4.24	46.34
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	9.13	124.20	128.66	3.59	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	7.18	26.92	30.31	12.58	81.65

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.62	75.12	78.12	3.99	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.14	93.99	97.27	3.49	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.46	48.07	8.12	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.51	154.50	158.06	2.31	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Asia-S.A.E.C.	7	5	260	2.41	4.00	4.42	7.34	180.00	183.34	1.85	184.20
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.53	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.35	144.93	148.35	2.36	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40
Europe-S.A.W.C.	295	278	13,807	2.41	3.88	4.42	7.14	119.82	123.09	2.72	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.37	160.44	163.83	2.11	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-Africa	27	111	1,124	2.41	3.94	4.42	7.26	130.07	133.39	2.55	205.85

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.70	4.22	107.85
S.A.W.C.-Europe	1,101	6,815	50,210	2.41	3.89	4.42	7.14	119.89	123.14	2.71	127.15
S.A.W.C.-Middle East	5	18	179	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
S.A.W.C.-U.S.E.C.	808	3,821	38,022	2.41	3.88	4.42	7.11	82.93	86.16	3.89	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.12	139.10	142.35	2.33	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.08	82.19	85.41	3.91	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.32	134.44	137.80	2.50	190.92
U.S.W.C.-S.A.E.C.	2	6	72	2.41	3.98	4.42	7.42	131.22	134.66	2.62	135.82
Subtotal	3,937	15,968	183,600	2.41	3.88	4.42	7.12	105.64	108.89	3.08	134.95
Refrigerated Ships											
Diverted Transits											
Africa-Asia	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	3,983	16,260	184,527	2.41	3.88	4.42	7.12	106.86	110.11	3.04	135.63
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	16.57	299.18	306.40	2.41	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.48	236.82	243.38	2.77	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.52	248.81	255.38	2.64	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.91	355.30	363.91	2.42	370.17
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.69	239.87	248.37	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	16.87	167.55	174.70	4.27	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.95	297.89	305.21	2.45	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.23	160.82	167.30	4.03	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.24	212.68	219.15	3.04	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.46	166.02	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.38	247.34	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Diverted Transits (continued)											
Canada E.C.-Oceania	3	61	184	2.41	7.77	4.42	14.26	251.48	257.97	2.58	249.02
Subtotal	3	61	188	2.41	7.78	4.42	14.26	251.23	257.73	2.59	248.78
Subtotal	400	2,990	31,272	2.41	8.67	4.42	15.90	240.61	247.56	2.89	298.58
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	18.27	19.34	5.81	24.00
Asia-U.S.E.C.	3	77	178	2.41	1.27	4.42	2.33	27.11	28.17	3.90	38.76
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.19	12.24	9.46	37.36
Canada E.C.-Asia	18	707	1,578	2.41	1.27	4.42	2.33	25.06	26.12	4.22	27.21
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.34	13.77	14.82	7.69	26.23
C.A.E.C.-Asia	5	141	390	2.41	1.29	4.42	2.35	22.38	23.44	4.74	31.40
C.A.E.C.-C.A.W.C.	45	750	2,550	2.41	1.27	4.42	2.32	7.37	8.42	14.32	22.70
C.A.E.C.-S.A.W.C.	46	887	2,462	2.41	1.27	4.42	2.33	13.34	14.40	7.93	20.04
C.A.E.C.-U.S.W.C.	5	228	541	2.41	1.27	4.42	2.32	11.93	12.99	8.86	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-S.A.W.C.	4	82	194	2.41	1.27	4.42	2.33	23.35	24.41	4.53	25.18
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
Oceania-U.S.E.C.	9	162	422	2.41	1.27	4.42	2.33	28.05	29.11	3.77	32.60

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Canada E.C.	1	14	36	2.41	1.27	4.42	2.33	20.46	21.52	5.17	27.25
S.A.W.C.-C.A.E.C.	15	557	1,376	2.41	1.27	4.42	2.33	10.99	12.05	9.63	15.42
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.03	29.09	3.78	30.35
S.A.W.C.-U.S.E.C.	17	607	1,461	2.41	1.27	4.42	2.33	11.70	12.76	9.04	18.51
U.S.E.C.-Asia	90	2,946	7,114	2.41	1.27	4.42	2.33	22.71	23.77	4.66	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-S.A.W.C.	3	49	128	2.41	1.27	4.42	2.33	13.62	14.68	7.77	21.94
U.S.E.C.-U.S.W.C.	21	601	1,551	2.41	1.27	4.42	2.33	14.06	15.12	7.52	30.95
U.S.W.C.-Africa	10	334	984	2.41	1.26	4.42	2.31	16.39	17.44	6.41	20.19
U.S.W.C.-C.A.E.C.	3	96	262	2.41	1.26	4.42	2.32	11.90	12.96	8.86	23.13
U.S.W.C.-U.S.E.C.	4	102	289	2.41	1.27	4.42	2.32	13.36	14.41	7.91	29.10
Subtotal	394	9,634	25,611	2.41	1.27	4.42	2.33	17.58	18.64	6.02	27.16
Tankers											
Diverted Transits											
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.29	1.27	2.29	79.73	0.48
S.A.E.C.-Asia	100	14,050	31,763	2.41	1.27	4.42	2.32	15.30	16.35	6.90	16.31
S.A.E.C.-C.A.W.C.	68	3,130	8,802	2.41	1.26	4.42	2.32	10.88	11.94	9.68	11.68
S.A.E.C.-U.S.W.C.	27	978	1,569	2.41	1.27	4.42	2.32	18.66	19.71	5.66	18.82
U.S.W.C.-S.A.E.C.	1	29	40	2.41	1.27	4.42	2.33	18.79	19.85	5.64	18.90
Subtotal	195	18,187	42,174	2.41	1.27	4.42	2.32	14.72	15.78	7.17	15.65
Subtotal	589	27,821	67,785	2.41	1.27	4.42	2.32	15.71	16.77	6.72	19.64

(Continued)

Table E-19. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 150,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.41	417.19	441.51	5.83	496.39
Asia-U.S.E.C.	481	2,251	71,524	2.41	29.20	4.42	53.55	439.54	463.89	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.65	266.35	290.29	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.57	386.38	412.05	6.64	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.86	402.97	427.88	6.18	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	53.80	415.81	439.94	5.80	510.17
Subtotal	711	2,799	110,615	2.41	29.43	4.42	53.97	433.06	457.47	5.64	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.46	484.21	508.53	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.10	457.51	5.64	508.34
Total Non-Diverting	17,184	405,015	1,398,481	2.41	1.79	4.42	3.29	*,***.**	*,***.**	***.**	59.28
Total Diverting	720	35,918	78,548	2.41	1.36	4.42	2.49	20.60	21.81	5.89	21.25

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2536 transits and 56215466 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, 200,000-DWT SCENARIO, 2060

Table E-20. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,459	6	2,465	0.23	36,883	113	36,996	0.31	137,143	297	137,440	0.22
Dry Bulk Carriers	4,515	471	4,986	9.44	260,009	24,956	284,965	8.76	599,991	34,530	634,521	5.44
Chemical Tankers	1,223	1	1,224	0.10	32,940	48	32,988	0.15	76,249	104	76,353	0.14
Full Container Ships	1,438	33	1,470	2.24	31,321	465	31,786	1.46	196,721	1,704	198,425	0.86
General Cargo Ships	1,458	6	1,464	0.43	13,946	45	13,991	0.32	50,197	240	50,438	0.48
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,937	46	3,983	1.15	15,968	292	16,260	1.80	183,600	926	184,527	0.50
Roll-On Roll-Off	397	3	400	0.70	2,929	61	2,990	2.05	31,084	188	31,272	0.60
Tankers	471	95	567	16.79	23,684	4,137	27,821	14.87	55,340	10,411	65,751	15.83
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,615	1,982	112,596	1.76
Total	17,148	674	17,822	3.78	421,549	30,150	451,699	6.67	1,460,625	50,382	1,511,007	3.33

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-21. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	67	0	67	0.22	0	0	0	0.00	3,250	7	3,257	0.22
Dry Bulk Carriers	388	22	410	5.44	0	0	0	0.00	35,934	2,067	38,002	5.44
Chemical Tankers	127	0	127	0.14	0	0	0	0.00	6,884	10	6,893	0.14
Full Container Ships	6	0	6	0.86	0	0	0	0.00	516	4	521	0.86
General Cargo Ships	273	1	274	0.48	0	0	0	0.00	6,018	29	6,047	0.48
Liquid Gas Carriers	958	0	958	0.00	0	0	0	0.00	97,360	0	97,360	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	1,064	5	1,069	0.50	0	0	0	0.00	37,778	190	37,968	0.50
Roll-On Roll-Off	58	0	58	0.60	0	0	0	0.00	3,411	21	3,432	0.60
Tankers	243	46	289	15.83	0	0	0	0.00	27,021	5,082	32,103	15.83
Vehicle Carriers	433	8	441	1.76	0	0	0	0.00	51,169	917	52,086	1.76
Total	3,667	83	3,750	2.22	0	0	0	0.00	270,669	8,327	278,996	2.98

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.41	93.05	94.60	1.66	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.43	97.19	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.41	51.25	52.80	3.02	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.03	4.42	3.42	64.85	67.23	3.68	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-Asia	31	815	2,156	2.41	1.85	4.42	3.40	95.14	96.69	1.63	98.29
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.71	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,702	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	654	2.41	1.87	4.42	3.42	96.30	97.86	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.01	4.42	3.41	63.36	65.76	3.79	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	102	1,504	9,392	2.41	1.01	4.42	3.43	89.15	91.57	2.71	104.63
Europe-U.S.W.C.	36	1,115	2,809	2.41	1.85	4.42	3.40	82.34	83.88	1.87	107.84
Oceania-C.A.E.C.	10	99	485	2.41	0.97	4.42	3.43	93.87	96.33	2.62	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.58	73.14	2.17	76.57
S.A.E.C.-Canada W.C.	25	335	1,304	2.41	1.01	4.42	3.42	91.94	94.35	2.63	98.78
S.A.E.C.-U.S.W.C.	84	1,260	4,434	2.41	1.87	4.42	3.42	78.16	79.71	1.99	80.87
S.A.W.C.-Africa	3	52	136	2.41	1.87	4.42	3.43	82.90	84.46	1.88	120.48
S.A.W.C.-Canada E.C.	1	2	58	2.41	0.97	4.42	3.43	68.29	70.75	3.59	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,747	2.41	1.87	4.42	3.42	89.68	91.23	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,924	2.41	1.87	4.42	3.42	62.12	63.68	2.50	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.40	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.23	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,031	2.41	1.87	4.42	3.42	61.84	63.40	2.51	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.44	86.99	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.42	66.46	68.02	2.34	101.57

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.59	85.14	1.85	108.54
U.S.W.C.-S.A.E.C.	6	104	293	2.41	1.87	4.42	3.43	79.98	81.54	1.95	82.98
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.28	61.82	2.56	102.02
Subtotal	2,459	36,883	137,143	2.41	1.72	4.42	3.15	83.59	85.20	1.92	104.46
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	2	25	71	2.41	1.87	4.42	3.43	107.65	109.21	1.45	108.63
Oceania-Canada E.C.	4	88	226	2.41	1.85	4.42	3.40	97.85	99.40	1.58	98.00
Subtotal	6	113	297	2.41	1.86	4.42	3.40	100.04	101.59	1.55	100.37
Subtotal	2,465	36,996	137,440	2.41	1.72	4.42	3.15	83.64	85.25	1.92	104.44
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	29	1,201	2,443	2.41	1.30	4.42	2.39	15.34	16.43	7.09	27.11
Africa-Canada W.C.	156	7,645	14,988	2.41	1.28	4.42	2.34	17.82	18.88	5.98	19.99
Africa-S.A.W.C.	9	313	752	2.41	1.30	4.42	2.39	18.13	19.22	6.00	26.14
Africa-U.S.W.C.	10	297	978	2.41	1.27	4.42	2.32	16.17	17.22	6.48	19.94
Asia-C.A.E.C.	29	527	2,527	2.41	1.30	4.42	2.43	18.87	20.00	6.00	24.40
Asia-U.S.E.C.	386	12,134	38,319	2.41	1.27	4.42	2.33	16.62	17.68	6.40	23.16
C.A.W.C.-Africa	2	52	144	2.41	1.29	4.42	2.40	15.33	16.44	7.24	27.18
C.A.W.C.-C.A.E.C.	63	2,167	5,401	2.41	1.30	4.42	2.37	7.56	8.64	14.21	16.30
C.A.W.C.-Europe	19	626	1,741	2.41	1.28	4.42	2.37	12.21	13.29	8.86	18.57

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	47	1,854	4,275	2.41	1.29	4.42	2.37	7.68	8.77	14.08	18.15
Canada E.C.-Asia	129	7,535	17,909	2.41	1.22	4.42	2.25	18.78	19.81	5.48	20.41
Canada E.C.-S.A.W.C.	12	426	1,109	2.41	1.29	4.42	2.37	12.86	13.94	8.41	15.56
Canada W.C.-Africa	175	7,689	17,204	2.41	1.28	4.42	2.35	17.50	18.57	6.11	19.57
Canada W.C.-C.A.E.C.	9	270	757	2.41	1.30	4.42	2.39	12.59	13.68	8.63	21.54
Canada W.C.-Europe	301	15,944	36,215	2.41	1.24	4.42	2.28	16.15	17.18	6.44	21.21
Canada W.C.-U.S.E.C.	105	3,183	8,784	2.41	1.30	4.42	2.39	13.34	14.43	8.15	23.33
C.A.E.C.-Asia	22	808	1,807	2.41	1.30	4.42	2.39	18.13	19.22	6.00	23.38
C.A.E.C.-C.A.W.C.	49	1,650	4,089	2.41	1.30	4.42	2.39	7.82	8.91	13.90	16.83
C.A.E.C.-Canada W.C.	3	105	251	2.41	1.30	4.42	2.39	12.61	13.70	8.62	21.59
C.A.E.C.-Oceania	1	22	69	2.41	1.30	4.42	2.39	19.89	20.98	5.47	22.59
C.A.E.C.-S.A.W.C.	24	734	1,978	2.41	1.30	4.42	2.39	10.61	11.70	10.25	14.07
C.A.E.C.-U.S.W.C.	9	286	731	2.41	1.30	4.42	2.39	11.61	12.70	9.37	20.59
Columbia-Asia	2	352	725	2.41	1.17	4.42	2.14	17.07	18.04	5.70	25.50
Europe-C.A.W.C.	51	1,627	4,226	2.41	1.30	4.42	2.39	12.61	13.70	8.62	22.38
Europe-Canada W.C.	12	408	1,158	2.41	1.28	4.42	2.33	16.57	17.62	6.36	22.07
Europe-U.S.W.C.	142	4,679	13,586	2.41	1.28	4.42	2.33	15.65	16.70	6.74	20.80
Middle East-S.A.W.C.	2	104	231	2.41	1.25	4.42	2.28	14.08	15.11	7.38	15.83
Oceania-C.A.E.C.	14	469	1,196	2.41	1.30	4.42	2.39	19.09	20.18	5.69	22.54
Oceania-U.S.E.C.	36	2,218	4,934	2.41	1.23	4.42	2.25	15.65	16.67	6.53	17.42
S.A.E.C.-Asia	60	2,563	5,777	2.41	1.28	4.42	2.34	16.76	17.82	6.34	18.82
S.A.W.C.-Africa	5	296	568	2.41	1.25	4.42	2.29	14.34	15.39	7.26	21.40
S.A.W.C.-Canada E.C.	1	24	50	2.41	1.30	4.42	2.39	13.34	14.43	8.15	16.04

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	12	277	969	2.41	1.30	4.42	2.39	10.59	11.68	10.26	14.04
S.A.W.C.-U.S.E.C.	90	3,585	7,616	2.41	1.30	4.42	2.38	11.28	12.36	9.59	15.48
U.S.E.C.-Asia	1,629	139,874	308,403	2.41	1.20	4.42	2.19	16.97	17.97	5.87	22.61
U.S.E.C.-C.A.W.C.	375	14,003	32,163	2.41	1.30	4.42	2.39	7.80	8.89	13.96	18.73
U.S.E.C.-Oceania	23	909	2,047	2.41	1.29	4.42	2.37	19.26	20.34	5.61	20.97
U.S.E.C.-S.A.W.C.	82	2,944	7,057	2.41	1.30	4.42	2.38	11.43	12.52	9.46	15.60
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.30	4.42	2.39	11.61	12.70	9.36	22.38
U.S.W.C.-Africa	198	9,018	21,771	2.41	1.26	4.42	2.30	15.70	16.75	6.67	19.37
U.S.W.C.-Canada E.C.	5	211	479	2.41	1.29	4.42	2.37	13.93	15.01	7.72	22.50
U.S.W.C.-C.A.E.C.	1	30	76	2.41	1.30	4.42	2.39	11.59	12.68	9.38	20.54
U.S.W.C.-Europe	168	9,505	21,131	2.41	1.24	4.42	2.27	14.02	15.05	7.37	18.82
U.S.W.C.-U.S.E.C.	8	215	775	2.41	1.28	4.42	2.42	11.92	13.06	9.54	23.13
Venezuela-Asia	8	1,231	2,532	2.41	1.17	4.42	2.14	17.07	18.04	5.70	23.70
Subtotal	4,515	260,009	599,991	2.41	1.23	4.42	2.26	15.85	16.87	6.48	21.42
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	15	695	1,732	2.41	1.25	4.42	2.30	17.56	18.60	5.96	18.43
Asia-S.A.E.C.	5	172	202	2.41	1.30	4.42	2.39	21.84	22.93	4.98	21.54
Brazil-Asia	45	6,687	3,885	2.41	1.17	4.42	2.14	18.97	19.94	5.13	18.35
C.A.W.C.-S.A.E.C.	16	268	1,070	2.41	1.30	4.42	2.39	11.59	12.68	9.38	12.04
Canada E.C.-Oceania	7	132	553	2.41	1.29	4.42	2.40	21.11	22.22	5.28	21.80
Canada W.C.-S.A.E.C.	29	1,820	3,810	2.41	1.22	4.42	2.23	11.70	12.72	8.70	12.24

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Europe-S.A.W.C.	16	514	781	2.41	1.30	4.42	2.39	16.13	17.22	6.74	16.07
Oceania-Canada E.C.	23	859	1,782	2.41	1.30	4.42	2.39	20.84	21.93	5.22	21.54
S.A.E.C.-C.A.W.C.	12	441	777	2.41	1.30	4.42	2.39	11.61	12.70	9.36	12.07
S.A.E.C.-Canada W.C.	3	97	247	2.41	1.30	4.42	2.39	17.13	18.22	6.35	17.83
S.A.E.C.-U.S.W.C.	34	1,722	2,129	2.41	1.23	4.42	2.27	13.30	14.33	7.77	13.07
S.A.W.C.-Europe	251	11,113	17,052	2.41	1.27	4.42	2.33	15.83	16.89	6.68	16.02
U.S.W.C.-S.A.E.C.	13	436	510	2.41	1.30	4.42	2.39	16.09	17.18	6.75	15.79
Subtotal	471	24,956	34,530	2.41	1.24	4.42	2.28	16.38	17.42	6.31	16.38
Subtotal	4,986	284,965	634,521	2.41	1.23	4.42	2.26	15.89	16.92	6.46	20.98
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.02	55.13	2.07	70.82
Asia-S.A.E.C.	4	23	259	2.41	1.34	4.42	2.46	50.34	51.46	2.22	52.00
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.82	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.01	39.13	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-S.A.W.C.	9	98	222	2.41	1.34	4.42	2.46	58.65	59.77	1.90	62.50
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.06	43.17	2.66	56.46
Oceania-U.S.E.C.	17	494	1,376	2.41	1.34	4.42	2.46	40.62	41.74	2.75	45.24
S.A.E.C.-C.A.W.C.	10	79	201	2.41	1.34	4.42	2.46	50.33	51.45	2.22	54.86
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.16	45.28	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.11	40.23	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.03	61.15	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.20	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,440	2.41	1.34	4.42	2.46	41.26	42.38	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.60	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.31	46.43	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.90	4.33	43.90
Subtotal	1,223	32,940	76,249	2.41	1.34	4.42	2.46	39.97	41.09	2.80	55.80
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	1	43	91	2.41	1.34	4.42	2.46	30.34	31.46	3.68	31.00

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	6	13	2.41	1.34	4.42	2.46	38.34	39.46	2.92	39.00
Subtotal	1	48	104	2.41	1.34	4.42	2.46	31.27	32.39	3.57	31.93
Subtotal	1,224	32,988	76,353	2.41	1.34	4.42	2.46	39.96	41.07	2.80	55.77
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
Asia-U.S.E.C. (low inv. cost)	186	5,208	43,658	2.41	4.92	4.42	9.02	231.47	235.57	1.77	245.26
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	*,***.**	*,***.**	*,***.**	***.**	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.33	226.88	230.66	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.28	210.68	214.46	1.79	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.24	213.60	217.37	1.76	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.21	143.25	146.99	2.61	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.16	152.93	156.64	2.43	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.80	227.53	1.67	284.41
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	140	3,123	17,807	2.41	4.67	4.42	*,***.**	*,***.**	*,***.**	***.**	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.20	221.93	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	234	8,718	51,202	2.41	4.88	4.42	8.96	233.14	237.21	1.75	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.98	142.95	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.39	159.47	163.29	2.40	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.19	161.25	164.97	2.31	232.70
U.S.W.C.-Europe	196	3,835	25,515	2.41	4.68	4.42	8.53	208.77	212.62	1.84	217.65
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	*,***.**	*,***.**	*,***.**	***.**	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.54	141.16	145.05	2.76	224.31
Subtotal	1,438	31,321	196,721	2.41	4.72	4.42	8.66	*,***.**	*,***.**	***.**	234.22
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	23	286	1,594	2.41	4.47	4.42	8.21	257.66	261.39	1.45	260.84

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	10	177	108	2.41	4.47	4.42	8.19	251.63	255.36	1.48	248.23
Oceania-S.A.E.C.	0	2	1	2.41	4.49	4.42	8.23	241.87	245.61	1.55	238.38
Subtotal	33	465	1,704	2.41	4.47	4.42	8.20	255.29	259.02	1.46	255.93
Subtotal	1,470	31,786	198,425	2.41	4.72	4.42	8.65	*,***.**	*,***.**	***.**	234.53
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-Canada E.C.	0	3	8	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Asia-C.A.E.C.	127	1,501	5,893	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	0.69	4.42	2.54	37.44	39.29	4.93	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.64	9.72	10.90	12.17	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.68	30.85	3.97	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.60	27.74	28.93	4.32	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.67	12.26	13.48	9.91	74.92
Canada E.C.-Asia	10	25	473	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada E.C.-S.A.W.C.	16	148	760	2.41	0.69	4.42	2.55	27.39	29.25	6.76	35.55
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.61	31.72	32.91	3.77	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	0.78	4.42	2.60	35.76	37.57	5.07	71.10

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.66	8.51	9.72	14.18	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	0.76	4.42	2.57	21.92	23.74	8.27	34.74
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.56	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	73	734	3,216	2.41	1.39	4.42	2.55	33.84	35.01	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.70	62.17	63.43	2.02	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Middle East-U.S.W.C.	7	19	315	2.41	1.39	4.42	2.55	40.94	42.10	2.83	47.45
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	2	9	41	2.41	1.43	4.42	2.61	57.48	58.66	2.06	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.E.C.-Canada W.C.	0	2	13	2.41	1.39	4.42	2.55	35.04	36.20	3.30	38.55
S.A.E.C.-U.S.W.C.	17	77	647	2.41	1.40	4.42	2.58	38.18	39.36	3.09	40.19
S.A.W.C.-Africa	8	149	350	2.41	1.39	4.42	2.55	34.04	35.20	3.40	53.35
S.A.W.C.-Canada E.C.	1	14	39	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.67	23.90	25.12	5.11	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-Middle East	2	25	79	2.41	1.39	4.42	2.55	35.99	37.15	3.22	42.50
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.58	25.31	26.48	4.64	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	0.69	4.42	2.54	37.69	39.53	4.90	52.66

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.10	60.90
U.S.E.C.-Oceania	6	89	270	2.41	1.39	4.42	2.55	40.94	42.10	2.83	46.45
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.62	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.53	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.60	44.83	46.01	2.63	69.85
U.S.W.C.-S.A.E.C.	8	19	136	2.41	1.45	4.42	2.68	53.26	54.49	2.31	59.12
Subtotal	1,458	13,946	50,197	2.41	1.20	4.42	2.20	30.52	31.81	4.24	46.34
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45
Canada E.C.-Oceania	0	7	9	2.41	1.39	4.42	2.55	47.84	49.00	2.42	47.45
Canada W.C.-Middle East	2	13	70	2.41	0.69	4.42	2.55	42.19	44.05	4.39	42.50
Subtotal	6	45	240	2.41	1.09	4.42	2.00	45.15	46.50	3.00	45.49
Subtotal	1,464	13,991	50,438	2.41	1.20	4.42	2.20	30.57	31.86	4.24	46.34
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	9.13	124.20	128.66	3.59	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	7.18	26.92	30.31	12.58	81.65

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.62	75.12	78.12	3.99	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.14	93.99	97.27	3.49	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.46	48.07	8.12	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.51	154.50	158.06	2.31	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Asia-S.A.E.C.	7	5	260	2.41	4.00	4.42	7.34	180.00	183.34	1.85	184.20
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.53	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.35	144.93	148.35	2.36	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40
Europe-S.A.W.C.	295	278	13,807	2.41	3.88	4.42	7.14	119.82	123.09	2.72	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.37	160.44	163.83	2.11	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-Africa	27	111	1,124	2.41	3.94	4.42	7.26	130.07	133.39	2.55	205.85

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.70	4.22	107.85
S.A.W.C.-Europe	1,101	6,815	50,210	2.41	3.89	4.42	7.14	119.89	123.14	2.71	127.15
S.A.W.C.-Middle East	5	18	179	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
S.A.W.C.-U.S.E.C.	808	3,821	38,022	2.41	3.88	4.42	7.11	82.93	86.16	3.89	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.12	139.10	142.35	2.33	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.08	82.19	85.41	3.91	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.32	134.44	137.80	2.50	190.92
U.S.W.C.-S.A.E.C.	2	6	72	2.41	3.98	4.42	7.42	131.22	134.66	2.62	135.82
Subtotal	3,937	15,968	183,600	2.41	3.88	4.42	7.12	105.64	108.89	3.08	134.95
Refrigerated Ships											
Diverted Transits											
Africa-Asia	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	3,983	16,260	184,527	2.41	3.88	4.42	7.12	106.86	110.11	3.04	135.63
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	16.57	299.18	306.40	2.41	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.48	236.82	243.38	2.77	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.52	248.81	255.38	2.64	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.91	355.30	363.91	2.42	370.17
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.69	239.87	248.37	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	16.87	167.55	174.70	4.27	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.95	297.89	305.21	2.45	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.23	160.82	167.30	4.03	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.24	212.68	219.15	3.04	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.46	166.02	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.38	247.34	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Diverted Transits (continued)											
Canada E.C.-Oceania	3	61	184	2.41	7.77	4.42	14.26	251.48	257.97	2.58	249.02
Subtotal	3	61	188	2.41	7.78	4.42	14.26	251.23	257.73	2.59	248.78
Subtotal	400	2,990	31,272	2.41	8.67	4.42	15.90	240.61	247.56	2.89	298.58
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	18.27	19.34	5.81	24.00
Asia-U.S.E.C.	3	77	178	2.41	1.27	4.42	2.33	27.11	28.17	3.90	38.76
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.19	12.24	9.46	37.36
Canada E.C.-Asia	18	707	1,578	2.41	1.27	4.42	2.33	25.06	26.12	4.22	27.21
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.34	13.77	14.82	7.69	26.23
C.A.E.C.-Asia	5	141	382	2.41	1.27	4.42	2.32	22.35	23.41	4.73	31.40
C.A.E.C.-C.A.W.C.	45	750	2,550	2.41	1.27	4.42	2.32	7.37	8.42	14.32	22.70
C.A.E.C.-S.A.W.C.	46	887	2,462	2.41	1.27	4.42	2.33	13.34	14.40	7.93	20.04
C.A.E.C.-U.S.W.C.	5	228	541	2.41	1.27	4.42	2.32	11.93	12.99	8.86	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-S.A.W.C.	4	82	194	2.41	1.27	4.42	2.33	23.35	24.41	4.53	25.18
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
Oceania-U.S.E.C.	9	162	422	2.41	1.27	4.42	2.33	28.05	29.11	3.77	32.60

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	77	14,050	29,736	2.41	1.27	4.42	2.32	14.11	15.17	7.48	16.31
S.A.W.C.-Canada E.C.	1	14	36	2.41	1.27	4.42	2.33	20.46	21.52	5.17	27.25
S.A.W.C.-C.A.E.C.	15	557	1,376	2.41	1.27	4.42	2.33	10.99	12.05	9.63	15.42
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.03	29.09	3.78	30.35
S.A.W.C.-U.S.E.C.	17	607	1,461	2.41	1.27	4.42	2.33	11.70	12.76	9.04	18.51
U.S.E.C.-Asia	90	2,946	7,114	2.41	1.27	4.42	2.33	22.71	23.77	4.66	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-S.A.W.C.	3	49	128	2.41	1.27	4.42	2.33	13.62	14.68	7.77	21.94
U.S.E.C.-U.S.W.C.	21	601	1,551	2.41	1.27	4.42	2.33	14.06	15.12	7.52	30.95
U.S.W.C.-Africa	10	334	984	2.41	1.26	4.42	2.31	16.39	17.44	6.41	20.19
U.S.W.C.-C.A.E.C.	3	96	262	2.41	1.26	4.42	2.32	11.90	12.96	8.86	23.13
U.S.W.C.-U.S.E.C.	4	102	289	2.41	1.27	4.42	2.32	13.36	14.41	7.91	29.10
Subtotal	471	23,684	55,340	2.41	1.27	4.42	2.33	15.52	16.58	6.81	20.73
Tankers											
Diverted Transits											
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.29	1.27	2.29	79.73	0.48
S.A.E.C.-C.A.W.C.	68	3,130	8,802	2.41	1.26	4.42	2.32	10.88	11.94	9.68	11.68
S.A.E.C.-U.S.W.C.	27	978	1,569	2.41	1.27	4.42	2.32	18.66	19.71	5.66	18.82
U.S.W.C.-S.A.E.C.	1	29	40	2.41	1.27	4.42	2.33	18.79	19.85	5.64	18.90
Subtotal	95	4,137	10,411	2.41	1.26	4.42	2.32	12.77	13.83	8.25	13.42
Subtotal	567	27,821	65,751	2.41	1.27	4.42	2.32	15.11	16.17	6.99	19.64

(Continued)

Table E-22. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 200,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.41	417.19	441.51	5.83	496.39
Asia-U.S.E.C.	481	2,251	71,524	2.41	29.20	4.42	53.55	439.54	463.89	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.65	266.35	290.29	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.57	386.38	412.05	6.64	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.86	402.97	427.88	6.18	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	53.80	415.81	439.94	5.80	510.17
Subtotal	711	2,799	110,615	2.41	29.43	4.42	53.97	433.06	457.47	5.64	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.46	484.21	508.53	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.10	457.51	5.64	508.34
Total Non-Diverting	17,148	421,549	1,460,625	2.41	1.81	4.42	3.32	*,***.**	*,***.**	***.**	57.63
Total Diverting	674	30,150	50,382	2.41	1.34	4.42	2.45	22.41	23.55	5.09	22.52

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES, 250,000-DWT SCENARIO, 2060

Table E-23. Laden Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost a/	Total	Lost as a Percent of Total
Container-Breakbulk	2,459	6	2,465	0.23	36,883	113	36,996	0.31	137,143	297	137,440	0.22
Dry Bulk Carriers	4,621	436	5,057	8.62	278,550	20,215	298,765	6.77	638,029	35,462	673,490	5.27
Chemical Tankers	1,223	1	1,224	0.10	32,940	48	32,988	0.15	76,249	104	76,353	0.14
Full Container Ships	1,438	33	1,470	2.24	31,321	465	31,786	1.46	196,721	1,704	198,425	0.86
General Cargo Ships	1,458	6	1,464	0.43	13,946	45	13,991	0.32	50,197	240	50,438	0.48
Liquid Gas Carriers	104	0	104	0.00	1,071	0	1,071	0.00	6,296	0	6,296	0.00
Passenger Ships	435	0	435	0.00	0	0	0	0.00	13,389	0	13,389	0.00
Refrigerated Ships	3,937	46	3,983	1.15	15,968	292	16,260	1.80	183,600	926	184,527	0.50
Roll-On Roll-Off	397	3	400	0.70	2,929	61	2,990	2.05	31,084	188	31,272	0.60
Tankers	458	95	553	17.21	23,684	4,137	27,821	14.87	55,340	10,411	65,751	15.83
Vehicle Carriers	711	13	724	1.84	2,799	33	2,831	1.15	110,615	1,982	112,596	1.76
Total	17,240	639	17,879	3.57	440,090	25,410	465,499	5.46	1,498,663	51,313	1,549,976	3.31

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. The recommended toll structure uses a vessel type and size differentiated earning capacity based toll. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transiting the Canal. The extra fee is only used to determine diversion status by adding it to cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-24. Ballast Transits, Tons Carried, and Toll Revenue, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type

	Transits				Tons Carried(thousands)				Revenue(1990 US$thousands)			
Ship Type	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Diverted	Total	Diverted as a Percent of Total	Canal	Lost	Total	Lost as a Percent of Total
Container-Breakbulk	67	0	67	0.22	0	0	0	0.00	3,250	7	3,257	0.22
Dry Bulk Carriers	324	18	342	5.27	0	0	0	0.00	20,642	1,148	21,790	5.27
Chemical Tankers	127	0	127	0.14	0	0	0	0.00	6,884	10	6,893	0.14
Full Container Ships	6	0	6	0.86	0	0	0	0.00	516	4	521	0.86
General Cargo Ships	273	1	274	0.48	0	0	0	0.00	6,018	29	6,047	0.48
Liquid Gas Carriers	958	0	958	0.00	0	0	0	0.00	97,360	0	97,360	0.00
Passenger Ships	51	0	51	0.00	0	0	0	0.00	1,327	0	1,327	0.00
Refrigerated Ships	1,064	5	1,069	0.50	0	0	0	0.00	37,778	190	37,968	0.50
Roll-On Roll-Off	58	0	58	0.60	0	0	0	0.00	3,411	21	3,432	0.60
Tankers	235	44	279	15.83	0	0	0	0.00	27,001	5,078	32,079	15.83
Vehicle Carriers	433	8	441	1.76	0	0	0	0.00	51,169	917	52,086	1.76
Total	3,595	77	3,672	2.11	0	0	0	0.00	255,357	7,404	262,760	2.82

Note: Diversions of ballast transits are computed by diverting a proportion of ballast transits equal to lost revenue as a percent of total potential revenue for a particular laden ship type. See last column on previous table.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk											
Non-Diverted Transits											
Africa-C.A.W.C.	6	185	380	2.41	1.85	4.42	3.40	72.26	73.81	2.14	119.11
Africa-Canada W.C.	0	5	24	2.41	1.87	4.42	3.43	92.01	93.57	1.69	106.57
Africa-U.S.W.C.	2	25	115	2.41	1.87	4.42	3.43	93.01	94.57	1.68	107.78
Asia-Canada E.C.	1	8	42	2.41	1.86	4.42	3.41	93.05	94.60	1.66	100.96
Asia-C.A.E.C.	135	1,246	7,112	2.41	1.87	4.42	3.43	97.19	98.75	1.60	113.04
Asia-S.A.E.C.	48	305	2,394	2.41	1.87	4.42	3.43	105.12	106.68	1.48	107.25
Asia-U.S.E.C.	139	1,759	7,827	2.41	1.86	4.42	3.41	99.37	100.92	1.56	123.49
C.A.W.C.-Africa	6	112	277	2.41	1.87	4.42	3.43	76.03	77.59	2.05	127.35
C.A.W.C.-C.A.E.C.	16	247	825	2.41	1.86	4.42	3.41	51.25	52.80	3.02	91.73
C.A.W.C.-Europe	41	304	2,166	2.41	1.03	4.42	3.42	64.85	67.23	3.68	95.59
C.A.W.C.-S.A.E.C.	23	10	1,131	2.41	1.87	4.42	3.43	72.11	73.67	2.16	77.11
C.A.W.C.-U.S.E.C.	7	40	337	2.41	1.87	4.42	3.43	57.32	58.88	2.72	95.90
Canada E.C.-Asia	31	815	2,156	2.41	1.85	4.42	3.40	95.14	96.69	1.63	98.29
Canada E.C.-C.A.W.C.	3	25	130	2.41	1.87	4.42	3.43	55.94	57.50	2.79	96.99
Canada E.C.-S.A.W.C.	1	17	53	2.41	1.85	4.42	3.40	65.71	67.25	2.35	79.70
Canada E.C.-U.S.W.C.	0	0	0	2.41	1.86	4.42	3.42	72.57	74.13	2.14	111.42
Canada W.C.-Africa	29	662	1,704	2.41	1.85	4.42	3.40	93.53	95.08	1.65	106.62
Canada W.C.-Europe	107	3,116	7,702	2.41	1.85	4.42	3.40	81.19	82.74	1.90	109.01
Canada W.C.-S.A.E.C.	22	421	1,088	2.41	1.87	4.42	3.43	74.11	75.67	2.10	114.56
Canada W.C.-U.S.E.C.	15	303	873	2.41	1.85	4.42	3.40	67.85	69.40	2.28	108.00
C.A.E.C.-Asia	13	270	654	2.41	1.87	4.42	3.42	96.30	97.86	1.62	111.98
C.A.E.C.-C.A.W.C.	13	49	662	2.41	1.87	4.42	3.43	52.15	53.71	2.99	94.93
C.A.E.C.-Canada W.C.	4	59	197	2.41	1.87	4.42	3.43	66.58	68.14	2.34	106.57

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Oceania	2	38	123	2.41	1.87	4.42	3.43	94.01	95.57	1.66	112.63
C.A.E.C.-S.A.W.C.	37	286	1,892	2.41	1.87	4.42	3.43	64.73	66.29	2.41	79.50
C.A.E.C.-U.S.W.C.	6	112	320	2.41	1.01	4.42	3.41	63.36	65.76	3.79	97.78
Europe-C.A.W.C.	44	271	2,250	2.41	1.87	4.42	3.43	66.79	68.35	2.33	118.42
Europe-Canada W.C.	7	217	588	2.41	1.85	4.42	3.40	83.24	84.79	1.86	107.58
Europe-S.A.W.C.	182	1,504	9,392	2.41	1.01	4.42	3.43	89.15	91.57	2.71	104.63
Europe-U.S.W.C.	36	1,115	2,809	2.41	1.85	4.42	3.40	82.34	83.88	1.87	107.84
Oceania-C.A.E.C.	10	99	485	2.41	0.97	4.42	3.43	93.87	96.33	2.62	113.61
S.A.E.C.-C.A.W.C.	16	252	843	2.41	1.87	4.42	3.42	71.58	73.14	2.17	76.57
S.A.E.C.-Canada W.C.	25	335	1,304	2.41	1.01	4.42	3.42	91.94	94.35	2.63	98.78
S.A.E.C.-U.S.W.C.	84	1,260	4,434	2.41	1.87	4.42	3.42	78.16	79.71	1.99	80.87
S.A.W.C.-Africa	3	52	136	2.41	1.87	4.42	3.43	82.90	84.46	1.88	120.48
S.A.W.C.-Canada E.C.	1	2	58	2.41	0.97	4.42	3.43	68.29	70.75	3.59	84.90
S.A.W.C.-C.A.E.C.	26	206	1,272	2.41	1.87	4.42	3.43	65.19	66.75	2.39	80.11
S.A.W.C.-Europe	329	5,753	16,747	2.41	1.87	4.42	3.42	89.68	91.23	1.74	106.41
S.A.W.C.-U.S.E.C.	239	2,340	11,924	2.41	1.87	4.42	3.42	62.12	63.68	2.50	81.53
U.S.E.C.-Asia	284	7,177	18,756	2.41	1.86	4.42	3.40	96.15	97.70	1.61	119.21
U.S.E.C.-C.A.W.C.	22	446	1,183	2.41	1.86	4.42	3.42	47.68	49.23	3.26	93.27
U.S.E.C.-S.A.W.C.	347	3,443	18,031	2.41	1.87	4.42	3.42	61.84	63.40	2.51	81.01
U.S.E.C.-U.S.W.C.	0	0	1	2.41	1.86	4.42	3.42	58.86	60.42	2.64	98.00
U.S.W.C.-Africa	22	367	1,821	2.41	1.85	4.42	3.40	85.44	86.99	1.81	102.85
U.S.W.C.-Canada E.C.	1	33	74	2.41	1.85	4.42	3.40	69.85	71.40	2.21	106.00
U.S.W.C.-C.A.E.C.	19	135	954	2.41	1.87	4.42	3.42	66.46	68.02	2.34	101.57

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Container-Breakbulk (continued)											
Non-Diverted Transits (continued)											
U.S.W.C.-Europe	51	1,343	3,573	2.41	1.86	4.42	3.40	83.59	85.14	1.85	108.54
U.S.W.C.-S.A.E.C.	6	104	293	2.41	1.87	4.42	3.43	79.98	81.54	1.95	82.98
U.S.W.C.-U.S.E.C.	0	6	32	2.41	1.85	4.42	3.40	60.28	61.82	2.56	102.02
Subtotal	2,459	36,883	137,143	2.41	1.72	4.42	3.15	83.59	85.20	1.92	104.46
Container-Breakbulk											
Diverted Transits											
Canada E.C.-Oceania	2	25	71	2.41	1.87	4.42	3.43	107.65	109.21	1.45	108.63
Oceania-Canada E.C.	4	88	226	2.41	1.85	4.42	3.40	97.85	99.40	1.58	98.00
Subtotal	6	113	297	2.41	1.86	4.42	3.40	100.04	101.59	1.55	100.37
Subtotal	2,465	36,996	137,440	2.41	1.72	4.42	3.15	83.64	85.25	1.92	104.44
Dry Bulk Carriers											
Non-Diverted Transits											
Africa-C.A.W.C.	29	1,201	2,443	2.41	1.30	4.42	2.39	15.34	16.43	7.09	27.11
Africa-Canada W.C.	156	7,645	14,988	2.41	1.28	4.42	2.34	17.82	18.88	5.98	19.99
Africa-S.A.W.C.	9	313	752	2.41	1.30	4.42	2.39	18.13	19.22	6.00	26.14
Africa-U.S.W.C.	10	297	978	2.41	1.27	4.42	2.32	16.17	17.22	6.48	19.94
Asia-C.A.E.C.	29	527	2,527	2.41	1.30	4.42	2.43	18.87	20.00	6.00	24.40
Asia-U.S.E.C.	386	12,134	38,319	2.41	1.27	4.42	2.33	16.62	17.68	6.40	23.16
Brazil-Asia	108	18,541	37,979	2.41	1.16	4.42	2.13	17.30	18.27	5.60	18.35
C.A.W.C.-Africa	2	52	144	2.41	1.29	4.42	2.40	15.33	16.44	7.24	27.18
C.A.W.C.-C.A.E.C.	63	2,167	5,401	2.41	1.30	4.42	2.37	7.56	8.64	14.21	16.30

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-Europe	19	626	1,741	2.41	1.28	4.42	2.37	12.21	13.29	8.86	18.57
C.A.W.C.-U.S.E.C.	47	1,854	4,275	2.41	1.29	4.42	2.37	7.68	8.77	14.08	18.15
Canada E.C.-Asia	126	7,535	17,884	2.41	1.22	4.42	2.25	18.26	19.29	5.62	20.41
Canada E.C.-S.A.W.C.	12	426	1,109	2.41	1.29	4.42	2.37	12.86	13.94	8.41	15.56
Canada W.C.-Africa	175	7,689	17,204	2.41	1.28	4.42	2.35	17.50	18.57	6.11	19.57
Canada W.C.-C.A.E.C.	9	270	757	2.41	1.30	4.42	2.39	12.59	13.68	8.63	21.54
Canada W.C.-Europe	301	15,944	36,215	2.41	1.24	4.42	2.28	16.15	17.18	6.44	21.21
Canada W.C.-U.S.E.C.	105	3,183	8,784	2.41	1.30	4.42	2.39	13.34	14.43	8.15	23.33
C.A.E.C.-Asia	22	808	1,807	2.41	1.30	4.42	2.39	18.13	19.22	6.00	23.38
C.A.E.C.-C.A.W.C.	49	1,650	4,089	2.41	1.30	4.42	2.39	7.82	8.91	13.90	16.83
C.A.E.C.-Canada W.C.	3	105	251	2.41	1.30	4.42	2.39	12.61	13.70	8.62	21.59
C.A.E.C.-Oceania	1	22	69	2.41	1.30	4.42	2.39	19.89	20.98	5.47	22.59
C.A.E.C.-S.A.W.C.	24	734	1,978	2.41	1.30	4.42	2.39	10.61	11.70	10.25	14.07
C.A.E.C.-U.S.W.C.	9	286	731	2.41	1.30	4.42	2.39	11.61	12.70	9.37	20.59
Columbia-Asia	2	352	724	2.41	1.17	4.42	2.14	17.07	18.04	5.71	25.50
Europe-C.A.W.C.	51	1,627	4,226	2.41	1.30	4.42	2.39	12.61	13.70	8.62	22.38
Europe-Canada W.C.	12	408	1,158	2.41	1.28	4.42	2.33	16.57	17.62	6.36	22.07
Europe-U.S.W.C.	142	4,679	13,586	2.41	1.28	4.42	2.33	15.65	16.70	6.74	20.80
Middle East-S.A.W.C.	2	104	231	2.41	1.25	4.42	2.28	14.08	15.11	7.38	15.83
Oceania-C.A.E.C.	14	469	1,196	2.41	1.30	4.42	2.39	19.09	20.18	5.69	22.54
Oceania-U.S.E.C.	36	2,218	4,934	2.41	1.23	4.42	2.25	15.65	16.67	6.53	17.42
S.A.E.C.-Asia	60	2,563	5,777	2.41	1.28	4.42	2.34	16.76	17.82	6.34	18.93
S.A.W.C.-Africa	5	296	568	2.41	1.25	4.42	2.29	14.34	15.39	7.26	21.40

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-Canada E.C.	1	24	50	2.41	1.30	4.42	2.39	13.34	14.43	8.15	16.04
S.A.W.C.-C.A.E.C.	12	277	969	2.41	1.30	4.42	2.39	10.59	11.68	10.26	14.04
S.A.W.C.-U.S.E.C.	91	3,585	7,710	2.41	1.30	4.42	2.38	11.28	12.36	9.60	15.48
U.S.E.C.-Asia	1,629	139,874	308,403	2.41	1.20	4.42	2.19	16.97	17.97	5.87	22.61
U.S.E.C.-C.A.W.C.	375	14,003	32,163	2.41	1.30	4.42	2.39	7.80	8.89	13.96	18.73
U.S.E.C.-Oceania	23	909	2,047	2.41	1.29	4.42	2.37	19.26	20.34	5.61	20.97
U.S.E.C.-S.A.W.C.	82	2,944	7,057	2.41	1.30	4.42	2.38	11.43	12.52	9.46	15.60
U.S.E.C.-U.S.W.C.	1	0	47	2.41	1.30	4.42	2.39	11.61	12.70	9.36	22.38
U.S.W.C.-Africa	198	9,018	21,771	2.41	1.26	4.42	2.30	15.70	16.75	6.67	19.37
U.S.W.C.-Canada E.C.	5	211	479	2.41	1.29	4.42	2.37	13.93	15.01	7.72	22.50
U.S.W.C.-C.A.E.C.	1	30	76	2.41	1.30	4.42	2.39	11.59	12.68	9.38	20.54
U.S.W.C.-Europe	168	9,505	21,131	2.41	1.24	4.42	2.27	14.02	15.05	7.37	18.82
U.S.W.C.-U.S.E.C.	8	215	775	2.41	1.28	4.42	2.42	11.92	13.06	9.54	23.13
Venezuela-Asia	7	1,230	2,522	2.41	1.16	4.42	2.13	15.96	16.93	6.08	23.70
Subtotal	4,621	278,550	638,029	2.41	1.23	4.42	2.25	15.92	16.95	6.42	21.22
Dry Bulk Carriers											
Diverted Transits											
Asia-Canada E.C.	15	695	1,732	2.41	1.25	4.42	2.30	17.56	18.60	5.96	18.43
Asia-S.A.E.C.	5	172	202	2.41	1.30	4.42	2.39	21.84	22.93	4.98	21.54
C.A.W.C.-S.A.E.C.	16	268	1,070	2.41	1.30	4.42	2.39	11.59	12.68	9.38	12.04
Canada E.C.-Oceania	7	132	553	2.41	1.29	4.42	2.40	21.11	22.22	5.28	21.80
Canada W.C.-S.A.E.C.	29	1,820	3,810	2.41	1.22	4.42	2.23	11.70	12.72	8.70	12.24

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Dry Bulk Carriers (continued)											
Diverted Transits (continued)											
Europe-S.A.W.C.	16	514	781	2.41	1.30	4.42	2.39	16.13	17.22	6.74	16.07
Oceania-Canada E.C.	23	859	1,782	2.41	1.30	4.42	2.39	20.84	21.93	5.22	21.54
S.A.E.C.-C.A.W.C.	12	441	777	2.41	1.30	4.42	2.39	11.61	12.70	9.36	12.07
S.A.E.C.-Canada W.C.	3	97	247	2.41	1.30	4.42	2.39	17.13	18.22	6.35	17.83
S.A.E.C.-U.S.W.C.	34	1,722	2,129	2.41	1.23	4.42	2.27	13.30	14.33	7.77	13.07
S.A.W.C.-Europe	262	13,060	21,869	2.41	1.25	4.42	2.30	15.69	16.73	6.65	16.02
U.S.W.C.-S.A.E.C.	13	436	510	2.41	1.30	4.42	2.39	16.09	17.18	6.75	15.79
Subtotal	436	20,215	35,462	2.41	1.26	4.42	2.30	15.38	16.43	6.81	15.70
Subtotal	5,057	298,765	673,490	2.41	1.23	4.42	2.25	15.89	16.91	6.45	20.84
Chemical Tankers											
Non-Diverted Transits											
Africa-S.A.W.C.	2	59	128	2.41	1.34	4.42	2.46	43.34	44.46	2.58	60.00
Asia-C.A.E.C.	4	50	133	2.41	1.34	4.42	2.46	54.02	55.13	2.07	70.82
Asia-S.A.E.C.	4	23	259	2.41	1.34	4.42	2.46	50.34	51.46	2.22	52.00
Asia-U.S.E.C.	39	820	2,233	2.41	1.34	4.42	2.46	43.82	44.93	2.55	59.67
C.A.W.C.-C.A.E.C.	49	306	771	2.41	1.34	4.42	2.46	39.39	40.51	2.84	83.80
C.A.W.C.-Europe	9	169	375	2.41	1.34	4.42	2.46	38.01	39.13	2.94	56.27
C.A.W.C.-U.S.E.C.	63	885	2,154	2.41	1.34	4.42	2.46	27.74	28.86	4.03	58.89
Canada W.C.-Europe	4	106	272	2.41	1.34	4.42	2.46	42.34	43.46	2.64	57.00
Canada W.C.-U.S.E.C.	39	1,042	2,941	2.41	1.34	4.42	2.46	31.94	33.06	3.50	52.60
C.A.E.C.-Asia	9	293	648	2.41	1.34	4.42	2.46	42.34	43.46	2.64	55.00
C.A.E.C.-C.A.W.C.	5	115	319	2.41	1.34	4.42	2.46	21.34	22.46	5.24	42.00

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	11	217	562	2.41	1.34	4.42	2.46	30.34	31.46	3.68	40.32
C.A.E.C.-U.S.W.C.	2	15	33	2.41	1.34	4.42	2.46	55.94	57.06	2.00	98.40
Europe-C.A.W.C.	10	51	158	2.41	1.34	4.42	2.46	60.84	61.96	1.84	93.55
Europe-S.A.W.C.	9	98	222	2.41	1.34	4.42	2.46	58.65	59.77	1.90	62.50
Europe-U.S.W.C.	10	261	607	2.41	1.34	4.42	2.46	42.06	43.17	2.66	56.46
Oceania-U.S.E.C.	17	494	1,376	2.41	1.34	4.42	2.46	40.62	41.74	2.75	45.24
S.A.E.C.-C.A.W.C.	10	79	201	2.41	1.34	4.42	2.46	50.33	51.45	2.22	54.86
S.A.W.C.-C.A.E.C.	36	134	873	2.41	1.34	4.42	2.46	44.16	45.28	2.53	60.24
S.A.W.C.-Europe	12	151	356	2.41	1.34	4.42	2.46	53.51	54.63	2.09	56.81
S.A.W.C.-U.S.E.C.	12	100	417	2.41	1.34	4.42	2.46	39.11	40.23	2.86	53.98
U.S.E.C.-Asia	683	23,746	51,336	2.41	1.34	4.42	2.46	41.54	42.66	2.69	56.40
U.S.E.C.-C.A.W.C.	27	238	616	2.41	1.34	4.42	2.46	34.18	35.30	3.27	74.41
U.S.E.C.-Canada W.C.	8	61	141	2.41	1.34	4.42	2.46	60.03	61.15	1.86	104.95
U.S.E.C.-Oceania	17	545	1,234	2.41	1.34	4.42	2.46	43.20	44.31	2.59	48.34
U.S.E.C.-S.A.W.C.	53	560	1,440	2.41	1.34	4.42	2.46	41.26	42.38	2.71	57.19
U.S.E.C.-U.S.W.C.	48	1,814	4,544	2.41	1.34	4.42	2.46	25.49	26.60	4.38	43.29
U.S.W.C.-C.A.E.C.	1	12	40	2.41	1.34	4.42	2.46	29.34	30.46	3.81	49.00
U.S.W.C.-Europe	16	266	711	2.41	1.34	4.42	2.46	45.31	46.43	2.47	61.30
U.S.W.C.-U.S.E.C.	12	233	1,148	2.41	1.34	4.42	2.46	25.79	26.90	4.33	43.90
Subtotal	1,223	32,940	76,249	2.41	1.34	4.42	2.46	39.97	41.09	2.80	55.80
Chemical Tankers											
Diverted Transits											
S.A.E.C.-U.S.W.C.	1	43	91	2.41	1.34	4.42	2.46	30.34	31.46	3.68	31.00

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Chemical Tankers (continued)											
Diverted Transits (continued)											
U.S.W.C.-S.A.E.C.	0	6	13	2.41	1.34	4.42	2.46	38.34	39.46	2.92	39.00
Subtotal	1	48	104	2.41	1.34	4.42	2.46	31.27	32.39	3.57	31.93
Subtotal	1,224	32,988	76,353	2.41	1.34	4.42	2.46	39.96	41.07	2.80	55.77
Full Container Ships											
Non-Diverted Transits											
Africa-U.S.W.C.	0	5	23	2.41	4.49	4.42	8.23	247.81	251.55	1.51	284.11
Asia-Canada E.C.	33	739	4,566	2.41	4.70	4.42	8.62	207.29	211.21	1.89	225.70
Asia-S.A.E.C.	4	14	183	2.41	4.49	4.42	8.23	274.66	278.40	1.36	282.11
Asia-U.S.E.C. (low inv. cost)	186	5,208	43,658	2.41	4.92	4.42	9.02	231.47	235.57	1.77	245.26
C.A.W.C.-C.A.E.C.	1	9	89	2.41	4.44	4.42	*,***.**	*,***.**	*,***.**	***.**	207.98
C.A.W.C.-Europe	2	37	260	2.41	4.42	4.42	8.11	152.02	155.71	2.43	204.85
C.A.W.C.-S.A.E.C.	0	7	43	2.41	4.44	4.42	8.14	162.41	166.11	2.28	169.25
C.A.W.C.-U.S.E.C.	0	5	24	2.41	4.49	4.42	8.23	161.41	165.15	2.32	253.29
Canada E.C.-Asia	35	658	3,394	2.41	4.55	4.42	8.33	226.88	230.66	1.67	236.18
Canada E.C.-U.S.W.C.	8	247	1,379	2.41	4.77	4.42	8.75	154.77	158.75	2.57	229.00
Canada W.C.-Europe	31	511	2,438	2.41	4.51	4.42	8.28	210.68	214.46	1.79	276.36
C.A.E.C.-Asia	8	116	810	2.41	4.47	4.42	8.24	213.60	217.37	1.76	244.68
C.A.E.C.-C.A.W.C.	1	7	54	2.41	4.47	4.42	8.21	143.25	146.99	2.61	235.87
C.A.E.C.-Oceania	1	8	42	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
C.A.E.C.-S.A.W.C.	2	10	81	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
C.A.E.C.-U.S.W.C.	2	26	164	2.41	4.45	4.42	8.16	152.93	156.64	2.43	218.40
Europe-C.A.W.C.	0	1	12	2.41	4.42	4.42	8.11	152.02	155.71	2.43	243.00

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Non-Diverted Transits (continued)											
Europe-Canada W.C.	25	336	1,739	2.41	4.47	4.42	8.20	223.80	227.53	1.67	284.41
Europe-S.A.W.C.	81	1,309	8,643	2.41	4.42	4.42	8.11	191.22	194.91	1.93	221.95
Europe-U.S.W.C.	140	3,123	17,807	2.41	4.67	4.42	*,***.**	*,***.**	*,***.**	***.**	215.66
Middle East-U.S.W.C.	15	247	1,230	2.41	4.47	4.42	8.20	218.20	221.93	1.71	247.58
Oceania-C.A.E.C.	5	64	271	2.41	4.49	4.42	8.23	250.78	254.52	1.49	297.02
S.A.E.C.-C.A.W.C.	1	8	40	2.41	4.49	4.42	8.23	197.14	200.88	1.90	206.59
S.A.E.C.-U.S.W.C.	2	20	87	2.41	4.49	4.42	8.23	183.23	186.97	2.04	219.50
S.A.W.C.-C.A.E.C.	0	1	13	2.41	4.49	4.42	8.23	178.89	182.63	2.09	214.04
S.A.W.C.-Europe	144	3,081	15,450	2.41	4.42	4.42	8.11	191.21	194.90	1.93	221.95
S.A.W.C.-U.S.E.C.	99	1,047	5,075	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-Asia (low inv. cost)	234	8,718	51,202	2.41	4.88	4.42	8.96	233.14	237.21	1.75	246.59
U.S.E.C.-C.A.W.C.	13	112	656	2.41	4.49	4.42	8.23	140.53	144.27	2.66	253.29
U.S.E.C.-S.A.W.C.	117	1,005	5,986	2.41	4.49	4.42	8.23	174.32	178.06	2.15	221.50
U.S.E.C.-U.S.W.C.	1	26	154	2.41	4.76	4.42	8.73	138.98	142.95	2.86	224.03
U.S.W.C.-Africa	0	0	0	2.41	4.64	4.42	8.51	193.64	197.51	2.00	233.00
U.S.W.C.-Canada E.C.	0	8	48	2.41	4.57	4.42	8.39	159.47	163.29	2.40	231.46
U.S.W.C.-C.A.E.C.	6	90	498	2.41	4.46	4.42	8.19	161.25	164.97	2.31	232.70
U.S.W.C.-Europe	196	3,835	25,515	2.41	4.68	4.42	8.53	208.77	212.62	1.84	217.65
U.S.W.C.-Middle East	25	356	2,062	2.41	4.47	4.42	*,***.**	*,***.**	*,***.**	***.**	229.43
U.S.W.C.-U.S.E.C.	21	326	3,027	2.41	4.65	4.42	8.54	141.16	145.05	2.76	224.31
Subtotal	1,438	31,321	196,721	2.41	4.72	4.42	8.66	*,***.**	*,***.**	***.**	234.22
Full Container Ships											
Diverted Transits											
Canada E.C.-Oceania	23	286	1,594	2.41	4.47	4.42	8.21	257.66	261.39	1.45	260.84

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Full Container Ships (continued)											
Diverted Transits (continued)											
Oceania-Canada E.C.	10	177	108	2.41	4.47	4.42	8.19	251.63	255.36	1.48	248.23
Oceania-S.A.E.C.	0	2	1	2.41	4.49	4.42	8.23	241.87	245.61	1.55	238.38
Subtotal	33	465	1,704	2.41	4.47	4.42	8.20	255.29	259.02	1.46	255.93
Subtotal	1,470	31,786	198,425	2.41	4.72	4.42	8.65	*,***.**	*,***.**	***.**	234.53
General Cargo Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	3	46	150	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
Africa-S.A.W.C.	3	68	153	2.41	1.39	4.42	2.55	37.94	39.10	3.05	54.35
Asia-Canada E.C.	0	3	8	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Asia-C.A.E.C.	127	1,501	5,893	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
Asia-U.S.E.C.	49	632	2,307	2.41	0.69	4.42	2.54	37.44	39.29	4.93	52.33
C.A.W.C.-Africa	7	139	337	2.41	1.39	4.42	2.55	31.04	32.20	3.73	56.35
C.A.W.C.-C.A.E.C.	55	243	863	2.41	1.46	4.42	2.64	9.72	10.90	12.17	59.62
C.A.W.C.-Europe	51	291	1,528	2.41	1.41	4.42	2.58	29.68	30.85	3.97	52.03
C.A.W.C.-S.A.E.C.	15	99	449	2.41	1.41	4.42	2.60	27.74	28.93	4.32	32.29
C.A.W.C.-U.S.E.C.	16	84	263	2.41	1.45	4.42	2.67	12.26	13.48	9.91	74.92
Canada E.C.-Asia	10	25	473	2.41	1.39	4.42	2.55	41.94	43.10	2.76	46.45
Canada E.C.-C.A.W.C.	2	36	98	2.41	1.39	4.42	2.55	21.19	22.35	5.46	41.50
Canada E.C.-S.A.W.C.	16	148	760	2.41	0.69	4.42	2.55	27.39	29.25	6.76	35.55
Canada W.C.-C.A.E.C.	16	120	408	2.41	1.42	4.42	2.61	31.72	32.91	3.77	70.25
Canada W.C.-Europe	1	21	45	2.41	1.39	4.42	2.55	37.94	39.10	3.05	52.40
Canada W.C.-S.A.E.C.	14	126	381	2.41	0.78	4.42	2.60	35.76	37.57	5.07	71.10

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-Asia	28	538	1,296	2.41	1.39	4.42	2.55	36.99	38.15	3.13	49.45
C.A.E.C.-C.A.W.C.	56	209	918	2.41	1.45	4.42	2.66	8.51	9.72	14.18	63.99
C.A.E.C.-Oceania	1	13	41	2.41	1.39	4.42	2.55	40.94	42.10	2.83	49.45
C.A.E.C.-S.A.W.C.	53	492	1,599	2.41	0.76	4.42	2.57	21.92	23.74	8.27	34.74
C.A.E.C.-U.S.W.C.	12	42	134	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
Europe-C.A.W.C.	87	598	3,076	2.41	1.40	4.42	2.56	28.49	29.66	4.09	59.50
Europe-Canada W.C.	3	11	32	2.41	1.50	4.42	2.75	80.37	81.62	1.56	136.96
Europe-S.A.W.C.	73	734	3,216	2.41	1.39	4.42	2.55	33.84	35.01	3.43	35.65
Europe-U.S.W.C.	4	18	68	2.41	1.44	4.42	2.70	62.17	63.43	2.02	107.39
Middle East-S.A.W.C.	6	3	67	2.41	1.50	4.42	2.75	73.82	75.07	1.69	102.30
Middle East-U.S.W.C.	7	19	315	2.41	1.39	4.42	2.55	40.94	42.10	2.83	47.45
Oceania-C.A.E.C.	1	7	49	2.41	1.39	4.42	2.55	39.94	41.10	2.90	49.45
Oceania-U.S.E.C.	2	9	41	2.41	1.43	4.42	2.61	57.48	58.66	2.06	69.46
S.A.E.C.-C.A.W.C.	13	261	586	2.41	1.39	4.42	2.55	25.14	26.30	4.60	26.70
S.A.E.C.-Canada W.C.	0	2	13	2.41	1.39	4.42	2.55	35.04	36.20	3.30	38.55
S.A.E.C.-U.S.W.C.	17	77	647	2.41	1.40	4.42	2.58	38.18	39.36	3.09	40.19
S.A.W.C.-Africa	8	149	350	2.41	1.39	4.42	2.55	34.04	35.20	3.40	53.35
S.A.W.C.-Canada E.C.	1	14	39	2.41	1.39	4.42	2.55	28.09	29.25	4.12	35.55
S.A.W.C.-C.A.E.C.	82	361	1,438	2.41	1.45	4.42	2.67	23.90	25.12	5.11	48.57
S.A.W.C.-Europe	171	2,817	7,972	2.41	1.39	4.42	2.55	33.04	34.20	3.50	34.60
S.A.W.C.-Middle East	2	25	79	2.41	1.39	4.42	2.55	35.99	37.15	3.22	42.50
S.A.W.C.-U.S.E.C.	56	430	1,800	2.41	1.40	4.42	2.58	25.31	26.48	4.64	40.80
U.S.E.C.-Asia	74	1,214	3,489	2.41	0.69	4.42	2.54	37.69	39.53	4.90	52.66

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
General Cargo Ships (continued)											
Non-Diverted Transits (continued)											
U.S.E.C.-C.A.W.C.	103	776	2,202	2.41	1.43	4.42	2.62	14.67	15.86	8.10	60.90
U.S.E.C.-Oceania	6	89	270	2.41	1.39	4.42	2.55	40.94	42.10	2.83	46.45
U.S.E.C.-S.A.W.C.	187	1,336	5,796	2.41	1.41	4.42	2.58	25.45	26.62	4.62	41.52
U.S.E.C.-U.S.W.C.	1	0	9	2.41	1.50	4.42	2.75	35.37	36.62	3.53	122.89
U.S.W.C.-Africa	7	75	308	2.41	1.39	4.42	2.55	36.99	38.15	3.13	47.45
U.S.W.C.-C.A.E.C.	3	1	35	2.41	1.50	4.42	2.75	32.53	33.78	3.84	110.69
U.S.W.C.-Europe	3	25	61	2.41	1.42	4.42	2.60	44.83	46.01	2.63	69.85
U.S.W.C.-S.A.E.C.	8	19	136	2.41	1.45	4.42	2.68	53.26	54.49	2.31	59.12
Subtotal	1,458	13,946	50,197	2.41	1.20	4.42	2.20	30.52	31.81	4.24	46.34
General Cargo Ships											
Diverted Transits											
Asia-S.A.E.C.	4	25	162	2.41	1.39	4.42	2.55	45.89	47.05	2.52	46.45
Canada E.C.-Oceania	0	7	9	2.41	1.39	4.42	2.55	47.84	49.00	2.42	47.45
Canada W.C.-Middle East	2	13	70	2.41	0.69	4.42	2.55	42.19	44.05	4.39	42.50
Subtotal	6	45	240	2.41	1.09	4.42	2.00	45.15	46.50	3.00	45.49
Subtotal	1,464	13,991	50,438	2.41	1.20	4.42	2.20	30.57	31.86	4.24	46.34
Liquid Gas Carriers											
Non-Diverted Transits											
C.A.W.C.-C.A.E.C.	10	43	212	2.41	7.30	4.42	13.39	57.30	63.39	10.63	201.00
C.A.E.C.-Asia	10	53	378	2.41	4.67	4.42	9.13	124.20	128.66	3.59	178.06
C.A.E.C.-C.A.W.C.	56	742	4,286	2.41	3.79	4.42	7.18	26.92	30.31	12.58	81.65

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Liquid Gas Carriers (continued)											
Non-Diverted Transits (continued)											
C.A.E.C.-S.A.W.C.	4	60	318	2.41	3.83	4.42	7.02	45.83	49.02	6.96	70.00
C.A.E.C.-U.S.W.C.	0	3	13	2.41	3.83	4.42	7.02	51.83	55.02	6.16	109.00
Europe-C.A.W.C.	2	7	46	2.41	7.30	4.42	13.39	129.30	135.39	4.71	234.00
Europe-S.A.W.C.	0	1	5	2.41	3.82	4.42	7.01	76.82	80.01	4.15	82.00
Oceania-U.S.E.C.	4	57	359	2.41	3.62	4.42	6.62	75.12	78.12	3.99	85.98
S.A.E.C.-Asia	2	30	158	2.41	3.83	4.42	7.02	89.83	93.02	3.55	107.00
S.A.E.C.-C.A.W.C.	12	32	250	2.41	7.30	4.42	13.39	115.30	121.39	5.28	132.00
U.S.E.C.-Asia	3	41	252	2.41	3.86	4.42	7.14	93.99	97.27	3.49	139.47
U.S.E.C.-C.A.W.C.	0	1	6	2.41	7.30	4.42	13.40	66.30	72.40	9.19	226.00
U.S.E.C.-S.A.W.C.	1	2	14	2.41	7.30	4.42	13.39	109.30	115.39	5.57	182.00
Subtotal	104	1,071	6,296	2.41	3.99	4.42	7.32	44.46	48.07	8.12	96.49
Passenger Ships											
Non-Diverted Transits											
North-Bound	197	0	4,709	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
South-Bound	238	0	8,680	2.41	0.00	4.42	0.00	0.00	0.00	0.00	0.00
Subtotal	435	0	13,389	2.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refrigerated Ships											
Non-Diverted Transits											
Africa-C.A.W.C.	0	0	5	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
Africa-S.A.W.C.	49	21	2,024	2.41	3.94	4.42	7.51	154.50	158.06	2.31	228.37
Asia-C.A.E.C.	25	95	1,230	2.41	3.86	4.42	7.07	131.86	135.07	2.44	180.00

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
Asia-S.A.E.C.	7	5	260	2.41	4.00	4.42	7.34	180.00	183.34	1.85	184.20
Asia-U.S.E.C.	1	0	28	2.41	4.00	4.42	7.34	149.60	152.94	2.23	213.60
C.A.W.C.-Africa	2	7	69	2.41	4.00	4.42	7.34	120.20	123.54	2.78	224.60
C.A.W.C.-Canada E.C.	1	5	22	2.41	4.00	4.42	7.34	79.20	82.54	4.21	163.40
C.A.W.C.-C.A.E.C.	39	294	1,932	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.W.C.-Europe	276	1,493	13,621	2.41	3.86	4.42	7.07	92.86	96.07	3.46	150.00
C.A.W.C.-S.A.E.C.	2	9	63	2.41	4.00	4.42	7.34	94.40	97.74	3.53	103.00
C.A.W.C.-U.S.E.C.	1	2	44	2.41	4.00	4.42	7.34	64.00	67.34	5.21	160.40
Canada E.C.-Asia	15	92	547	2.41	4.00	4.42	7.34	165.80	169.14	2.01	182.60
Canada E.C.-C.A.W.C.	11	31	534	2.41	3.86	4.42	7.07	71.86	75.07	4.48	149.00
Canada W.C.-Europe	4	45	183	2.41	3.86	4.42	7.07	132.86	136.07	2.42	190.00
C.A.E.C.-Asia	13	37	539	2.41	3.93	4.42	7.35	144.93	148.35	2.36	197.33
C.A.E.C.-C.A.W.C.	43	11	2,130	2.41	3.86	4.42	7.07	52.86	56.07	6.09	132.00
C.A.E.C.-S.A.W.C.	93	82	4,600	2.41	3.86	4.42	7.07	75.86	79.07	4.24	107.00
Europe-C.A.W.C.	308	26	15,165	2.41	3.86	4.42	7.07	92.86	96.07	3.46	187.00
Europe-Canada W.C.	1	1	38	2.41	4.00	4.42	7.34	145.60	148.94	2.29	204.40
Europe-S.A.W.C.	295	278	13,807	2.41	3.88	4.42	7.14	119.82	123.09	2.72	127.10
Europe-U.S.W.C.	18	16	671	2.41	4.00	4.42	7.34	135.40	138.74	2.46	192.20
Middle East-S.A.W.C.	3	6	99	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
Oceania-C.A.E.C.	6	50	240	2.41	4.00	4.42	7.34	157.20	160.54	2.12	196.80
Oceania-U.S.E.C.	53	207	2,041	2.41	3.98	4.42	7.37	160.44	163.83	2.11	183.47
S.A.E.C.-Asia	12	62	434	2.41	4.00	4.42	7.34	146.60	149.94	2.28	172.00
S.A.W.C.-Africa	27	111	1,124	2.41	3.94	4.42	7.26	130.07	133.39	2.55	205.85

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: With New Toll Structure	Total Transportation Costs per Ton Carried, Via Panama Canal: Percent Increase	Total Transportation Costs per Ton Carried: Via Least Costly Alternative Route
Refrigerated Ships (continued)											
Non-Diverted Transits (continued)											
S.A.W.C.-C.A.E.C.	40	241	1,933	2.41	3.86	4.42	7.09	76.48	79.70	4.22	107.85
S.A.W.C.-Europe	1,101	6,815	50,210	2.41	3.89	4.42	7.14	119.89	123.14	2.71	127.15
S.A.W.C.-Middle East	5	18	179	2.41	4.00	4.42	7.34	138.00	141.34	2.42	165.40
S.A.W.C.-U.S.E.C.	808	3,821	38,022	2.41	3.88	4.42	7.11	82.93	86.16	3.89	122.50
U.S.E.C.-Asia	46	189	2,160	2.41	3.87	4.42	7.12	139.10	142.35	2.33	198.29
U.S.E.C.-C.A.W.C.	70	196	3,430	2.41	3.86	4.42	7.07	57.86	61.07	5.56	146.00
U.S.E.C.-S.A.W.C.	423	892	20,407	2.41	3.87	4.42	7.08	82.19	85.41	3.91	121.46
U.S.W.C.-Europe	140	804	5,735	2.41	3.95	4.42	7.32	134.44	137.80	2.50	190.92
U.S.W.C.-S.A.E.C.	2	6	72	2.41	3.98	4.42	7.42	131.22	134.66	2.62	135.82
Subtotal	3,937	15,968	183,600	2.41	3.88	4.42	7.12	105.64	108.89	3.08	134.95
Refrigerated Ships											
Diverted Transits											
Africa-Asia	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	46	292	926	2.41	4.00	4.42	7.34	173.40	176.74	1.92	173.00
Subtotal	3,983	16,260	184,527	2.41	3.88	4.42	7.12	106.86	110.11	3.04	135.63
Roll-On Roll-Off											
Non-Diverted Transits											
Asia-Canada E.C.	3	15	194	2.41	9.35	4.42	16.57	299.18	306.40	2.41	324.43
Asia-C.A.E.C.	32	633	4,425	2.41	7.92	4.42	14.48	236.82	243.38	2.77	268.32
Asia-U.S.E.C.	67	1,286	8,956	2.41	7.95	4.42	14.52	248.81	255.38	2.64	304.22
C.A.W.C.-Europe	33	177	2,620	2.41	8.66	4.42	15.88	198.66	205.88	3.64	280.00

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Non-Diverted Transits (continued)											
C.A.W.C.-U.S.E.C.	3	1	204	2.41	8.66	4.42	15.88	170.66	177.88	4.23	273.00
Canada E.C.-Asia	17	85	1,017	2.41	9.30	4.42	17.91	355.30	363.91	2.42	370.17
Canada W.C.-C.A.E.C.	0	1	23	2.41	10.19	4.42	18.69	239.87	248.37	3.54	394.39
C.A.E.C.-C.A.W.C.	1	2	52	2.41	9.72	4.42	16.87	167.55	174.70	4.27	296.40
C.A.E.C.-Oceania	7	20	561	2.41	8.66	4.42	15.88	275.66	282.88	2.62	332.00
C.A.E.C.-S.A.W.C.	85	149	3,951	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
Europe-C.A.W.C.	35	221	2,772	2.41	8.66	4.42	15.88	198.66	205.88	3.64	350.00
Europe-S.A.W.C.	0	0	5	2.41	8.67	4.42	15.89	262.67	269.89	2.75	303.00
Europe-U.S.W.C.	1	3	48	2.41	8.66	4.42	15.89	262.66	269.89	2.75	350.00
Oceania-C.A.E.C.	0	0	2	2.41	7.97	4.42	14.61	234.97	241.61	2.83	273.80
S.A.W.C.-C.A.E.C.	22	44	1,022	2.41	10.19	4.42	18.70	232.93	241.44	3.65	280.17
S.A.W.C.-Europe	2	5	135	2.41	8.66	4.42	15.88	262.66	269.88	2.75	311.00
S.A.W.C.-U.S.E.C.	12	25	557	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.E.C.-Asia	14	93	1,129	2.41	8.64	4.42	15.95	297.89	305.21	2.45	378.28
U.S.E.C.-C.A.W.C.	4	7	323	2.41	8.66	4.42	15.88	144.66	151.88	4.99	273.00
U.S.E.C.-S.A.W.C.	57	101	2,661	2.41	10.19	4.42	18.70	224.99	233.50	3.78	292.08
U.S.W.C.-Canada E.C.	1	2	33	2.41	10.20	4.42	18.70	263.70	272.20	3.22	414.27
U.S.W.C.-C.A.E.C.	2	48	328	2.41	7.75	4.42	14.23	160.82	167.30	4.03	232.64
U.S.W.C.-Europe	0	1	4	2.41	7.77	4.42	14.24	212.68	219.15	3.04	267.50
U.S.W.C.-U.S.E.C.	0	9	61	2.41	7.86	4.42	14.42	159.46	166.02	4.11	255.79
Subtotal	397	2,929	31,084	2.41	8.68	4.42	15.92	240.38	247.34	2.90	299.63
Roll-On Roll-Off											
Diverted Transits											
C.A.W.C.-S.A.E.C.	0	0	3	2.41	8.66	4.42	15.88	211.66	218.88	3.41	211.00

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Roll-On Roll-Off (continued)											
Diverted Transits (continued)											
Canada E.C.-Oceania	3	61	184	2.41	7.77	4.42	14.26	251.48	257.97	2.58	249.02
Subtotal	3	61	188	2.41	7.78	4.42	14.26	251.23	257.73	2.59	248.78
Subtotal	400	2,990	31,272	2.41	8.67	4.42	15.90	240.61	247.56	2.89	298.58
Tankers											
Non-Diverted Transits											
Africa-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.34	18.27	19.34	5.81	24.00
Asia-U.S.E.C.	3	77	178	2.41	1.27	4.42	2.33	27.11	28.17	3.90	38.76
C.A.W.C.-Africa	0	0	3	2.41	1.27	4.42	2.33	46.27	47.33	2.29	100.00
C.A.W.C.-Canada E.C.	0	8	18	2.41	1.27	4.42	2.33	12.21	13.27	8.67	28.82
C.A.W.C.-C.A.E.C.	16	95	599	2.41	1.27	4.42	2.33	10.26	11.32	10.31	34.99
C.A.W.C.-Europe	4	94	241	2.41	1.27	4.42	2.33	17.17	18.23	6.16	28.84
C.A.W.C.-U.S.E.C.	10	80	373	2.41	1.27	4.42	2.33	11.19	12.24	9.46	37.36
Canada E.C.-Asia	18	707	1,578	2.41	1.27	4.42	2.33	25.06	26.12	4.22	27.21
Canada W.C.-U.S.E.C.	6	255	640	2.41	1.28	4.42	2.34	13.77	14.82	7.69	26.23
C.A.E.C.-Asia	5	141	382	2.41	1.27	4.42	2.32	22.35	23.41	4.73	31.40
C.A.E.C.-C.A.W.C.	45	750	2,550	2.41	1.27	4.42	2.32	7.37	8.42	14.32	22.70
C.A.E.C.-S.A.W.C.	46	887	2,462	2.41	1.27	4.42	2.33	13.34	14.40	7.93	20.04
C.A.E.C.-U.S.W.C.	5	228	541	2.41	1.27	4.42	2.32	11.93	12.99	8.86	23.43
Europe-C.A.W.C.	17	81	311	2.41	1.27	4.42	2.33	24.95	26.01	4.24	44.78
Europe-S.A.W.C.	4	82	194	2.41	1.27	4.42	2.33	23.35	24.41	4.53	25.18
Europe-U.S.W.C.	4	109	258	2.41	1.27	4.42	2.33	22.50	23.56	4.70	32.22
Oceania-U.S.E.C.	9	162	422	2.41	1.27	4.42	2.33	28.05	29.11	3.77	32.60

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried, Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Tankers (continued)											
Non-Diverted Transits (continued)											
S.A.E.C.-Asia	64	14,050	29,736	2.41	1.27	4.42	2.32	12.27	13.33	8.60	16.31
S.A.W.C.-Canada E.C.	1	14	36	2.41	1.27	4.42	2.33	20.46	21.52	5.17	27.25
S.A.W.C.-C.A.E.C.	15	557	1,376	2.41	1.27	4.42	2.33	10.99	12.05	9.63	15.42
S.A.W.C.-Europe	19	173	421	2.41	1.27	4.42	2.33	28.03	29.09	3.78	30.35
S.A.W.C.-U.S.E.C.	17	607	1,461	2.41	1.27	4.42	2.33	11.70	12.76	9.04	18.51
U.S.E.C.-Asia	90	2,946	7,114	2.41	1.27	4.42	2.33	22.71	23.77	4.66	32.54
U.S.E.C.-C.A.W.C.	14	260	800	2.41	1.27	4.42	2.33	9.23	10.29	11.46	28.15
U.S.E.C.-Canada W.C.	2	7	116	2.41	1.27	4.42	2.33	18.17	19.23	5.82	35.78
U.S.E.C.-Oceania	4	129	313	2.41	1.27	4.42	2.33	26.02	27.08	4.07	30.19
U.S.E.C.-S.A.W.C.	3	49	128	2.41	1.27	4.42	2.33	13.62	14.68	7.77	21.94
U.S.E.C.-U.S.W.C.	21	601	1,551	2.41	1.27	4.42	2.33	14.06	15.12	7.52	30.95
U.S.W.C.-Africa	10	334	984	2.41	1.26	4.42	2.31	16.39	17.44	6.41	20.19
U.S.W.C.-C.A.E.C.	3	96	262	2.41	1.26	4.42	2.32	11.90	12.96	8.86	23.13
U.S.W.C.-U.S.E.C.	4	102	289	2.41	1.27	4.42	2.32	13.36	14.41	7.91	29.10
Subtotal	458	23,684	55,340	2.41	1.27	4.42	2.33	14.43	15.49	7.32	20.73
Tankers											
Diverted Transits											
Middle East-U.S.W.C.	0	0	0	2.41	1.27	4.42	2.29	1.27	2.29	79.73	0.48
S.A.E.C.-C.A.W.C.	68	3,130	8,802	2.41	1.26	4.42	2.32	10.88	11.94	9.68	11.68
S.A.E.C.-U.S.W.C.	27	978	1,569	2.41	1.27	4.42	2.32	18.66	19.71	5.66	18.82
U.S.W.C.-S.A.E.C.	1	29	40	2.41	1.27	4.42	2.33	18.79	19.85	5.64	18.90
Subtotal	95	4,137	10,411	2.41	1.26	4.42	2.32	12.77	13.83	8.25	13.42
Subtotal	553	27,821	65,751	2.41	1.27	4.42	2.32	14.18	15.24	7.45	19.64

(Continued)

Table E-25. Laden Transits, Tons Carried, Toll Revenue and Toll Rates, Using Optimal Toll Structure and Rates, 250,000 DWT Scenario, 2060, by Ship Type, Diversion Status, and Trade Route (1990 US$, except when noted)(continued)

Ship Type, Diversion Status, and Trade Route	Transits	Cargo Tonnage Carried (thousands)	Revenue (thousands) a/	Current Toll Schedule: Toll Per Panama Canal Net Ton	Current Toll Schedule: Toll Per Cargo Ton Carried	New Toll Schedule: Toll Per Panama Canal Net Ton	New Toll Schedule: Toll Per Cargo Ton Carried	Total Transportation Costs per Ton Carried: Via Panama Canal: With Current Toll Structure	Via Panama Canal: With New Toll Structure	Via Panama Canal: Percent Increase	Via Least Costly Alternative Route
Vehicle Carriers (continued)											
Non-Diverted Transits (continued)											
Asia-C.A.E.C.	13	34	1,755	2.41	29.09	4.42	53.41	417.19	441.51	5.83	496.39
Asia-U.S.E.C.	481	2,251	71,524	2.41	29.20	4.42	53.55	439.54	463.89	5.54	516.31
C.A.W.C.-C.A.E.C.	3	3	234	2.41	28.71	4.42	52.65	266.35	290.29	8.99	440.99
C.A.E.C.-C.A.W.C.	8	3	1,281	2.41	29.22	4.42	53.59	272.22	296.59	8.95	411.00
C.A.E.C.-Oceania	1	0	150	2.41	29.22	4.42	53.59	434.22	458.59	5.61	482.00
Europe-Canada W.C.	7	16	1,455	2.41	30.90	4.42	56.57	386.38	412.05	6.64	457.44
Europe-U.S.W.C.	156	299	27,254	2.41	29.95	4.42	54.86	402.97	427.88	6.18	458.96
S.A.W.C.-C.A.E.C.	0	0	16	2.41	28.70	4.42	52.63	323.70	347.63	7.39	380.00
U.S.E.C.-Asia	42	192	6,945	2.41	29.67	4.42	53.80	415.81	439.94	5.80	510.17
Subtotal	711	2,799	110,615	2.41	29.43	4.42	53.97	433.06	457.47	5.64	508.98
Vehicle Carriers											
Diverted Transits											
Asia-S.A.E.C.	0	0	7	2.41	29.13	4.42	53.46	484.21	508.53	5.02	468.49
Canada E.C.-Asia	1	3	35	2.41	29.22	4.42	53.60	465.22	489.60	5.24	456.00
U.S.E.C.-Oceania	13	30	1,940	2.41	29.22	4.42	53.59	433.22	457.59	5.63	453.00
Subtotal	13	33	1,982	2.41	29.22	4.42	53.59	436.19	460.56	5.59	453.36
Subtotal	724	2,831	112,596	2.41	29.42	4.42	53.96	433.10	457.51	5.64	508.34
Total Non-Diverting	17,240	440,090	1,498,663	2.41	1.78	4.42	3.27	*,***.**	*,***.**	***.**	55.98
Total Diverting	639	25,410	51,313	2.41	1.37	4.42	2.51	22.73	23.90	5.15	23.12

Notes: These calculations do not include all transits and tons carried forecast by the WEFA Group. For some ship-type and trade-route combinations (accounting for a total of 27 transits and 291695 tons), vessel costs were not available for every DWT size interval. As a result, these transits and tons were excluded. In addition, for 2480 transits and 49528628 tons, the cost by way of the Panama Canal without a toll was higher than the least costly alternative route. As a result, these transits and tons were excluded. Percentages may not calculate exactly as shown due to rounding. A fee of $0.40 per Panama Canal net ton has also been included to account for charges such as handling and agency fees incurred when transitting the Canal. The extra fee is only used to determine diversion status by adding it to the cost per ton carried and is not included in the revenue calculations.

a/ Revenue lost from diversions is measured as the revenue generated by the maximum, nondiverting toll rate increase.

Source: Nathan Associates Inc., based on forecasts of traffic and transportation costs provided by The WEFA Group.

OPTIMAL TOLL STRUCTURE AND RATES

Table E-26. Optimal Toll Structure and Rates (1990 US$)

Project Year, Scenario, and Ship Type	Laden	Ballast
2020		
Status Quo		
All Vessels	4.02	3.20
150,00 DWT		
Tankers less than 40,000 Panama Canal Net Tons	4.02	3.20
Tankers larger than or equal to 40,000 Panama Canal Net Tons	3.30	2.63
All Other Vessels	4.02	3.20
200,00 DWT		
Dry Bulk Carriers less than 70,000 Panama Canal Net Tons	4.02	3.20
Dry Bulk Carriers larger than or equal to 70,000 Panama Canal Net Tons	1.51	1.20
Tankers less than 40,000 Panama Canal Net Tons	4.02	3.20
Tankers larger than or equal to 40,000 Panama Canal Net Tons	3.30	2.63
All Other Vessels	4.02	3.20
250,00 DWT		
Tankers less than 40,000 Panama Canal Net Tons	4.02	3.20
Tankers larger than or equal to 40,000 Panama Canal Net Tons	3.30	2.63
All Other Vessels	4.02	3.20
2060		
Status Quo		
All Vessels	4.02	3.20
150,000 DWT		
All Vessels	4.02	3.20
200,000 DWT		
All Vessels	4.02	3.20
250,000 DWT		
All Vessels	4.02	3.20

Source: Nathan Associates Inc.

Appendix F

DISTRIBUTION OF TONNAGE CARRIED ON THE LEAST COSTLY ROUTES

Table F-1. Distribution of Tonnage Carried on the Least Costly Alternative Routes by Ship Type and Trade Route, 2020 and 2060

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
CONTAINER-BREAKBULK																		
AFRICA - C. AMERICA W.C.	0.000	0.002	0.848	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.002	0.848	0.850	0.150	0.000	0.000	0.000	0.000
AFRICA - CANADA WEST COAST	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
AFRICA - U.S. W.C., HAWAII	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
ASIA - CANADA EAST COAST	0.000	0.369	0.033	0.402	0.598	0.000	0.000	0.000	0.000	0.000	0.369	0.033	0.402	0.598	0.000	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.766	0.180	0.946	0.054	0.000	0.000	0.000	0.000	0.000	0.766	0.180	0.946	0.054	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.000	0.000	0.092	0.092	0.908	0.000	0.000	0.000	0.000	0.000	0.000	0.092	0.092	0.908	0.000	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.000	0.812	0.101	0.913	0.087	0.000	0.000	0.000	0.000	0.000	0.812	0.101	0.913	0.087	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.000	0.379	0.468	0.847	0.153	0.000	0.000	0.000	0.000	0.000	0.379	0.468	0.847	0.153	0.000	0.000	0.000	0.000
C. AMERICA W.C. - AFRICA	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.000	0.316	0.563	0.879	0.121	0.000	0.000	0.000	0.000	0.000	0.316	0.563	0.879	0.121	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.000	0.615	0.041	0.656	0.344	0.000	0.000	0.000	0.000	0.000	0.615	0.041	0.656	0.344	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.000	0.000	0.457	0.457	0.543	0.000	0.000	0.000	0.000	0.000	0.000	0.457	0.457	0.543	0.000	0.000	0.000	0.000
CANADA EAST COAST - C. AMERICA W.C.	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CANADA EAST COAST - OCEANIA	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CANADA EAST COAST - S. AMERICA W.C.	0.000	0.000	0.926	0.926	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.926	0.926	0.074	0.000	0.000	0.000	0.000
CANADA EAST COAST - U.S. W.C., HAWAII	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CANADA WEST COAST - AFRICA	0.000	0.000	0.936	0.936	0.064	0.000	0.000	0.000	0.000	0.000	0.000	0.936	0.936	0.064	0.000	0.000	0.000	0.000
CANADA WEST COAST - EUROPE	0.000	0.000	0.335	0.335	0.665	0.000	0.000	0.000	0.000	0.000	0.000	0.335	0.335	0.665	0.000	0.000	0.000	0.000
CANADA WEST COAST - S. AMERICA E.C.	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
CANADA WEST COAST - U.S. EAST COAST	0.000	0.000	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.000	0.715	0.114	0.829	0.171	0.000	0.000	0.000	0.000	0.000	0.715	0.114	0.829	0.171	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - CANADA WEST COAST	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - OCEANIA	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	0.000	0.255	0.542	0.798	0.202	0.000	0.000	0.000	0.000	0.000	0.255	0.542	0.798	0.202	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.000	0.438	0.445	0.883	0.117	0.000	0.000	0.000	0.000	0.000	0.438	0.445	0.883	0.117	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
EUROPE - CANADA WEST COAST	0.000	0.000	0.097	0.097	0.903	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.097	0.903	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.000	0.468	0.372	0.840	0.160	0.000	0.000	0.000	0.000	0.000	0.468	0.372	0.840	0.160	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.000	0.000	0.134	0.134	0.865	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.134	0.865	0.000	0.000	0.000	0.000
OCEANIA - CANADA EAST COAST	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
OCEANIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
OCEANIA - EUROPE	0.000	0.076	0.053	0.129	0.871	0.000	0.000	0.000	0.000	0.000	0.076	0.053	0.129	0.871	0.000	0.000	0.000	0.000
OCEANIA - S. AMERICA E.C.	0.000	0.383	0.516	0.898	0.102	0.000	0.000	0.000	0.000	0.000	0.383	0.516	0.898	0.102	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.000	0.000	0.061	0.061	0.939	0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.061	0.939	0.000	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.000	0.554	0.155	0.709	0.291	0.000	0.000	0.000	0.000	0.000	0.554	0.155	0.709	0.291	0.000	0.000	0.000	0.000
S. AMERICA E.C. - C. AMERICA W.C.	0.000	0.788	0.087	0.876	0.124	0.000	0.000	0.000	0.000	0.000	0.788	0.087	0.876	0.124	0.000	0.000	0.000	0.000
S. AMERICA E.C. - CANADA WEST COAST	0.000	0.750	0.107	0.857	0.143	0.000	0.000	0.000	0.000	0.000	0.750	0.107	0.857	0.143	0.000	0.000	0.000	0.000

(Continued)

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
CONTAINER-BREAKBULK (CONTINUED)																		
S. AMERICA E.C. - OCEANIA	0.000	0.790	0.080	0.850	0.150	0.000	0.000	0.000	0.000	0.000	0.750	0.107	0.857	0.143	0.000	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.000	0.510	0.249	0.759	0.241	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.850	0.150	0.000	0.000	0.000	0.000
S. AMERICA E.C. - U.S. W.C., HAWAII	0.000	0.574	0.234	0.808	0.192	0.000	0.000	0.000	0.000	0.000	0.510	0.249	0.759	0.241	0.000	0.000	0.000	0.000
S. AMERICA W.C. - AFRICA	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.574	0.234	0.808	0.192	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CANADA EAST COAST	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.000	0.718	0.157	0.875	0.125	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.718	0.157	0.875	0.125	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.000	0.659	0.150	0.809	0.191	0.000	0.000	0.000	0.000	0.000	0.946	0.054	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.000	0.144	0.342	0.486	0.514	0.000	0.000	0.000	0.000	0.000	0.659	0.150	0.809	0.191	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.000	0.495	0.331	0.826	0.174	0.000	0.000	0.000	0.000	0.000	0.144	0.342	0.486	0.514	0.000	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.000	0.545	0.073	0.618	0.382	0.000	0.000	0.000	0.000	0.000	0.495	0.331	0.826	0.174	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.680	0.000	0.680	0.320	0.000	0.000	0.000	0.000	0.000	0.545	0.073	0.618	0.382	0.000	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.646	0.050	0.696	0.304	0.000	0.000	0.000	0.000
U.S. EAST COAST - U.S. W.C., HAWAII	0.000	0.025	0.084	0.109	0.891	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - AFRICA	0.000	0.000	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.084	0.109	0.891	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CANADA EAST COAST	0.000	0.736	0.148	0.884	0.116	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.000	0.063	0.276	0.339	0.661	0.000	0.000	0.000	0.000	0.000	0.736	0.148	0.884	0.116	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.063	0.276	0.339	0.661	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - S. AMERICA E.C.	0.000	0.086	0.482	0.569	0.431	0.000	0.000	0.000	0.000	0.000	0.870	0.050	0.920	0.080	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - U.S. EAST COAST	0.000	0.086	0.482	0.569	0.431	0.000	0.000	0.000	0.000	0.000	0.086	0.482	0.569	0.431	0.000	0.000	0.000	0.000
DRY BULK CARRIERS																		
AFRICA - C. AMERICA W.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
AFRICA - CANADA WEST COAST	0.000	0.000	0.000	0.543	0.257	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.453	0.277	0.270	0.000	0.000	0.000
AFRICA - OCEANIA	0.000	0.000	0.000	0.556	0.394	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.466	0.324	0.210	0.000	0.000	0.000
AFRICA - S. AMERICA W.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
AFRICA - U.S. W.C., HAWAII	0.000	0.000	0.000	0.334	0.610	0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.289	0.458	0.253	0.000	0.000	0.000
ASIA - CANADA EAST COAST	0.000	0.000	0.000	0.230	0.571	0.199	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.663	0.209	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.939	0.009	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.904	0.036	0.061	0.000	0.000	0.000
ASIA - EUROPE	0.000	0.000	0.000	0.000	0.932	0.068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.821	0.179	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.000	0.000	0.000	0.506	0.238	0.256	0.000	0.000	0.000	0.000	0.000	0.000	0.404	0.330	0.266	0.000	0.000	0.000
BRAZIL - ASIA	0.000	0.000	0.000	0.000	0.000	0.000	0.199	0.496	0.305	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.361	0.639
C. AMERICA W.C. - AFRICA	0.000	0.000	0.000	0.829	0.058	0.113	0.000	0.000	0.000	0.000	0.000	0.000	0.758	0.116	0.127	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.739	0.039	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.633	0.137	0.230	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.000	0.000	0.000	0.648	0.175	0.176	0.000	0.000	0.000	0.000	0.000	0.000	0.552	0.260	0.189	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.000	0.000	0.000	0.681	0.144	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.585	0.227	0.188	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.000	0.000	0.000	0.310	0.256	0.027	0.110	0.188	0.110	0.000	0.000	0.000	0.232	0.189	0.176	0.000	0.201	0.201
CANADA EAST COAST - OCEANIA	0.000	0.000	0.000	0.849	0.046	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.790	0.060	0.151	0.000	0.000	0.000
CANADA EAST COAST - S. AMERICA W.C.	0.000	0.000	0.000	0.675	0.278	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.587	0.214	0.200	0.000	0.000	0.000
CANADA WEST COAST - AFRICA	0.000	0.000	0.000	0.456	0.341	0.204	0.000	0.000	0.000	0.000	0.000	0.000	0.356	0.433	0.211	0.000	0.000	0.000

(Continued)

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
DRY BULK CARRIERS (CONTINUED)																		
CANADA WEST COAST - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
CANADA WEST COAST - EUROPE	0.000	0.000	0.000	0.225	0.376	0.167	0.070	0.162	0.000	0.000	0.000	0.000	0.147	0.487	0.251	0.000	0.115	0.000
CANADA WEST COAST - MIDDLE EAST	0.000	0.000	0.000	0.266	0.536	0.198	0.000	0.000	0.000	0.000	0.000	0.000	0.163	0.628	0.208	0.000	0.000	0.000
CANADA WEST COAST - S. AMERICA E.C.	0.000	0.000	0.000	0.166	0.106	0.142	0.293	0.293	0.000	0.000	0.000	0.000	0.161	0.186	0.187	0.000	0.467	0.000
CANADA WEST COAST - U.S. EAST COAST	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - CANADA WEST COAST	0.000	0.000	0.000	0.900	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - OCEANIA	0.000	0.000	0.000	0.900	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
COLUMBIA - ASIA	0.000	0.000	0.000	0.000	0.000	0.000	0.491	0.509	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
EUROPE - ASIA	0.000	0.000	0.000	0.421	0.529	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.331	0.458	0.211	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.000	0.000	0.000	0.850	0.050	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
EUROPE - CANADA WEST COAST	0.000	0.000	0.000	0.485	0.283	0.232	0.000	0.000	0.000	0.000	0.000	0.000	0.396	0.299	0.306	0.000	0.000	0.000
EUROPE - OCEANIA	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.000	0.000	0.000	0.508	0.275	0.218	0.000	0.000	0.000	0.000	0.000	0.000	0.418	0.292	0.289	0.000	0.000	0.000
MIDDLE EAST - S. AMERICA W.C.	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.830	0.170	0.000	0.000	0.000
OCEANIA - CANADA EAST COAST	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
OCEANIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
OCEANIA - EUROPE	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
OCEANIA - S. AMERICA E.C.	0.000	0.000	0.000	0.000	0.189	0.811	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.270	0.730	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.000	0.000	0.000	0.058	0.331	0.610	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.423	0.577	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.000	0.000	0.000	0.531	0.319	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.441	0.288	0.270	0.000	0.000	0.000
S. AMERICA E.C. - C. AMERICA W.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
S. AMERICA E.C. - CANADA WEST COAST	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.000	0.000	0.000	0.779	0.050	0.171	0.000	0.000	0.000	0.000	0.000	0.000	0.697	0.068	0.235	0.000	0.000	0.000
S. AMERICA E.C. - U.S. W.C., HAWAII	0.000	0.000	0.000	0.274	0.151	0.575	0.000	0.000	0.000	0.000	0.000	0.000	0.178	0.175	0.647	0.000	0.000	0.000
S. AMERICA W.C. - AFRICA	0.000	0.000	0.000	0.191	0.602	0.207	0.000	0.000	0.000	0.000	0.000	0.000	0.102	0.684	0.214	0.000	0.000	0.000
S. AMERICA W.C. - CANADA EAST COAST	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.000	0.000	0.000	0.448	0.154	0.038	0.129	0.230	0.000	0.000	0.000	0.000	0.428	0.127	0.146	0.000	0.149	0.149
S. AMERICA W.C. - S. AMERICA E.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.000	0.000	0.000	0.761	0.188	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.659	0.187	0.154	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.000	0.000	0.000	0.056	0.333	0.075	0.535	0.000	0.000	0.000	0.000	0.000	0.000	0.251	0.211	0.000	0.537	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.000	0.000	0.000	0.825	0.132	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.742	0.019	0.239	0.000	0.000	0.000
U.S. EAST COAST - CANADA WEST COAST	0.000	0.000	0.000	0.622	0.179	0.199	0.000	0.000	0.000	0.000	0.000	0.000	0.644	0.109	0.247	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.000	0.000	0.730	0.180	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.715	0.024	0.260	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	0.000	0.000	0.000	0.803	0.149	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.030	0.210	0.000	0.000	0.000
U.S. EAST COAST - U.S. W.C., HAWAII	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.579	0.248	0.000	0.000	0.000
U.S. W.C., HAWAII - AFRICA	0.000	0.000	0.000	0.274	0.488	0.238	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.579	0.248	0.000	0.000	0.000

(Continued

Table F-1. (continued)

Ship Type and Trade Route	Tonnage Carried Intervals (thousands), 2020									Tonnage Carried Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
DRY BULK CARRIERS (CONTINUED)																		
U.S. W.C., HAWAII - CANADA EAST COAST	0.000	0.000	0.000	0.721	0.069	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.619	0.162	0.219	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.000	0.000	0.000	0.141	0.487	0.373	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.579	0.381	0.000	0.000	0.000
U.S. W.C., HAWAII - S. AMERICA E.C.	0.000	0.000	0.000	0.850	0.100	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.040	0.210	0.000	0.000	0.000
U.S. W.C., HAWAII - U.S. EAST COAST	0.000	0.000	0.000	0.895	0.057	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.091	0.059	0.000	0.000	0.000
VENEZUELA - ASIA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500
CHEMICAL TANKERS																		
AFRICA - S. AMERICA W.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.327	0.000	0.000	0.673	0.000	0.000	0.000	0.000	0.000	0.278	0.000	0.000	0.722	0.000	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.159	0.000	0.000	0.841	0.000	0.000	0.000	0.000	0.000	0.102	0.000	0.000	0.898	0.000	0.000	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.090	0.000	0.000	0.806	0.104	0.000	0.000	0.000	0.000	0.054	0.000	0.000	0.741	0.205	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.237	0.000	0.000	0.763	0.000	0.000	0.000	0.000	0.000	0.189	0.000	0.000	0.811	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.360	0.000	0.000	0.540	0.100	0.000	0.000	0.000	0.000	0.310	0.000	0.000	0.490	0.200	0.000	0.000	0.000	0.000
CANADA WEST COAST - EUROPE	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - U.S. EAST COAST	0.000	0.000	0.000	0.900	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.200	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.009	0.000	0.000	0.991	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.176	0.000	0.000	0.824	0.000	0.000	0.000	0.000	0.000	0.120	0.000	0.000	0.880	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.006	0.000	0.000	0.894	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.200	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.008	0.000	0.000	0.992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.599	0.000	0.000	0.401	0.000	0.000	0.000	0.000	0.000	0.549	0.000	0.000	0.451	0.000	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.094	0.000	0.000	0.906	0.000	0.000	0.000	0.000	0.000	0.044	0.000	0.000	0.956	0.000	0.000	0.000	0.000	0.000
OCEANIA - EUROPE	0.000	0.000	0.000	0.900	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.200	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.000	0.000	0.000	0.578	0.422	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.476	0.524	0.000	0.000	0.000	0.000
S. AMERICA E.C. - C. AMERICA W.C.	0.762	0.000	0.000	0.238	0.000	0.000	0.000	0.000	0.000	0.714	0.000	0.000	0.286	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - U.S. W.C., HAWAII	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.716	0.000	0.000	0.284	0.000	0.000	0.000	0.000	0.000	0.673	0.000	0.000	0.327	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.461	0.000	0.000	0.539	0.000	0.000	0.000	0.000	0.000	0.410	0.000	0.000	0.590	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.039	0.000	0.000	0.961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.454	0.000	0.000	0.459	0.087	0.000	0.000	0.000	0.000	0.400	0.000	0.000	0.424	0.177	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.023	0.000	0.000	0.876	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.200	0.000	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.642	0.000	0.000	0.358	0.000	0.000	0.000	0.000	0.000	0.592	0.000	0.000	0.408	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - CANADA WEST COAST	0.901	0.000	0.000	0.099	0.000	0.000	0.000	0.000	0.000	0.861	0.000	0.000	0.139	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.064	0.000	0.000	0.711	0.225	0.000	0.000	0.000	0.000	0.017	0.000	0.000	0.658	0.325	0.000	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	0.513	0.000	0.000	0.390	0.097	0.000	0.000	0.000	0.000	0.463	0.000	0.000	0.440	0.097	0.000	0.000	0.000	0.000

(Continue

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
CHEMICAL TANKERS(CONTINUED)																		
U.S. EAST COAST - U.S. W.C., HAWAII	0.009	0.000	0.000	0.180	0.811	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.191	0.809	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.222	0.000	0.000	0.677	0.101	0.000	0.000	0.000	0.000	0.174	0.000	0.000	0.624	0.202	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - S. AMERICA E.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - U.S. EAST COAST	0.000	0.000	0.000	0.241	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.241	0.759	0.000	0.000	0.000	0.000
FULL CONTAINER SHIPS																		
AFRICA - U.S. W.C., HAWAII	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
ASIA - CANADA EAST COAST	0.000	0.101	0.153	0.253	0.747	0.000	0.000	0.000	0.000	0.000	0.090	0.124	0.214	0.786	0.000	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.217	0.694	0.911	0.089	0.000	0.000	0.000	0.000	0.000	0.205	0.663	0.868	0.132	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.000	0.000	0.174	0.174	0.826	0.000	0.000	0.000	0.000	0.000	0.000	0.142	0.142	0.858	0.000	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.000	0.000	0.054	0.054	0.498	0.448	0.000	0.000	0.000	0.000	0.000	0.027	0.027	0.399	0.324	0.249	0.000	0.000
ASIA - U.S. EAST COAST	0.000	0.000	0.054	0.054	0.498	0.448	0.000	0.000	0.000	0.000	0.000	0.027	0.027	0.399	0.324	0.249	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.000	0.183	0.779	0.963	0.037	0.000	0.000	0.000	0.000	0.000	0.169	0.756	0.925	0.075	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.000	0.000	0.980	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	0.000	0.075	0.884	0.959	0.041	0.000	0.000	0.000	0.000	0.000	0.067	0.851	0.918	0.082	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.000	0.264	0.449	0.713	0.287	0.000	0.000	0.000	0.000	0.000	0.254	0.420	0.674	0.326	0.000	0.000	0.000	0.000
CANADA EAST COAST - OCEANIA	0.000	0.580	0.381	0.961	0.039	0.000	0.000	0.000	0.000	0.000	0.570	0.352	0.922	0.078	0.000	0.000	0.000	0.000
CANADA EAST COAST - U.S. W.C., HAWAII	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - EUROPE	0.000	0.498	0.344	0.841	0.159	0.000	0.000	0.000	0.000	0.000	0.483	0.316	0.799	0.201	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.000	0.194	0.655	0.849	0.151	0.000	0.000	0.000	0.000	0.000	0.177	0.622	0.799	0.201	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.692	0.014	0.266	0.280	0.027	0.000	0.000	0.000	0.000	0.000	0.685	0.264	0.948	0.052	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - OCEANIA	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.159	0.763	0.000	0.763	0.079	0.000	0.000	0.000	0.000	0.000	0.960	0.000	0.960	0.040	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	0.000	0.108	0.826	0.934	0.066	0.000	0.000	0.000	0.000	0.000	0.095	0.798	0.893	0.107	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.000	0.000	0.329	0.329	0.671	0.000	0.000	0.000	0.000	0.000	0.000	0.302	0.302	0.698	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.000	0.000	0.980	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000
EUROPE - CANADA WEST COAST	0.000	0.610	0.357	0.967	0.033	0.000	0.000	0.000	0.000	0.000	0.600	0.333	0.933	0.067	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.000	0.300	0.663	0.963	0.037	0.000	0.000	0.000	0.000	0.000	0.289	0.637	0.926	0.074	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.000	0.000	0.980	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.000	0.222	0.210	0.432	0.258	0.310	0.000	0.000	0.000	0.000	0.194	0.188	0.382	0.258	0.361	0.000	0.000	0.000
MIDDLE EAST - U.S. W.C., HAWAII	0.000	0.362	0.564	0.927	0.073	0.000	0.000	0.000	0.000	0.000	0.353	0.537	0.890	0.110	0.000	0.000	0.000	0.000
OCEANIA - CANADA EAST COAST	0.000	0.483	0.478	0.961	0.039	0.000	0.000	0.000	0.000	0.000	0.473	0.448	0.921	0.079	0.000	0.000	0.000	0.000
OCEANIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
OCEANIA - S. AMERICA E.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.000	0.462	0.499	0.961	0.039	0.000	0.000	0.000	0.000	0.000	0.452	0.470	0.921	0.079	0.000	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
S. AMERICA E.C. - C. AMERICA W.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
S. AMERICA E.C. - U.S. W.C., HAWAII	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000

(Continued)

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
FULL CONTAINER SHIPS (CONTINUED)																		
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.197	0.778	0.000	0.778	0.025	0.000	0.000	0.000	0.000	0.000	0.960	0.000	0.960	0.040	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.000	0.000	0.978	0.978	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.948	0.948	0.052	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.000	0.000	0.118	0.118	0.490	0.392	0.000	0.000	0.000	0.000	0.000	0.089	0.089	0.394	0.295	0.222	0.000	0.000
U.S. EAST COAST - ASIA	0.000	0.000	0.118	0.118	0.490	0.392	0.000	0.000	0.000	0.000	0.000	0.089	0.089	0.394	0.295	0.222	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.508	0.455	0.963	0.037	0.000	0.000	0.000	0.000	0.000	0.498	0.427	0.925	0.075	0.000	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	0.000	0.980	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.970	0.030	0.000	0.000	0.000	0.000
U.S. EAST COAST - U.S. W.C., HAWAII	0.000	0.000	0.056	0.056	0.944	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.028	0.972	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - AFRICA	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CANADA EAST COAST	0.000	0.041	0.543	0.584	0.416	0.000	0.000	0.000	0.000	0.000	0.029	0.514	0.543	0.457	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.034	0.130	0.766	0.896	0.071	0.000	0.000	0.000	0.000	0.000	0.337	0.567	0.904	0.096	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.000	0.266	0.218	0.484	0.258	0.258	0.000	0.000	0.000	0.000	0.237	0.194	0.431	0.263	0.306	0.000	0.000	0.000
U.S. W.C., HAWAII - MIDDLE EAST	0.000	0.390	0.531	0.922	0.078	0.000	0.000	0.000	0.000	0.000	0.380	0.504	0.884	0.116	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - U.S. EAST COAST	0.000	0.000	0.343	0.343	0.657	0.000	0.000	0.000	0.000	0.000	0.000	0.314	0.314	0.686	0.000	0.000	0.000	0.000
GENERAL CARGO CARRIERS																		
AFRICA - C. AMERICA W.C.	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
AFRICA - S. AMERICA W.C.	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - CANADA EAST COAST	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.000	0.861	0.139	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.861	0.139	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - AFRICA	0.436	0.497	0.067	0.564	0.000	0.000	0.000	0.000	0.000	0.436	0.497	0.067	0.564	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.159	0.792	0.050	0.841	0.000	0.000	0.000	0.000	0.000	0.159	0.792	0.050	0.841	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.253	0.703	0.045	0.747	0.000	0.000	0.000	0.000	0.000	0.253	0.703	0.045	0.747	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	0.545	0.407	0.048	0.455	0.000	0.000	0.000	0.000	0.000	0.545	0.407	0.048	0.455	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - C. AMERICA W.C.	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - OCEANIA	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - S. AMERICA W.C.	0.305	0.649	0.046	0.695	0.000	0.000	0.000	0.000	0.000	0.305	0.649	0.046	0.695	0.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - CENTRAL AMERICA E.C., W. INDIE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - EUROPE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - MIDDLE EAST	0.232	0.720	0.048	0.768	0.000	0.000	0.000	0.000	0.000	0.232	0.720	0.048	0.768	0.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - S. AMERICA E.C.	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.519	0.429	0.052	0.481	0.000	0.000	0.000	0.000	0.000	0.519	0.429	0.052	0.481	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - OCEANIA	0.124	0.824	0.052	0.876	0.000	0.000	0.000	0.000	0.000	0.124	0.824	0.052	0.876	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.																		

(Continue

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
GENERAL CARGO CARRIERS (CONTINUED)																		
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.051	0.896	0.053	0.949	0.000	0.000	0.000	0.000	0.000	0.051	0.896	0.053	0.949	0.000	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.087	0.863	0.050	0.913	0.000	0.000	0.000	0.000	0.000	0.087	0.863	0.050	0.913	0.000	0.000	0.000	0.000	0.000
EUROPE - CANADA WEST COAST	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.004	0.700	0.296	0.996	0.000	0.000	0.000	0.000	0.000	0.004	0.700	0.296	0.996	0.000	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.023	0.927	0.050	0.977	0.000	0.000	0.000	0.000	0.000	0.023	0.927	0.050	0.977	0.000	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.691	0.281	0.028	0.309	0.000	0.000	0.000	0.000	0.000	0.691	0.281	0.028	0.309	0.000	0.000	0.000	0.000	0.000
MIDDLE EAST - S. AMERICA W.C.	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000
MIDDLE EAST - U.S. W.C., HAWAII	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
OCEANIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
OCEANIA - EUROPE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
OCEANIA - S. AMERICA E.C.	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.300	0.646	0.055	0.700	0.000	0.000	0.000	0.000	0.000	0.300	0.646	0.055	0.700	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - C. AMERICA W.C.	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - CANADA WEST COAST	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.189	0.763	0.048	0.811	0.000	0.000	0.000	0.000	0.000	0.189	0.763	0.048	0.811	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - U.S. W.C., HAWAII	0.151	0.803	0.045	0.849	0.000	0.000	0.000	0.000	0.000	0.151	0.803	0.045	0.849	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - AFRICA	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CANADA EAST COAST	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.542	0.414	0.044	0.458	0.000	0.000	0.000	0.000	0.000	0.542	0.414	0.044	0.458	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - MIDDLE EAST	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.629	0.334	0.036	0.371	0.000	0.000	0.000	0.000	0.000	0.629	0.334	0.036	0.371	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.144	0.807	0.049	0.856	0.000	0.000	0.000	0.000	0.000	0.144	0.807	0.049	0.856	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.000	0.888	0.112	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.888	0.112	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.323	0.626	0.051	0.677	0.000	0.000	0.000	0.000	0.000	0.323	0.626	0.051	0.677	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	0.161	0.790	0.049	0.839	0.000	0.000	0.000	0.000	0.000	0.161	0.790	0.049	0.839	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - U.S. W.C., HAWAII	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - AFRICA	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.050	1.000	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000	0.920	0.030	0.050	0.080	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.252	0.696	0.052	0.748	0.000	0.000	0.000	0.000	0.000	0.252	0.696	0.052	0.748	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - S. AMERICA E.C.	0.591	0.369	0.040	0.409	0.000	0.000	0.000	0.000	0.000	0.591	0.369	0.040	0.409	0.000	0.000	0.000	0.000	0.000
LIQUID GAS CARRIERS																		
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.332	0.000	0.000	0.668	0.000	0.000	0.000	0.000	0.000	0.332	0.000	0.000	0.668	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.065	0.000	0.000	0.617	0.318	0.000	0.000	0.000	0.000	0.065	0.000	0.000	0.617	0.318	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

(Continued

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
LIQUID GAS CARRIERS (CONTINUED)																		
EUROPE - S. AMERICA W.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - C. AMERICA W.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.019	0.000	0.000	0.981	0.000	0.000	0.000	0.000	0.000	0.019	0.000	0.000	0.981	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REFRIGERATED SHIPS																		
AFRICA - ASIA	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
AFRICA - C. AMERICA W.C.	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
AFRICA - S. AMERICA W.C.	0.556	0.444	0.000	0.444	0.000	0.000	0.000	0.000	0.000	0.979	0.021	0.000	0.021	0.000	0.000	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.294	0.706	0.000	0.706	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - AFRICA	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CANADA EAST COAST	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.009	0.991	0.000	0.991	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.147	0.853	0.000	0.853	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - C. AMERICA W.C.	0.141	0.859	0.000	0.859	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CANADA WEST COAST - EUROPE	0.483	0.517	0.000	0.517	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.791	0.209	0.000	0.209	0.000	0.000	0.000	0.000	0.000	0.619	0.381	0.000	0.381	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.752	0.248	0.000	0.248	0.000	0.000	0.000	0.000	0.000	0.550	0.450	0.000	0.450	0.000	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.138	0.862	0.000	0.862	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - CANADA WEST COAST	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.420	0.580	0.000	0.580	0.000	0.000	0.000	0.000	0.000	0.155	0.845	0.000	0.845	0.000	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
MIDDLE EAST - S. AMERICA W.C.	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
OCEANIA - CENTRAL AMERICA E.C., W. INDIE	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
OCEANIA - EUROPE	0.386	0.614	0.000	0.614	0.000	0.000	0.000	0.000	0.000	0.184	0.816	0.000	0.816	0.000	0.000	0.000	0.000	0.000
OCEANIA - S. AMERICA E.C.	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.831	0.169	0.000	0.169	0.000	0.000	0.000	0.000	0.000	0.672	0.328	0.000	0.328	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - AFRICA	0.629	0.371	0.000	0.371	0.000	0.000	0.000	0.000	0.000	0.428	0.572	0.000	0.572	0.000	0.000	0.000	0.000	0.000

(Continued

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
REFRIGERATED SHIPS (CONTINUED)																		
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.307	0.693	0.000	0.693	0.000	0.000	0.000	0.000	0.000	0.047	0.953	0.000	0.953	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.363	0.637	0.000	0.637	0.000	0.000	0.000	0.000	0.000	0.158	0.842	0.000	0.842	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - MIDDLE EAST	0.800	0.200	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.600	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.797	0.203	0.000	0.203	0.000	0.000	0.000	0.000	0.000	0.629	0.371	0.000	0.371	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.256	0.744	0.000	0.744	0.000	0.000	0.000	0.000	0.000	0.075	0.925	0.000	0.925	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.359	0.641	0.000	0.641	0.000	0.000	0.000	0.000	0.000	0.106	0.894	0.000	0.894	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.169	0.831	0.000	0.831	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - S. AMERICA W.C.	0.156	0.844	0.000	0.844	0.000	0.000	0.000	0.000	0.000	0.023	0.977	0.000	0.977	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.736	0.264	0.000	0.264	0.000	0.000	0.000	0.000	0.000	0.552	0.448	0.000	0.448	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - S. AMERICA E.C.	0.900	0.100	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.791	0.209	0.000	0.209	0.000	0.000	0.000	0.000	0.000
ROLL-ON ROLL-OFF																		
AFRICA - ASIA	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000
AFRICA - OCEANIA	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000
ASIA - CANADA EAST COAST	0.398	0.287	0.149	0.436	0.167	0.000	0.000	0.000	0.000	0.398	0.287	0.149	0.436	0.167	0.000	0.000	0.000	0.000
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.069	0.488	0.557	0.443	0.000	0.000	0.000	0.000	0.000	0.069	0.488	0.557	0.443	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.363	0.061	0.006	0.066	0.571	0.000	0.000	0.000	0.000	0.363	0.061	0.006	0.066	0.571	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.005	0.082	0.471	0.553	0.442	0.000	0.000	0.000	0.000	0.005	0.082	0.471	0.553	0.442	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.700	0.300	0.000	0.300	0.000	0.000	0.000	0.000	0.000	0.700	0.300	0.000	0.300	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - OCEANIA	0.000	0.000	0.305	0.305	0.695	0.000	0.000	0.000	0.000	0.000	0.000	0.305	0.305	0.695	0.000	0.000	0.000	0.000
CANADA WEST COAST - CENTRAL AMERICA E.C., W. INDIE	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.339	0.661	0.000	0.661	0.000	0.000	0.000	0.000	0.000	0.339	0.661	0.000	0.661	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - OCEANIA	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.000	0.051	0.869	0.920	0.080	0.000	0.000	0.000	0.000	0.000	0.051	0.869	0.920	0.080	0.000	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.000	0.054	0.703	0.758	0.242	0.000	0.000	0.000	0.000	0.000	0.083	0.712	0.795	0.205	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
OCEANIA - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.950	0.950	0.050	0.000	0.000	0.000	0.000
OCEANIA - EUROPE	0.000	0.000	0.152	0.152	0.848	0.000	0.000	0.000	0.000	0.000	0.000	0.152	0.152	0.848	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.000	0.098	0.562	0.660	0.340	0.000	0.000	0.000	0.000	0.000	0.098	0.562	0.660	0.340	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.102	0.778	0.000	0.778	0.119	0.000	0.000	0.000	0.000	0.102	0.778	0.000	0.778	0.119	0.000	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.064	0.580	0.644	0.356	0.000	0.000	0.000	0.000	0.000	0.092	0.514	0.606	0.394	0.000	0.000	0.000	0.000

(Continued)

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
ROLL-ON ROLL-OFF (CONTINUED)																		
U.S. EAST COAST - S. AMERICA W.C.	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CANADA EAST COAST	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.970	0.030	0.000	0.030	0.000	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.000	0.010	0.225	0.235	0.765	0.000	0.000	0.000	0.000	0.000	0.010	0.225	0.235	0.765	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - EUROPE	0.000	0.000	0.289	0.289	0.711	0.000	0.000	0.000	0.000	0.000	0.000	0.289	0.289	0.711	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - U.S. EAST COAST	0.000	0.006	0.581	0.587	0.413	0.000	0.000	0.000	0.000	0.000	0.006	0.581	0.587	0.413	0.000	0.000	0.000	0.000
TANKERS																		
AFRICA - U.S. W.C., HAWAII	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
C. AMERICA W.C. - AFRICA	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CANADA EAST COAST	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.289	0.000	0.000	0.695	0.016	0.000	0.000	0.000	0.000	0.289	0.000	0.000	0.695	0.016	0.000	0.000	0.000	0.000
C. AMERICA W.C. - EUROPE	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
C. AMERICA W.C. - S. AMERICA E.C.	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - U.S. EAST COAST	0.244	0.000	0.000	0.739	0.017	0.000	0.000	0.000	0.000	0.244	0.000	0.000	0.739	0.017	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.000	0.000	0.000	0.421	0.579	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.421	0.579	0.000	0.000	0.000	0.000
CANADA WEST COAST - U.S. EAST COAST	0.000	0.000	0.000	0.078	0.765	0.157	0.000	0.000	0.000	0.000	0.000	0.000	0.143	0.741	0.116	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - ASIA	0.028	0.000	0.000	0.485	0.274	0.213	0.000	0.000	0.000	0.028	0.000	0.000	0.485	0.274	0.213	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.069	0.000	0.000	0.150	0.613	0.169	0.000	0.000	0.000	0.092	0.000	0.000	0.139	0.689	0.079	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - S. AMERICA W.C.	0.030	0.000	0.000	0.730	0.241	0.000	0.000	0.000	0.000	0.054	0.000	0.000	0.718	0.228	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - U.S. W.C., HAWAII	0.003	0.000	0.000	0.153	0.737	0.106	0.000	0.000	0.000	0.003	0.000	0.000	0.174	0.726	0.097	0.000	0.000	0.000
EUROPE - C. AMERICA W.C.	0.389	0.000	0.000	0.591	0.020	0.000	0.000	0.000	0.000	0.389	0.000	0.000	0.591	0.020	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
EUROPE - S. AMERICA W.C.	0.043	0.000	0.000	0.937	0.020	0.000	0.000	0.000	0.000	0.043	0.000	0.000	0.937	0.020	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.000	0.000	0.000	0.747	0.253	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.747	0.253	0.000	0.000	0.000	0.000
MIDDLE EAST - U.S. W.C., HAWAII	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
OCEANIA - EUROPE	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
OCEANIA - U.S. EAST COAST	0.096	0.000	0.000	0.433	0.471	0.000	0.000	0.000	0.000	0.096	0.000	0.000	0.433	0.471	0.000	0.000	0.000	0.000
S. AMERICA E.C. - ASIA	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.990	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.996
S. AMERICA E.C. - C. AMERICA W.C.	0.002	0.000	0.000	0.027	0.202	0.768	0.000	0.000	0.000	0.002	0.000	0.000	0.038	0.385	0.575	0.000	0.000	0.000
S. AMERICA E.C. - S. AMERICA W.C.	0.010	0.000	0.000	0.075	0.671	0.244	0.000	0.000	0.000	0.010	0.000	0.000	0.084	0.793	0.113	0.000	0.000	0.000
S. AMERICA E.C. - U.S. W.C., HAWAII	0.000	0.000	0.000	0.406	0.209	0.385	0.000	0.000	0.000	0.000	0.000	0.000	0.414	0.544	0.041	0.000	0.000	0.000
S. AMERICA W.C. - CANADA EAST COAST	0.109	0.000	0.000	0.871	0.020	0.000	0.000	0.000	0.000	0.109	0.000	0.000	0.871	0.020	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.004	0.000	0.000	0.207	0.491	0.299	0.000	0.000	0.000	0.004	0.000	0.000	0.218	0.778	0.000	0.000	0.000	0.000
S. AMERICA W.C. - EUROPE	0.210	0.000	0.000	0.768	0.023	0.000	0.000	0.000	0.000	0.210	0.000	0.000	0.768	0.023	0.000	0.000	0.000	0.000
S. AMERICA W.C. - S. AMERICA E.C.	0.701	0.000	0.000	0.285	0.014	0.000	0.000	0.000	0.000	0.701	0.000	0.000	0.285	0.014	0.000	0.000	0.000	0.000
S. AMERICA W.C. - U.S. EAST COAST	0.000	0.000	0.000	0.350	0.641	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.359	0.641	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.016	0.000	0.000	0.400	0.377	0.207	0.000	0.000	0.000	0.016	0.000	0.000	0.421	0.366	0.198	0.000	0.000	0.000
U.S. EAST COAST - C. AMERICA W.C.	0.042	0.000	0.000	0.768	0.190	0.000	0.000	0.000	0.000	0.043	0.000	0.000	0.767	0.190	0.000	0.000	0.000	0.000
U.S. EAST COAST - CANADA WEST COAST	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	0.000	0.000	0.719	0.281	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.719	0.281	0.000	0.000	0.000	0.000

(Continued

Table F-1. (continued)

Ship Type and Trade Route	Vessel DWT Intervals (thousands), 2020									Vessel DWT Intervals (thousands), 2060								
	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250	0-10	10-25	25-40	10-40	40-65	65-100	100-150	150-200	200-250
TANKERS (CONTINUED)																		
U.S. EAST COAST - S. AMERICA W.C.	0.051	0.000	0.000	0.680	0.269	0.000	0.000	0.000	0.000	0.050	0.000	0.000	0.576	0.374	0.000	0.000	0.000	0.000
U.S. EAST COAST - U.S. W.C., HAWAII	0.000	0.000	0.000	0.709	0.245	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.709	0.245	0.046	0.000	0.000	0.000
U.S. W.C., HAWAII - AFRICA	0.003	0.000	0.000	0.000	0.000	0.997	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.997	0.000	0.000	0.000
U.S. W.C., HAWAII - CANADA EAST COAST	0.000	0.000	0.000	0.980	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.262	0.329	0.409	0.000	0.000	0.000
U.S. W.C., HAWAII - CENTRAL AMERICA E.C., W. INDIE	0.000	0.000	0.000	0.262	0.329	0.409	0.000	0.000	0.000	0.003	0.000	0.000	0.401	0.597	0.000	0.000	0.000	0.000
U.S. W.C., HAWAII - S. AMERICA E.C.	0.003	0.000	0.000	0.401	0.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.590	0.142	0.268	0.000	0.000	0.000
U.S. W.C., HAWAII - U.S. EAST COAST	0.000	0.000	0.000	0.590	0.142	0.268	0.000	0.000	0.000	0.000	0.000	0.000	0.590	0.142	0.268	0.000	0.000	0.000
VEHICLE CARRIERS																		
ASIA - CENTRAL AMERICA E.C., W. INDIE	0.187	0.813	0.000	0.813	0.000	0.000	0.000	0.000	0.000	0.187	0.813	0.000	0.813	0.000	0.000	0.000	0.000	0.000
ASIA - EUROPE	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
ASIA - S. AMERICA E.C.	0.146	0.854	0.000	0.854	0.000	0.000	0.000	0.000	0.000	0.146	0.854	0.000	0.854	0.000	0.000	0.000	0.000	0.000
ASIA - U.S. EAST COAST	0.039	0.961	0.000	0.961	0.000	0.000	0.000	0.000	0.000	0.039	0.961	0.000	0.961	0.000	0.000	0.000	0.000	0.000
C. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	0.982	0.018	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.982	0.018	0.000	0.018	0.000	0.000	0.000	0.000	0.000
CANADA EAST COAST - ASIA	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - C. AMERICA W.C.	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
CENTRAL AMERICA E.C., W. INDIE - OCEANIA	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - ASIA	0.000	0.729	0.271	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.729	0.271	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - CANADA WEST COAST	0.000	0.457	0.543	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.457	0.543	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - OCEANIA	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
EUROPE - U.S. W.C., HAWAII	0.019	0.746	0.235	0.981	0.000	0.000	0.000	0.000	0.000	0.019	0.746	0.235	0.981	0.000	0.000	0.000	0.000	0.000
S. AMERICA W.C. - CENTRAL AMERICA E.C., W. INDIE	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - ASIA	0.000	0.962	0.038	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.962	0.038	1.000	0.000	0.000	0.000	0.000	0.000
U.S. EAST COAST - OCEANIA	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000

Source: Nathan Associates Inc., computed from data provided by the WEFA Group.

Appendix G

"NO TOLL" DIVERSIONS IN THE WEFA GROUP'S FORECAST OF CANAL TRAFFIC

Table G-1. "No Toll" Diversions In The WEFA Group's Forecast of Canal Traffic, Status Quo Canal, 2020, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	2.0	47.1
EUROPE-ASIA	5.0	84.6
EUROPE-OCEANIA	65.0	770.6
OCEANIA-EUROPE	26.5	504.7
OCEANIA-U.S. EAST COAST	24.4	585.6
S. AMERICA E.C.-ASIA	90.2	1,978.9
S. AMERICA E.C.-OCEANIA	6.0	99.5
S. AMERICA E.C.-S. AMERICA W.C.	33.9	368.7
S. AMERICA W.C.-S. AMERICA E.C.	17.0	87.4
U.S. EAST COAST-OCEANIA	19.5	409.0
Subtotal	289.6	4,936.2
Dry Bulk Carriers		
AFRICA-OCEANIA	7.5	254.3
ASIA-EUROPE	3.1	122.2
CANADA WEST COAST-MIDDLE EAST	23.0	956.0
CANADA WEST COAST-S. AMERICA E.C.	17.4	568.7
EUROPE-ASIA	8.7	251.1
EUROPE-OCEANIA	5.7	147.0
OCEANIA-EUROPE	10.0	261.2
OCEANIA-S. AMERICA E.C.	15.0	663.4
S. AMERICA E.C.-S. AMERICA W.C.	31.7	838.0
S. AMERICA W.C.-S. AMERICA E.C.	7.5	199.3
Subtotal	129.6	4,261.1
Chemical Tankers		
ASIA-EUROPE	19.8	337.0
C. AMERICA W.C.-S. AMERICA E.C.	4.1	19.2

(Continued)

Table G-1. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers (continued)		
EUROPE-ASIA	14.4	399.3
EUROPE-OCEANIA	9.7	186.8
OCEANIA-EUROPE	6.4	169.8
S. AMERICA E.C.-S. AMERICA W.C.	7.5	187.9
S. AMERICA W.C.-S. AMERICA E.C.	5.1	53.2
Subtotal	67.2	1,353.1
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	97.8	1,183.8
ASIA-EUROPE	18.3	318.7
ASIA-U.S. EAST COAST (H)	342.1	5,827.8
EUROPE-ASIA	10.6	211.0
EUROPE-OCEANIA	8.0	111.5
OCEANIA-CANADA EAST COAST	5.7	93.6
OCEANIA-S. AMERICA E.C.	0.1	0.9
OCEANIA-U.S. EAST COAST	44.7	716.2
S. AMERICA E.C.-ASIA	4.9	58.4
S. AMERICA E.C.-S. AMERICA W.C.	4.1	34.8
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.0
U.S. EAST COAST-ASIA (H)	413.1	9,868.2
U.S. EAST COAST-OCEANIA	121.6	1,434.8
Subtotal	1,070.8	19,859.7
General Cargo Ships		
ASIA-EUROPE	3.7	33.0
EUROPE-ASIA	3.4	48.0
EUROPE-OCEANIA	13.8	165.9
OCEANIA-EUROPE	0.0	0.4
OCEANIA-S. AMERICA E.C.	6.1	15.3

(Continued)

Table G-1. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA E.C.-ASIA	19.6	363.0
S. AMERICA E.C.-S. AMERICA W.C.	47.0	375.4
S. AMERICA W.C.-S. AMERICA E.C.	37.8	158.6
Subtotal	131.4	1,159.6
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	49.6	649.2
Subtotal	49.6	649.2
Refrigerated Ships		
EUROPE-ASIA	36.7	203.2
OCEANIA-EUROPE	174.8	801.0
OCEANIA-S. AMERICA E.C.	1.8	1.7
S. AMERICA E.C.-S. AMERICA W.C.	7.6	9.5
S. AMERICA W.C.-S. AMERICA E.C.	11.9	23.9
Subtotal	232.9	1,039.2
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.2
AFRICA-OCEANIA	0.0	0.3
ASIA-EUROPE	2.9	20.1
EUROPE-ASIA	1.8	22.5
EUROPE-OCEANIA	30.2	460.7
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	1.4	6.4
S. AMERICA W.C.-S. AMERICA E.C.	1.3	3.5
U.S. EAST COAST-OCEANIA	12.3	217.2
Subtotal	49.9	730.9

(Continued)

Table G-1. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	1.1	29.3
C. AMERICA W.C.-S. AMERICA E.C.	2.3	7.9
EUROPE-OCEANIA	0.8	24.1
OCEANIA-EUROPE	1.5	38.4
S. AMERICA E.C.-ASIA	5.3	147.3
S. AMERICA E.C.-S. AMERICA W.C.	41.1	1,641.0
S. AMERICA W.C.-S. AMERICA E.C.	8.0	26.8
Subtotal	60.0	1,914.8
Vehicle Carriers		
ASIA-EUROPE	9.8	54.9
EUROPE-ASIA	6.4	18.9
EUROPE-OCEANIA	0.4	2.1
Subtotal	16.6	75.9
Total	2,097.6	35,979.6

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-2. "No Toll" Diversions in The WEFA Group's Forecast of Canal Traffic, 150,000 DWT Canal, 2020, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	2.0	47.1
EUROPE-ASIA	5.0	84.6
EUROPE-OCEANIA	65.0	770.6
OCEANIA-EUROPE	26.5	504.7
OCEANIA-U.S. EAST COAST	24.4	585.6
S. AMERICA E.C.-ASIA	90.2	1,978.9
S. AMERICA E.C.-OCEANIA	6.0	99.5
S. AMERICA E.C.-S. AMERICA W.C.	33.9	368.7
S. AMERICA W.C.-S. AMERICA E.C.	17.0	87.4
U.S. EAST COAST-OCEANIA	19.5	409.0
Subtotal	289.6	4,936.2
Dry Bulk Carriers		
AFRICA-OCEANIA	7.2	254.3
ASIA-EUROPE	3.0	122.2
BRAZIL-ASIA	129.5	14,863.7
CANADA WEST COAST-MIDDLE EAST	21.1	956.0
EUROPE-ASIA	8.4	251.1
EUROPE-OCEANIA	5.5	147.0
OCEANIA-EUROPE	9.7	261.2
OCEANIA-S. AMERICA E.C.	12.4	663.4
S. AMERICA E.C.-S. AMERICA W.C.	29.9	838.0
S. AMERICA W.C.-S. AMERICA E.C.	7.3	199.3
Subtotal	233.9	18,556.2
Chemical Tankers		
ASIA-EUROPE	19.8	337.0
C. AMERICA W.C.-S. AMERICA E.C.	4.1	19.2

(Continued)

Table G-2. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers (continued)		
EUROPE-ASIA	14.4	399.3
EUROPE-OCEANIA	9.7	186.8
OCEANIA-EUROPE	6.4	169.8
S. AMERICA E.C.-S. AMERICA W.C.	7.5	187.9
S. AMERICA W.C.-S. AMERICA E.C.	5.1	53.2
Subtotal	67.2	1,353.1
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	97.8	1,183.8
ASIA-EUROPE	18.3	318.7
ASIA-U.S. EAST COAST (H)	308.4	6,727.8
EUROPE-ASIA	10.6	211.0
EUROPE-OCEANIA	8.0	111.5
OCEANIA-CANADA EAST COAST	5.7	93.6
OCEANIA-S. AMERICA E.C.	0.1	0.9
OCEANIA-U.S. EAST COAST	44.7	716.2
S. AMERICA E.C.-ASIA	4.9	58.4
S. AMERICA E.C.-S. AMERICA W.C.	4.1	34.8
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.0
U.S. EAST COAST-ASIA (H)	364.0	10,708.2
U.S. EAST COAST-OCEANIA	121.6	1,434.8
Subtotal	988.1	21,599.7
General Cargo Ships		
ASIA-EUROPE	3.7	33.0
EUROPE-ASIA	3.4	48.0
EUROPE-OCEANIA	13.8	165.9
OCEANIA-EUROPE	0.0	0.4
OCEANIA-S. AMERICA E.C.	6.1	15.3

(Continued)

Table G-2. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA E.C.-ASIA	19.6	363.0
S. AMERICA E.C.-S. AMERICA W.C.	47.0	375.4
S. AMERICA W.C.-S. AMERICA E.C.	37.8	158.6
Subtotal	131.4	1,159.6
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	49.6	649.2
Subtotal	49.6	649.2
Refrigerated Ships		
EUROPE-ASIA	36.7	203.2
OCEANIA-EUROPE	174.8	801.0
OCEANIA-S. AMERICA E.C.	1.8	1.7
S. AMERICA E.C.-S. AMERICA W.C.	7.6	9.5
S. AMERICA W.C.-S. AMERICA E.C.	11.9	23.9
Subtotal	232.9	1,039.2
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.2
AFRICA-OCEANIA	0.0	0.3
ASIA-EUROPE	2.9	20.1
EUROPE-ASIA	1.8	22.5
EUROPE-OCEANIA	30.2	460.7
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	1.4	6.4
S. AMERICA W.C.-S. AMERICA E.C.	1.3	3.5
U.S. EAST COAST-OCEANIA	12.3	217.2
Subtotal	49.9	730.9

(Continued)

Table G-2. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	1.1	29.3
C. AMERICA W.C.-S. AMERICA E.C.	2.3	7.9
EUROPE-OCEANIA	0.8	24.1
OCEANIA-EUROPE	1.5	38.4
S. AMERICA E.C.-S. AMERICA W.C.	38.2	1,641.0
S. AMERICA W.C.-S. AMERICA E.C.	8.0	26.8
Subtotal	51.8	1,767.5
Vehicle Carriers		
ASIA-EUROPE	9.8	54.9
EUROPE-ASIA	6.4	18.9
EUROPE-OCEANIA	0.4	2.1
Subtotal	16.6	75.9
Total	2,111.0	51,867.4

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-3. "No Toll" Diversions in The WEFA Group's Forecast of Canal Traffic, 200,000 DWT Canal, 2020, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	2.0	47.1
EUROPE-ASIA	5.0	84.6
EUROPE-OCEANIA	65.0	770.6
OCEANIA-EUROPE	26.5	504.7
OCEANIA-U.S. EAST COAST	24.4	585.6
S. AMERICA E.C.-ASIA	90.2	1,978.9
S. AMERICA E.C.-OCEANIA	6.0	99.5
S. AMERICA E.C.-S. AMERICA W.C.	33.9	368.7
S. AMERICA W.C.-S. AMERICA E.C.	17.0	87.4
U.S. EAST COAST-OCEANIA	19.5	409.0
Subtotal	289.6	4,936.2
Dry Bulk Carriers		
AFRICA-OCEANIA	7.2	254.3
ASIA-EUROPE	3.0	122.2
CANADA WEST COAST-MIDDLE EAST	21.1	956.0
EUROPE-ASIA	8.4	251.1
EUROPE-OCEANIA	5.5	147.0
OCEANIA-EUROPE	9.7	261.2
OCEANIA-S. AMERICA E.C.	12.4	663.4
S. AMERICA E.C.-S. AMERICA W.C.	29.9	838.0
S. AMERICA W.C.-S. AMERICA E.C.	7.3	199.3
Subtotal	104.4	3,692.4
Chemical Tankers		
ASIA-EUROPE	19.8	337.0
C. AMERICA W.C.-S. AMERICA E.C.	4.1	19.2
EUROPE-ASIA	14.4	399.3

(Continued)

Table G-3. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers (continued)		
EUROPE-OCEANIA	9.7	186.8
OCEANIA-EUROPE	6.4	169.8
S. AMERICA E.C.-S. AMERICA W.C.	7.5	187.9
S. AMERICA W.C.-S. AMERICA E.C.	5.1	53.2
Subtotal	67.2	1,353.1
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	97.8	1,183.8
ASIA-EUROPE	18.3	318.7
ASIA-U.S. EAST COAST (H)	308.4	6,727.8
EUROPE-ASIA	10.6	211.0
EUROPE-OCEANIA	8.0	111.5
OCEANIA-CANADA EAST COAST	5.7	93.6
OCEANIA-S. AMERICA E.C.	0.1	0.9
OCEANIA-U.S. EAST COAST	44.7	716.2
S. AMERICA E.C.-ASIA	4.9	58.4
S. AMERICA E.C.-S. AMERICA W.C.	4.1	34.8
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.0
U.S. EAST COAST-ASIA (H)	364.0	10,708.2
U.S. EAST COAST-OCEANIA	121.6	1,434.8
Subtotal	988.1	21,599.7
General Cargo Ships		
ASIA-EUROPE	3.7	33.0
EUROPE-ASIA	3.4	48.0
EUROPE-OCEANIA	13.8	165.9
OCEANIA-EUROPE	0.0	0.4
OCEANIA-S. AMERICA E.C.	6.1	15.3
S. AMERICA E.C.-ASIA	19.6	363.0

(Continued)

Table G-3. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA E.C.-S. AMERICA W.C.	47.0	375.4
S. AMERICA W.C.-S. AMERICA E.C.	37.8	158.6
Subtotal	131.4	1,159.6
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	49.6	649.2
Subtotal	49.6	649.2
Refrigerated Ships		
EUROPE-ASIA	36.7	203.2
OCEANIA-EUROPE	174.8	801.0
OCEANIA-S. AMERICA E.C.	1.8	1.7
S. AMERICA E.C.-S. AMERICA W.C.	7.6	9.5
S. AMERICA W.C.-S. AMERICA E.C.	11.9	23.9
Subtotal	232.9	1,039.2
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.2
AFRICA-OCEANIA	0.0	0.3
ASIA-EUROPE	2.9	20.1
EUROPE-ASIA	1.8	22.5
EUROPE-OCEANIA	30.2	460.7
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	1.4	6.4
S. AMERICA W.C.-S. AMERICA E.C.	1.3	3.5
U.S. EAST COAST-OCEANIA	12.3	217.2
Subtotal	49.9	730.9

(Continued)

Table G-3. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	1.1	29.3
C. AMERICA W.C.-S. AMERICA E.C.	2.3	7.9
EUROPE-OCEANIA	0.8	24.1
OCEANIA-EUROPE	1.5	38.4
S. AMERICA E.C.-S. AMERICA W.C.	38.2	1,641.0
S. AMERICA W.C.-S. AMERICA E.C.	8.0	26.8
Subtotal	51.8	1,767.5
Vehicle Carriers		
ASIA-EUROPE	9.8	54.9
EUROPE-ASIA	6.4	18.9
EUROPE-OCEANIA	0.4	2.1
Subtotal	16.6	75.9
Total	1,981.4	37,003.6

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-4. "No Toll" Diversions in The WEFA Group's Forecast of Canal Traffic, 250,000 DWT Canal, 2020, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	2.0	47.1
EUROPE-ASIA	5.0	84.6
EUROPE-OCEANIA	65.0	770.6
OCEANIA-EUROPE	26.5	504.7
OCEANIA-U.S. EAST COAST	24.4	585.6
S. AMERICA E.C.-ASIA	90.2	1,978.9
S. AMERICA E.C.-OCEANIA	6.0	99.5
S. AMERICA E.C.-S. AMERICA W.C.	33.9	368.7
S. AMERICA W.C.-S. AMERICA E.C.	17.0	87.4
U.S. EAST COAST-OCEANIA	19.5	409.0
Subtotal	289.6	4,936.2
Dry Bulk Carriers		
AFRICA-OCEANIA	7.2	254.3
ASIA-EUROPE	3.0	122.2
CANADA WEST COAST-MIDDLE EAST	21.1	956.0
EUROPE-ASIA	8.4	251.1
EUROPE-OCEANIA	5.5	147.0
OCEANIA-EUROPE	9.7	261.2
OCEANIA-S. AMERICA E.C.	12.4	663.4
S. AMERICA E.C.-S. AMERICA W.C.	29.9	838.0
S. AMERICA W.C.-S. AMERICA E.C.	7.3	199.3
Subtotal	104.4	3,692.4
Chemical Tankers		
ASIA-EUROPE	19.8	337.0
C. AMERICA W.C.-S. AMERICA E.C.	4.1	19.2
EUROPE-ASIA	14.4	399.3

(Continued)

Table G-4. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers (continued)		
EUROPE-OCEANIA	9.7	186.8
OCEANIA-EUROPE	6.4	169.8
S. AMERICA E.C.-S. AMERICA W.C.	7.5	187.9
S. AMERICA W.C.-S. AMERICA E.C.	5.1	53.2
Subtotal	67.2	1,353.1
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	97.8	1,183.8
ASIA-EUROPE	18.3	318.7
ASIA-U.S. EAST COAST (H)	308.4	6,727.8
EUROPE-ASIA	10.6	211.0
EUROPE-OCEANIA	8.0	111.5
OCEANIA-CANADA EAST COAST	5.7	93.6
OCEANIA-S. AMERICA E.C.	0.1	0.9
OCEANIA-U.S. EAST COAST	44.7	716.2
S. AMERICA E.C.-ASIA	4.9	58.4
S. AMERICA E.C.-S. AMERICA W.C.	4.1	34.8
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.0
U.S. EAST COAST-ASIA (H)	364.0	10,708.2
U.S. EAST COAST-OCEANIA	121.6	1,434.8
Subtotal	988.1	21,599.7
General Cargo Ships		
ASIA-EUROPE	3.7	33.0
EUROPE-ASIA	3.4	48.0
EUROPE-OCEANIA	13.8	165.9
OCEANIA-EUROPE	0.0	0.4
OCEANIA-S. AMERICA E.C.	6.1	15.3
S. AMERICA E.C.-ASIA	19.6	363.0

(Continued)

Table G-4. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA E.C.-S. AMERICA W.C.	47.0	375.4
S. AMERICA W.C.-S. AMERICA E.C.	37.8	158.6
Subtotal	131.4	1,159.6
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	49.6	649.2
Subtotal	49.6	649.2
Refrigerated Ships		
EUROPE-ASIA	36.7	203.2
OCEANIA-EUROPE	174.8	801.0
OCEANIA-S. AMERICA E.C.	1.8	1.7
S. AMERICA E.C.-S. AMERICA W.C.	7.6	9.5
S. AMERICA W.C.-S. AMERICA E.C.	11.9	23.9
Subtotal	232.9	1,039.2
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.2
AFRICA-OCEANIA	0.0	0.3
ASIA-EUROPE	2.9	20.1
EUROPE-ASIA	1.8	22.5
EUROPE-OCEANIA	30.2	460.7
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	1.4	6.4
S. AMERICA W.C.-S. AMERICA E.C.	1.3	3.5
U.S. EAST COAST-OCEANIA	12.3	217.2
Subtotal	49.9	730.9

(Continued)

Table G-4. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	1.1	29.3
C. AMERICA W.C.-S. AMERICA E.C.	2.3	7.9
EUROPE-OCEANIA	0.8	24.1
OCEANIA-EUROPE	1.5	38.4
S. AMERICA E.C.-S. AMERICA W.C.	38.2	1,641.0
S. AMERICA W.C.-S. AMERICA E.C.	8.0	26.8
Subtotal	51.8	1,767.5
Vehicle Carriers		
ASIA-EUROPE	9.8	54.9
EUROPE-ASIA	6.4	18.9
EUROPE-OCEANIA	0.4	2.1
Subtotal	16.6	75.9
Total	1,981.4	37,003.6

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-5. "No Toll" Diversions in The WEFA Group's Forecast of Canal Traffic, Status Quo Canal, 2060, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	3.5	80.9
EUROPE-ASIA	8.7	147.0
Subtotal	12.2	227.9
Dry Bulk Carriers		
CANADA WEST COAST-MIDDLE EAST	55.6	2,845.5
Subtotal	55.6	2,845.5
Chemical Tankers		
EUROPE-ASIA	20.3	654.1
Subtotal	20.3	654.1
Full Container Ships		
ASIA-EUROPE	25.6	521.0
ASIA-U.S. EAST COAST (H)	316.1	6,312.6
EUROPE-ASIA	13.9	321.6
U.S. EAST COAST-ASIA (H)	416.2	11,576.4
Subtotal	771.9	18,731.6
General Cargo Ships		
EUROPE-ASIA	6.3	90.3
Subtotal	6.3	90.3
Liquid Gas Carriers		
U.S. EAST COAST-OCEANIA	0.0	0.0
Subtotal	0.0	0.0

(Continued)

Table G-5. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Refrigerated Ships		
EUROPE-ASIA	41.2	278.3
Subtotal	41.2	278.3
Roll-On Roll-Off		
ASIA-EUROPE	4.9	33.8
EUROPE-ASIA	2.7	34.9
Subtotal	7.6	68.8
Vehicle Carriers		
ASIA-EUROPE	12.4	69.7
EUROPE-ASIA	6.5	19.1
Subtotal	18.9	88.8
Total	933.9	22,985.3

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-6. "No Toll" Diversions in The WEFA Group's Forecast of Canal Traffic, 150,000 DWT Canal, 2060, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	3.5	80.9
EUROPE-ASIA	8.7	147.0
EUROPE-OCEANIA	103.6	1,229.3
OCEANIA-EUROPE	36.6	699.2
OCEANIA-S. AMERICA E.C.	19.2	245.6
OCEANIA-U.S. EAST COAST	34.9	839.9
S. AMERICA E.C.-ASIA	94.8	2,081.7
S. AMERICA E.C.-OCEANIA	5.7	94.9
S. AMERICA E.C.-S. AMERICA W.C.	61.4	668.2
S. AMERICA W.C.-S. AMERICA E.C.	33.6	167.3
U.S. EAST COAST-OCEANIA	34.4	721.5
Subtotal	436.5	6,975.4
Dry Bulk Carriers		
AFRICA-OCEANIA	29.7	1,295.8
ASIA-EUROPE	3.7	171.7
BRAZIL-ASIA	55.9	6,686.8
CANADA WEST COAST-MIDDLE EAST	52.7	2,845.5
EUROPE-ASIA	11.0	411.8
EUROPE-OCEANIA	7.3	241.1
OCEANIA-EUROPE	13.0	433.0
OCEANIA-S. AMERICA E.C.	1.5	86.2
S. AMERICA E.C.-S. AMERICA W.C.	38.9	1,295.6
S. AMERICA W.C.-S. AMERICA E.C.	10.7	362.2
Subtotal	224.3	13,829.8

(Continued)

Table G-6. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers		
ASIA-EUROPE	24.0	489.1
C. AMERICA W.C.-S. AMERICA E.C.	7.2	35.4
EUROPE-ASIA	20.3	654.1
EUROPE-OCEANIA	12.4	267.6
OCEANIA-EUROPE	9.4	281.9
S. AMERICA E.C.-S. AMERICA W.C.	6.6	181.1
S. AMERICA W.C.-S. AMERICA E.C.	7.7	99.2
Subtotal	87.5	2,008.2
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	118.2	1,581.1
ASIA-EUROPE	25.6	521.0
ASIA-U.S. EAST COAST (H)	278.4	7,812.6
EUROPE-ASIA	13.9	321.6
EUROPE-OCEANIA	10.7	162.8
OCEANIA-U.S. EAST COAST	69.8	1,190.7
S. AMERICA E.C.-ASIA	6.3	74.6
S. AMERICA E.C.-S. AMERICA W.C.	7.4	63.7
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.1
U.S. EAST COAST-ASIA (H)	350.8	13,076.4
U.S. EAST COAST-OCEANIA	219.0	2,738.9
Subtotal	1,100.2	27,543.6
General Cargo Ships		
ASIA-EUROPE	5.7	51.8
EUROPE-ASIA	6.3	90.3
EUROPE-OCEANIA	24.5	302.2
OCEANIA-EUROPE	0.0	0.6
OCEANIA-S. AMERICA E.C.	15.0	38.4

(Continued)

Table G-6. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA E.C.-ASIA	25.8	479.5
S. AMERICA E.C.-S. AMERICA W.C.	80.9	654.7
S. AMERICA W.C.-S. AMERICA E.C.	71.7	306.6
Subtotal	229.9	1,924.2
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	32.9	431.2
U.S. EAST COAST-OCEANIA	0.0	0.0
Subtotal	32.9	431.2
Refrigerated Ships		
EUROPE-ASIA	41.2	278.3
OCEANIA-EUROPE	211.8	1,199.9
OCEANIA-S. AMERICA E.C.	3.8	4.2
S. AMERICA E.C.-S. AMERICA W.C.	9.1	13.8
S. AMERICA W.C.-S. AMERICA E.C.	24.1	52.7
Subtotal	290.0	1,548.9
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.4
AFRICA-OCEANIA	0.1	1.2
ASIA-EUROPE	4.9	33.8
EUROPE-ASIA	2.7	34.9
EUROPE-OCEANIA	48.8	716.5
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	2.0	9.2
S. AMERICA W.C.-S. AMERICA E.C.	2.7	6.9
U.S. EAST COAST-OCEANIA	23.8	411.0
Subtotal	84.9	1,214.2

(Continued)

Table G-6. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	0.8	22.9
C. AMERICA W.C.-S. AMERICA E.C.	3.7	13.0
EUROPE-OCEANIA	1.1	34.3
OCEANIA-EUROPE	2.5	64.9
S. AMERICA E.C.-S. AMERICA W.C.	11.7	477.5
S. AMERICA W.C.-S. AMERICA E.C.	10.7	36.0
Subtotal	30.5	648.7
Vehicle Carriers		
ASIA-EUROPE	12.4	69.7
EUROPE-ASIA	6.5	19.1
EUROPE-OCEANIA	0.5	2.5
Subtotal	19.4	91.3
Total	2,536.3	56,215.5

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-7. "No Toll" Diversions in The WEFA Group's Forecast of Canal Traffic, 200,000 DWT Canal, 2060, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	3.5	80.9
EUROPE-ASIA	8.7	147.0
EUROPE-OCEANIA	103.6	1,229.3
OCEANIA-EUROPE	36.6	699.2
OCEANIA-S. AMERICA E.C.	19.2	245.6
OCEANIA-U.S. EAST COAST	34.9	839.9
S. AMERICA E.C.-ASIA	94.8	2,081.7
S. AMERICA E.C.-OCEANIA	5.7	94.9
S. AMERICA E.C.-S. AMERICA W.C.	61.4	668.2
S. AMERICA W.C.-S. AMERICA E.C.	33.6	167.3
U.S. EAST COAST-OCEANIA	34.4	721.5
Subtotal	436.5	6,975.4
Dry Bulk Carriers		
AFRICA-OCEANIA	29.7	1,295.8
ASIA-EUROPE	3.7	171.7
CANADA WEST COAST-MIDDLE EAST	52.7	2,845.5
EUROPE-ASIA	11.0	411.8
EUROPE-OCEANIA	7.3	241.1
OCEANIA-EUROPE	13.0	433.0
OCEANIA-S. AMERICA E.C.	1.5	86.2
S. AMERICA E.C.-S. AMERICA W.C.	38.9	1,295.6
S. AMERICA W.C.-S. AMERICA E.C.	10.7	362.2
Subtotal	168.5	7,143.0
Chemical Tankers		
ASIA-EUROPE	24.0	489.1
C. AMERICA W.C.-S. AMERICA E.C.	7.2	35.4

(Continued)

Table G-7. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers (continued)		
EUROPE-ASIA	20.3	654.1
EUROPE-OCEANIA	12.4	267.6
OCEANIA-EUROPE	9.4	281.9
S. AMERICA E.C.-S. AMERICA W.C.	6.6	181.1
S. AMERICA W.C.-S. AMERICA E.C.	7.7	99.2
Subtotal	87.5	2,008.2
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	118.2	1,581.1
ASIA-EUROPE	25.6	521.0
ASIA-U.S. EAST COAST (H)	278.4	7,812.6
EUROPE-ASIA	13.9	321.6
EUROPE-OCEANIA	10.7	162.8
OCEANIA-U.S. EAST COAST	69.8	1,190.7
S. AMERICA E.C.-ASIA	6.3	74.6
S. AMERICA E.C.-S. AMERICA W.C.	7.4	63.7
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.1
U.S. EAST COAST-ASIA (H)	350.8	13,076.4
U.S. EAST COAST-OCEANIA	219.0	2,738.9
Subtotal	1,100.2	27,543.6
General Cargo Ships		
ASIA-EUROPE	5.7	51.8
EUROPE-ASIA	6.3	90.3
EUROPE-OCEANIA	24.5	302.2
OCEANIA-EUROPE	0.0	0.6
OCEANIA-S. AMERICA E.C.	15.0	38.4
S. AMERICA E.C.-ASIA	25.8	479.5
S. AMERICA E.C.-S. AMERICA W.C.	80.9	654.7

(Continued)

Table G-7. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA W.C.-S. AMERICA E.C.	71.7	306.6
Subtotal	229.9	1,924.2
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	32.9	431.2
U.S. EAST COAST-OCEANIA	0.0	0.0
Subtotal	32.9	431.2
Refrigerated Ships		
EUROPE-ASIA	41.2	278.3
OCEANIA-EUROPE	211.8	1,199.9
OCEANIA-S. AMERICA E.C.	3.8	4.2
S. AMERICA E.C.-S. AMERICA W.C.	9.1	13.8
S. AMERICA W.C.-S. AMERICA E.C.	24.1	52.7
Subtotal	290.0	1,548.9
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.4
AFRICA-OCEANIA	0.1	1.2
ASIA-EUROPE	4.9	33.8
EUROPE-ASIA	2.7	34.9
EUROPE-OCEANIA	48.8	716.5
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	2.0	9.2
S. AMERICA W.C.-S. AMERICA E.C.	2.7	6.9
U.S. EAST COAST-OCEANIA	23.8	411.0
Subtotal	84.9	1,214.2

(Continued)

Table G-7. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	0.8	22.9
C. AMERICA W.C.-S. AMERICA E.C.	3.7	13.0
EUROPE-OCEANIA	1.1	34.3
OCEANIA-EUROPE	2.5	64.9
S. AMERICA E.C.-S. AMERICA W.C.	11.7	477.5
S. AMERICA W.C.-S. AMERICA E.C.	10.7	36.0
Subtotal	30.6	648.7
Vehicle Carriers		
ASIA-EUROPE	12.4	69.7
EUROPE-ASIA	6.5	19.1
EUROPE-OCEANIA	0.5	2.5
Subtotal	19.4	91.3
Total	2,480.4	49,528.6

Note: A zero means that the value was less than 0.05.

Source: Nathan Associates Inc., from data provided by The WEFA Group.

Table G-8. "No Toll" Diversions In The WEFA Group's Forecast of Canal Traffic, 250,000 DWT Canal, 2060, by Ship Type and Trade Route

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Container-Breakbulk		
ASIA-EUROPE	3.5	80.9
EUROPE-ASIA	8.7	147.0
EUROPE-OCEANIA	103.6	1,229.3
OCEANIA-EUROPE	36.6	699.2
OCEANIA-S. AMERICA E.C.	19.2	245.6
OCEANIA-U.S. EAST COAST	34.9	839.9
S. AMERICA E.C.-ASIA	94.8	2,081.7
S. AMERICA E.C.-OCEANIA	5.7	94.9
S. AMERICA E.C.-S. AMERICA W.C.	61.4	668.2
S. AMERICA W.C.-S. AMERICA E.C.	33.6	167.3
U.S. EAST COAST-OCEANIA	34.4	721.5
Subtotal	436.5	6,975.4
Dry Bulk Carriers		
AFRICA-OCEANIA	29.7	1,295.8
ASIA-EUROPE	3.7	171.7
CANADA WEST COAST-MIDDLE EAST	52.7	2,845.5
EUROPE-ASIA	11.0	411.8
EUROPE-OCEANIA	7.3	241.1
OCEANIA-EUROPE	13.0	433.0
OCEANIA-S. AMERICA E.C.	1.5	86.2
S. AMERICA E.C.-S. AMERICA W.C.	38.9	1,295.6
S. AMERICA W.C.-S. AMERICA E.C.	10.7	362.2
Subtotal	168.5	7,143.0
Chemical Tankers		
ASIA-EUROPE	24.0	489.1
C. AMERICA W.C.-S. AMERICA E.C.	7.2	35.4

(Continued)

Table G-8. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Chemical Tankers (continued)		
EUROPE-ASIA	20.3	654.1
EUROPE-OCEANIA	12.4	267.6
OCEANIA-EUROPE	9.4	281.9
S. AMERICA E.C.-S. AMERICA W.C.	6.6	181.1
S. AMERICA W.C.-S. AMERICA E.C.	7.7	99.2
Subtotal	87.5	2,008.2
Full Container Ships		
ASIA-CENTRAL AMERICA E.C., W. INDIE	118.2	1,581.1
ASIA-EUROPE	25.6	521.0
ASIA-U.S. EAST COAST (H)	278.4	7,812.6
EUROPE-ASIA	13.9	321.6
EUROPE-OCEANIA	10.7	162.8
OCEANIA-U.S. EAST COAST	69.8	1,190.7
S. AMERICA E.C.-ASIA	6.3	74.6
S. AMERICA E.C.-S. AMERICA W.C.	7.4	63.7
S. AMERICA W.C.-S. AMERICA E.C.	0.0	0.1
U.S. EAST COAST-ASIA (H)	350.8	13,076.4
U.S. EAST COAST-OCEANIA	219.0	2,738.9
Subtotal	1,100.2	27,543.6
General Cargo Ships		
ASIA-EUROPE	5.7	51.8
EUROPE-ASIA	6.3	90.3
EUROPE-OCEANIA	24.5	302.2
OCEANIA-EUROPE	0.0	0.6
OCEANIA-S. AMERICA E.C.	15.0	38.4
S. AMERICA E.C.-ASIA	25.8	479.5
S. AMERICA E.C.-S. AMERICA W.C.	80.9	654.7

(Continued)

Table G-8. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
General Cargo Ships (continued)		
S. AMERICA W.C.-S. AMERICA E.C.	71.7	306.6
Subtotal	229.9	1,924.2
Liquid Gas Carriers		
S. AMERICA E.C.-S. AMERICA W.C.	32.9	431.2
U.S. EAST COAST-OCEANIA	0.0	0.0
Subtotal	32.9	431.2
Refrigerated Ships		
EUROPE-ASIA	41.2	278.3
OCEANIA-EUROPE	211.8	1,199.9
OCEANIA-S. AMERICA E.C.	3.8	4.2
S. AMERICA E.C.-S. AMERICA W.C.	9.1	13.8
S. AMERICA W.C.-S. AMERICA E.C.	24.1	52.7
Subtotal	290.0	1,548.9
Roll-On Roll-Off		
AFRICA-ASIA	0.0	0.4
AFRICA-OCEANIA	0.1	1.2
ASIA-EUROPE	4.9	33.8
EUROPE-ASIA	2.7	34.9
EUROPE-OCEANIA	48.8	716.5
OCEANIA-EUROPE	0.0	0.1
OCEANIA-U.S. EAST COAST	2.0	9.2
S. AMERICA W.C.-S. AMERICA E.C.	2.7	6.9
U.S. EAST COAST-OCEANIA	23.8	411.0
Subtotal	84.9	1,214.2

(Continued)

Table G-8. (continued)

Ship Type and Trade Route	Transits	Tonnage Carried (thousands)
Tankers		
ASIA-EUROPE	0.8	22.9
C. AMERICA W.C.-S. AMERICA E.C.	3.7	13.0
EUROPE-OCEANIA	1.1	34.3
OCEANIA-EUROPE	2.5	64.9
S. AMERICA E.C.-S. AMERICA W.C.	11.7	477.5
S. AMERICA W.C.-S. AMERICA E.C.	10.7	36.0
Subtotal	30.6	648.7
Vehicle Carriers		
ASIA-EUROPE	12.4	69.7
EUROPE-ASIA	6.5	19.1
EUROPE-OCEANIA	0.5	2.5
Subtotal	19.4	91.3
Total	2,480.4	49,528.6

Note: A zero means that the value was less than 0.05.
Source: Nathan Associates Inc., from data provided by The WEFA Group.

Appendix H

SUMMARY OF PROJECT COSTS AND SOURCES OF FINANCING

Table H-1. High-Rise Lock Canal 150,000 DWT: Summary of Project Costs and Sources of Financing Assuming a Panama Canal Authority (1990 US$ millions)

		Constr.	Sources of Financing for Construction Equipment												
	Project	Equip.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv.	Fund	Equity	Grants	Total
2010	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	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
2012	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
2013	4	287.5	115.0	115.0	0.0	14.4	0.0	0.0	0.0	0.0	0.0	43.1	0.0	0.0	287.5
2014	5	462.4	185.0	185.0	0.0	23.1	0.0	0.0	0.0	0.0	0.0	69.4	0.0	0.0	462.4
2015	6	182.2	72.9	72.9	0.0	9.1	0.0	0.0	0.0	0.0	0.0	27.3	0.0	0.0	182.2
2016	7	144.1	57.6	57.6	0.0	7.2	0.0	0.0	0.0	0.0	0.0	21.6	0.0	0.0	144.1
2017	8	46.0	18.4	18.4	0.0	2.3	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	46.0
2018	9	2.0	0.8	0.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	2.0
2019	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	1,124.2	449.7	449.7	0.0	56.2	0.0	0.0	0.0	0.0	0.0	168.6	0.0	0.0	1,124.2

Table H-1. (continued)

Year	Project Year	Other Equip. Costs	Sources of Financing for Other Equipment												
			Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
			U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2010	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	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
2012	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
2013	4	46.5	18.6	18.6	0.0	2.3	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	46.5
2014	5	134.2	53.7	53.7	0.0	6.7	0.0	0.0	0.0	0.0	0.0	20.1	0.0	0.0	134.2
2015	6	74.7	29.9	29.9	0.0	3.7	0.0	0.0	0.0	0.0	0.0	11.2	0.0	0.0	74.7
2016	7	125.1	50.0	50.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	18.8	0.0	0.0	125.1
2017	8	269.9	108.0	108.0	0.0	13.5	0.0	0.0	0.0	0.0	0.0	40.5	0.0	0.0	269.9
2018	9	277.4	111.0	111.0	0.0	13.9	0.0	0.0	0.0	0.0	0.0	41.6	0.0	0.0	277.4
2019	10	295.9	118.4	118.4	0.0	14.8	0.0	0.0	0.0	0.0	0.0	44.4	0.0	0.0	295.9
2020	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	1,223.7	489.5	489.5	0.0	61.2	0.0	0.0	0.0	0.0	0.0	183.6	0.0	0.0	1,223.7

Table H-1. (continued)

		Other	Sources of Financing for Other Construction Costs												
	Project	Constr.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas Inv	Fund	Equity	Grants	Total
2010	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	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
2012	3	195.4	0.0	0.0	9.8	0.0	52.8	33.2	33.2	7.8	0.0	58.6	0.0	0.0	195.4
2013	4	591.7	0.0	0.0	29.6	0.0	159.8	100.6	100.6	23.7	0.0	177.5	0.0	0.0	591.7
2014	5	662.3	0.0	0.0	33.1	0.0	178.8	112.6	112.6	26.5	0.0	198.7	0.0	0.0	662.3
2015	6	871.8	0.0	0.0	43.6	0.0	235.4	148.2	148.2	34.9	0.0	261.5	0.0	0.0	871.8
2016	7	882.5	0.0	0.0	44.1	0.0	238.3	150.0	150.0	35.3	0.0	264.8	0.0	0.0	882.5
2017	8	670.8	0.0	0.0	33.5	0.0	181.1	114.0	114.0	26.8	0.0	201.2	0.0	0.0	670.8
2018	9	414.1	0.0	0.0	20.7	0.0	111.8	70.4	70.4	16.6	0.0	124.2	0.0	0.0	414.1
2019	10	269.7	0.0	0.0	13.5	0.0	72.8	45.8	45.8	10.8	0.0	80.9	0.0	0.0	269.7
2020	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	4,558.3	0.0	0.0	227.9	0.0	1,230.7	774.9	774.9	182.3	0.0	1,367.5	0.0	0.0	4,558.3

Table H-1. (continued)

			Sources of Financing for Indirect Costs												
	Project	Indirect	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv.	Fund	Equity	Grants	Total
2010	1	88.4	0.0	0.0	4.4	0.0	23.9	15.0	15.0	3.5	0.0	26.5	0.0	0.0	88.4
2011	2	90.2	0.0	0.0	4.5	0.0	24.4	15.3	15.3	3.6	0.0	27.1	0.0	0.0	90.2
2012	3	78.6	0.0	0.0	3.9	0.0	21.2	13.4	13.4	3.1	0.0	23.6	0.0	0.0	78.6
2013	4	30.6	0.0	0.0	1.5	0.0	8.3	5.2	5.2	1.2	0.0	9.2	0.0	0.0	30.6
2014	5	29.8	0.0	0.0	1.5	0.0	8.0	5.1	5.1	1.2	0.0	8.9	0.0	0.0	29.8
2015	6	29.8	0.0	0.0	1.5	0.0	8.0	5.1	5.1	1.2	0.0	8.9	0.0	0.0	29.8
2016	7	29.8	0.0	0.0	1.5	0.0	8.0	5.1	5.1	1.2	0.0	8.9	0.0	0.0	29.8
2017	8	29.8	0.0	0.0	1.5	0.0	8.0	5.1	5.1	1.2	0.0	8.9	0.0	0.0	29.8
2018	9	29.8	0.0	0.0	1.5	0.0	8.0	5.1	5.1	1.2	0.0	8.9	0.0	0.0	29.8
2019	10	31.3	0.0	0.0	1.6	0.0	8.5	5.3	5.3	1.3	0.0	9.4	0.0	0.0	31.3
2020	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	468.1	0.0	0.0	23.4	0.0	126.4	79.6	79.6	18.7	0.0	140.4	0.0	0.0	468.1

Table H-1. (continued)

		Summary of Sources of Financing for All Project Costs												
	Project	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2010	1	0.0	0.0	4.4	0.0	23.9	15.0	15.0	3.5	0.0	26.5	0.0	0.0	88.4
2011	2	0.0	0.0	4.5	0.0	24.4	15.3	15.3	3.6	0.0	27.1	0.0	0.0	90.2
2012	3	0.0	0.0	13.7	0.0	74.0	46.6	46.6	11.0	0.0	82.2	0.0	0.0	274.0
2013	4	133.6	133.6	31.1	16.7	168.0	105.8	105.8	24.9	0.0	236.8	0.0	0.0	956.3
2014	5	238.6	238.6	34.6	29.8	186.9	117.7	117.7	27.7	0.0	297.1	0.0	0.0	1,288.7
2015	6	102.8	102.8	45.1	12.8	243.4	153.3	153.3	36.1	0.0	309.0	0.0	0.0	1,158.5
2016	7	107.7	107.7	45.6	13.5	246.3	155.1	155.1	36.5	0.0	314.1	0.0	0.0	1,181.5
2017	8	126.4	126.4	35.0	15.8	189.2	119.1	119.1	28.0	0.0	257.6	0.0	0.0	1,016.5
2018	9	111.8	111.8	22.2	14.0	119.9	75.5	75.5	17.8	0.0	175.1	0.0	0.0	723.3
2019	10	118.4	118.4	15.1	14.8	81.3	51.2	51.2	12.0	0.0	134.7	0.0	0.0	596.9
2020	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2024	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	939.2	939.2	251.3	117.4	1,357.1	854.5	854.5	201.1	0.0	1,860.1	0.0	0.0	7,374.3

Source: Shares of financing by source from Table 6-2; annual project costs by component from Yachiyo Engineering Co., Ltd. as adjusted by Stone & Webster and by TAMS Consultants to reflect contracting flows such as mobilization, contract advances, and retainages.

Table H-2. High-Rise Lock Canal 200,000 DWT: Summary of Project Costs and Sources of Financing Assuming a Panama Canal Authority (1990 US$ millions)

		Constr.	Sources of Financing for Construction Equipment												
	Project	Equip.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv.	Fund	Equity	Grants	Total
2009	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	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
2011	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
2012	4	294.7	117.9	117.9	0.0	14.7	0.0	0.0	0.0	0.0	0.0	44.2	0.0	0.0	294.7
2013	5	374.9	150.0	150.0	0.0	18.7	0.0	0.0	0.0	0.0	0.0	56.2	0.0	0.0	374.9
2014	6	223.8	89.5	89.5	0.0	11.2	0.0	0.0	0.0	0.0	0.0	33.6	0.0	0.0	223.8
2015	7	218.2	87.3	87.3	0.0	10.9	0.0	0.0	0.0	0.0	0.0	32.7	0.0	0.0	218.2
2016	8	96.1	38.4	38.4	0.0	4.8	0.0	0.0	0.0	0.0	0.0	14.4	0.0	0.0	96.1
2017	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
2018	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	1,207.7	483.1	483.1	0.0	60.4	0.0	0.0	0.0	0.0	0.0	181.2	0.0	0.0	1,207.7

Table H-2. (continued)

		Other	Sources of Financing for Other Equipment												
	Project	Equip.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2009	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	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
2011	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
2012	4	48.4	19.4	19.4	0.0	2.4	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	48.4
2013	5	158.4	63.4	63.4	0.0	7.9	0.0	0.0	0.0	0.0	0.0	23.8	0.0	0.0	158.4
2014	6	89.1	35.6	35.6	0.0	4.5	0.0	0.0	0.0	0.0	0.0	13.4	0.0	0.0	89.1
2015	7	138.8	55.5	55.5	0.0	6.9	0.0	0.0	0.0	0.0	0.0	20.8	0.0	0.0	138.8
2016	8	295.1	118.0	118.0	0.0	14.8	0.0	0.0	0.0	0.0	0.0	44.3	0.0	0.0	295.1
2017	9	303.1	121.2	121.2	0.0	15.2	0.0	0.0	0.0	0.0	0.0	45.5	0.0	0.0	303.1
2018	10	323.2	129.3	129.3	0.0	16.2	0.0	0.0	0.0	0.0	0.0	48.5	0.0	0.0	323.2
2019	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	1,356.1	542.4	542.4	0.0	67.8	0.0	0.0	0.0	0.0	0.0	203.4	0.0	0.0	1,356.1

Table H-2. (continued)

		Other	Sources of Financing for Other Construction Costs												
	Project	Constr.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2009	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	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
2011	3	209.4	0.0	0.0	10.5	0.0	56.5	35.6	35.6	8.4	0.0	62.8	0.0	0.0	209.4
2012	4	547.9	0.0	0.0	27.4	0.0	147.9	93.1	93.1	21.9	0.0	164.4	0.0	0.0	547.9
2013	5	730.2	0.0	0.0	36.5	0.0	197.2	124.1	124.1	29.2	0.0	219.1	0.0	0.0	730.2
2014	6	938.8	0.0	0.0	46.9	0.0	253.5	159.6	159.6	37.6	0.0	281.6	0.0	0.0	938.8
2015	7	906.7	0.0	0.0	45.3	0.0	244.8	154.1	154.1	36.3	0.0	272.0	0.0	0.0	906.7
2016	8	861.8	0.0	0.0	43.1	0.0	232.7	146.5	146.5	34.5	0.0	258.5	0.0	0.0	861.8
2017	9	655.4	0.0	0.0	32.8	0.0	177.0	111.4	111.4	26.2	0.0	196.6	0.0	0.0	655.4
2018	10	440.5	0.0	0.0	22.0	0.0	118.9	74.9	74.9	17.6	0.0	132.2	0.0	0.0	440.5
2019	11	164.8	0.0	0.0	8.2	0.0	44.5	28.0	28.0	6.6	0.0	49.4	0.0	0.0	164.8
2020	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	5,455.5	0.0	0.0	272.8	0.0	1,473.0	927.4	927.4	218.2	0.0	1,636.7	0.0	0.0	5,455.5

Table H-2. (continued)

			Sources of Financing for Indirect Costs												
	Project	Indirect	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv.	Fund	Equity	Grants	Total
2009	1	95.7	0.0	0.0	4.8	0.0	25.8	16.3	16.3	3.8	0.0	28.7	0.0	0.0	95.7
2010	2	97.8	0.0	0.0	4.9	0.0	26.4	16.6	16.6	3.9	0.0	29.3	0.0	0.0	97.8
2011	3	88.3	0.0	0.0	4.4	0.0	23.8	15.0	15.0	3.5	0.0	26.5	0.0	0.0	88.3
2012	4	33.3	0.0	0.0	1.7	0.0	9.0	5.7	5.7	1.3	0.0	10.0	0.0	0.0	33.3
2013	5	32.2	0.0	0.0	1.6	0.0	8.7	5.5	5.5	1.3	0.0	9.7	0.0	0.0	32.2
2014	6	32.2	0.0	0.0	1.6	0.0	8.7	5.5	5.5	1.3	0.0	9.7	0.0	0.0	32.2
2015	7	32.2	0.0	0.0	1.6	0.0	8.7	5.5	5.5	1.3	0.0	9.7	0.0	0.0	32.2
2016	8	32.2	0.0	0.0	1.6	0.0	8.7	5.5	5.5	1.3	0.0	9.7	0.0	0.0	32.2
2017	9	32.2	0.0	0.0	1.6	0.0	8.7	5.5	5.5	1.3	0.0	9.7	0.0	0.0	32.2
2018	10	32.2	0.0	0.0	1.6	0.0	8.7	5.5	5.5	1.3	0.0	9.7	0.0	0.0	32.2
2019	11	18.1	0.0	0.0	0.9	0.0	4.9	3.1	3.1	0.7	0.0	5.4	0.0	0.0	18.1
2020	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	526.4	0.0	0.0	26.3	0.0	142.1	89.5	89.5	21.1	0.0	157.9	0.0	0.0	526.4

Table H-2. (continued)

		Summary of Sources of Financing for All Project Costs												
	Project	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2009	1	0.0	0.0	4.8	0.0	25.8	16.3	16.3	3.8	0.0	28.7	0.0	0.0	95.7
2010	2	0.0	0.0	4.9	0.0	26.4	16.6	16.6	3.9	0.0	29.3	0.0	0.0	97.8
2011	3	0.0	0.0	14.9	0.0	80.4	50.6	50.6	11.9	0.0	89.3	0.0	0.0	297.7
2012	4	137.2	137.2	29.1	17.2	156.9	98.8	98.8	23.2	0.0	225.8	0.0	0.0	924.3
2013	5	213.3	213.3	38.1	26.7	205.8	129.6	129.6	30.5	0.0	308.7	0.0	0.0	1,295.7
2014	6	125.2	125.2	48.6	15.6	262.2	165.1	165.1	38.8	0.0	338.2	0.0	0.0	1,283.9
2015	7	142.8	142.8	46.9	17.9	253.5	159.6	159.6	37.6	0.0	335.2	0.0	0.0	1,295.9
2016	8	156.5	156.5	44.7	19.6	241.4	152.0	152.0	35.8	0.0	326.9	0.0	0.0	1,285.2
2017	9	121.2	121.2	34.4	15.2	185.7	116.9	116.9	27.5	0.0	251.7	0.0	0.0	990.7
2018	10	129.3	129.3	23.6	16.2	127.6	80.4	80.4	18.9	0.0	190.3	0.0	0.0	795.9
2019	11	0.0	0.0	9.1	0.0	49.4	31.1	31.1	7.3	0.0	54.9	0.0	0.0	182.9
2020	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	1,025.5	1,025.5	299.1	128.2	1,615.1	1,016.9	1,016.9	239.3	0.0	2,179.1	0.0	0.0	8,545.7

Source: Shares of financing by source from Table 6-3; annual project costs by component from Yachiyo Engineering Co., Ltd. as adjusted by Stone & Webster and by TAMS Consultants to reflect contracting flows such as mobilization, contract advances, and retainages.

Table H-3. Sea-Level Canal Case A: Summary of Project Costs and Sources of Financing Assuming a Panama Canal Authority (1990 US$ millions)

			Sources of Financing for Construction Equipment												
		Constr.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Project Year	Equip. Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv.	Fund	Equity	Grants	Total
2005	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	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
2007	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
2008	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	0.0
2009	5	1,111.1	444.4	444.4	0.0	55.6	0.0	0.0	0.0	0.0	0.0	166.7	0.0	0.0	1,111.1
2010	6	363.6	145.4	145.4	0.0	18.2	0.0	0.0	0.0	0.0	0.0	54.5	0.0	0.0	363.6
2011	7	99.8	39.9	39.9	0.0	5.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	99.8
2012	8	144.7	57.9	57.9	0.0	7.2	0.0	0.0	0.0	0.0	0.0	21.7	0.0	0.0	144.7
2013	9	7.4	3.0	3.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	7.4
2014	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	11	98.6	39.4	39.4	0.0	4.9	0.0	0.0	0.0	0.0	0.0	14.8	0.0	0.0	98.6
2016	12	5.2	2.1	2.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	5.2
2017	13	218.6	87.4	87.4	0.0	10.9	0.0	0.0	0.0	0.0	0.0	32.8	0.0	0.0	218.6
2018	14	11.5	4.6	4.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	11.5
2019	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0													
	Total	2,060.5	824.2	824.2	0.0	103.0	0.0	0.0	0.0	0.0	0.0	309.1	0.0	0.0	2,060.5

Table H-3. (continued)

		Other	Sources of Financing for Other Equipment												
	Project	Equip.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2005	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	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
2007	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
2008	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	0.0
2009	5	250.8	100.3	100.3	0.0	12.5	0.0	0.0	0.0	0.0	0.0	37.6	0.0	0.0	250.8
2010	6	121.0	48.4	48.4	0.0	6.1	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0	121.0
2011	7	84.4	33.8	33.8	0.0	4.2	0.0	0.0	0.0	0.0	0.0	12.7	0.0	0.0	84.4
2012	8	84.4	33.8	33.8	0.0	4.2	0.0	0.0	0.0	0.0	0.0	12.7	0.0	0.0	84.4
2013	9	84.4	33.8	33.8	0.0	4.2	0.0	0.0	0.0	0.0	0.0	12.7	0.0	0.0	84.4
2014	10	208.3	83.3	83.3	0.0	10.4	0.0	0.0	0.0	0.0	0.0	31.2	0.0	0.0	208.3
2015	11	85.2	34.1	34.1	0.0	4.3	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	85.2
2016	12	246.0	98.4	98.4	0.0	12.3	0.0	0.0	0.0	0.0	0.0	36.9	0.0	0.0	246.0
2017	13	254.8	101.9	101.9	0.0	12.7	0.0	0.0	0.0	0.0	0.0	38.2	0.0	0.0	254.8
2018	14	254.8	101.9	101.9	0.0	12.7	0.0	0.0	0.0	0.0	0.0	38.2	0.0	0.0	254.8
2019	15	267.6	107.0	107.0	0.0	13.4	0.0	0.0	0.0	0.0	0.0	40.1	0.0	0.0	267.6
		0.0													
	Total	1,941.7	776.7	776.7	0.0	97.1	0.0	0.0	0.0	0.0	0.0	291.3	0.0	0.0	1,941.7

Table H-3. (continued)

		Other	Sources of Financing for Other Construction Costs												
	Project	Constr.	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2005	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	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
2007	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
2008	4	285.9	0.0	0.0	14.3	0.0	77.2	48.6	48.6	11.4	0.0	85.8	0.0	0.0	285.9
2009	5	816.2	0.0	0.0	40.8	0.0	220.4	138.8	138.8	32.6	0.0	244.9	0.0	0.0	816.2
2010	6	766.8	0.0	0.0	38.3	0.0	207.0	130.4	130.4	30.7	0.0	230.0	0.0	0.0	766.8
2011	7	807.8	0.0	0.0	40.4	0.0	218.1	137.3	137.3	32.3	0.0	242.3	0.0	0.0	807.8
2012	8	952.3	0.0	0.0	47.6	0.0	257.1	161.9	161.9	38.1	0.0	285.7	0.0	0.0	952.3
2013	9	750.8	0.0	0.0	37.5	0.0	202.7	127.6	127.6	30.0	0.0	225.2	0.0	0.0	750.8
2014	10	825.3	0.0	0.0	41.3	0.0	222.8	140.3	140.3	33.0	0.0	247.6	0.0	0.0	825.3
2015	11	753.8	0.0	0.0	37.7	0.0	203.5	128.1	128.1	30.2	0.0	226.1	0.0	0.0	753.8
2016	12	768.5	0.0	0.0	38.4	0.0	207.5	130.6	130.6	30.7	0.0	230.6	0.0	0.0	768.5
2017	13	741.3	0.0	0.0	37.1	0.0	200.2	126.0	126.0	29.7	0.0	222.4	0.0	0.0	741.3
2018	14	777.8	0.0	0.0	38.9	0.0	210.0	132.2	132.2	31.1	0.0	233.3	0.0	0.0	777.8
2019	15	679.3	0.0	0.0	34.0	0.0	183.4	115.5	115.5	27.2	0.0	203.8	0.0	0.0	679.3
		0.0													
	Total	8,925.8	0.0	0.0	446.3	0.0	2,410.0	1,517.4	1,517.4	357.0	0.0	2,677.7	0.0	0.0	8,925.8

Table H-3. (continued)

			Sources of Financing for Indirect Costs												
	Project	Indirect	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	Costs	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv.	Fund	Equity	Grants	Total
2005	1	84.5	0.0	0.0	4.2	0.0	22.8	14.4	14.4	3.4	0.0	25.4	0.0	0.0	84.5
2006	2	87.1	0.0	0.0	4.4	0.0	23.5	14.8	14.8	3.5	0.0	26.1	0.0	0.0	87.1
2007	3	83.0	0.0	0.0	4.2	0.0	22.4	14.1	14.1	3.3	0.0	24.9	0.0	0.0	83.0
2008	4	43.2	0.0	0.0	2.2	0.0	11.7	7.3	7.3	1.7	0.0	13.0	0.0	0.0	43.2
2009	5	27.3	0.0	0.0	1.4	0.0	7.4	4.6	4.6	1.1	0.0	8.2	0.0	0.0	27.3
2010	6	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2011	7	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2012	8	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2013	9	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2014	10	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2015	11	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2016	12	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2017	13	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2018	14	26.5	0.0	0.0	1.3	0.0	7.2	4.5	4.5	1.1	0.0	8.0	0.0	0.0	26.5
2019	15	27.8	0.0	0.0	1.4	0.0	7.5	4.7	4.7	1.1	0.0	8.3	0.0	0.0	27.8
		0.0													
	Total	591.4	0.0	0.0	29.6	0.0	159.7	100.5	100.5	23.7	0.0	177.4	0.0	0.0	591.4

Table H-3. (continued)

		Summary of Sources of Financing for All Project Costs												
	Project	Export-Import Banks		Commer.	Equip.	Dev. Bank	Foreign Bonds		ODA	Japan-EXIM	Trust	Outside	Gov't	
Year	Year	U.S.	Japan	Banks	Suppliers	Loans	U.S.	Japan	Loans	Overseas. Inv	Fund	Equity	Grants	Total
2005	1	0.0	0.0	4.2	0.0	22.8	14.4	14.4	3.4	0.0	25.4	0.0	0.0	84.5
2006	2	0.0	0.0	4.4	0.0	23.5	14.8	14.8	3.5	0.0	26.1	0.0	0.0	87.1
2007	3	0.0	0.0	4.2	0.0	22.4	14.1	14.1	3.3	0.0	24.9	0.0	0.0	83.0
2008	4	0.0	0.0	16.5	0.0	88.9	55.9	55.9	13.2	0.0	98.7	0.0	0.0	329.1
2009	5	544.8	544.8	42.2	68.1	227.7	143.4	143.4	33.7	0.0	457.3	0.0	0.0	2,205.4
2010	6	193.8	193.8	39.7	24.2	214.2	134.9	134.9	31.7	0.0	310.7	0.0	0.0	1,277.9
2011	7	73.7	73.7	41.7	9.2	225.3	141.8	141.8	33.4	0.0	277.9	0.0	0.0	1,018.5
2012	8	91.6	91.6	48.9	11.5	264.3	166.4	166.4	39.2	0.0	328.0	0.0	0.0	1,207.9
2013	9	36.7	36.7	38.9	4.6	209.9	132.1	132.1	31.1	0.0	247.0	0.0	0.0	869.1
2014	10	83.3	83.3	42.6	10.4	230.0	144.8	144.8	34.1	0.0	286.8	0.0	0.0	1,060.1
2015	11	73.5	73.5	39.0	9.2	210.7	132.7	132.7	31.2	0.0	261.7	0.0	0.0	964.1
2016	12	100.5	100.5	39.8	12.6	214.7	135.2	135.2	31.8	0.0	276.2	0.0	0.0	1,046.2
2017	13	189.4	189.4	38.4	23.7	207.3	130.5	130.5	30.7	0.0	301.4	0.0	0.0	1,241.2
2018	14	106.5	106.5	40.2	13.3	217.2	136.7	136.7	32.2	0.0	281.2	0.0	0.0	1,070.6
2019	15	107.0	107.0	35.4	13.4	190.9	120.2	120.2	28.3	0.0	252.3	0.0	0.0	974.7
	Total	1,600.9	1,600.9	475.9	200.1	2,569.6	1,617.9	1,617.9	380.7	0.0	3,455.5	0.0	0.0	13,519.4

Source: Shares of financing by source from Table 6-4; annual project costs by component from Yachiyo Engineering Co., Ltd. as adjusted by Stone & Webster and by TAMS Consultants to reflect contracting flows such as mobilization, contract advances, and retainages.

Appendix I

SUMMARY OF DEBT SERVICE REQUIREMENTS BY TYPE OF FINANCING

Table I-1. High-Rise Lock Canal 150,000 DWT: Summary of Debt Service Requirements by Type of Financing Assuming a Panama Canal Authority (1990 US$ millions)

		Export-Import Banks														
	Project	United States			Japan			Commercial Banks			Equipment Suppliers			Development Banks		
Year	Year	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.
2010	1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	4.4	0.0	0.0	0.0	1.8	0.0	23.9
2011	2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	8.9	0.0	0.0	0.0	3.6	0.0	48.2
2012	3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	22.6	0.0	0.0	0.0	9.2	0.0	122.2
2013	4	9.4	0.0	133.6	8.7	13.4	120.2	3.6	0.0	53.7	1.1	0.0	16.7	21.8	0.0	290.2
2014	5	26.1	0.0	372.2	23.4	37.2	321.7	6.0	0.0	88.4	3.1	0.0	46.5	35.8	0.0	477.1
2015	6	33.3	0.0	475.0	27.6	47.5	376.9	9.0	0.9	132.5	4.0	0.0	59.4	54.0	1.6	718.9
2016	7	40.5	14.8	567.8	31.5	58.3	426.3	12.0	1.8	176.4	4.8	8.4	64.5	72.3	3.2	962.0
2017	8	47.9	41.4	652.8	35.8	70.9	481.8	14.2	4.5	206.9	5.0	23.3	57.0	86.2	8.1	1,143.1
2018	9	52.6	52.8	711.8	38.4	82.1	511.5	15.3	10.7	218.3	4.4	21.3	49.6	94.4	19.3	1,243.6
2019	10	57.0	64.7	765.4	40.6	93.9	535.9	15.5	17.7	215.7	4.1	13.2	51.3	98.8	31.8	1,293.0
2020	11	52.2	78.8	686.7	34.3	93.9	442.0	14.1	25.8	189.9	3.2	14.6	36.7	96.1	48.0	1,245.0
2021	12	46.5	91.2	595.5	28.0	93.9	348.1	12.2	34.0	155.9	2.2	14.9	21.8	92.2	64.5	1,180.5
2022	13	39.9	104.4	491.1	21.7	93.9	254.2	9.9	38.3	117.6	1.2	14.4	7.4	87.1	77.1	1,103.5
2023	14	32.6	104.4	386.8	15.7	80.6	173.6	7.3	36.5	81.1	0.4	7.4	0.0	81.2	85.1	1,018.4
2024	15	25.2	104.4	282.4	10.7	56.7	116.9	4.9	32.6	48.5	0.0	0.0	0.0	74.7	90.5	927.9
2025	16	18.2	89.5	192.9	7.1	46.4	70.5	2.9	23.6	24.9	0.0	0.0	0.0	67.9	90.5	837.5
2026	17	12.4	63.0	129.9	4.1	35.6	34.8	1.4	14.5	10.5	0.0	0.0	0.0	61.1	90.5	747.0
2027	18	8.2	51.6	78.3	1.9	23.0	11.8	0.6	7.4	3.0	0.0	0.0	0.0	54.3	90.5	656.5
2028	19	4.8	39.6	38.7	0.6	11.8	0.0	0.2	3.0	0.0	0.0	0.0	0.0	47.5	90.5	566.0
2029	20	2.3	25.6	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.8	90.5	475.6
2030	21	0.7	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	88.9	386.7
2031	22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.4	87.3	299.4
2032	23	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	82.3	217.1
2033	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9	71.1	146.0
2034	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	58.7	87.3
2035	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	42.4	44.8
2036	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	26.0	18.8
2037	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	13.4	5.4
2038	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	5.4	0.0
2039	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2040	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2041	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2042	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2043	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2044	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2045	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2046	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2047	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2048	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2049	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	509.5	939.2		330.3	939.2		131.5	251.3		33.7	117.4		1,297.8	1,357.1	

Table I-1. (continued)

Year	Project Year	Foreign Bonds: United States Int.	Foreign Bonds: United States Prin.	Foreign Bonds: United States Bal.	Foreign Bonds: Japan Int.	Foreign Bonds: Japan Prin.	Foreign Bonds: Japan Bal.	ODA Loans Int.	ODA Loans Prin.	ODA Loans Bal.	Japan EXIM-Overseas Invest Int.	Japan EXIM-Overseas Invest Prin.	Japan EXIM-Overseas Invest Bal.	Total Int.	Total Prin.	Total Bal.
2010	1	1.2	0.0	15.0	1.1	0.8	14.3	0.2	0.0	3.5	0.0	0.0	0.0	4.6	0.8	61.1
2011	2	2.5	0.0	30.4	2.1	1.5	28.1	0.3	0.0	7.1	0.0	0.0	0.0	9.2	1.5	122.8
2012	3	6.3	0.0	76.9	5.4	3.8	70.8	0.8	0.0	18.1	0.0	0.0	0.0	23.3	3.8	310.7
2013	4	15.1	0.0	182.7	12.8	9.1	167.5	1.9	0.0	43.0	0.0	0.0	0.0	74.4	22.5	1,007.7
2014	5	24.8	0.0	300.4	20.7	15.0	270.1	3.2	0.0	70.7	0.0	0.0	0.0	143.0	52.2	1,947.1
2015	6	37.4	1.5	452.2	30.7	22.7	400.7	4.8	0.0	106.7	0.0	0.0	0.0	200.8	74.2	2,722.4
2016	7	50.0	3.0	604.2	40.3	30.4	525.4	6.4	0.0	143.2	0.0	0.0	0.0	257.9	119.9	3,469.9
2017	8	59.5	7.7	715.6	46.7	36.4	608.1	7.7	0.3	171.0	0.0	0.0	0.0	303.0	192.6	4,036.2
2018	9	64.9	18.3	772.8	49.5	40.2	643.4	8.5	0.5	188.2	0.0	0.0	0.0	327.9	245.3	4,339.2
2019	10	67.4	30.0	793.9	50.3	42.7	651.8	9.0	1.4	198.8	0.0	0.0	0.0	342.6	295.4	4,506.0
2020	11	64.6	45.4	748.6	47.1	42.7	609.1	8.9	3.3	195.5	0.0	0.0	0.0	320.5	352.6	4,153.4
2021	12	60.5	60.9	687.7	44.0	42.7	566.4	8.7	5.4	190.1	0.0	0.0	0.0	294.4	407.5	3,745.9
2022	13	55.2	72.8	614.9	40.8	42.7	523.6	8.5	8.2	181.9	0.0	0.0	0.0	264.3	451.7	3,294.2
2023	14	49.1	80.3	534.6	37.7	42.7	480.9	8.1	11.0	170.9	0.0	0.0	0.0	231.9	447.9	2,846.2
2024	15	42.3	85.4	449.1	34.6	42.7	438.2	7.5	13.2	157.7	0.0	0.0	0.0	200.0	425.5	2,420.8
2025	16	35.3	83.9	365.2	31.4	42.7	395.5	6.9	14.5	143.2	0.0	0.0	0.0	169.7	391.2	2,029.6
2026	17	28.4	82.4	282.8	28.3	42.7	352.7	6.3	15.5	127.7	0.0	0.0	0.0	142.1	344.2	1,685.4
2027	18	21.7	77.8	205.0	25.1	42.7	310.0	5.6	15.5	112.2	0.0	0.0	0.0	117.5	308.5	1,376.9
2028	19	15.5	67.2	137.8	22.0	42.7	267.3	4.9	15.5	96.8	0.0	0.0	0.0	95.5	270.3	1,106.6
2029	20	10.2	55.4	82.4	18.9	42.7	224.6	4.2	15.5	81.3	0.0	0.0	0.0	76.3	229.6	877.0
2030	21	6.0	40.1	42.4	15.7	42.0	182.6	3.5	15.2	66.1	0.0	0.0	0.0	59.9	199.3	677.7
2031	22	3.0	24.6	17.8	12.7	41.2	141.4	2.8	14.9	51.2	0.0	0.0	0.0	45.8	168.0	509.8
2032	23	1.2	12.7	5.1	9.7	38.9	102.5	2.1	14.1	37.1	0.0	0.0	0.0	33.9	147.9	361.8
2033	24	0.3	5.1	0.0	6.9	33.6	68.9	1.5	12.2	24.9	0.0	0.0	0.0	23.7	122.0	239.8
2034	25	0.0	0.0	0.0	4.6	27.7	41.2	1.0	10.0	14.9	0.0	0.0	0.0	15.4	96.4	143.4
2035	26	0.0	0.0	0.0	2.7	20.0	21.2	0.6	7.3	7.7	0.0	0.0	0.0	9.0	69.7	73.7
2036	27	0.0	0.0	0.0	1.3	12.3	8.9	0.3	4.4	3.2	0.0	0.0	0.0	4.5	42.8	30.9
2037	28	0.0	0.0	0.0	0.5	6.3	2.6	0.1	2.3	0.9	0.0	0.0	0.0	1.8	22.0	8.9
2038	29	0.0	0.0	0.0	0.1	2.6	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.5	8.9	0.0
2039	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2040	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2041	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2042	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2043	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2044	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2045	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2046	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2047	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2048	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2049	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	722.6	854.5		643.7	854.5		124.4	201.1		0.0	0.0		3,793.5	5,514.2	

Source: Prepared by Nathan Associates Inc. based on debt service requirements and financing terms and conditions presented in Table 6-1.

Table I-2. High-Rise Lock Canal 200,000 DWT: Summary of Debt Service Requirements by Type of Financing Assuming a Panama Canal Authority (1990 US$ millions)

		Export-Import Banks														
	Project	United States			Japan			Commercial Banks			Equipment Suppliers			Development Banks		
Year	Year	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.
2009	1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	4.8	0.0	0.0	0.0	1.9	0.0	25.8
2010	2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	9.7	0.0	0.0	0.0	3.9	0.0	52.2
2011	3	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	24.6	0.0	0.0	0.0	9.9	0.0	132.6
2012	4	9.6	0.0	137.2	9.0	13.7	123.5	3.6	0.0	53.6	1.2	0.0	17.2	21.7	0.0	289.5
2013	5	24.5	0.0	350.6	22.0	35.1	301.8	6.2	0.0	91.7	3.0	0.0	43.8	37.2	0.0	495.4
2014	6	33.3	0.0	475.7	27.8	47.6	379.4	9.5	1.0	139.3	4.0	0.0	59.5	56.8	1.7	755.8
2015	7	43.0	15.2	603.3	33.9	61.9	460.3	12.5	1.9	184.3	5.1	8.6	68.7	75.6	3.5	1,005.9
2016	8	52.5	39.0	720.8	40.0	77.5	539.3	15.4	4.9	224.1	5.6	21.9	66.4	93.4	8.8	1,238.4
2017	9	58.0	52.9	789.2	42.8	89.6	570.9	17.3	10.7	247.8	5.1	21.2	60.4	106.4	19.3	1,404.8
2018	10	63.1	68.7	849.7	45.2	102.6	597.6	18.0	18.3	253.1	4.9	16.7	59.8	114.3	33.0	1,499.4
2019	11	58.0	86.1	763.6	38.3	102.6	495.1	17.2	27.1	235.1	3.7	18.7	41.1	115.2	50.5	1,498.2
2020	12	51.7	99.6	664.0	31.5	102.6	392.5	15.3	35.5	199.6	2.5	17.4	23.7	111.1	67.4	1,430.8
2021	13	44.5	113.9	550.1	24.6	102.6	290.0	12.8	41.5	158.1	1.3	15.7	8.1	105.7	83.5	1,347.3
2022	14	36.5	113.9	436.2	17.9	88.8	201.2	10.0	42.5	115.6	0.4	8.1	0.0	99.3	95.9	1,251.5
2023	15	28.5	113.9	322.2	12.3	67.5	133.7	7.1	39.6	76.0	0.0	0.0	0.0	91.9	104.4	1,147.1
2024	16	20.8	98.7	223.5	8.0	55.0	78.7	4.6	31.8	44.2	0.0	0.0	0.0	84.0	107.7	1,039.4
2025	17	14.3	75.0	148.5	4.6	40.7	38.0	2.6	22.4	21.8	0.0	0.0	0.0	75.9	107.7	931.7
2026	18	9.3	61.1	87.4	2.1	25.1	12.9	1.2	13.4	8.4	0.0	0.0	0.0	67.9	107.7	824.1
2027	19	5.3	45.2	42.2	0.6	12.9	0.0	0.5	6.6	1.8	0.0	0.0	0.0	59.8	107.7	716.4
2028	20	2.5	27.8	14.4	0.0	0.0	0.0	0.1	1.8	0.0	0.0	0.0	0.0	51.7	107.7	608.7
2029	21	0.8	14.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.7	106.0	502.8
2030	22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.8	104.2	398.6
2031	23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	98.8	299.7
2032	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.8	88.4	211.4
2033	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	74.6	136.7
2034	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	57.2	79.5
2035	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	40.3	39.3
2036	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	24.2	15.1
2037	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	11.8	3.3
2038	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	3.3	0.0
2039	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2040	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2041	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2042	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2043	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2044	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2045	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2046	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2047	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2048	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	556.3	1,025.5		360.7	1,025.5		156.5	299.1		36.8	128.2		1,544.5	1,615.1	

Table I-2. (continued)

		Foreign Bonds														
	Project	United States			Japan			ODA Loans			Japan EXIM-Overseas Invest			Total		
Year	Year	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.
2009	1	1.3	0.0	16.3	1.2	0.8	15.5	0.2	0.0	3.8	0.0	0.0	0.0	5.0	0.8	66.2
2010	2	2.7	0.0	32.9	2.3	1.6	30.4	0.3	0.0	7.7	0.0	0.0	0.0	10.0	1.6	133.0
2011	3	6.9	0.0	83.5	5.9	4.2	76.9	0.9	0.0	19.6	0.0	0.0	0.0	25.3	4.2	337.2
2012	4	15.0	0.0	182.3	12.7	9.1	166.6	1.9	0.0	42.9	0.0	0.0	0.0	74.8	22.8	1,012.8
2013	5	25.7	0.0	311.9	21.5	15.6	280.6	3.3	0.0	73.4	0.0	0.0	0.0	143.3	50.7	1,949.2
2014	6	39.3	1.6	475.4	32.3	23.8	421.8	5.1	0.0	112.2	0.0	0.0	0.0	208.0	75.7	2,819.1
2015	7	52.3	3.3	631.7	42.1	31.8	549.6	6.7	0.0	149.8	0.0	0.0	0.0	271.4	126.2	3,653.6
2016	8	64.5	8.4	775.3	50.8	39.4	662.1	8.3	0.3	185.3	0.0	0.0	0.0	330.5	200.2	4,411.7
2017	9	73.2	18.2	874.0	56.4	45.3	733.7	9.6	0.6	212.2	0.0	0.0	0.0	368.9	257.8	4,892.9
2018	10	78.1	31.2	923.1	58.9	49.3	764.8	10.4	1.5	229.6	0.0	0.0	0.0	392.9	321.4	5,177.1
2019	11	77.7	47.7	906.5	57.6	50.8	745.1	10.6	3.3	233.6	0.0	0.0	0.0	378.4	386.8	4,918.3
2020	12	73.5	63.7	842.9	53.8	50.8	694.2	10.4	5.6	227.9	0.0	0.0	0.0	349.8	442.6	4,475.8
2021	13	67.9	78.9	764.0	50.1	50.8	643.4	10.2	8.6	219.3	0.0	0.0	0.0	317.1	495.5	3,980.3
2022	14	61.2	90.5	673.5	46.4	50.8	592.5	9.7	11.5	207.8	0.0	0.0	0.0	281.3	502.2	3,478.1
2023	15	53.5	98.6	574.9	42.6	50.8	541.7	9.2	14.3	193.5	0.0	0.0	0.0	245.3	489.2	2,989.0
2024	16	45.4	100.1	474.8	38.9	50.8	490.8	8.5	16.4	177.1	0.0	0.0	0.0	210.2	460.4	2,528.5
2025	17	37.1	98.4	376.4	35.1	50.8	440.0	7.8	17.8	159.3	0.0	0.0	0.0	177.5	412.8	2,115.7
2026	18	29.1	93.3	283.1	31.4	50.8	389.1	7.0	18.4	140.9	0.0	0.0	0.0	148.1	369.8	1,745.9
2027	19	21.6	83.5	199.6	27.7	50.8	338.3	6.1	18.4	122.5	0.0	0.0	0.0	121.6	325.1	1,420.8
2028	20	15.0	70.5	129.1	23.9	50.8	287.4	5.3	18.4	104.1	0.0	0.0	0.0	98.5	277.1	1,143.7
2029	21	9.5	54.0	75.1	20.2	50.0	237.4	4.5	18.1	85.9	0.0	0.0	0.0	78.6	242.5	901.2
2030	22	5.4	38.0	37.1	16.5	49.2	188.2	3.7	17.8	68.1	0.0	0.0	0.0	61.4	209.2	692.0
2031	23	2.6	22.8	14.3	13.0	46.7	141.5	2.9	16.9	51.2	0.0	0.0	0.0	46.5	185.2	506.8
2032	24	0.9	11.1	3.1	9.6	41.7	99.8	2.1	15.1	36.1	0.0	0.0	0.0	33.5	156.4	350.4
2033	25	0.2	3.1	0.0	6.7	35.3	64.6	1.5	12.8	23.4	0.0	0.0	0.0	22.8	125.8	224.6
2034	26	0.0	0.0	0.0	4.2	27.0	37.6	0.9	9.8	13.6	0.0	0.0	0.0	14.4	93.9	130.7
2035	27	0.0	0.0	0.0	2.4	19.0	18.5	0.5	6.9	6.7	0.0	0.0	0.0	8.2	66.2	64.5
2036	28	0.0	0.0	0.0	1.2	11.4	7.1	0.3	4.1	2.6	0.0	0.0	0.0	3.9	39.7	24.8
2037	29	0.0	0.0	0.0	0.4	5.6	1.6	0.1	2.0	0.6	0.0	0.0	0.0	1.4	19.4	5.4
2038	30	0.0	0.0	0.0	0.1	1.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.3	5.4	0.0
2039	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2040	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2041	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2042	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2043	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2044	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2045	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2046	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2047	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2048	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	859.9	1,016.9		766.1	1,016.9		148.1	239.3		0.0	0.0		4,428.9	6,366.6	

Source: Prepared by Nathan Associates Inc. based on debt service requirements and financing terms and conditions presented in Table 6-1.

Table I-3. Sea-Level Canal Case A: Summary of Debt Service Requirements by Type of Financing Assuming a Panama Canal Authority (1990 US$ millions)

		Export-Import Banks														
	Project	United States			Japan			Commercial Banks			Equipment Suppliers			Development Banks		
Year	Year	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.	Int.	Prin.	Bal.
2005	1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	4.2	0.0	0.0	0.0	1.7	0.0	22.8
2006	2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	8.6	0.0	0.0	0.0	3.5	0.0	46.3
2007	3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	12.7	0.0	0.0	0.0	5.2	0.0	68.7
2008	4	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	29.2	0.0	0.0	0.0	11.8	0.0	157.6
2009	5	38.1	0.0	544.8	35.6	54.5	490.3	4.8	0.0	71.4	4.6	0.0	68.1	28.9	0.0	385.3
2010	6	51.7	0.0	738.6	44.6	73.9	610.3	7.5	0.8	110.2	6.2	0.0	92.3	44.9	1.5	598.0
2011	7	56.9	0.0	812.3	44.5	81.2	602.7	10.2	1.7	150.2	6.9	0.0	101.5	61.7	3.1	820.2
2012	8	62.2	60.5	843.4	45.0	90.4	604.0	13.4	2.5	196.6	7.1	34.0	78.9	81.2	4.6	1,079.9
2013	9	60.2	82.1	798.0	41.4	94.1	546.6	15.8	5.8	229.6	4.9	46.2	37.4	96.5	10.5	1,279.2
2014	10	60.1	90.3	791.1	40.5	102.4	527.5	18.1	14.3	257.9	2.9	16.7	31.1	112.7	25.7	1,483.5
2015	11	58.8	100.4	764.2	38.4	109.7	491.3	19.7	21.4	275.6	2.5	10.3	29.9	126.3	40.0	1,654.3
2016	12	58.7	104.5	760.2	37.6	119.8	472.0	20.8	28.8	286.5	2.7	8.0	34.5	139.1	55.0	1,813.9
2017	13	64.5	113.8	835.7	42.0	138.7	522.6	21.3	37.8	287.1	3.8	7.5	50.6	150.2	72.6	1,948.6
2018	14	63.8	121.9	820.3	39.7	149.4	479.8	21.4	42.3	285.0	4.2	9.8	54.1	160.8	86.6	2,079.2
2019	15	62.6	133.1	794.3	37.5	105.6	481.2	20.9	42.4	278.0	4.4	10.9	56.6	168.3	101.9	2,168.2
2020	16	52.9	154.1	640.1	30.8	86.2	395.0	18.1	42.2	235.8	3.5	18.1	38.5	160.4	116.0	2,052.2
2021	17	43.0	105.5	534.7	25.1	78.9	316.1	15.2	41.8	194.0	2.3	18.5	20.0	151.5	130.3	1,921.9
2022	18	35.7	95.8	438.8	20.0	69.7	246.4	12.4	39.7	154.3	1.1	13.3	6.7	141.4	144.1	1,777.8
2023	19	29.2	87.6	351.2	15.4	66.0	180.4	9.7	40.0	114.3	0.3	6.7	0.0	130.4	158.6	1,619.2
2024	20	23.2	77.4	273.8	11.1	57.7	122.7	7.1	38.5	75.7	0.0	0.0	0.0	118.2	171.3	1,447.9
2025	21	17.9	73.4	200.4	7.4	50.3	72.4	4.6	30.7	45.0	0.0	0.0	0.0	105.4	169.8	1,278.1
2026	22	12.9	64.1	136.3	4.2	40.3	32.1	2.7	22.8	22.2	0.0	0.0	0.0	92.7	168.2	1,109.9
2027	23	8.6	55.9	80.4	1.8	21.4	10.7	1.2	15.1	7.1	0.0	0.0	0.0	80.1	166.7	943.2
2028	24	4.8	44.8	35.6	0.5	10.7	0.0	0.4	7.1	0.0	0.0	0.0	0.0	67.7	160.8	782.4
2029	25	2.1	23.7	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.9	145.6	636.8
2030	26	0.6	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.3	131.3	505.4
2031	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.7	116.3	389.1
2032	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.3	98.7	290.4
2033	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	84.7	205.7
2034	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.1	69.4	136.3
2035	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	55.3	81.0
2036	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	41.0	39.9
2037	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	27.2	12.7
2038	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	12.7	0.0
2039	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2040	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2041	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2042	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2043	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2044	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	868.5	1,600.9		563.1	1,600.9		248.9	475.9		57.4	200.1		2,457.2	2,569.6	

Table I-3. (continued)

Year	Project Year	Foreign Bonds: United States Int.	Foreign Bonds: United States Prin.	Foreign Bonds: United States Bal.	Foreign Bonds: Japan Int.	Foreign Bonds: Japan Prin.	Foreign Bonds: Japan Bal.	ODA Loans Int.	ODA Loans Prin.	ODA Loans Bal.	Japan EXIM-Overseas Invest Int.	Japan EXIM-Overseas Invest Prin.	Japan EXIM-Overseas Invest Bal.	Total Int.	Total Prin.	Total Bal.
2005	1	1.2	0.0	14.4	1.0	0.7	13.6	0.2	0.0	3.4	0.0	0.0	0.0	4.4	0.7	58.4
2006	2	2.4	0.0	29.2	2.1	1.5	27.0	0.3	0.0	6.9	0.0	0.0	0.0	8.8	1.5	117.9
2007	3	3.6	0.0	43.3	3.0	2.2	38.9	0.5	0.0	10.2	0.0	0.0	0.0	13.0	2.2	173.9
2008	4	8.2	0.0	99.2	6.9	5.0	89.9	1.1	0.0	23.3	0.0	0.0	0.0	29.9	5.0	399.3
2009	5	20.0	0.0	242.6	16.9	12.1	221.2	2.6	0.0	57.1	0.0	0.0	0.0	151.5	66.6	2,080.7
2010	6	31.1	1.4	376.0	25.8	18.9	337.2	4.0	0.0	88.8	0.0	0.0	0.0	215.9	96.5	2,951.4
2011	7	42.7	2.9	515.0	34.7	26.0	453.0	5.5	0.0	122.2	0.0	0.0	0.0	263.0	114.9	3,577.1
2012	8	56.1	4.3	677.0	44.9	34.3	585.2	7.3	0.3	161.1	0.0	0.0	0.0	317.2	231.0	4,226.0
2013	9	66.6	9.9	799.2	52.0	40.9	676.4	8.6	0.5	191.6	0.0	0.0	0.0	345.9	290.0	4,558.2
2014	10	77.4	24.3	919.8	59.5	48.1	773.1	10.1	0.8	224.9	0.0	0.0	0.0	381.4	322.5	5,009.0
2015	11	86.0	37.7	1,014.7	65.6	54.8	851.0	11.5	1.8	254.4	0.0	0.0	0.0	408.9	376.2	5,335.3
2016	12	93.8	51.9	1,097.9	71.3	61.5	924.6	12.8	4.4	281.8	0.0	0.0	0.0	437.0	434.0	5,671.3
2017	13	99.9	68.6	1,159.9	76.3	68.0	987.1	14.0	6.8	305.6	0.0	0.0	0.0	472.0	513.9	6,097.3
2018	14	105.3	81.8	1,214.8	81.2	74.9	1,048.9	15.1	9.4	328.4	0.0	0.0	0.0	491.4	576.1	6,310.6
2019	15	108.2	96.3	1,238.8	84.4	80.9	1,088.2	15.9	12.4	344.3	0.0	0.0	0.0	502.3	583.5	6,449.6
2020	16	100.0	108.1	1,130.7	78.5	80.9	1,007.3	15.3	14.8	329.5	0.0	0.0	0.0	459.5	620.5	5,829.1
2021	17	90.8	120.1	1,010.5	72.6	80.9	926.4	14.6	17.4	312.1	0.0	0.0	0.0	415.1	593.4	5,235.7
2022	18	80.7	131.8	878.8	66.6	80.9	845.5	13.8	19.8	292.2	0.0	0.0	0.0	371.8	595.2	4,640.5
2023	19	69.6	139.8	738.9	60.7	80.9	764.6	12.9	22.3	270.0	0.0	0.0	0.0	328.2	601.9	4,038.6
2024	20	58.1	137.5	601.4	54.7	80.9	683.7	11.9	24.6	245.3	0.0	0.0	0.0	284.4	588.0	3,450.6
2025	21	47.1	124.0	477.3	48.8	80.2	603.6	10.7	26.8	218.5	0.0	0.0	0.0	241.8	555.3	2,895.3
2026	22	37.1	109.9	367.5	42.9	79.4	524.1	9.5	28.8	189.7	0.0	0.0	0.0	202.0	513.5	2,381.8
2027	23	28.4	93.2	274.3	37.1	78.7	445.4	8.2	28.5	161.2	0.0	0.0	0.0	165.4	459.6	1,922.2
2028	24	21.0	80.0	194.2	31.3	75.9	369.5	6.9	27.5	133.7	0.0	0.0	0.0	132.7	406.8	1,515.4
2029	25	14.7	65.5	128.7	25.9	68.8	300.7	5.7	24.9	108.8	0.0	0.0	0.0	104.3	328.5	1,186.9
2030	26	9.5	52.3	76.5	21.0	62.0	238.7	4.6	22.5	86.4	0.0	0.0	0.0	81.1	280.0	906.9
2031	27	5.5	38.7	37.7	16.5	54.9	183.7	3.7	19.9	66.5	0.0	0.0	0.0	61.4	229.9	677.1
2032	28	2.6	25.7	12.0	12.6	46.6	137.1	2.8	16.9	49.6	0.0	0.0	0.0	45.4	187.9	489.2
2033	29	0.7	12.0	0.0	9.3	40.0	97.1	2.1	14.5	35.2	0.0	0.0	0.0	32.3	151.2	338.0
2034	30	0.0	0.0	0.0	6.5	32.8	64.4	1.4	11.9	23.3	0.0	0.0	0.0	22.1	114.0	224.0
2035	31	0.0	0.0	0.0	4.3	26.1	38.2	0.9	9.5	13.8	0.0	0.0	0.0	14.4	90.9	133.0
2036	32	0.0	0.0	0.0	2.5	19.4	18.9	0.5	7.0	6.8	0.0	0.0	0.0	8.3	67.4	65.6
2037	33	0.0	0.0	0.0	1.1	12.8	6.0	0.3	4.7	2.2	0.0	0.0	0.0	3.9	44.7	20.9
2038	34	0.0	0.0	0.0	0.3	6.0	0.0	0.1	2.2	0.0	0.0	0.0	0.0	1.1	20.9	0.0
2039	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2040	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2041	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2042	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2043	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2044	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	1,368.2	1,617.9		1,218.9	1,617.9		235.6	380.7		0.0	0.0		7,017.8	10,063.9	

Source: Prepared by Nathan Associates Inc. based on debt service requirements and financing terms and conditions presented in Table 6-1.

Appendix J

SENSITIVITY ANALYSES

Table J-1. Panama Canal Alternatives: Sources of Financing, Assumed Terms and Conditions and Interest Rates Increased by 25 Percent

Source of financing	Interest rate	Grace period	Total term	Conditions
U.S. Export-Import Bank (suppliers credit)	8.75	3 years	12 years	Up to 85 percent of value of equipment exported
Japan Export-Import Bank (suppliers credit)	8.00 a/	0 years	10 years	Up to 85 percent of value of equipment exported; MITI insurance required
Commercial Banks	8.44	5 years	10 years	Terms for a medium grade investment; participation of multilateral development bank in project preferred
Equipment Suppliers	8.44	3 years	5 years	5 percent of value of equipment; terms for a medium grade investment
Development Banks	9.38	5 years	20 years	Requires Panamanian Government guarantee; economically feasible project
U.S. Private Bonds	10.31	5 years	15 years	Participation of multilateral development bank in project preferred; terms for a medium-grade investment
Japanese Private Bonds	8.81 a/	0 years	20 years	Yen-denominated; participation of multilateral development bank in project;
OECF/ODA Loans	5.25 a/	7 years	20 years	Loan to Panamanian Government ; FIRR should be between 10 and 20 percent; yen-denominated; Panamanian Government guarantee required;
Japan-EXIM Overseas Investment	8.00 a/	0 years	10 years	Possible for SPC entity; MITI insurance required; Panamanian Government guarantee; limited to 60 percent of Japanese non-financial corporations participation in project.
Toll Reserve Trust Fund	n.a.	n.a.	n.a.	Trust fund should maintain balance of $500 million;
Other Equity	n.a.	n.a.	n.a.	Would require a Special Purpose Corporation or an International Public Entity management arrangement
Government Grants	n.a.	n.a.	n.a.	Not anticipated under current conditions

n.a.= not applicable

a\ Includes cost of currency swap, hedging or currency risk insurance of 150 basis points for yen-denominated loans. Swap rates used are those for 10-year maturities as a liquid swap market does not exist for maturities beyond 10-years.

Source: Nathan Associates Inc.

Table J-2. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service Coverage	Overall Debt Service Coverage
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Ratio i/	Ratio j/
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009		523.6	111.7	635.3	359.4	275.9	63.5	0.0	0.0	0.0	212.4	0.0	0.0	1,858.0	--	--
2010	1	537.7	113.5	651.2	360.5	290.7	65.1	5.7	0.8	6.4	219.2	26.5	0.0	2,125.0	35.2	367.0
2011	2	552.3	115.3	667.5	361.5	306.0	66.8	11.4	1.5	12.9	226.4	27.1	0.0	2,409.3	18.6	205.7
2012	3	567.2	117.1	684.2	362.6	321.6	68.4	28.7	3.8	32.6	220.6	82.2	0.0	2,644.1	7.8	88.9
2013	4	582.5	118.9	701.4	363.7	337.7	70.1	91.7	22.5	114.2	153.4	236.8	0.0	2,666.4	2.3	25.7
2014	5	598.2	120.8	719.0	364.8	354.2	71.9	176.1	52.2	228.4	54.0	297.1	0.0	2,529.9	1.2	12.3
2015	6	614.4	122.7	737.1	365.8	371.2	73.7	247.5	74.2	321.6	-24.1	309.0	0.0	2,298.0	0.9	8.1
2016	7	631.0	124.6	755.6	366.9	388.7	75.6	318.0	119.9	438.0	-124.8	314.1	0.0	1,951.0	0.7	5.2
2017	8	648.0	126.5	774.6	368.0	406.6	77.5	373.8	192.6	566.3	-237.2	257.6	0.0	1,534.3	0.6	3.3
2018	9	665.5	128.5	794.1	369.1	425.0	79.4	404.5	245.3	649.8	-304.2	175.1	0.0	1,116.4	0.5	2.2
2019	10	683.5	130.5	814.1	370.1	443.9	81.4	422.6	295.4	718.1	-355.5	134.7	0.0	670.8	0.5	1.4
2020	11	904.0	132.6	1,036.6	475.1	561.5	103.7	395.6	352.6	748.2	-290.3	0.0	0.0	407.3	0.6	1.2
2021	12	911.9	133.6	1,045.5	477.8	567.7	104.5	363.4	407.5	770.9	-307.8	0.0	0.0	115.8	0.6	0.8
2022	13	919.8	134.6	1,054.4	480.5	573.9	105.4	326.4	451.7	778.1	-309.6	0.0	0.0	-189.2	0.6	0.4
2023	14	927.8	135.6	1,063.5	483.2	580.3	106.3	286.4	447.9	734.4	-260.4	0.0	0.0	-457.2	0.6	0.0
2024	15	935.9	136.7	1,072.6	485.9	586.7	107.3	247.0	425.5	672.4	-193.0	0.0	0.0	-668.5	0.7	-0.3
2025	16	944.1	137.7	1,081.8	488.6	593.2	108.2	209.6	391.2	600.7	-115.7	0.0	0.0	-811.0	0.8	-0.5
2026	17	952.3	138.8	1,091.1	491.3	599.8	109.1	175.4	344.2	519.5	-28.9	0.0	0.0	-872.3	0.9	-0.7
2027	18	960.6	139.8	1,100.4	494.0	606.4	110.0	145.0	308.5	453.5	42.9	0.0	0.0	-864.2	1.1	-0.8
2028	19	969.0	140.9	1,109.8	496.7	613.2	111.0	117.8	270.3	388.1	114.1	0.0	0.0	-784.7	1.3	-0.7
2029	20	977.4	141.9	1,119.4	499.4	620.0	111.9	94.1	229.6	323.7	184.4	0.0	0.0	-631.7	1.6	-0.4
2030	21	985.9	143.0	1,129.0	502.1	626.9	112.9	73.8	199.3	273.0	240.9	0.0	0.0	-416.1	1.9	0.4
2031	22	994.5	144.1	1,138.6	504.8	633.9	113.9	56.4	168.0	224.4	295.6	0.0	0.0	-137.1	2.3	1.7
2032	23	1,003.2	145.2	1,148.4	507.5	640.9	114.8	41.8	147.9	189.7	336.4	0.0	0.0	193.8	2.8	3.8
2033	24	1,011.9	146.3	1,158.2	510.2	648.1	115.8	29.2	122.0	151.2	381.1	0.0	0.0	582.7	3.5	7.4
2034	25	1,020.7	147.4	1,168.2	512.9	655.3	116.8	18.9	96.4	115.4	423.1	0.0	505.8	523.3	4.7	9.2
2035	26	1,029.6	148.5	1,178.2	515.6	662.6	117.8	11.1	69.7	80.8	464.0	0.0	487.3	520.9	6.7	13.2
2036	27	1,038.6	149.7	1,188.3	518.3	670.0	118.8	5.5	42.8	48.3	502.9	0.0	523.8	520.8	11.4	22.2
2037	28	1,047.7	150.8	1,198.5	521.0	677.5	119.8	2.2	22.0	24.3	533.4	0.0	554.2	520.8	23.0	44.4

Table J-2. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service Coverage	Overall Debt Service Coverage
Year	Year	Tolls a/	Other b/	Total	Oper. & Maint. c/	Operations	Panama d/	Int.	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Ratio i/	Ratio j/
2038	29	1,056.8	152.0	1,208.7	523.7	685.1	120.9	0.6	8.9	9.5	554.7	0.0	575.6	520.8	59.5	114.3
2039	30	1,066.0	153.1	1,219.1	526.4	692.8	121.9	0.0	0.0	0.0	570.8	0.0	591.7	520.8	--	--
2040	31	1,075.3	154.3	1,229.6	529.1	700.5	123.0	0.0	0.0	0.0	577.6	0.0	598.4	520.8	--	--
2041	32	1,084.6	155.5	1,240.1	531.7	708.3	124.0	0.0	0.0	0.0	584.3	0.0	605.2	520.8	--	--
2042	33	1,094.1	156.6	1,250.7	534.4	716.3	125.1	0.0	0.0	0.0	591.2	0.0	612.0	520.8	--	--
2043	34	1,103.6	157.8	1,261.5	537.1	724.3	126.1	0.0	0.0	0.0	598.2	0.0	619.0	520.8	--	--
2044	35	1,113.2	159.0	1,272.3	539.8	732.4	127.2	0.0	0.0	0.0	605.2	0.0	626.0	520.8	--	--
2045	36	1,122.9	160.2	1,283.2	542.5	740.6	128.3	0.0	0.0	0.0	612.3	0.0	633.2	520.8	--	--
2046	37	1,132.7	161.4	1,294.2	545.2	748.9	129.4	0.0	0.0	0.0	619.5	0.0	640.4	520.8	--	--
2047	38	1,142.6	162.7	1,305.3	547.9	757.3	130.5	0.0	0.0	0.0	626.8	0.0	647.6	520.8	--	--
2048	39	1,152.6	163.9	1,316.5	550.6	765.8	131.6	0.0	0.0	0.0	634.2	0.0	655.0	520.8	--	--
2049	40	1,162.6	165.2	1,327.8	553.3	774.4	132.8	0.0	0.0	0.0	641.7	0.0	662.5	520.8	--	--
2050	41	1,172.7	166.4	1,339.1	556.0	783.1	133.9	0.0	0.0	0.0	649.2	0.0	670.0	520.8	--	--
2051	42	1,182.9	167.7	1,350.6	558.7	791.9	135.1	0.0	0.0	0.0	656.8	0.0	677.7	520.8	--	--
2052	43	1,193.3	169.0	1,362.2	561.4	800.8	136.2	0.0	0.0	0.0	664.6	0.0	685.4	520.8	--	--
2053	44	1,203.6	170.2	1,373.9	564.1	809.8	137.4	0.0	0.0	0.0	672.4	0.0	693.2	520.8	--	--
2054	45	1,214.1	171.5	1,385.7	566.8	818.9	138.6	0.0	0.0	0.0	680.3	0.0	701.1	520.8	--	--
2055	46	1,224.7	172.8	1,397.5	569.5	828.0	139.8	0.0	0.0	0.0	688.3	0.0	709.1	520.8	--	--
2056	47	1,235.4	174.1	1,409.5	572.2	837.3	141.0	0.0	0.0	0.0	696.4	0.0	717.2	520.8	--	--
2057	48	1,246.1	175.5	1,421.6	574.9	846.7	142.2	0.0	0.0	0.0	704.6	0.0	725.4	520.8	--	--
2058	49	1,257.0	176.8	1,433.8	577.6	856.2	143.4	0.0	0.0	0.0	712.8	0.0	733.7	520.8	--	--
2059	50	1,268.0	178.1	1,446.1	580.3	865.8	144.6	0.0	0.0	0.0	721.2	0.0	742.0	520.8	--	--
2060	51	1,279.0	179.5	1,458.5	583.0	875.5	145.9	0.0	0.0	0.0	729.7	0.0	750.5	520.8	--	--
	Total	55,057.3	8,611.7	63,669.0	28,889.7	34,779.3	6,366.9	4,680.1	5,514.2	10,194.3	18,218.1	1,860.1	17,343.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-3. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							61.9	61.9
2010	1	290.7	194.6	96.1	88.4	7.7	56.7	64.5
2011	2	306.0	199.2	106.8	90.2	16.6	178.9	195.5
2012	3	321.6	203.9	117.8	274.0	-156.2	686.9	530.7
2013	4	337.7	208.6	129.1	956.3	-827.2	877.4	50.2
2014	5	354.2	213.4	140.9	1,288.7	-1,147.8	621.1	-526.7
2015	6	371.2	218.2	153.0	1,158.5	-1,005.5	545.8	-459.7
2016	7	388.7	223.1	165.6	1,181.5	-1,015.9	321.0	-695.0
2017	8	406.6	228.1	178.5	1,016.5	-838.0	-18.1	-856.1
2018	9	425.0	233.1	191.9	723.3	-531.4	-187.6	-719.0
2019	10	443.9	238.2	205.7	596.9	-391.2	-718.1	-1,109.3
2020	11	561.5	243.4	318.1	0.0	318.1	-748.2	-430.1
2021	12	567.7	245.7	322.0	0.0	322.0	-770.9	-448.9
2022	13	573.9	248.0	326.0	0.0	326.0	-778.1	-452.2
2023	14	580.3	250.3	330.0	0.0	330.0	-734.4	-404.4
2024	15	586.7	252.6	334.1	0.0	334.1	-672.4	-338.3
2025	16	593.2	255.0	338.2	0.0	338.2	-600.7	-262.5
2026	17	599.8	257.3	342.4	0.0	342.4	-519.5	-177.1
2027	18	606.4	259.7	346.7	0.0	346.7	-453.5	-106.7
2028	19	613.2	262.1	351.0	0.0	351.0	-388.1	-37.1
2029	20	620.0	264.6	355.4	0.0	355.4	-323.7	31.7
2030	21	626.9	267.0	359.8	0.0	359.8	-273.0	86.8
2031	22	633.9	269.5	364.3	0.0	364.3	-224.4	140.0
2032	23	640.9	272.0	368.9	0.0	368.9	-189.7	179.2
2033	24	648.1	274.5	373.5	0.0	373.5	-151.2	222.4
2034	25	655.3	277.1	378.2	0.0	378.2	-115.4	262.9
2035	26	662.6	279.6	383.0	0.0	383.0	-80.8	302.2
2036	27	670.0	282.2	387.8	0.0	387.8	-48.3	339.5
2037	28	677.5	284.8	392.7	0.0	392.7	-24.3	368.4
2038	29	685.1	287.5	397.6	0.0	397.6	-9.5	388.1
2039	30	692.8	290.1	402.6	0.0	402.6	0.0	402.6
2040	31	700.5	292.8	407.7	0.0	407.7	0.0	407.7
2041	32	708.3	295.5	412.8	0.0	412.8	0.0	412.8
2042	33	716.3	298.2	418.1	0.0	418.1	0.0	418.1
2043	34	724.3	301.0	423.3	0.0	423.3	0.0	423.3
2044	35	732.4	303.7	428.7	0.0	428.7	0.0	428.7
2045	36	740.6	306.5	434.1	0.0	434.1	0.0	434.1
2046	37	748.9	309.3	439.6	0.0	439.6	0.0	439.6

Table J-3. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	757.3	312.2	445.2	0.0	445.2	0.0	445.2
2048	39	765.8	315.0	450.8	0.0	450.8	0.0	450.8
2049	40	774.4	317.9	456.5	0.0	456.5	0.0	456.5
2050	41	783.1	320.8	462.3	0.0	462.3	0.0	462.3
2051	42	791.9	323.8	468.1	0.0	468.1	0.0	468.1
2052	43	800.8	326.7	474.0	0.0	474.0	0.0	474.0
2053	44	809.8	329.7	480.0	0.0	480.0	0.0	480.0
2054	45	818.9	332.7	486.1	0.0	486.1	0.0	486.1
2055	46	828.0	335.8	492.3	0.0	492.3	0.0	492.3
2056	47	837.3	338.8	498.5	0.0	498.5	0.0	498.5
2057	48	846.7	341.9	504.8	0.0	504.8	0.0	504.8
2058	49	856.2	345.0	511.2	0.0	511.2	0.0	511.2
2059	50	865.8	348.1	517.7	0.0	517.7	0.0	517.7
2060	51	875.5	351.3	524.2	0.0	524.2	0.0	524.2
	Total	32,624.5	14,230.5	18,394.0	7,374.3	11,019.7		6,277.7
				Financial Internal Rate of Return		4.6%		2.8%
				Net Present Value at 8 percent discount rate		-1,590.6		-1,637.0

a/ From Table J-2

b/ From Table 6-6

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-4. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service Coverage	Overall Debt Service Coverage
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Ratio i/	Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009		599.9	111.7	711.7	359.4	352.3	71.2	0.0	0.0	0.0	281.1	0.0	0.0	2,242.4	--	--
2010	1	624.6	113.5	738.1	360.5	377.6	73.8	5.7	0.8	6.4	297.4	26.5	0.0	2,603.0	47.4	453.8
2011	2	650.3	115.3	765.5	361.5	404.0	76.6	11.4	1.5	12.9	314.5	27.1	0.0	2,994.6	25.4	258.0
2012	3	677.0	117.1	794.0	362.6	431.4	79.4	28.7	3.8	32.6	319.4	82.2	0.0	3,351.6	10.8	113.6
2013	4	704.8	118.9	823.7	363.7	460.0	82.4	91.7	22.5	114.2	263.4	236.8	0.0	3,512.2	3.3	34.1
2014	5	733.7	120.8	854.5	364.8	489.7	85.5	176.1	52.2	228.4	175.9	297.1	0.0	3,531.5	1.8	17.2
2015	6	763.9	122.7	886.5	365.8	520.7	88.7	247.5	74.2	321.6	110.4	309.0	0.0	3,474.2	1.3	12.1
2016	7	795.3	124.6	919.9	366.9	552.9	92.0	318.0	119.9	438.0	23.0	314.1	0.0	3,322.1	1.1	8.6
2017	8	827.9	126.5	954.5	368.0	586.5	95.4	373.8	192.6	566.3	-75.3	257.6	0.0	3,122.1	0.9	6.4
2018	9	862.0	128.5	990.5	369.1	621.4	99.0	404.5	245.3	649.8	-127.4	175.1	0.0	2,944.5	0.8	5.3
2019	10	897.4	130.5	1,027.9	370.1	657.8	102.8	422.6	295.4	718.1	-163.1	134.7	0.0	2,764.5	0.8	4.6
2020	11	1,175.0	132.6	1,307.6	475.1	832.5	130.8	395.6	352.6	748.2	-46.4	0.0	0.0	2,828.7	0.9	4.7
2021	12	1,184.8	133.6	1,318.4	477.8	840.6	131.8	363.4	407.5	770.9	-62.2	0.0	0.0	2,879.6	0.9	4.7
2022	13	1,194.7	134.6	1,329.3	480.5	848.8	132.9	326.4	451.7	778.1	-62.3	0.0	0.0	2,932.6	0.9	4.7
2023	14	1,204.6	135.6	1,340.3	483.2	857.1	134.0	286.4	447.9	734.4	-11.3	0.0	0.0	3,038.6	1.0	5.1
2024	15	1,214.7	136.7	1,351.4	485.9	865.5	135.1	247.0	425.5	672.4	57.9	0.0	2,596.4	621.5	1.1	2.0
2025	16	1,224.8	137.7	1,362.5	488.6	873.9	136.3	209.6	391.2	600.7	137.0	0.0	258.5	524.9	1.2	2.1
2026	17	1,235.0	138.8	1,373.8	491.3	882.5	137.4	175.4	344.2	519.5	225.6	0.0	250.5	521.0	1.4	2.4
2027	18	1,245.3	139.8	1,385.2	494.0	891.2	138.5	145.0	308.5	453.5	299.2	0.0	320.2	520.8	1.7	2.8
2028	19	1,255.7	140.9	1,396.6	496.7	899.9	139.7	117.8	270.3	388.1	372.2	0.0	393.0	520.8	2.0	3.3
2029	20	1,266.2	141.9	1,408.1	499.4	908.8	140.8	94.1	229.6	323.7	444.3	0.0	465.1	520.8	2.4	4.0
2030	21	1,276.8	143.0	1,419.8	502.1	917.7	142.0	73.8	199.3	273.0	502.7	0.0	523.5	520.8	2.8	4.7
2031	22	1,287.4	144.1	1,431.5	504.8	926.7	143.2	56.4	168.0	224.4	559.2	0.0	580.1	520.8	3.5	5.8
2032	23	1,298.1	145.2	1,443.4	507.5	935.9	144.3	41.8	147.9	189.7	601.9	0.0	622.7	520.8	4.2	6.9
2033	24	1,309.0	146.3	1,455.3	510.2	945.1	145.5	29.2	122.0	151.2	648.4	0.0	669.3	520.8	5.3	8.7
2034	25	1,319.9	147.4	1,467.3	512.9	954.4	146.7	18.9	96.4	115.4	692.4	0.0	713.2	520.8	7.0	11.5
2035	26	1,330.9	148.5	1,479.4	515.6	963.9	147.9	11.1	69.7	80.8	735.1	0.0	756.0	520.8	10.1	16.5
2036	27	1,342.0	149.7	1,491.7	518.3	973.4	149.2	5.5	42.8	48.3	776.0	0.0	796.8	520.8	17.1	27.9
2037	28	1,353.2	150.8	1,504.0	521.0	983.0	150.4	2.2	22.0	24.3	808.4	0.0	829.2	520.8	34.3	55.8

Table J-4. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364 5	152.0	1,516 4	523 7	992 8	151 6	0 6	8 9	9 5	831 6	0 0	852 5	520 8	88 6	143 5
2039	30	1,375 8	153 1	1,529 0	526 4	1,002 6	152 9	0 0	0 0	0 0	849 7	0 0	870 5	520 8	- -	- -
2040	31	1,387 3	154 3	1,541 6	529 1	1,012 6	154 2	0 0	0 0	0 0	858 4	0 0	879 2	520 8	- -	- -
2041	32	1,398 9	155 5	1,554 3	531 7	1,022 6	155 4	0 0	0 0	0 0	867 2	0 0	888 0	520 8	- -	- -
2042	33	1,410 6	156 6	1,567 2	534 4	1,032 7	156 7	0 0	0 0	0 0	876 0	0 0	896 9	520 8	- -	- -
2043	34	1,422 3	157 8	1,580 1	537 1	1,043 0	158 0	0 0	0 0	0 0	885 0	0 0	905 8	520 8	- -	- -
2044	35	1,434 2	159 0	1,593 2	539 8	1,053 4	159 3	0 0	0 0	0 0	894 0	0 0	914 9	520 8	- -	- -
2045	36	1,446 1	160 2	1,606 4	542 5	1,063 8	160 6	0 0	0 0	0 0	903 2	0 0	924 0	520 8	- -	- -
2046	37	1,458 2	161 4	1,619 7	545 2	1,074 4	162 0	0 0	0 0	0 0	912 5	0 0	933 3	520 8	- -	- -
2047	38	1,470 4	162 7	1,633 0	547 9	1,085 1	163 3	0 0	0 0	0 0	921 8	0 0	942 6	520 8	- -	- -
2048	39	1,482 6	163 9	1,646 5	550 6	1,095 9	164 7	0 0	0 0	0 0	931 3	0 0	952 1	520 8	- -	- -
2049	40	1,495 0	165 2	1,660 2	553 3	1,106 8	166 0	0 0	0 0	0 0	940 8	0 0	961 6	520 8	- -	- -
2050	41	1,507 5	166 4	1,673 9	556 0	1,117 9	167 4	0 0	0 0	0 0	950 5	0 0	971 3	520 8	- -	- -
2051	42	1,520 0	167 7	1,687 7	558 7	1,129 0	168 8	0 0	0 0	0 0	960 2	0 0	981 1	520 8	- -	- -
2052	43	1,532 7	169 0	1,701 7	561 4	1,140 2	170 2	0 0	0 0	0 0	970 1	0 0	990 9	520 8	- -	- -
2053	44	1,545 5	170 2	1,715 7	564 1	1,151 6	171 6	0 0	0 0	0 0	980 0	0 0	1,000 9	520 8	- -	- -
2054	45	1,558 4	171 5	1,729 9	566 8	1,163 1	173 0	0 0	0 0	0 0	990 1	0 0	1,010 9	520 8	- -	- -
2055	46	1,571 4	172 8	1,744 2	569 5	1,174 7	174 4	0 0	0 0	0 0	1,000 3	0 0	1,021 1	520 8	- -	- -
2056	47	1,584 5	174 1	1,758 6	572 2	1,186 4	175 9	0 0	0 0	0 0	1,010 6	0 0	1,031 4	520 8	- -	- -
2057	48	1,597 7	175 5	1,773 2	574 9	1,198 3	177 3	0 0	0 0	0 0	1,021 0	0 0	1,041 8	520 8	- -	- -
2058	49	1,611 0	176 8	1,787 8	577 6	1,210 2	178 8	0 0	0 0	0 0	1,031 4	0 0	1,052 3	520 8	- -	- -
2059	50	1,624 5	178 1	1,802 6	580 3	1,222 3	180 3	0 0	0 0	0 0	1,042 0	0 0	1,062 9	520 8	- -	- -
2060	51	1,638 0	179 5	1,817 5	583 0	1,234 5	181 8	0 0	0 0	0 0	1,052 8	0 0	1,073 6	520 8	- -	- -
	Total	69,730 8	8,611 7	78,342 5	28,889 7	49,452 9	7,834 3	4,680 1	5,514 2	10,194 3	31,424 3	1,860 1	31,934 0			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-5. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							61.9	61.9
2010	1	377.6	194.6	183.0	88.4	94.6	56.7	151.3
2011	2	404.0	199.2	204.7	90.2	114.5	178.9	293.5
2012	3	431.4	203.9	227.5	274.0	-46.5	686.9	640.5
2013	4	460.0	208.6	251.4	956.3	-704.9	877.4	172.5
2014	5	489.7	213.4	276.4	1,288.7	-1,012.3	621.1	-391.2
2015	6	520.7	218.2	302.5	1,158.5	-856.0	545.8	-310.2
2016	7	552.9	223.1	329.8	1,181.5	-851.7	321.0	-530.7
2017	8	586.5	228.1	358.4	1,016.5	-658.1	-18.1	-676.2
2018	9	621.4	233.1	388.3	723.3	-335.0	-187.6	-522.6
2019	10	657.8	238.2	419.6	596.9	-177.3	-718.1	-895.4
2020	11	832.5	243.4	589.1	0.0	589.1	-748.2	-159.1
2021	12	840.6	245.7	594.9	0.0	594.9	-770.9	-176.0
2022	13	848.8	248.0	600.8	0.0	600.8	-778.1	-177.3
2023	14	857.1	250.3	606.8	0.0	606.8	-734.4	-127.6
2024	15	865.5	252.6	612.9	0.0	612.9	-672.4	-59.6
2025	16	873.9	255.0	619.0	0.0	619.0	-600.7	18.2
2026	17	882.5	257.3	625.2	0.0	625.2	-519.5	105.6
2027	18	891.2	259.7	631.4	0.0	631.4	-453.5	178.0
2028	19	899.9	262.1	637.8	0.0	637.8	-388.1	249.7
2029	20	908.8	264.6	644.2	0.0	644.2	-323.7	320.5
2030	21	917.7	267.0	650.7	0.0	650.7	-273.0	377.6
2031	22	926.7	269.5	657.2	0.0	657.2	-224.4	432.9
2032	23	935.9	272.0	663.9	0.0	663.9	-189.7	474.2
2033	24	945.1	274.5	670.6	0.0	670.6	-151.2	519.4
2034	25	954.4	277.1	677.4	0.0	677.4	-115.4	562.0
2035	26	963.9	279.6	684.2	0.0	684.2	-80.8	603.4
2036	27	973.4	282.2	691.2	0.0	691.2	-48.3	642.9
2037	28	983.0	284.8	698.2	0.0	698.2	-24.3	673.9
2038	29	992.8	287.5	705.3	0.0	705.3	-9.5	695.8
2039	30	1,002.6	290.1	712.5	0.0	712.5	0.0	712.5
2040	31	1,012.6	292.8	719.7	0.0	719.7	0.0	719.7
2041	32	1,022.6	295.5	727.1	0.0	727.1	0.0	727.1
2042	33	1,032.7	298.2	734.5	0.0	734.5	0.0	734.5
2043	34	1,043.0	301.0	742.0	0.0	742.0	0.0	742.0
2044	35	1,053.4	303.7	749.6	0.0	749.6	0.0	749.6
2045	36	1,063.8	306.5	757.3	0.0	757.3	0.0	757.3
2046	37	1,074.4	309.3	765.1	0.0	765.1	0.0	765.1

Table J-5. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	312.2	772.9	0.0	772.9	0.0	772.9
2048	39	1,095.9	315.0	780.9	0.0	780.9	0.0	780.9
2049	40	1,106.8	317.9	788.9	0.0	788.9	0.0	788.9
2050	41	1,117.9	320.8	797.0	0.0	797.0	0.0	797.0
2051	42	1,129.0	323.8	805.2	0.0	805.2	0.0	805.2
2052	43	1,140.2	326.7	813.5	0.0	813.5	0.0	813.5
2053	44	1,151.6	329.7	821.9	0.0	821.9	0.0	821.9
2054	45	1,163.1	332.7	830.4	0.0	830.4	0.0	830.4
2055	46	1,174.7	335.8	838.9	0.0	838.9	0.0	838.9
2056	47	1,186.4	338.8	847.6	0.0	847.6	0.0	847.6
2057	48	1,198.3	341.9	856.4	0.0	856.4	0.0	856.4
2058	49	1,210.2	345.0	865.2	0.0	865.2	0.0	865.2
2059	50	1,222.3	348.1	874.2	0.0	874.2	0.0	874.2
2060	51	1,234.5	351.3	883.2	0.0	883.2	0.0	883.2
	Total	46,917.1	14,230.5	32,686.6	7,374.3	25,312.3		20,570.3
				Financial Internal Rate of Return		10.1%		13.9%
				Net Present Value at 8 percent discount rate		951.0		716.3

a/ From Table J-4.

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-6. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	- -	- -
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	- -	- -
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	- -	- -
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	- -	- -
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	- -	- -
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	- -	- -
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	- -	- -
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	- -	- -
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	- -	- -
2009	1	523.6	111.7	635.3	359.4	275.9	63.5	6.1	0.8	6.9	205.5	28.7	0.0	1,822.4	30.6	293.4
2010	2	537.7	113.5	651.2	360.5	290.7	65.1	12.3	1.6	13.9	211.7	29.3	0.0	2,077.6	16.2	165.1
2011	3	552.3	115.3	667.5	361.5	306.0	66.8	31.2	4.2	35.4	203.9	89.3	0.0	2,275.2	6.8	71.1
2012	4	567.2	117.1	684.2	362.6	321.6	68.4	92.2	22.8	115.0	138.2	225.8	0.0	2,278.6	2.2	22.0
2013	5	582.5	118.9	701.4	363.7	337.7	70.1	176.6	50.7	227.2	40.3	308.7	0.0	2,101.4	1.2	10.4
2014	6	598.2	120.8	719.0	364.8	354.2	71.9	256.4	75.7	332.2	-49.8	338.2	0.0	1,797.4	0.9	6.3
2015	7	614.4	122.7	737.1	365.8	371.2	73.7	334.7	126.2	460.9	-163.4	335.2	0.0	1,370.7	0.6	3.6
2016	8	631.0	124.6	755.6	366.9	388.7	75.6	407.6	200.2	607.8	-294.7	326.9	0.0	803.9	0.5	1.8
2017	9	648.0	126.5	774.6	368.0	406.6	77.5	455.0	257.8	712.8	-383.6	251.7	0.0	200.7	0.5	0.7
2018	10	665.5	128.5	794.1	369.1	425.0	79.4	484.7	321.4	806.1	-460.5	190.3	0.0	-442.0	0.4	-0.1
2019	11	683.5	130.5	814.1	370.1	443.9	81.4	467.0	386.8	853.8	-491.3	54.9	0.0	-1,005.9	0.4	-0.8
2020	12	904.0	132.6	1,036.6	483.4	553.2	103.7	431.8	442.6	874.4	-424.9	0.0	0.0	-1,471.0	0.5	-1.2
2021	13	912.6	133.6	1,046.2	486.1	560.1	104.6	391.6	495.5	887.0	-431.6	0.0	0.0	-1,961.4	0.5	-1.7
2022	14	921.2	134.6	1,055.9	488.8	567.1	105.6	347.5	502.2	849.7	-388.2	0.0	0.0	-2,428.0	0.5	-2.3
2023	15	930.0	135.6	1,065.6	491.5	574.1	106.6	302.9	489.2	792.1	-324.5	0.0	0.0	-2,849.7	0.6	-3.0
2024	16	938.8	136.7	1,075.5	494.2	581.3	107.5	259.6	460.4	720.1	-246.3	0.0	0.0	-3,210.0	0.7	-3.8
2025	17	947.7	137.7	1,085.4	496.9	588.5	108.5	219.2	412.8	632.0	-152.0	0.0	0.0	-3,490.4	0.8	-4.8
2026	18	956.7	138.8	1,095.5	499.6	595.9	109.5	182.8	369.8	552.6	-66.3	0.0	0.0	-3,696.3	0.9	-5.8
2027	19	965.8	139.8	1,105.6	502.3	603.3	110.6	150.1	325.1	475.2	17.6	0.0	0.0	-3,826.6	1.0	-7.0
2028	20	975.0	140.9	1,115.8	505.0	610.9	111.6	121.5	277.1	398.6	100.7	0.0	0.0	-3,879.0	1.3	-8.5
2029	21	984.2	141.9	1,126.2	507.7	618.5	112.6	96.9	242.5	339.4	166.5	0.0	0.0	-3,867.6	1.5	-9.9
2030	22	993.5	143.0	1,136.6	510.4	626.2	113.7	75.6	209.2	284.8	227.7	0.0	0.0	-3,794.6	1.8	-11.5
2031	23	1,003.0	144.1	1,147.1	513.1	634.0	114.7	57.2	185.2	242.4	276.9	0.0	0.0	-3,669.5	2.1	-13.0
2032	24	1,012.5	145.2	1,157.7	515.8	641.9	115.8	41.3	156.4	197.6	328.6	0.0	0.0	-3,487.7	2.7	-15.0
2033	25	1,022.1	146.3	1,168.4	518.5	649.9	116.8	28.1	125.8	153.8	379.3	0.0	0.0	-3,247.9	3.5	-17.6
2034	26	1,031.8	147.4	1,179.2	521.2	658.1	117.9	17.7	93.9	111.6	428.5	0.0	0.0	-2,949.3	4.8	-21.6
2035	27	1,041.6	148.5	1,190.1	523.9	666.3	119.0	10.0	66.2	76.2	471.1	0.0	0.0	-2,596.2	7.2	-26.9
2036	28	1,051.5	149.7	1,201.2	526.6	674.6	120.1	4.8	39.7	44.5	510.0	0.0	0.0	-2,190.1	12.5	-36.7
2037	29	1,061.5	150.8	1,212.3	529.3	683.0	121.2	1.8	19.4	21.1	540.6	0.0	0.0	-1,737.1	26.6	-55.6
2038	30	1,071.5	152.0	1,223.5	532.0	691.5	122.3	0.4	5.4	5.8	563.4	0.0	0.0	-1,243.2	- -	- -
2039	31	1,081.7	153.1	1,234.8	534.7	700.2	123.5	0.0	0.0	0.0	576.7	0.0	0.0	-716.2	- -	- -
2040	32	1,092.0	154.3	1,246.2	537.4	708.9	124.6	0.0	0.0	0.0	584.3	0.0	0.0	-160.6	- -	- -

Table J-6. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,102 3	155 5	1,257 8	540 0	717 7	125 8	0 0	0 0	0 0	592 0	0 0	0 0	424 9	- -	- -
2042	34	1,112 8	156 6	1,269 4	542 7	726 7	126 9	0 0	0 0	0 0	599 7	0 0	0 0	1,041 7	- -	- -
2043	35	1,123 3	157 8	1,281 2	545 4	735 7	128 1	0 0	0 0	0 0	607 6	0 0	1,149 3	541 7	- -	- -
2044	36	1,134 0	159 0	1,293 0	548 1	744 9	129 3	0 0	0 0	0 0	615 6	0 0	657 3	521 7	- -	- -
2045	37	1,144 8	160 2	1,305 0	550 8	754 2	130 5	0 0	0 0	0 0	623 7	0 0	645 3	520 9	- -	- -
2046	38	1,155 6	161 4	1,317 1	553 5	763 5	131 7	0 0	0 0	0 0	631 8	0 0	652 7	520 8	- -	- -
2047	39	1,166 6	162 7	1,329 3	556 2	773 0	132 9	0 0	0 0	0 0	640 1	0 0	661 0	520 8	- -	- -
2048	40	1,177 7	163 9	1,341 6	558 9	782 7	134 2	0 0	0 0	0 0	648 5	0 0	669 3	520 8	- -	- -
2049	41	1,188 8	165 2	1,354 0	561 6	792 4	135 4	0 0	0 0	0 0	657 0	0 0	677 8	520 8	- -	- -
2050	42	1,200 1	166 4	1,366 5	564 3	802 2	136 7	0 0	0 0	0 0	665 6	0 0	686 4	520 8	- -	- -
2051	43	1,211 5	167 7	1,379 2	567 0	812 2	137 9	0 0	0 0	0 0	674 3	0 0	695 1	520 8	- -	- -
2052	44	1,223 0	169 0	1,392 0	569 7	822 3	139 2	0 0	0 0	0 0	683 1	0 0	703 9	520 8	- -	- -
2053	45	1,234 6	170 2	1,404 9	572 4	832 4	140 5	0 0	0 0	0 0	692 0	0 0	712 8	520 8	- -	- -
2054	46	1,246 3	171 5	1,417 9	575 1	842 8	141 8	0 0	0 0	0 0	701 0	0 0	721 8	520 8	- -	- -
2055	47	1,258 2	172 8	1,431 0	577 8	853 2	143 1	0 0	0 0	0 0	710 1	0 0	730 9	520 8	- -	- -
2056	48	1,270 1	174 1	1,444 3	580 5	863 7	144 4	0 0	0 0	0 0	719 3	0 0	740 2	520 8	- -	- -
2057	49	1,282 2	175 5	1,457 6	583 2	874 4	145 8	0 0	0 0	0 0	728 7	0 0	749 5	520 8	- -	- -
2058	50	1,294 3	176 8	1,471 1	585 9	885 2	147 1	0 0	0 0	0 0	738 1	0 0	758 9	520 8	- -	- -
2059	51	1,306 6	178 1	1,484 8	588 6	896 2	148 5	0 0	0 0	0 0	747 7	0 0	768 5	520 8	- -	- -
2060	52	1,319 0	179 5	1,498 5	591 3	907 2	149 9	0 0	0 0	0 0	757 4	0 0	778 2	520 8	- -	- -
Total		55,788 9	8,611 7	64,400 6	29,230 0	35,170 7	6,440 1	5,464 5	6,366 6	11,831 0	16,899 6	2,179 1	13,158 9			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-7. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						67 0	67 0
1	2009	275 9	190 1	85 8	95 7	-9 9	61 5	51 6
2	2010	290 7	194 6	96 1	97 8	-1 7	194 4	192 8
3	2011	306 0	199 2	106 8	297 7	-190 9	663 1	472 2
4	2012	321 6	203 9	117 8	924 3	-806 5	872 0	65 4
5	2013	337.7	208 6	129 1	1,295 7	-1,166 6	718 4	-448 1
6	2014	354 2	213 4	140 9	1,283 9	-1,143 0	628 5	-514 5
7	2015	371 2	218 2	153.0	1,295 9	-1,142 9	497 4	-645 5
8	2016	388 7	223 1	165 6	1,285 2	-1,119 6	131 1	-988 5
9	2017	406 6	228 1	178 5	990 7	-812 2	-107 2	-919 3
10	2018	425.0	233 1	191 9	795 9	-604 0	-678 1	-1,282 1
11	2019	443 9	238 2	205 7	182 9	22 8	-853 8	-831 0
12	2020	553 2	243.4	309 8	0 0	309 8	-874 4	-564 6
13	2021	560 1	245 7	314 4	0 0	314 4	-887 0	-572 6
14	2022	567 1	248 0	319 1	0 0	319 1	-849 7	-530 6
15	2023	574 1	250 3	323 9	0 0	323 9	-792 1	-468 2
16	2024	581 3	252 6	328 7	0 0	328 7	-720 1	-391 4
17	2025	588 5	255 0	333 6	0 0	333 6	-632 0	-298 4
18	2026	595 9	257 3	338 6	0 0	338 6	-552 6	-214 0
19	2027	603 3	259 7	343 6	0 0	343 6	-475 2	-131 6
20	2028	610 9	262 1	348 7	0 0	348 7	-398 6	-49 9
21	2029	618 5	264 6	353 9	0 0	353 9	-339 4	14 5
22	2030	626 2	267 0	359 2	0 0	359 2	-284 8	74 4
23	2031	634 0	269 5	364 5	0 0	364 5	-242 4	122 1
24	2032	641 9	272 0	369 9	0 0	369 9	-197 6	172 3
25	2033	649 9	274 5	375 4	0 0	375 4	-153 8	221 6
26	2034	658 1	277 1	381 0	0 0	381 0	-111 6	269 4
27	2035	666 3	279 6	386 6	0 0	386 6	-76 2	310 4
28	2036	674 6	282 2	392 4	0 0	392 4	-44 5	347 8
29	2037	683 0	284 8	398 2	0 0	398 2	-21 1	377 0
30	2038	691 5	287 5	404 1	0 0	404 1	-5 8	398 3
31	2039	700 2	290 1	410 0	0 0	410 0	0 0	410 0
32	2040	708 9	292 8	416 1	0 0	416 1	0 0	416 1
33	2041	717 7	295 5	422 2	0 0	422 2	0 0	422 2
34	2042	726 7	298 2	428 5	0 0	428 5	0 0	428 5
35	2043	735 7	301 0	434 8	0 0	434 8	0 0	434 8
36	2044	744 9	303 7	441 2	0 0	441 2	0 0	441 2
37	2045	754 2	306 5	447 6	0 0	447 6	0 0	447 6
38	2046	763 5	309 3	454 2	0 0	454 2	0 0	454 2
39	2047	773 0	312 2	460 9	0 0	460 9	0 0	460 9
40	2048	782 7	315 0	467 6	0 0	467 6	0 0	467 6

Table J-7. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	792.4	317.9	474.4	0.0	474.4	0.0	474.4
42	2050	802.2	320.8	481.4	0.0	481.4	0.0	481.4
43	2051	812.2	323.8	488.4	0.0	488.4	0.0	488.4
44	2052	822.3	326.7	495.5	0.0	495.5	0.0	495.5
45	2053	832.4	329.7	502.7	0.0	502.7	0.0	502.7
46	2054	842.8	332.7	510.0	0.0	510.0	0.0	510.0
47	2055	853.2	335.8	517.4	0.0	517.4	0.0	517.4
48	2056	863.7	338.8	524.9	0.0	524.9	0.0	524.9
49	2057	874.4	341.9	532.5	0.0	532.5	0.0	532.5
50	2058	885.2	345.0	540.2	0.0	540.2	0.0	540.2
51	2059	896.2	348.1	548.0	0.0	548.0	0.0	548.0
52	2060	907.2	351.3	555.9	0.0	555.9	0.0	555.9
Total		33,291.8	14,420.6	18,871.2	8,545.7	10,325.5		4,861.0
				Financial Internal Rate of Return		3.7%		1.8%
				Net Present Value at 8 percent discount rate		-2,337.1		-2,353.2

a/ From Table J-6.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-8. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009	1	599.9	111.7	711.7	359.4	352.3	71.2	6.1	0.8	6.9	274.2	28.7	0.0	2,206.8	40.5	358.8
2010	2	624.6	113.5	738.1	360.5	377.6	73.8	12.3	1.6	13.9	289.8	29.3	0.0	2,555.5	21.8	205.0
2011	3	650.3	115.3	765.5	361.5	404.0	76.6	31.2	4.2	35.4	292.0	89.3	0.0	2,860.5	9.3	90.1
2012	4	677.0	117.1	794.0	362.6	431.4	79.4	92.2	22.8	115.0	237.0	225.8	0.0	2,986.1	3.1	29.0
2013	5	704.8	118.9	823.7	363.7	460.0	82.4	176.6	50.7	227.2	150.4	308.7	0.0	2,947.2	1.7	14.6
2014	6	733.7	120.8	854.5	364.8	489.7	85.5	256.4	75.7	332.2	72.1	338.2	0.0	2,799.0	1.2	9.6
2015	7	763.9	122.7	886.5	365.8	520.7	88.7	334.7	126.2	460.9	-28.8	335.2	0.0	2,546.9	0.9	6.5
2016	8	795.3	124.6	919.9	366.9	552.9	92.0	407.6	200.2	607.8	-146.9	326.9	0.0	2,175.0	0.8	4.3
2017	9	827.9	126.5	954.5	368.0	586.5	95.4	455.0	257.8	712.8	-221.7	251.7	0.0	1,788.6	0.7	3.2
2018	10	862.0	128.5	990.5	369.1	621.4	99.0	484.7	321.4	806.1	-283.7	190.3	0.0	1,386.1	0.6	2.4
2019	11	897.4	130.5	1,027.9	370.1	657.8	102.8	467.0	386.8	853.8	-298.9	54.9	0.0	1,087.8	0.6	1.9
2020	12	1,186.0	132.6	1,318.6	483.4	835.2	131.9	431.8	442.6	874.4	-171.1	0.0	0.0	960.3	0.8	1.9
2021	13	1,197.3	133.6	1,330.9	486.1	844.8	133.1	391.6	495.5	887.0	-175.3	0.0	0.0	823.3	0.8	1.7
2022	14	1,208.7	134.6	1,343.3	488.8	854.5	134.3	347.5	502.2	849.7	-129.5	0.0	0.0	726.8	0.8	1.7
2023	15	1,220.2	135.6	1,355.8	491.5	864.3	135.6	302.9	489.2	792.1	-63.4	0.0	0.0	692.5	0.9	1.8
2024	16	1,231.8	136.7	1,368.4	494.2	874.3	136.8	259.6	460.4	720.1	17.4	0.0	209.8	527.7	1.0	1.8
2025	17	1,243.5	137.7	1,381.2	496.9	884.3	138.1	219.2	412.8	632.0	114.2	0.0	141.9	521.1	1.2	2.0
2026	18	1,255.3	138.8	1,394.1	499.6	894.5	139.4	182.8	369.8	552.6	202.5	0.0	223.6	520.8	1.4	2.3
2027	19	1,267.3	139.8	1,407.1	502.3	904.8	140.7	150.1	325.1	475.2	288.9	0.0	309.7	520.8	1.6	2.7
2028	20	1,279.3	140.9	1,420.2	505.0	915.2	142.0	121.5	277.1	398.6	374.6	0.0	395.5	520.8	1.9	3.2
2029	21	1,291.5	141.9	1,433.4	507.7	925.8	143.3	96.9	242.5	339.4	443.1	0.0	463.9	520.8	2.3	3.8
2030	22	1,303.8	143.0	1,446.8	510.4	936.4	144.7	75.6	209.2	284.8	506.9	0.0	527.8	520.8	2.8	4.6
2031	23	1,316.2	144.1	1,460.3	513.1	947.2	146.0	57.2	185.2	242.4	558.8	0.0	579.6	520.8	3.3	5.5
2032	24	1,328.7	145.2	1,473.9	515.8	958.1	147.4	41.3	156.4	197.6	613.1	0.0	634.0	520.8	4.1	6.7
2033	25	1,341.3	146.3	1,487.6	518.5	969.2	148.8	28.1	125.8	153.8	666.6	0.0	687.4	520.8	5.3	8.7
2034	26	1,354.1	147.4	1,501.5	521.2	980.3	150.2	17.7	93.9	111.6	718.6	0.0	739.4	520.8	7.4	12.1
2035	27	1,367.0	148.5	1,515.5	523.9	991.6	151.6	10.0	66.2	76.2	763.9	0.0	784.7	520.8	11.0	17.9
2036	28	1,380.0	149.7	1,529.6	526.6	1,003.1	153.0	4.8	39.7	44.5	805.6	0.0	826.4	520.8	19.1	30.8
2037	29	1,393.1	150.8	1,543.9	529.3	1,014.6	154.4	1.8	19.4	21.1	839.1	0.0	859.9	520.8	40.7	65.3
2038	30	1,406.3	152.0	1,558.3	532.0	1,026.3	155.8	0.4	5.4	5.8	864.8	0.0	885.6	520.8	--	--
2039	31	1,419.7	153.1	1,572.8	534.7	1,038.2	157.3	0.0	0.0	0.0	880.9	0.0	901.7	520.8	--	--
2040	32	1,433.2	154.3	1,587.5	537.4	1,050.2	158.8	0.0	0.0	0.0	891.4	0.0	912.2	520.8	--	--

Table J-8. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,446 9	155 5	1,602 3	540 0	1,062 3	160 2	0 0	0 0	0 0	902 0	0 0	922 9	520 8	- -	- -
2042	34	1,460 6	156 6	1,617 3	542 7	1,074 5	161 7	0 0	0 0	0 0	912 8	0 0	933 6	520 8	- -	- -
2043	35	1,474 5	157 8	1,632 3	545 4	1,086 9	163 2	0 0	0 0	0 0	923 7	0 0	944 5	520 8	- -	- -
2044	36	1,488 5	159 0	1,647 6	548 1	1,099 4	164 8	0 0	0 0	0 0	934 7	0 0	955 5	520 8	- -	- -
2045	37	1,502 7	160 2	1,662 9	550 8	1,112 1	166 3	0 0	0 0	0 0	945 8	0 0	966 6	520 8	- -	- -
2046	38	1,517 0	161 4	1,678 4	553 5	1,124 9	167 8	0 0	0 0	0 0	957 1	0 0	977 9	520 8	- -	- -
2047	39	1,531 4	162 7	1,694 1	556 2	1,137 9	169 4	0 0	0 0	0 0	968 5	0 0	989 3	520 8	- -	- -
2048	40	1,546 0	163 9	1,709 9	558 9	1,151 0	171 0	0 0	0 0	0 0	980 0	0 0	1,000 8	520 8	- -	- -
2049	41	1,560 7	165 2	1,725 9	561 6	1,164 2	172 6	0 0	0 0	0 0	991 6	0 0	1,012 5	520 8	- -	- -
2050	42	1,575 5	166 4	1,742 0	564 3	1,177 6	174 2	0 0	0 0	0 0	1,003 4	0 0	1,024 3	520 8	- -	- -
2051	43	1,590 5	167 7	1,758 2	567 0	1,191 2	175 8	0 0	0 0	0 0	1,015 4	0 0	1,036 2	520 8	- -	- -
2052	44	1,605 7	169 0	1,774 6	569 7	1,204 9	177 5	0 0	0 0	0 0	1,027 4	0 0	1,048 3	520 8	- -	- -
2053	45	1,620 9	170 2	1,791 2	572 4	1,218 7	179 1	0 0	0 0	0 0	1,039 6	0 0	1,060 5	520 8	- -	- -
2054	46	1,636 3	171 5	1,807 9	575 1	1,232 8	180 8	0 0	0 0	0 0	1,052 0	0 0	1,072 8	520 8	- -	- -
2055	47	1,651 9	172 8	1,824 7	577 8	1,246 9	182 5	0 0	0 0	0 0	1,064 5	0 0	1,085 3	520 8	- -	- -
2056	48	1,667 6	174 1	1,841 8	580 5	1,261 3	184 2	0 0	0 0	0 0	1,077 1	0 0	1,097 9	520 8	- -	- -
2057	49	1,683 5	175 5	1,859 0	583 2	1,275 7	185 9	0 0	0 0	0 0	1,089 9	0 0	1,110 7	520 8	- -	- -
2058	50	1,699 5	176 8	1,876 3	585 9	1,290 4	187 6	0 0	0 0	0 0	1,102 8	0 0	1,123 6	520 8	- -	- -
2059	51	1,715 7	178 1	1,893 8	588 6	1,305 2	189 4	0 0	0 0	0 0	1,115 8	0 0	1,136 7	520 8	- -	- -
2060	52	1,732 0	179 5	1,911 5	591 3	1,320 2	191 2	0 0	0 0	0 0	1,129 1	0 0	1,149 9	520 8	- -	- -
Total		71,707 1	8,611 7	80,318 8	29,230 0	51,088 9	8,031 9	5,464 5	6,366 6	11,831 0	31,225 9	2,179 1	30,732 8			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-9. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						67 0	67 0
1	2009	352 3	190 1	162 2	95 7	66 5	61 5	128 0
2	2010	377 6	194 6	183 0	97 8	85 2	194 4	279 6
3	2011	404.0	199 2	204 7	297 7	-93 0	663 1	570 1
4	2012	431 4	203 9	227 5	924 3	-696 8	872 0	175 2
5	2013	460 0	208 6	251 4	1,295 7	-1,044 3	718 4	-325 9
6	2014	489.7	213 4	276 4	1,283 9	-1,007 5	628 5	-379 0
7	2015	520 7	218.2	302 5	1,295 9	-993 4	497 4	-496 0
8	2016	552 9	223.1	329 8	1,285 2	-955 4	131 1	-824 2
9	2017	586 5	228.1	358 4	990 7	-632 3	-107 2	-739 4
10	2018	621 4	233.1	388.3	795 9	-407 6	-678 1	-1,085 7
11	2019	657 8	238 2	419 6	182 9	236 7	-853 8	-617 2
12	2020	835 2	243 4	591.8	0 0	591 8	-874 4	-282 6
13	2021	844 8	245.7	599 1	0 0	599.1	-887 0	-287 9
14	2022	854 5	248 0	606 5	0 0	606 5	-849 7	-243 1
15	2023	864 3	250.3	614.0	0 0	614 0	-792 1	-178 1
16	2024	874.3	252 6	621.7	0 0	621 7	-720 1	-98 4
17	2025	884 3	255 0	629.4	0 0	629 4	-632 0	-2 7
18	2026	894 5	257 3	637.2	0 0	637 2	-552 6	84 6
19	2027	904 8	259.7	645.1	0.0	645 1	-475 2	169 9
20	2028	915 2	262 1	653 1	0 0	653 1	-398 6	254 5
21	2029	925 8	264.6	661.2	0 0	661 2	-339 4	321 8
22	2030	936 4	267.0	669.4	0 0	669 4	-284 8	384 6
23	2031	947 2	269 5	677 7	0 0	677 7	-242 4	435 3
24	2032	958 1	272 0	686 1	0 0	686 1	-197 6	488 5
25	2033	969 2	274 5	694 6	0 0	694 6	-153 8	540 8
26	2034	980 3	277 1	703 3	0 0	703 3	-111 6	591 7
27	2035	991 6	279 6	712 0	0 0	712 0	-76 2	635 8
28	2036	1003 1	282 2	720 9	0 0	720 9	-44 5	676 3
29	2037	1014 6	284 8	729 8	0 0	729 8	-21 1	708 7
30	2038	1026 3	287 5	738 9	0 0	738 9	-5 8	733 1
31	2039	1038 2	290 1	748 1	0 0	748 1	0 0	748 1
32	2040	1050 2	292 8	757 4	0 0	757 4	0 0	757 4
33	2041	1062 3	295 5	766 8	0 0	766 8	0 0	766 8
34	2042	1074 5	298 2	776 3	0 0	776 3	0 0	776 3
35	2043	1086 9	301 0	785 9	0 0	785 9	0 0	785 9
36	2044	1099 4	303 7	795 7	0 0	795 7	0 0	795 7
37	2045	1112 1	306 5	805 6	0 0	805 6	0 0	805 6
38	2046	1124 9	309 3	815 6	0 0	815 6	0 0	815 6
39	2047	1137 9	312 2	825 7	0 0	825 7	0 0	825 7
40	2048	1151 0	315 0	835 9	0 0	835 9	0 0	835 9

Table J-9. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1164.2	317.9	846.3	0.0	846.3	0.0	846.3
42	2050	1177.6	320.8	856.8	0.0	856.8	0.0	856.8
43	2051	1191.2	323.8	867.4	0.0	867.4	0.0	867.4
44	2052	1204.9	326.7	878.1	0.0	878.1	0.0	878.1
45	2053	1218.7	329.7	889.0	0.0	889.0	0.0	889.0
46	2054	1232.8	332.7	900.0	0.0	900.0	0.0	900.0
47	2055	1246.9	335.8	911.2	0.0	911.2	0.0	911.2
48	2056	1261.3	338.8	922.4	0.0	922.4	0.0	922.4
49	2057	1275.7	341.9	933.8	0.0	933.8	0.0	933.8
50	2058	1290.4	345.0	945.4	0.0	945.4	0.0	945.4
51	2059	1305.2	348.1	957.1	0.0	957.1	0.0	957.1
52	2060	1320.2	351.3	968.9	0.0	968.9	0.0	968.9
Total		48,905.4	14,420.6	34,484.8	8,545.7	25,939.1		20,474.6
				Financial Internal Rate of Return		8.4%		8.0%
				Net Present Value at 8 percent discount rate		193.1		-10.4

a/ From Table J-8.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-10. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int.	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	- -	- -
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	- -	- -
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	- -	- -
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	- -	- -
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	- -	- -
2005	1	470.7	105.0	575.6	355.1	220.5	57.6	5.4	0.7	6.1	156.8	25.4	0.0	856.9	26.6	166.6
2006	2	483.4	106.6	590.0	356.2	233.8	59.0	10.9	1.5	12.4	162.4	26.1	0.0	1,027.4	14.1	97.2
2007	3	496.4	108.3	604.7	357.2	247.5	60.5	16.1	2.2	18.3	168.7	24.9	0.0	1,212.4	10.2	76.7
2008	4	509.8	110.0	619.8	358.3	261.5	62.0	36.9	5.0	41.9	157.6	98.7	0.0	1,319.8	4.8	36.3
2009	5	523.6	111.7	635.3	359.4	275.9	63.5	186.4	66.6	253.0	-40.6	457.3	0.0	874.6	0.8	4.3
2010	6	537.7	113.5	651.2	360.5	290.7	65.1	265.7	96.5	362.2	-136.6	310.7	0.0	462.3	0.6	1.9
2011	7	552.3	115.3	667.5	361.5	306.0	66.8	324.0	114.9	438.9	-199.7	277.9	0.0	3.2	0.5	0.6
2012	8	567.2	117.1	684.2	362.6	321.6	68.4	391.1	231.0	622.1	-368.8	328.0	0.0	-693.5	0.4	-0.7
2013	9	582.5	118.9	701.4	363.7	337.7	70.1	426.7	290.0	716.6	-449.1	247.0	0.0	-1,417.3	0.4	-1.6
2014	10	598.2	120.8	719.0	364.8	354.2	71.9	470.6	322.5	793.1	-510.8	286.8	0.0	-2,271.5	0.4	-2.5
2015	11	614.4	122.7	737.1	365.8	371.2	73.7	504.6	376.2	880.8	-583.3	261.7	0.0	-3,207.3	0.3	-3.3
2016	12	631.0	124.6	755.6	366.9	388.7	75.6	539.4	434.0	973.4	-660.3	276.2	0.0	-4,272.1	0.3	-4.1
2017	13	648.0	126.5	774.6	368.0	406.6	77.5	582.6	513.9	1,096.4	-767.3	301.4	0.0	-5,511.6	0.3	-4.7
2018	14	665.5	128.5	794.1	369.1	425.0	79.4	606.6	576.1	1,182.7	-837.1	281.2	0.0	-6,850.4	0.3	-5.5
2019	15	683.5	130.5	814.1	370.1	443.9	81.4	620.1	583.5	1,203.6	-841.0	252.3	0.0	-8,217.7	0.3	-6.5
2020	16	938.0	132.6	1,070.6	525.8	544.8	107.1	567.4	620.5	1,187.8	-750.1	0.0	0.0	-9,296.6	0.4	-7.5
2021	17	946.3	133.6	1,079.9	528.3	551.6	108.0	512.5	593.4	1,105.9	-662.2	0.0	0.0	-10,330.6	0.4	-8.9
2022	18	954.7	134.6	1,089.3	530.8	558.6	108.9	459.1	595.2	1,054.3	-604.7	0.0	0.0	-11,348.5	0.4	-10.3
2023	19	963.2	135.6	1,098.8	533.2	565.6	109.9	405.2	601.9	1,007.1	-551.5	0.0	0.0	-12,353.9	0.5	-11.8
2024	20	971.7	136.7	1,108.4	535.7	572.7	110.8	351.0	588.0	939.1	-477.3	0.0	0.0	-13,325.4	0.5	-13.7
2025	21	980.3	137.7	1,118.0	538.2	579.8	111.8	298.5	555.3	853.8	-385.8	0.0	0.0	-14,244.2	0.5	-16.1
2026	22	989.0	138.8	1,127.8	540.7	587.1	112.8	249.2	513.5	762.7	-288.4	0.0	0.0	-15,102.3	0.6	-19.2
2027	23	997.8	139.8	1,137.6	543.2	594.4	113.8	204.1	459.6	663.7	-183.0	0.0	0.0	-15,889.4	0.7	-23.2
2028	24	1,006.6	140.9	1,147.5	545.6	601.8	114.7	163.7	406.8	570.5	-83.4	0.0	0.0	-16,608.4	0.9	-28.3
2029	25	1,015.5	141.9	1,157.5	548.1	609.4	115.7	128.6	328.5	457.1	36.5	0.0	0.0	-17,236.2	1.1	-36.6
2030	26	1,024.5	143.0	1,167.5	550.6	616.9	116.8	99.9	280.0	379.8	120.3	0.0	0.0	-17,805.4	1.3	-45.6
2031	27	1,033.6	144.1	1,177.7	553.1	624.6	117.8	75.6	229.9	305.5	201.3	0.0	0.0	-18,316.2	1.7	-58.3
2032	28	1,042.8	145.2	1,188.0	555.6	632.4	118.8	55.8	187.9	243.7	269.9	0.0	0.0	-18,779.0	2.1	-74.9
2033	29	1,052.0	146.3	1,198.3	558.0	640.3	119.8	39.8	151.2	191.0	329.4	0.0	0.0	-19,200.7	2.7	-97.8
2034	30	1,061.3	147.4	1,208.7	560.5	648.2	120.9	27.2	114.0	141.2	386.2	0.0	0.0	-19,582.6	- -	- -
2035	31	1,070.7	148.5	1,219.3	563.0	656.3	121.9	17.7	90.9	108.6	425.7	0.0	0.0	-19,940.1	- -	- -
2036	32	1,080.2	149.7	1,229.9	565.5	664.4	123.0	10.2	67.4	77.6	463.8	0.0	0.0	-20,273.9	- -	- -
2037	33	1,089.8	150.8	1,240.6	568.0	672.6	124.1	4.8	44.7	49.5	499.1	0.0	0.0	-20,585.8	- -	- -
2038	34	1,099.4	152.0	1,251.4	570.4	681.0	125.1	1.4	20.9	22.3	533.5	0.0	0.0	-20,875.7	- -	- -
2039	35	1,109.2	153.1	1,262.3	572.9	689.4	126.2	0.0	0.0	0.0	563.2	0.0	0.0	-21,147.5	- -	- -
2040	36	1,119.0	154.3	1,273.3	575.4	697.9	127.3	0.0	0.0	0.0	570.6	0.0	0.0	-21,422.9	- -	- -
2041	37	1,128.9	155.5	1,284.4	577.9	706.5	128.4	0.0	0.0	0.0	578.1	0.0	0.0	-21,701.7	- -	- -
2042	38	1,138.9	156.6	1,295.6	580.4	715.2	129.6	0.0	0.0	0.0	585.7	0.0	0.0	-21,984.1	- -	- -

Table J-10. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,149.0	157.8	1,306.9	582.8	724.0	130.7	0.0	0.0	0.0	593.3	0.0	0.0	-22,270.2	- -	- -
2044	40	1,159.2	159.0	1,318.2	585.3	732.9	131.8	0.0	0.0	0.0	601.1	0.0	0.0	-22,559.9	- -	- -
2045	41	1,169.5	160.2	1,329.7	587.8	741.9	133.0	0.0	0.0	0.0	608.9	0.0	0.0	-22,853.3	- -	- -
2046	42	1,179.9	161.4	1,341.3	590.3	751.0	134.1	0.0	0.0	0.0	616.9	0.0	0.0	-23,150.6	- -	- -
2047	43	1,190.3	162.7	1,353.0	592.8	760.2	135.3	0.0	0.0	0.0	624.9	0.0	0.0	-23,451.6	- -	- -
2048	44	1,200.9	163.9	1,364.8	595.2	769.5	136.5	0.0	0.0	0.0	633.1	0.0	0.0	-23,756.7	- -	- -
2049	45	1,211.5	165.2	1,376.7	597.7	778.9	137.7	0.0	0.0	0.0	641.3	0.0	0.0	-24,065.7	- -	- -
2050	46	1,222.2	166.4	1,388.7	600.2	788.5	138.9	0.0	0.0	0.0	649.6	0.0	0.0	-24,378.7	- -	- -
2051	47	1,233.1	167.7	1,400.7	602.7	798.1	140.1	0.0	0.0	0.0	658.0	0.0	0.0	-24,695.8	- -	- -
2052	48	1,244.0	169.0	1,412.9	605.2	807.8	141.3	0.0	0.0	0.0	666.5	0.0	0.0	-25,017.2	- -	- -
2053	49	1,255.0	170.2	1,425.3	607.6	817.6	142.5	0.0	0.0	0.0	675.1	0.0	0.0	-25,342.8	- -	- -
2054	50	1,266.1	171.5	1,437.7	610.1	827.6	143.8	0.0	0.0	0.0	683.8	0.0	0.0	-25,672.7	- -	- -
2055	51	1,277.4	172.8	1,450.2	612.6	837.6	145.0	0.0	0.0	0.0	692.6	0.0	0.0	-26,007.0	- -	- -
2056	52	1,288.7	174.1	1,462.8	615.1	847.8	146.3	0.0	0.0	0.0	701.5	0.0	0.0	-26,345.9	- -	- -
2057	53	1,300.1	175.5	1,475.6	617.6	858.0	147.6	0.0	0.0	0.0	710.5	0.0	0.0	-26,689.2	- -	- -
2058	54	1,311.6	176.8	1,488.4	620.0	868.4	148.8	0.0	0.0	0.0	719.5	0.0	0.0	-27,037.3	- -	- -
2059	55	1,323.2	178.1	1,501.4	622.5	878.9	150.1	0.0	0.0	0.0	728.7	0.0	0.0	-27,390.0	- -	- -
2060	56	1,335.0	179.5	1,514.5	625.0	889.5	151.5	0.0	0.0	0.0	738.1	0.0	0.0	-27,747.6	- -	- -
	Total	56,868.5	8,611.7	65,480.2	30,790.0	34,690.2	6,548.0	8,658.9	10,063.9	18,722.8	9,419.4	3,455.5	0.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-11. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							59.2	59.2
2005	1	220.5	172.6	47.9	84.5	-36.6	54.8	18.3
2006	2	233.8	176.9	56.9	87.1	-30.2	45.7	15.6
2007	3	247.5	181.2	66.2	83.0	-16.8	212.1	195.3
2008	4	261.5	185.6	75.9	329.1	-253.2	1,706.2	1,452.9
2009	5	275.9	190.1	85.8	2,205.4	-2,119.6	714.3	-1,405.3
2010	6	290.7	194.6	96.1	1,277.9	-1,181.8	378.3	-803.4
2011	7	306.0	199.2	106.8	1,018.5	-911.7	441.0	-470.8
2012	8	321.6	203.9	117.8	1,207.9	-1,090.1	0.1	-1,090.1
2013	9	337.7	208.6	129.1	869.1	-740.0	56.7	-683.3
2014	10	354.2	213.4	140.9	1,060.1	-919.2	-90.7	-1,009.9
2015	11	371.2	218.2	153.0	964.1	-811.1	-110.8	-921.8
2016	12	388.7	223.1	165.6	1,046.2	-880.6	-33.6	-914.2
2017	13	406.6	228.1	178.5	1,241.2	-1,062.7	-307.1	-1,369.8
2018	14	425.0	233.1	191.9	1,070.6	-878.7	-460.3	-1,339.0
2019	15	443.9	238.2	205.7	974.7	-769.0	-1,203.6	-1,972.5
2020	16	544.8	243.4	301.4	0.0	301.4	-1,187.8	-886.4
2021	17	551.6	245.7	306.0	0.0	306.0	-1,105.9	-799.9
2022	18	558.6	248.0	310.6	0.0	310.6	-1,054.3	-743.7
2023	19	565.6	250.3	315.3	0.0	315.3	-1,007.1	-691.9
2024	20	572.7	252.6	320.0	0.0	320.0	-939.1	-619.0
2025	21	579.8	255.0	324.9	0.0	324.9	-853.8	-528.9
2026	22	587.1	257.3	329.7	0.0	329.7	-762.7	-433.0
2027	23	594.4	259.7	334.7	0.0	334.7	-663.7	-329.0
2028	24	601.8	262.1	339.7	0.0	339.7	-570.5	-230.8
2029	25	609.4	264.6	344.8	0.0	344.8	-457.1	-112.4
2030	26	616.9	267.0	349.9	0.0	349.9	-379.8	-29.9
2031	27	624.6	269.5	355.1	0.0	355.1	-305.5	49.6
2032	28	632.4	272.0	360.4	0.0	360.4	-243.7	116.7
2033	29	640.3	274.5	365.7	0.0	365.7	-191.0	174.7
2034	30	648.2	277.1	371.2	0.0	371.2	-141.2	230.0
2035	31	656.3	279.6	376.6	0.0	376.6	-108.6	268.0
2036	32	664.4	282.2	382.2	0.0	382.2	-77.6	304.6
2037	33	672.6	284.8	387.8	0.0	387.8	-49.5	338.3
2038	34	681.0	287.5	393.5	0.0	393.5	-22.3	371.2
2039	35	689.4	290.1	399.3	0.0	399.3	0.0	399.3
2040	36	697.9	292.8	405.1	0.0	405.1	0.0	405.1
2041	37	706.5	295.5	411.0	0.0	411.0	0.0	411.0
2042	38	715.2	298.2	417.0	0.0	417.0	0.0	417.0
2043	39	724.0	301.0	423.0	0.0	423.0	0.0	423.0
2044	40	732.9	303.7	429.2	0.0	429.2	0.0	429.2
2045	41	741.9	306.5	435.4	0.0	435.4	0.0	435.4
2046	42	751.0	309.3	441.7	0.0	441.7	0.0	441.7

Table J-11. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	760 2	312 2	448 0	0 0	448 0	0 0	448 0
2048	44	769 5	315 0	454 5	0 0	454 5	0 0	454 5
2049	45	778 9	317 9	461 0	0 0	461 0	0 0	461 0
2050	46	788 5	320 8	467 6	0 0	467 6	0 0	467 6
2051	47	798 1	323 8	474 3	0 0	474 3	0 0	474 3
2052	48	807 8	326 7	481 0	0 0	481 0	0 0	481 0
2053	49	817 6	329 7	487 9	0 0	487 9	0 0	487 9
2054	50	827 6	332 7	494 8	0 0	494 8	0 0	494 8
2055	51	837 6	335 8	501 8	0 0	501 8	0 0	501 8
2056	52	847 8	338 8	508 9	0 0	508 9	0 0	508 9
2057	53	858 0	341 9	516 1	0 0	516 1	0 0	516 1
2058	54	868 4	345 0	523 4	0 0	523 4	0 0	523 4
2059	55	878 9	348 1	530 7	0 0	530 7	0 0	530 7
2060	56	889 5	351 3	538 2	0 0	538 2	0 0	538 2
	Total	33,774 7	15,136 9	18,637 7	13,519 4	5,118 3		-3,540 5
				Financial Internal Rate of Return		1 3%		-0 9%
				Net Present Value at 8 percent discount rate		-4,648 1		-4,552 4

a/ From Table J-10

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-12. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int.	Debt Service Requirements e/: Princ.	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005	1	510.7	105.0	615.7	355.1	260.6	61.6	5.4	0.7	6.1	192.9	25.4	0.0	984.2	32.5	193.3
2006	2	531.7	106.6	638.3	356.2	282.1	63.8	10.9	1.5	12.4	205.9	26.1	0.0	1,203.4	17.6	114.9
2007	3	553.5	108.3	661.8	357.2	304.6	66.2	16.1	2.2	18.3	220.1	24.9	0.0	1,446.8	13.1	92.3
2008	4	576.3	110.0	686.3	358.3	327.9	68.6	36.9	5.0	41.9	217.4	98.7	0.0	1,623.3	6.2	44.9
2009	5	599.9	111.7	711.7	359.4	352.3	71.2	186.4	66.6	253.0	28.1	457.3	0.0	1,259.0	1.1	6.1
2010	6	624.6	113.5	738.1	360.5	377.6	73.8	265.7	96.5	362.2	-58.5	310.7	0.0	940.3	0.8	3.4
2011	7	650.3	115.3	765.5	361.5	404.0	76.6	324.0	114.9	438.9	-111.5	277.9	0.0	588.4	0.7	2.1
2012	8	677.0	117.1	794.0	362.6	431.4	79.4	391.1	231.0	622.1	-270.0	328.0	0.0	13.9	0.6	0.6
2013	9	704.8	118.9	823.7	363.7	460.0	82.4	426.7	290.0	716.6	-339.0	247.0	0.0	-571.5	0.5	-0.3
2014	10	733.7	120.8	854.5	364.8	489.7	85.5	470.6	322.5	793.1	-388.8	286.8	0.0	-1,270.0	0.5	-1.1
2015	11	763.9	122.7	886.5	365.8	520.7	88.7	504.6	376.2	880.8	-448.7	261.7	0.0	-2,031.1	0.5	-1.8
2016	12	795.3	124.6	919.9	366.9	552.9	92.0	539.4	434.0	973.4	-512.4	276.2	0.0	-2,901.0	0.5	-2.5
2017	13	827.9	126.5	954.5	368.0	586.5	95.4	582.6	513.9	1,096.4	-605.4	301.4	0.0	-3,923.8	0.4	-3.1
2018	14	862.0	128.5	990.5	369.1	621.4	99.0	606.6	576.1	1,182.7	-660.3	281.2	0.0	-5,022.3	0.4	-3.8
2019	15	897.4	130.5	1,027.9	370.1	657.8	102.8	620.1	583.5	1,203.6	-648.6	252.3	0.0	-6,124.0	0.5	-4.6
2020	16	1,221.0	132.6	1,353.6	525.8	827.8	135.4	567.4	620.5	1,187.8	-495.4	0.0	0.0	-6,864.4	0.6	-5.2
2021	17	1,232.1	133.6	1,365.7	528.3	837.4	136.6	512.5	593.4	1,105.9	-405.0	0.0	0.0	-7,544.0	0.6	-6.2
2022	18	1,243.3	134.6	1,377.9	530.8	847.2	137.8	459.1	595.2	1,054.3	-344.9	0.0	0.0	-8,190.6	0.7	-7.1
2023	19	1,254.6	135.6	1,390.3	533.2	857.0	139.0	405.2	601.9	1,007.1	-289.1	0.0	0.0	-8,807.4	0.7	-8.0
2024	20	1,266.0	136.7	1,402.7	535.7	867.0	140.3	351.0	588.0	939.1	-212.4	0.0	0.0	-9,372.1	0.8	-9.2
2025	21	1,277.6	137.7	1,415.3	538.2	877.1	141.5	298.5	555.3	853.8	-118.3	0.0	0.0	-9,865.2	0.9	-10.7
2026	22	1,289.2	138.8	1,427.9	540.7	887.3	142.8	249.2	513.5	762.7	-18.2	0.0	0.0	-10,278.0	1.0	-12.5
2027	23	1,300.9	139.8	1,440.7	543.2	897.6	144.1	204.1	459.6	663.7	89.8	0.0	0.0	-10,599.3	1.1	-14.8
2028	24	1,312.7	140.9	1,453.6	545.6	908.0	145.4	163.7	406.8	570.5	192.1	0.0	0.0	-10,831.2	1.3	-17.6
2029	25	1,324.7	141.9	1,466.6	548.1	918.5	146.7	128.6	328.5	457.1	314.7	0.0	0.0	-10,949.7	1.7	-22.3
2030	26	1,336.7	143.0	1,479.8	550.6	929.2	148.0	99.9	280.0	379.8	401.3	0.0	0.0	-10,986.4	2.1	-26.9
2031	27	1,348.9	144.1	1,493.0	553.1	939.9	149.3	75.6	229.9	305.5	485.1	0.0	0.0	-10,940.7	2.6	-33.2
2032	28	1,361.2	145.2	1,506.4	555.6	950.8	150.6	55.8	187.9	243.7	556.5	0.0	0.0	-10,821.9	3.3	-41.1
2033	29	1,373.5	146.3	1,519.9	558.0	961.8	152.0	39.8	151.2	191.0	618.8	0.0	0.0	-10,635.9	4.2	-51.4
2034	30	1,386.0	147.4	1,533.5	560.5	972.9	153.3	27.2	114.0	141.2	678.4	0.0	0.0	-10,382.9	--	--
2035	31	1,398.7	148.5	1,547.2	563.0	984.2	154.7	17.7	90.9	108.6	720.9	0.0	0.0	-10,077.4	--	--
2036	32	1,411.4	149.7	1,561.1	565.5	995.6	156.1	10.2	67.4	77.6	761.8	0.0	0.0	-9,718.6	--	--
2037	33	1,424.2	150.8	1,575.0	568.0	1,007.1	157.5	4.8	44.7	49.5	800.1	0.0	0.0	-9,307.3	--	--
2038	34	1,437.2	152.0	1,589.1	570.4	1,018.7	158.9	1.4	20.9	22.3	837.5	0.0	0.0	-8,842.1	--	--
2039	35	1,450.2	153.1	1,603.4	572.9	1,030.4	160.3	0.0	0.0	0.0	870.1	0.0	0.0	-8,325.7	--	--
2040	36	1,463.4	154.3	1,617.7	575.4	1,042.3	161.8	0.0	0.0	0.0	880.5	0.0	0.0	-7,778.2	--	--
2041	37	1,476.7	155.5	1,632.2	577.9	1,054.3	163.2	0.0	0.0	0.0	891.1	0.0	0.0	-7,198.2	--	--
2042	38	1,490.2	156.6	1,646.8	580.4	1,066.5	164.7	0.0	0.0	0.0	901.8	0.0	0.0	-6,584.3	--	--

Table J-12. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ.	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2043	39	1,503.7	157.8	1,661.6	582.8	1,078.7	166.2	0.0	0.0	0.0	912.6	0.0	0.0	-5,935.1	- -	- -
2044	40	1,517.4	159.0	1,676.4	585.3	1,091.1	167.6	0.0	0.0	0.0	923.5	0.0	0.0	-5,249.1	- -	- -
2045	41	1,531.2	160.2	1,691.5	587.8	1,103.7	169.1	0.0	0.0	0.0	934.5	0.0	0.0	-4,524.5	- -	- -
2046	42	1,545.2	161.4	1,706.6	590.3	1,116.3	170.7	0.0	0.0	0.0	945.7	0.0	0.0	-3,759.8	- -	- -
2047	43	1,559.2	162.7	1,721.9	592.8	1,129.1	172.2	0.0	0.0	0.0	956.9	0.0	0.0	-2,953.3	- -	- -
2048	44	1,573.4	163.9	1,737.3	595.2	1,142.1	173.7	0.0	0.0	0.0	968.3	0.0	0.0	-2,103.1	- -	- -
2049	45	1,587.7	165.2	1,752.9	597.7	1,155.1	175.3	0.0	0.0	0.0	979.9	0.0	0.0	-1,207.4	- -	- -
2050	46	1,602.1	166.4	1,768.6	600.2	1,168.4	176.9	0.0	0.0	0.0	991.5	0.0	0.0	-264.2	- -	- -
2051	47	1,616.7	167.7	1,784.4	602.7	1,181.7	178.4	0.0	0.0	0.0	1,003.3	0.0	0.0	728.6	- -	- -
2052	48	1,631.4	169.0	1,800.4	605.2	1,195.2	180.0	0.0	0.0	0.0	1,015.2	0.0	1,243.7	529.1	- -	- -
2053	49	1,646.3	170.2	1,816.5	607.6	1,208.9	181.7	0.0	0.0	0.0	1,027.2	0.0	1,056.4	521.2	- -	- -
2054	50	1,661.2	171.5	1,832.8	610.1	1,222.7	183.3	0.0	0.0	0.0	1,039.4	0.0	1,060.5	520.8	- -	- -
2055	51	1,676.4	172.8	1,849.2	612.6	1,236.6	184.9	0.0	0.0	0.0	1,051.7	0.0	1,072.5	520.8	- -	- -
2056	52	1,691.6	174.1	1,865.8	615.1	1,250.7	186.6	0.0	0.0	0.0	1,064.1	0.0	1,084.9	520.8	- -	- -
2057	53	1,707.0	175.5	1,882.5	617.6	1,264.9	188.2	0.0	0.0	0.0	1,076.7	0.0	1,097.5	520.8	- -	- -
2058	54	1,722.5	176.8	1,899.3	620.0	1,279.3	189.9	0.0	0.0	0.0	1,089.4	0.0	1,110.2	520.8	- -	- -
2059	55	1,738.2	178.1	1,916.3	622.5	1,293.8	191.6	0.0	0.0	0.0	1,102.2	0.0	1,123.0	520.8	- -	- -
2060	56	1,754.0	179.5	1,933.5	625.0	1,308.5	193.4	0.0	0.0	0.0	1,115.2	0.0	1,136.0	520.8	- -	- -
	Total	72,921.4	8,611.7	81,533.1	30,790.0	50,743.1	8,153.3	8,658.9	10,063.9	18,722.8	23,867.1	3,455.5	9,984.8			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-13. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							59.2	59.2
2005	1	260.6	172.6	88.0	84.5	3.5	54.8	58.3
2006	2	282.1	176.9	105.2	87.1	18.1	45.7	63.9
2007	3	304.6	181.2	123.3	83.0	40.3	212.1	252.5
2008	4	327.9	185.6	142.3	329.1	-186.8	1,706.2	1,519.4
2009	5	352.3	190.1	162.2	2,205.4	-2,043.2	714.3	-1,329.0
2010	6	377.6	194.6	183.0	1,277.9	-1,094.9	378.3	-716.6
2011	7	404.0	199.2	204.7	1,018.5	-813.8	441.0	-372.8
2012	8	431.4	203.9	227.5	1,207.9	-980.4	0.1	-980.3
2013	9	460.0	208.6	251.4	869.1	-617.7	56.7	-561.0
2014	10	489.7	213.4	276.4	1,060.1	-783.7	-90.7	-874.4
2015	11	520.7	218.2	302.5	964.1	-661.6	-110.8	-772.3
2016	12	552.9	223.1	329.8	1,046.2	-716.4	-33.6	-749.9
2017	13	586.5	228.1	358.4	1,241.2	-882.8	-307.1	-1,189.9
2018	14	621.4	233.1	388.3	1,070.6	-682.3	-460.3	-1,142.6
2019	15	657.8	238.2	419.6	974.7	-555.1	-1,203.6	-1,758.7
2020	16	827.8	243.4	584.4	0.0	584.4	-1,187.8	-603.4
2021	17	837.4	245.7	591.8	0.0	591.8	-1,105.9	-514.1
2022	18	847.2	248.0	599.2	0.0	599.2	-1,054.3	-455.1
2023	19	857.0	250.3	606.8	0.0	606.8	-1,007.1	-400.4
2024	20	867.0	252.6	614.4	0.0	614.4	-939.1	-324.7
2025	21	877.1	255.0	622.1	0.0	622.1	-853.8	-231.7
2026	22	887.3	257.3	629.9	0.0	629.9	-762.7	-132.8
2027	23	897.6	259.7	637.8	0.0	637.8	-663.7	-25.8
2028	24	908.0	262.1	645.8	0.0	645.8	-570.5	75.4
2029	25	918.5	264.6	653.9	0.0	653.9	-457.1	196.8
2030	26	929.2	267.0	662.1	0.0	662.1	-379.8	282.3
2031	27	939.9	269.5	670.4	0.0	670.4	-305.5	364.9
2032	28	950.8	272.0	678.8	0.0	678.8	-243.7	435.1
2033	29	961.8	274.5	687.3	0.0	687.3	-191.0	496.3
2034	30	972.9	277.1	695.9	0.0	695.9	-141.2	554.7
2035	31	984.2	279.6	704.6	0.0	704.6	-108.6	596.0
2036	32	995.6	282.2	713.3	0.0	713.3	-77.6	635.7
2037	33	1,007.1	284.8	722.2	0.0	722.2	-49.5	672.7
2038	34	1,018.7	287.5	731.2	0.0	731.2	-22.3	708.9
2039	35	1,030.4	290.1	740.3	0.0	740.3	0.0	740.3
2040	36	1,042.3	292.8	749.5	0.0	749.5	0.0	749.5
2041	37	1,054.3	295.5	758.8	0.0	758.8	0.0	758.8
2042	38	1,066.5	298.2	768.2	0.0	768.2	0.0	768.2
2043	39	1,078.7	301.0	777.8	0.0	777.8	0.0	777.8
2044	40	1,091.1	303.7	787.4	0.0	787.4	0.0	787.4
2045	41	1,103.7	306.5	797.1	0.0	797.1	0.0	797.1
2046	42	1,116.3	309.3	807.0	0.0	807.0	0.0	807.0

Table J-13. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Interest Rates Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	1,129.1	312.2	816.9	0.0	816.9	0.0	816.9
2048	44	1,142.1	315.0	827.0	0.0	827.0	0.0	827.0
2049	45	1,155.1	317.9	837.2	0.0	837.2	0.0	837.2
2050	46	1,168.4	320.8	847.5	0.0	847.5	0.0	847.5
2051	47	1,181.7	323.8	857.9	0.0	857.9	0.0	857.9
2052	48	1,195.2	326.7	868.5	0.0	868.5	0.0	868.5
2053	49	1,208.9	329.7	879.1	0.0	879.1	0.0	879.1
2054	50	1,222.7	332.7	889.9	0.0	889.9	0.0	889.9
2055	51	1,236.6	335.8	900.8	0.0	900.8	0.0	900.8
2056	52	1,250.7	338.8	911.9	0.0	911.9	0.0	911.9
2057	53	1,264.9	341.9	923.0	0.0	923.0	0.0	923.0
2058	54	1,279.3	345.0	934.3	0.0	934.3	0.0	934.3
2059	55	1,293.8	348.1	945.7	0.0	945.7	0.0	945.7
2060	56	1,308.5	351.3	957.2	0.0	957.2	0.0	957.2
	Total	49,734.9	15,136.9	34,597.9	13,519.4	21,078.5		12,419.7
				Financial Internal Rate of Return		4.5%		2.7%
				Net Present Value at 8 percent discount rate		-2,607.5		-2,663.0

a/ From Table J-12.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-14. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009		523.6	111.7	635.3	359.4	275.9	63.5	0.0	0.0	0.0	212.4	0.0	0.0	1,858.0	--	--
2010	1	537.7	113.5	651.2	360.5	290.7	65.1	5.7	0.9	6.7	219.0	33.2	0.0	2,118.1	33.9	351.8
2011	2	552.3	115.3	667.5	361.5	306.0	66.8	11.5	1.9	13.4	225.8	33.8	0.0	2,394.9	17.9	196.7
2012	3	567.2	117.1	684.2	362.6	321.6	68.4	29.1	4.8	33.9	219.3	102.8	0.0	2,607.2	7.5	84.4
2013	4	582.5	118.9	701.4	363.7	337.7	70.1	93.0	28.1	121.2	146.4	296.0	0.0	2,562.0	2.2	23.4
2014	5	598.2	120.8	719.0	364.8	354.2	71.9	178.8	65.3	244.1	38.3	371.4	0.0	2,331.3	1.2	10.7
2015	6	614.4	122.7	737.1	365.8	371.2	73.7	251.0	92.7	343.7	-46.2	386.3	0.0	1,992.1	0.9	6.7
2016	7	631.0	124.6	755.6	366.9	388.7	75.6	322.4	149.9	472.3	-159.2	392.6	0.0	1,520.0	0.7	3.9
2017	8	648.0	126.5	774.6	368.0	406.6	77.5	378.8	240.7	619.5	-290.4	322.0	0.0	968.5	0.5	2.1
2018	9	665.5	128.5	794.1	369.1	425.0	79.4	409.9	306.6	716.5	-370.9	218.9	0.0	417.5	0.5	1.1
2019	10	683.5	130.5	814.1	370.1	443.9	81.4	428.2	369.3	797.5	-435.0	168.4	0.0	-169.1	0.5	0.2
2020	11	904.0	132.6	1,036.6	475.1	561.5	103.7	400.7	440.7	841.4	-383.5	0.0	0.0	-559.5	0.5	-0.1
2021	12	911.9	133.6	1,045.5	477.8	567.7	104.5	368.0	509.4	877.4	-414.2	0.0	0.0	-996.1	0.5	-0.6
2022	13	919.8	134.6	1,054.4	480.5	573.9	105.4	330.4	564.7	895.1	-426.6	0.0	0.0	-1,462.5	0.5	-1.1
2023	14	927.8	135.6	1,063.5	483.2	580.3	106.3	289.9	559.9	849.8	-375.9	0.0	0.0	-1,896.9	0.6	-1.7
2024	15	935.9	136.7	1,072.6	485.9	586.7	107.3	250.0	531.8	781.8	-302.4	0.0	0.0	-2,275.1	0.6	-2.3
2025	16	944.1	137.7	1,081.8	488.6	593.2	108.2	212.1	489.0	701.1	-216.1	0.0	0.0	-2,582.2	0.7	-3.0
2026	17	952.3	138.8	1,091.1	491.3	599.8	109.1	177.6	430.2	607.8	-117.1	0.0	0.0	-2,802.6	0.8	-3.8
2027	18	960.6	139.8	1,100.4	494.0	606.4	110.0	146.9	385.6	532.4	-36.0	0.0	0.0	-2,950.7	0.9	-4.6
2028	19	969.0	140.9	1,109.8	496.7	613.2	111.0	119.4	337.9	457.2	45.0	0.0	0.0	-3,023.8	1.1	-5.5
2029	20	977.4	141.9	1,119.4	499.4	620.0	111.9	95.4	287.1	382.4	125.6	0.0	0.0	-3,019.1	1.3	-6.6
2030	21	985.9	143.0	1,129.0	502.1	626.9	112.9	74.9	249.1	324.0	190.0	0.0	0.0	-2,949.9	1.6	-7.5
2031	22	994.5	144.1	1,138.6	504.8	633.9	113.9	57.3	209.9	267.2	252.8	0.0	0.0	-2,815.1	1.9	-8.6
2032	23	1,003.2	145.2	1,148.4	507.5	640.9	114.8	42.4	184.9	227.4	298.7	0.0	0.0	-2,629.0	2.3	-9.2
2033	24	1,011.9	146.3	1,158.2	510.2	648.1	115.8	29.6	152.5	182.1	350.1	0.0	0.0	-2,384.0	2.9	-10.2
2034	25	1,020.7	147.4	1,168.2	512.9	655.3	116.8	19.3	120.5	139.8	398.7	0.0	0.0	-2,080.7	3.9	-11.0
2035	26	1,029.6	148.5	1,178.2	515.6	662.6	117.8	11.3	87.2	98.4	446.4	0.0	0.0	-1,717.5	5.5	-11.9
2036	27	1,038.6	149.7	1,188.3	518.3	670.0	118.8	5.6	53.4	59.1	492.1	0.0	0.0	-1,294.1	9.3	-12.6
2037	28	1,047.7	150.8	1,198.5	521.0	677.5	119.8	2.3	27.5	29.8	527.9	0.0	0.0	-818.0	18.7	-8.7

Table J-14. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,056 8	152.0	1,208 7	523 7	685 1	120 9	0 6	11 1	11 7	552 5	0 0	0 0	-298 2	48 1	22 7
2039	30	1,066 0	153.1	1,219 1	526 4	692 8	121 9	0 0	0 0	0 0	570 8	0 0	0 0	260 7	- -	- -
2040	31	1,075 3	154 3	1,229 6	529 1	700 5	123 0	0 0	0 0	0 0	577 6	0 0	0 0	848 7	- -	- -
2041	32	1,084 6	155.5	1,240 1	531 7	708 3	124 0	0 0	0 0	0 0	584 3	0 0	933 0	533 9	- -	- -
2042	33	1,094 1	156.6	1,250 7	534.4	716 3	125 1	0 0	0 0	0 0	591 2	0 0	625 2	521 4	- -	- -
2043	34	1,103 6	157.8	1,261 5	537.1	724 3	126 1	0 0	0 0	0 0	598 2	0 0	619 5	520 9	- -	- -
2044	35	1,113 2	159 0	1,272.3	539 8	732.4	127 2	0 0	0 0	0 0	605 2	0 0	626 1	520 8	- -	- -
2045	36	1,122 9	160 2	1,283 2	542 5	740 6	128.3	0 0	0 0	0 0	612 3	0 0	633 2	520 8	- -	- -
2046	37	1,132 7	161 4	1,294 2	545 2	748 9	129 4	0 0	0 0	0 0	619 5	0 0	640 4	520 8	- -	- -
2047	38	1,142 6	162 7	1,305 3	547 9	757 3	130 5	0 0	0 0	0 0	626 8	0 0	647 6	520 8	- -	- -
2048	39	1,152 6	163 9	1,316 5	550 6	765 8	131 6	0 0	0 0	0 0	634 2	0 0	655 0	520 8	- -	- -
2049	40	1,162 6	165 2	1,327 8	553 3	774 4	132 8	0.0	0 0	0 0	641 7	0 0	662 5	520 8	- -	- -
2050	41	1,172 7	166 4	1,339 1	556 0	783 1	133 9	0 0	0 0	0 0	649 2	0 0	670 0	520 8	- -	- -
2051	42	1,182 9	167.7	1,350 6	558 7	791 9	135 1	0 0	0 0	0 0	656 8	0 0	677 7	520 8	- -	- -
2052	43	1,193 3	169 0	1,362 2	561 4	800 8	136 2	0 0	0 0	0 0	664 6	0 0	685 4	520 8	- -	- -
2053	44	1,203 6	170 2	1,373 9	564 1	809 8	137 4	0 0	0 0	0 0	672 4	0 0	693 2	520 8	- -	- -
2054	45	1,214 1	171 5	1,385 7	566 8	818 9	138 6	0 0	0 0	0 0	680 3	0 0	701 1	520 8	- -	- -
2055	46	1,224 7	172 8	1,397 5	569 5	828 0	139 8	0 0	0 0	0 0	688 3	0 0	709 1	520 8	- -	- -
2056	47	1,235 4	174 1	1,409 5	572 2	837 3	141 0	0 0	0 0	0 0	696 4	0 0	717 2	520 8	- -	- -
2057	48	1,246 1	175 5	1,421 6	574 9	846 7	142 2	0 0	0 0	0 0	704 6	0 0	725 4	520 8	- -	- -
2058	49	1,257 0	176 8	1,433 8	577 6	856 2	143 4	0 0	0 0	0 0	712 8	0 0	733 7	520 8	- -	- -
2059	50	1,268 0	178 1	1,446 1	580 3	865 8	144 6	0 0	0 0	0 0	721 2	0 0	742 0	520 8	- -	- -
2060	51	1,279 0	179 5	1,458 5	583 0	875 5	145 9	0 0	0 0	0 0	729 7	0 0	750 5	520 8	- -	- -
	Total	55,057 3	8,611 7	63,669 0	28,889 7	34,779 3	6,366 9	4,741 8	6,892 7	11,634 6	16,777 8	2,325 1	13,847 7			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-15. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							77.4	77.4
2010	1	290.7	194.6	96.1	110.5	-14.4	72.3	57.9
2011	2	306.0	199.2	106.8	112.8	-6.0	226.4	220.4
2012	3	321.6	203.9	117.8	342.5	-224.7	865.5	640.8
2013	4	337.7	208.6	129.1	1,195.4	-1,066.2	1,118.3	52.1
2014	5	354.2	213.4	140.9	1,610.9	-1,470.0	817.8	-652.2
2015	6	371.2	218.2	153.0	1,448.1	-1,295.1	740.6	-554.5
2016	7	388.7	223.1	165.6	1,476.9	-1,311.3	476.4	-834.9
2017	8	406.6	228.1	178.5	1,270.6	-1,092.1	65.8	-1,026.3
2018	9	425.0	233.1	191.9	904.1	-712.2	-138.8	-851.0
2019	10	443.9	238.2	205.7	746.1	-540.4	-797.5	-1,337.9
2020	11	561.5	243.4	318.1	0.0	318.1	-841.4	-523.3
2021	12	567.7	245.7	322.0	0.0	322.0	-877.4	-555.3
2022	13	573.9	248.0	326.0	0.0	326.0	-895.1	-569.1
2023	14	580.3	250.3	330.0	0.0	330.0	-849.8	-519.8
2024	15	586.7	252.6	334.1	0.0	334.1	-781.8	-447.7
2025	16	593.2	255.0	338.2	0.0	338.2	-701.1	-362.9
2026	17	599.8	257.3	342.4	0.0	342.4	-607.8	-265.3
2027	18	606.4	259.7	346.7	0.0	346.7	-532.4	-185.7
2028	19	613.2	262.1	351.0	0.0	351.0	-457.2	-106.2
2029	20	620.0	264.6	355.4	0.0	355.4	-382.4	-27.0
2030	21	626.9	267.0	359.8	0.0	359.8	-324.0	35.9
2031	22	633.9	269.5	364.3	0.0	364.3	-267.2	97.1
2032	23	640.9	272.0	368.9	0.0	368.9	-227.4	141.6
2033	24	648.1	274.5	373.5	0.0	373.5	-182.1	191.4
2034	25	655.3	277.1	378.2	0.0	378.2	-139.8	238.5
2035	26	662.6	279.6	383.0	0.0	383.0	-98.4	284.6
2036	27	670.0	282.2	387.8	0.0	387.8	-59.1	328.7
2037	28	677.5	284.8	392.7	0.0	392.7	-29.8	362.9
2038	29	685.1	287.5	397.6	0.0	397.6	-11.7	385.9
2039	30	692.8	290.1	402.6	0.0	402.6	0.0	402.6
2040	31	700.5	292.8	407.7	0.0	407.7	0.0	407.7
2041	32	708.3	295.5	412.8	0.0	412.8	0.0	412.8
2042	33	716.3	298.2	418.1	0.0	418.1	0.0	418.1
2043	34	724.3	301.0	423.3	0.0	423.3	0.0	423.3
2044	35	732.4	303.7	428.7	0.0	428.7	0.0	428.7
2045	36	740.6	306.5	434.1	0.0	434.1	0.0	434.1
2046	37	748.9	309.3	439.6	0.0	439.6	0.0	439.6

Table J-15. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	757.3	312.2	445.2	0.0	445.2	0.0	445.2
2048	39	765.8	315.0	450.8	0.0	450.8	0.0	450.8
2049	40	774.4	317.9	456.5	0.0	456.5	0.0	456.5
2050	41	783.1	320.8	462.3	0.0	462.3	0.0	462.3
2051	42	791.9	323.8	468.1	0.0	468.1	0.0	468.1
2052	43	800.8	326.7	474.0	0.0	474.0	0.0	474.0
2053	44	809.8	329.7	480.0	0.0	480.0	0.0	480.0
2054	45	818.9	332.7	486.1	0.0	486.1	0.0	486.1
2055	46	828.0	335.8	492.3	0.0	492.3	0.0	492.3
2056	47	837.3	338.8	498.5	0.0	498.5	0.0	498.5
2057	48	846.7	341.9	504.8	0.0	504.8	0.0	504.8
2058	49	856.2	345.0	511.2	0.0	511.2	0.0	511.2
2059	50	865.8	348.1	517.7	0.0	517.7	0.0	517.7
2060	51	875.5	351.3	524.2	0.0	524.2	0.0	524.2
	Total	32,624.5	14,230.5	18,394.0	9,217.9	9,176.2		4,357.0
				Financial Internal Rate of Return		3.3%		1.7%
				Net Present Value at 8 percent discount rate		-2,731.5		-2,293.8

a/ From Table J-14.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-16. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service Coverage	Overall Debt Service Coverage
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Operations	Panama d/	Int.	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Ratio i/	Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009		599.9	111.7	711.7	359.4	352.3	71.2	0.0	0.0	0.0	281.1	0.0	0.0	2,242.4	--	--
2010	1	624.6	113.5	738.1	360.5	377.6	73.8	5.7	0.9	6.7	297.1	33.2	0.0	2,596.1	45.6	435.3
2011	2	650.3	115.3	765.5	361.5	404.0	76.6	11.5	1.9	13.4	314.0	33.8	0.0	2,980.1	24.5	247.0
2012	3	677.0	117.1	794.0	362.6	431.4	79.4	29.1	4.8	33.9	318.1	102.8	0.0	3,314.7	10.4	108.2
2013	4	704.8	118.9	823.7	363.7	460.0	82.4	93.0	28.1	121.2	256.5	296.0	0.0	3,407.8	3.1	31.2
2014	5	733.7	120.8	854.5	364.8	489.7	85.5	178.8	65.3	244.1	160.2	371.4	0.0	3,332.9	1.7	15.3
2015	6	763.9	122.7	886.5	365.8	520.7	88.7	251.0	92.7	343.7	88.4	386.3	0.0	3,168.3	1.3	10.5
2016	7	795.3	124.6	919.9	366.9	552.9	92.0	322.4	149.9	472.3	-11.3	392.6	0.0	2,891.1	1.0	7.1
2017	8	827.9	126.5	954.5	368.0	586.5	95.4	378.8	240.7	619.5	-128.4	322.0	0.0	2,556.4	0.8	4.9
2018	9	862.0	128.5	990.5	369.1	621.4	99.0	409.9	306.6	716.5	-194.1	218.9	0.0	2,245.6	0.7	3.9
2019	10	897.4	130.5	1,027.9	370.1	657.8	102.8	428.2	369.3	797.5	-242.5	168.4	0.0	1,924.6	0.7	3.1
2020	11	1,175.0	132.6	1,307.6	475.1	832.5	130.8	400.7	440.7	841.4	-139.6	0.0	0.0	1,861.9	0.8	3.0
2021	12	1,184.8	133.6	1,318.4	477.8	840.6	131.8	368.0	509.4	877.4	-168.6	0.0	0.0	1,767.8	0.8	2.8
2022	13	1,194.7	134.6	1,329.3	480.5	848.8	132.9	330.4	564.7	895.1	-179.2	0.0	0.0	1,659.3	0.8	2.7
2023	14	1,204.6	135.6	1,340.3	483.2	857.1	134.0	289.9	559.9	849.8	-126.8	0.0	0.0	1,598.9	0.9	2.7
2024	15	1,214.7	136.7	1,351.4	485.9	865.5	135.1	250.0	531.8	781.8	-51.5	0.0	0.0	1,611.4	0.9	3.0
2025	16	1,224.8	137.7	1,362.5	488.6	873.9	136.3	212.1	489.0	701.1	36.6	0.0	1,148.0	564.5	1.1	1.9
2026	17	1,235.0	138.8	1,373.8	491.3	882.5	137.4	177.6	430.2	607.8	137.3	0.0	201.8	522.6	1.2	2.1
2027	18	1,245.3	139.8	1,385.2	494.0	891.2	138.5	146.9	385.6	532.4	220.2	0.0	242.8	520.9	1.4	2.4
2028	19	1,255.7	140.9	1,396.6	496.7	899.9	139.7	119.4	337.9	457.2	303.0	0.0	323.9	520.8	1.7	2.8
2029	20	1,266.2	141.9	1,408.1	499.4	908.8	140.8	95.4	287.1	382.4	385.5	0.0	406.4	520.8	2.0	3.4
2030	21	1,276.8	143.0	1,419.8	502.1	917.7	142.0	74.9	249.1	324.0	451.8	0.0	472.6	520.8	2.4	4.0
2031	22	1,287.4	144.1	1,431.5	504.8	926.7	143.2	57.3	209.9	267.2	516.4	0.0	537.2	520.8	2.9	4.9
2032	23	1,298.1	145.2	1,443.4	507.5	935.9	144.3	42.4	184.9	227.4	564.2	0.0	585.0	520.8	3.5	5.8
2033	24	1,309.0	146.3	1,455.3	510.2	945.1	145.5	29.6	152.5	182.1	617.5	0.0	638.3	520.8	4.4	7.2
2034	25	1,319.9	147.4	1,467.3	512.9	954.4	146.7	19.3	120.5	139.8	667.9	0.0	688.8	520.8	5.8	9.5
2035	26	1,330.9	148.5	1,479.4	515.6	963.9	147.9	11.3	87.2	98.4	717.5	0.0	738.3	520.8	8.3	13.6
2036	27	1,342.0	149.7	1,491.7	518.3	973.4	149.2	5.6	53.4	59.1	765.2	0.0	786.0	520.8	14.0	22.8
2037	28	1,353.2	150.8	1,504.0	521.0	983.0	150.4	2.3	27.5	29.8	802.8	0.0	823.7	520.8	27.9	45.4

Table J-16. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364.5	152.0	1,516.4	523.7	992.8	151.6	0.6	11.1	11.7	829.4	0.0	850.2	520.8	71.7	116.2
2039	30	1,375.8	153.1	1,529.0	526.4	1,002.6	152.9	0.0	0.0	0.0	849.7	0.0	870.5	520.8	- -	- -
2040	31	1,387.3	154.3	1,541.6	529.1	1,012.6	154.2	0.0	0.0	0.0	858.4	0.0	879.2	520.8	- -	- -
2041	32	1,398.9	155.5	1,554.3	531.7	1,022.6	155.4	0.0	0.0	0.0	867.2	0.0	888.0	520.8	- -	- -
2042	33	1,410.6	156.6	1,567.2	534.4	1,032.7	156.7	0.0	0.0	0.0	876.0	0.0	896.9	520.8	- -	- -
2043	34	1,422.3	157.8	1,580.1	537.1	1,043.0	158.0	0.0	0.0	0.0	885.0	0.0	905.8	520.8	- -	- -
2044	35	1,434.2	159.0	1,593.2	539.8	1,053.4	159.3	0.0	0.0	0.0	894.0	0.0	914.9	520.8	- -	- -
2045	36	1,446.1	160.2	1,606.4	542.5	1,063.8	160.6	0.0	0.0	0.0	903.2	0.0	924.0	520.8	- -	- -
2046	37	1,458.2	161.4	1,619.7	545.2	1,074.4	162.0	0.0	0.0	0.0	912.5	0.0	933.3	520.8	- -	- -
2047	38	1,470.4	162.7	1,633.0	547.9	1,085.1	163.3	0.0	0.0	0.0	921.8	0.0	942.6	520.8	- -	- -
2048	39	1,482.6	163.9	1,646.5	550.6	1,095.9	164.7	0.0	0.0	0.0	931.3	0.0	952.1	520.8	- -	- -
2049	40	1,495.0	165.2	1,660.2	553.3	1,106.8	166.0	0.0	0.0	0.0	940.8	0.0	961.6	520.8	- -	- -
2050	41	1,507.5	166.4	1,673.9	556.0	1,117.9	167.4	0.0	0.0	0.0	950.5	0.0	971.3	520.8	- -	- -
2051	42	1,520.0	167.7	1,687.7	558.7	1,129.0	168.8	0.0	0.0	0.0	960.2	0.0	981.1	520.8	- -	- -
2052	43	1,532.7	169.0	1,701.7	561.4	1,140.2	170.2	0.0	0.0	0.0	970.1	0.0	990.9	520.8	- -	- -
2053	44	1,545.5	170.2	1,715.7	564.1	1,151.6	171.6	0.0	0.0	0.0	980.0	0.0	1,000.9	520.8	- -	- -
2054	45	1,558.4	171.5	1,729.9	566.8	1,163.1	173.0	0.0	0.0	0.0	990.1	0.0	1,010.9	520.8	- -	- -
2055	46	1,571.4	172.8	1,744.2	569.5	1,174.7	174.4	0.0	0.0	0.0	1,000.3	0.0	1,021.1	520.8	- -	- -
2056	47	1,584.5	174.1	1,758.6	572.2	1,186.4	175.9	0.0	0.0	0.0	1,010.6	0.0	1,031.4	520.8	- -	- -
2057	48	1,597.7	175.5	1,773.2	574.9	1,198.3	177.3	0.0	0.0	0.0	1,021.0	0.0	1,041.8	520.8	- -	- -
2058	49	1,611.0	176.8	1,787.8	577.6	1,210.2	178.8	0.0	0.0	0.0	1,031.4	0.0	1,052.3	520.8	- -	- -
2059	50	1,624.5	178.1	1,802.6	580.3	1,222.3	180.3	0.0	0.0	0.0	1,042.0	0.0	1,062.9	520.8	- -	- -
2060	51	1,638.0	179.5	1,817.5	583.0	1,234.5	181.8	0.0	0.0	0.0	1,052.8	0.0	1,073.6	520.8	- -	- -
	Total	69,730.8	8,611.7	78,342.5	28,889.7	49,452.9	7,834.3	4,741.8	6,892.7	11,634.6	29,984.0	2,325.1	29,750.2			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-17. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							77.4	77.4
2010	1	377.6	194.6	183.0	110.5	72.5	72.3	144.7
2011	2	404.0	199.2	204.7	112.8	92.0	226.4	318.4
2012	3	431.4	203.9	227.5	342.5	-115.0	865.5	750.5
2013	4	460.0	208.6	251.4	1,195.4	-944.0	1,118.3	174.4
2014	5	489.7	213.4	276.4	1,610.9	-1,334.5	817.8	-516.7
2015	6	520.7	218.2	302.5	1,448.1	-1,145.6	740.6	-405.0
2016	7	552.9	223.1	329.8	1,476.9	-1,147.0	476.4	-670.7
2017	8	586.5	228.1	358.4	1,270.6	-912.2	65.8	-846.4
2018	9	621.4	233.1	388.3	904.1	-515.8	-138.8	-654.6
2019	10	657.8	238.2	419.6	746.1	-326.6	-797.5	-1,124.1
2020	11	832.5	243.4	589.1	0.0	589.1	-841.4	-252.3
2021	12	840.6	245.7	594.9	0.0	594.9	-877.4	-282.4
2022	13	848.8	248.0	600.8	0.0	600.8	-895.1	-294.2
2023	14	857.1	250.3	606.8	0.0	606.8	-849.8	-243.0
2024	15	865.5	252.6	612.9	0.0	612.9	-781.8	-168.9
2025	16	873.9	255.0	619.0	0.0	619.0	-701.1	-82.1
2026	17	882.5	257.3	625.2	0.0	625.2	-607.8	17.4
2027	18	891.2	259.7	631.4	0.0	631.4	-532.4	99.0
2028	19	899.9	262.1	637.8	0.0	637.8	-457.2	180.6
2029	20	908.8	264.6	644.2	0.0	644.2	-382.4	261.8
2030	21	917.7	267.0	650.7	0.0	650.7	-324.0	326.7
2031	22	926.7	269.5	657.2	0.0	657.2	-267.2	390.0
2032	23	935.9	272.0	663.9	0.0	663.9	-227.4	436.5
2033	24	945.1	274.5	670.6	0.0	670.6	-182.1	488.5
2034	25	954.4	277.1	677.4	0.0	677.4	-139.8	537.6
2035	26	963.9	279.6	684.2	0.0	684.2	-98.4	585.8
2036	27	973.4	282.2	691.2	0.0	691.2	-59.1	632.1
2037	28	983.0	284.8	698.2	0.0	698.2	-29.8	668.4
2038	29	992.8	287.5	705.3	0.0	705.3	-11.7	693.6
2039	30	1,002.6	290.1	712.5	0.0	712.5	0.0	712.5
2040	31	1,012.6	292.8	719.7	0.0	719.7	0.0	719.7
2041	32	1,022.6	295.5	727.1	0.0	727.1	0.0	727.1
2042	33	1,032.7	298.2	734.5	0.0	734.5	0.0	734.5
2043	34	1,043.0	301.0	742.0	0.0	742.0	0.0	742.0
2044	35	1,053.4	303.7	749.6	0.0	749.6	0.0	749.6
2045	36	1,063.8	306.5	757.3	0.0	757.3	0.0	757.3
2046	37	1,074.4	309.3	765.1	0.0	765.1	0.0	765.1

Table J-17. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	312.2	772.9	0.0	772.9	0.0	772.9
2048	39	1,095.9	315.0	780.9	0.0	780.9	0.0	780.9
2049	40	1,106.8	317.9	788.9	0.0	788.9	0.0	788.9
2050	41.	1,117.9	320.8	797.0	0.0	797.0	0.0	797.0
2051	42	1,129.0	323.8	805.2	0.0	805.2	0.0	805.2
2052	43	1,140.2	326.7	813.5	0.0	813.5	0.0	813.5
2053	44	1,151.6	329.7	821.9	0.0	821.9	0.0	821.9
2054	45	1,163.1	332.7	830.4	0.0	830.4	0.0	830.4
2055	46	1,174.7	335.8	838.9	0.0	838.9	0.0	838.9
2056	47	1,186.4	338.8	847.6	0.0	847.6	0.0	847.6
2057	48	1,198.3	341.9	856.4	0.0	856.4	0.0	856.4
2058	49	1,210.2	345.0	865.2	0.0	865.2	0.0	865.2
2059	50	1,222.3	348.1	874.2	0.0	874.2	0.0	874.2
2060	51	1,234.5	351.3	883.2	0.0	883.2	0.0	883.2
	Total	46,917.1	14,230.5	32,686.6	9,217.9	23,468.8		18,649.6
				Financial Internal Rate of Return		7.7%		8.2%
				Net Present Value at 8 percent discount rate		-189.9		59.6

a/ From Table J-16.

b/ From Table 6-6.

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-18. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009	1	523.6	111.7	635.3	359.4	275.9	63.5	6.2	1.0	7.2	205.2	35.9	0.0	1,814.9	29.4	281.1
2010	2	537.7	113.5	651.2	360.5	290.7	65.1	12.5	2.1	14.5	211.1	36.7	0.0	2,061.9	15.6	157.7
2011	3	552.3	115.3	667.5	361.5	306.0	66.8	31.6	5.2	36.8	202.4	111.6	0.0	2,235.2	6.5	67.3
2012	4	567.2	117.1	684.2	362.6	321.6	68.4	93.5	28.5	122.0	131.2	282.3	0.0	2,173.5	2.1	19.9
2013	5	582.5	118.9	701.4	363.7	337.7	70.1	179.2	63.3	242.5	25.1	385.9	0.0	1,899.7	1.1	8.9
2014	6	598.2	120.8	719.0	364.8	354.2	71.9	260.1	94.7	354.7	-72.4	422.8	0.0	1,480.5	0.8	5.0
2015	7	614.4	122.7	737.1	365.8	371.2	73.7	339.3	157.8	497.1	-199.5	419.0	0.0	921.1	0.6	2.5
2016	8	631.0	124.6	755.6	366.9	388.7	75.6	413.2	250.2	663.4	-350.3	408.6	0.0	199.1	0.5	0.8
2017	9	648.0	126.5	774.6	368.0	406.6	77.5	461.1	322.2	783.3	-454.1	314.7	0.0	-561.8	0.4	-0.3
2018	10	665.5	128.5	794.1	369.1	425.0	79.4	491.1	401.7	892.9	-547.2	237.9	0.0	-1,369.4	0.4	-1.1
2019	11	683.5	130.5	814.1	370.1	443.9	81.4	473.0	483.5	956.5	-594.0	68.6	0.0	-2,086.7	0.4	-1.8
2020	12	904.0	132.6	1,036.6	483.4	553.2	103.7	437.2	553.2	990.4	-540.9	0.0	0.0	-2,711.0	0.5	-2.3
2021	13	912.6	133.6	1,046.2	486.1	560.1	104.6	396.4	619.3	1,015.7	-560.2	0.0	0.0	-3,379.7	0.4	-2.9
2022	14	921.2	134.6	1,055.9	488.8	567.1	105.6	351.7	627.7	979.4	-517.9	0.0	0.0	-4,032.8	0.5	-3.6
2023	15	930.0	135.6	1,065.6	491.5	574.1	106.6	306.6	611.5	918.0	-450.5	0.0	0.0	-4,644.6	0.5	-4.5
2024	16	938.8	136.7	1,075.5	494.2	581.3	107.5	262.8	575.5	838.3	-364.6	0.0	0.0	-5,194.9	0.6	-5.6
2025	17	947.7	137.7	1,085.4	496.9	588.5	108.5	221.9	516.0	737.9	-257.9	0.0	0.0	-5,660.7	0.7	-7.0
2026	18	956.7	138.8	1,095.5	499.6	595.9	109.5	185.1	462.3	647.4	-161.0	0.0	0.0	-6,048.1	0.8	-8.6
2027	19	965.8	139.8	1,105.6	502.3	603.3	110.6	152.1	406.4	558.4	-65.7	0.0	0.0	-6,355.7	0.9	-10.5
2028	20	975.0	140.9	1,115.8	505.0	610.9	111.6	123.1	346.4	469.5	29.8	0.0	0.0	-6,580.2	1.1	-13.0
2029	21	984.2	141.9	1,126.2	507.7	618.5	112.6	98.3	303.1	401.4	104.5	0.0	0.0	-6,738.9	1.3	-15.5
2030	22	993.5	143.0	1,136.6	510.4	626.2	113.7	76.7	261.5	338.3	174.3	0.0	0.0	-6,834.2	1.5	-18.7
2031	23	1,003.0	144.1	1,147.1	513.1	634.0	114.7	58.1	231.5	289.6	229.7	0.0	0.0	-6,877.9	1.8	-22.0
2032	24	1,012.5	145.2	1,157.7	515.8	641.9	115.8	41.9	195.4	237.4	288.8	0.0	0.0	-6,864.2	2.2	-26.7
2033	25	1,022.1	146.3	1,168.4	518.5	649.9	116.8	28.5	157.2	185.7	347.4	0.0	0.0	-6,791.4	2.9	-33.7
2034	26	1,031.8	147.4	1,179.2	521.2	658.1	117.9	18.0	117.4	135.4	404.8	0.0	0.0	-6,658.3	4.0	-45.2
2035	27	1,041.6	148.5	1,190.1	523.9	666.3	119.0	10.2	82.7	92.9	454.4	0.0	0.0	-6,470.2	5.9	-63.8
2036	28	1,051.5	149.7	1,201.2	526.6	674.6	120.1	4.9	49.7	54.5	499.9	0.0	0.0	-6,229.1	10.2	-104.1
2037	29	1,061.5	150.8	1,212.3	529.3	683.0	121.2	1.8	24.2	26.0	535.8	0.0	0.0	-5,942.5	21.6	-206.8
2038	30	1,071.5	152.0	1,223.5	532.0	691.5	122.3	0.4	6.8	7.1	562.1	0.0	0.0	-5,618.1	--	--
2039	31	1,081.7	153.1	1,234.8	534.7	700.2	123.5	0.0	0.0	0.0	576.7	0.0	0.0	-5,268.2	--	--
2040	32	1,092.0	154.3	1,246.2	537.4	708.9	124.6	0.0	0.0	0.0	584.3	0.0	0.0	-4,892.6	--	--

Table J-18. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int.	Princ.	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,102.3	155.5	1,257.8	540.0	717.7	125.8	0.0	0.0	0.0	592.0	0.0	0.0	-4,496.3	- -	- -
2042	34	1,112.8	156.6	1,269.4	542.7	726.7	126.9	0.0	0.0	0.0	599.7	0.0	0.0	-4,076.4	- -	- -
2043	35	1,123.3	157.8	1,281.2	545.4	735.7	128.1	0.0	0.0	0.0	607.6	0.0	0.0	-3,631.9	- -	- -
2044	36	1,134.0	159.0	1,293.0	548.1	744.9	129.3	0.0	0.0	0.0	615.6	0.0	0.0	-3,161.6	- -	- -
2045	37	1,144.8	160.2	1,305.0	550.8	754.2	130.5	0.0	0.0	0.0	623.7	0.0	0.0	-2,664.4	- -	- -
2046	38	1,155.6	161.4	1,317.1	553.5	763.5	131.7	0.0	0.0	0.0	631.8	0.0	0.0	-2,139.1	- -	- -
2047	39	1,166.6	162.7	1,329.3	556.2	773.0	132.9	0.0	0.0	0.0	640.1	0.0	0.0	-1,584.5	- -	- -
2048	40	1,177.7	163.9	1,341.6	558.9	782.7	134.2	0.0	0.0	0.0	648.5	0.0	0.0	-999.4	- -	- -
2049	41	1,188.8	165.2	1,354.0	561.6	792.4	135.4	0.0	0.0	0.0	657.0	0.0	0.0	-382.4	- -	- -
2050	42	1,200.1	166.4	1,366.5	564.3	802.2	136.7	0.0	0.0	0.0	665.6	0.0	0.0	267.8	- -	- -
2051	43	1,211.5	167.7	1,379.2	567.0	812.2	137.9	0.0	0.0	0.0	674.3	0.0	0.0	952.8	- -	- -
2052	44	1,223.0	169.0	1,392.0	569.7	822.3	139.2	0.0	0.0	0.0	683.1	0.0	1,135.9	538.1	- -	- -
2053	45	1,234.6	170.2	1,404.9	572.4	832.4	140.5	0.0	0.0	0.0	692.0	0.0	730.1	521.5	- -	- -
2054	46	1,246.3	171.5	1,417.9	575.1	842.8	141.8	0.0	0.0	0.0	701.0	0.0	722.5	520.9	- -	- -
2055	47	1,258.2	172.8	1,431.0	577.8	853.2	143.1	0.0	0.0	0.0	710.1	0.0	731.0	520.8	- -	- -
2056	48	1,270.1	174.1	1,444.3	580.5	863.7	144.4	0.0	0.0	0.0	719.3	0.0	740.2	520.8	- -	- -
2057	49	1,282.2	175.5	1,457.6	583.2	874.4	145.8	0.0	0.0	0.0	728.7	0.0	749.5	520.8	- -	- -
2058	50	1,294.3	176.8	1,471.1	585.9	885.2	147.1	0.0	0.0	0.0	738.1	0.0	758.9	520.8	- -	- -
2059	51	1,306.6	178.1	1,484.8	588.6	896.2	148.5	0.0	0.0	0.0	747.7	0.0	768.5	520.8	- -	- -
2060	52	1,319.0	179.5	1,498.5	591.3	907.2	149.9	0.0	0.0	0.0	757.4	0.0	778.2	520.8	- -	- -
Total		55,788.9	8,611.7	64,400.6	29,230.0	35,170.7	6,440.1	5,536.1	7,958.2	13,494.3	15,236.3	2,723.9	7,114.7			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-19. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						83 7	83 7
1	2009	275 9	190 1	85 8	119 6	-33 8	78 4	44 6
2	2010	290 7	194 6	96 1	122 3	-26 1	246 0	219 8
3	2011	306 0	199 2	106 8	372 1	-265 4	836 3	570 9
4	2012	321 6	203 9	117 8	1,155 4	-1,037 6	1,111 7	74 1
5	2013	337.7	208 6	129 1	1,619 6	-1,490 5	939 6	-550 9
6	2014	354 2	213 4	140 9	1,604 9	-1,464 0	846 1	-617 9
7	2015	371 2	218 2	153 0	1,619 9	-1,466 8	700 8	-766 0
8	2016	388 7	223 1	165.6	1,606 5	-1,440 9	260 3	-1,180 6
9	2017	406 6	228 1	178 5	1,238 4	-1,059 9	-26 3	-1,086 1
10	2018	425 0	233 1	191 9	994 9	-803 0	-732 8	-1,535 8
11	2019	443 9	238 2	205 7	228 6	-22 9	-956 5	-979 4
12	2020	553.2	243 4	309 8	0 0	309 8	-990 4	-680 6
13	2021	560 1	245 7	314.4	0 0	314 4	-1,015.7	-701 3
14	2022	567.1	248 0	319.1	0 0	319 1	-979 4	-660 3
15	2023	574 1	250 3	323 9	0 0	323 9	-918 0	-594 2
16	2024	581 3	252 6	328.7	0 0	328 7	-838 3	-509 6
17	2025	588 5	255 0	333 6	0 0	333 6	-737 9	-404 4
18	2026	595 9	257 3	338 6	0 0	338 6	-647 4	-308 8
19	2027	603 3	259 7	343 6	0 0	343 6	-558 4	-214 8
20	2028	610 9	262 1	348 7	0 0	348 7	-469 5	-120 8
21	2029	618 5	264 6	353 9	0 0	353 9	-401 4	-47 5
22	2030	626 2	267 0	359 2	0 0	359 2	-338 3	20 9
23	2031	634.0	269.5	364 5	0 0	364 5	-289 6	74 9
24	2032	641 9	272 0	369 9	0 0	369 9	-237 4	132 6
25	2033	649 9	274 5	375 4	0 0	375 4	-185 7	189 7
26	2034	658 1	277 1	381 0	0 0	381 0	-135 4	245 6
27	2035	666 3	279 6	386 6	0 0	386 6	-92 9	293 7
28	2036	674 6	282 2	392 4	0 0	392 4	-54 5	337 8
29	2037	683 0	284 8	398 2	0 0	398 2	-26 0	372 2
30	2038	691 5	287 5	404 1	0 0	404 1	-7 1	396 9
31	2039	700 2	290 1	410 0	0 0	410 0	0 0	410 0
32	2040	708 9	292 8	416 1	0 0	416 1	0 0	416 1
33	2041	717 7	295 5	422 2	0 0	422 2	0 0	422 2
34	2042	726 7	298 2	428 5	0 0	428 5	0 0	428 5
35	2043	735 7	301 0	434 8	0 0	434 8	0 0	434 8
36	2044	744 9	303 7	441 2	0 0	441 2	0 0	441 2
37	2045	754 2	306 5	447 6	0 0	447 6	0 0	447 6
38	2046	763 5	309 3	454 2	0 0	454 2	0 0	454 2
39	2047	773 0	312 2	460 9	0 0	460 9	0 0	460 9
40	2048	782 7	315 0	467 6	0 0	467 6	0 0	467 6

Table J-19. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	792 4	317 9	474 4	0 0	474 4	0 0	474 4
42	2050	802 2	320 8	481 4	0 0	481 4	0 0	481 4
43	2051	812 2	323 8	488 4	0 0	488 4	0 0	488 4
44	2052	822 3	326 7	495 5	0 0	495 5	0 0	495 5
45	2053	832 4	329 7	502 7	0 0	502 7	0 0	502 7
46	2054	842 8	332 7	510 0	0 0	510 0	0 0	510 0
47	2055	853 2	335 8	517 4	0 0	517 4	0 0	517 4
48	2056	863 7	338 8	524 9	0 0	524 9	0 0	524 9
49	2057	874 4	341 9	532 5	0 0	532 5	0 0	532 5
50	2058	885.2	345 0	540 2	0 0	540 2	0 0	540 2
51	2059	896 2	348 1	548 0	0 0	548 0	0 0	548 0
52	2060	907 2	351 3	555 9	0 0	555 9	0 0	555 9
Total		33,291 8	14,420 6	18,871 2	10,682 1	8,189 1		2,653 0
				Financial Internal Rate of Return		2 5%		0 9%
				Net Present Value at 8 percent discount rate		-3,630 1		-3,096 3

a/ From Table J-18.

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-20. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009	1	599.9	111.7	711.7	359.4	352.3	71.2	6.2	1.0	7.2	273.9	35.9	0.0	2,199.3	39.0	343.9
2010	2	624.6	113.5	738.1	360.5	377.6	73.8	12.5	2.1	14.5	289.3	36.7	0.0	2,539.9	20.9	196.0
2011	3	650.3	115.3	765.5	361.5	404.0	76.6	31.6	5.2	36.8	290.6	111.6	0.0	2,820.5	8.9	85.6
2012	4	677.0	117.1	794.0	362.6	431.4	79.4	93.5	28.5	122.0	230.0	282.3	0.0	2,881.0	2.9	26.5
2013	5	704.8	118.9	823.7	363.7	460.0	82.4	179.2	63.3	242.5	135.1	385.9	0.0	2,745.5	1.6	12.9
2014	6	733.7	120.8	854.5	364.8	489.7	85.5	260.1	94.7	354.7	49.6	422.8	0.0	2,482.1	1.1	8.1
2015	7	763.9	122.7	886.5	365.8	520.7	88.7	339.3	157.8	497.1	-65.0	419.0	0.0	2,097.3	0.9	5.1
2016	8	795.3	124.6	919.9	366.9	552.9	92.0	413.2	250.2	663.4	-202.5	408.6	0.0	1,570.2	0.7	3.1
2017	9	827.9	126.5	954.5	368.0	586.5	95.4	461.1	322.2	783.3	-292.2	314.7	0.0	1,026.1	0.6	1.9
2018	10	862.0	128.5	990.5	369.1	621.4	99.0	491.1	401.7	892.9	-370.5	237.9	0.0	458.8	0.6	1.1
2019	11	897.4	130.5	1,027.9	370.1	657.8	102.8	473.0	483.5	956.5	-401.5	68.6	0.0	7.0	0.6	0.6
2020	12	1,186.0	132.6	1,318.6	483.4	835.2	131.9	437.2	553.2	990.4	-287.1	0.0	0.0	-279.8	0.7	0.4
2021	13	1,197.3	133.6	1,330.9	486.1	844.8	133.1	396.4	619.3	1,015.7	-304.0	0.0	0.0	-595.0	0.7	0.1
2022	14	1,208.7	134.6	1,343.3	488.8	854.5	134.3	351.7	627.7	979.4	-259.2	0.0	0.0	-878.0	0.7	-0.2
2023	15	1,220.2	135.6	1,355.8	491.5	864.3	135.6	306.6	611.5	918.0	-189.3	0.0	0.0	-1,102.4	0.8	-0.4
2024	16	1,231.8	136.7	1,368.4	494.2	874.3	136.8	262.8	575.5	838.3	-100.9	0.0	0.0	-1,247.4	0.9	-0.6
2025	17	1,243.5	137.7	1,381.2	496.9	884.3	138.1	221.9	516.0	737.9	8.3	0.0	0.0	-1,289.0	1.0	-0.7
2026	18	1,255.3	138.8	1,394.1	499.6	894.5	139.4	185.1	462.3	647.4	107.7	0.0	0.0	-1,232.9	1.2	-0.7
2027	19	1,267.3	139.8	1,407.1	502.3	904.8	140.7	152.1	406.4	558.4	205.7	0.0	0.0	-1,076.5	1.4	-0.6
2028	20	1,279.3	140.9	1,420.2	505.0	915.2	142.0	123.1	346.4	469.5	303.7	0.0	0.0	-815.9	1.6	-0.1
2029	21	1,291.5	141.9	1,433.4	507.7	925.8	143.3	98.3	303.1	401.4	381.0	0.0	0.0	-467.5	1.9	0.8
2030	22	1,303.8	143.0	1,446.8	510.4	936.4	144.7	76.7	261.5	338.3	453.5	0.0	0.0	-32.7	2.3	2.2
2031	23	1,316.2	144.1	1,460.3	513.1	947.2	146.0	58.1	231.5	289.6	511.5	0.0	0.0	477.5	2.8	4.4
2032	24	1,328.7	145.2	1,473.9	515.8	958.1	147.4	41.9	195.4	237.4	573.4	0.0	0.0	1,070.0	3.4	7.9
2033	25	1,341.3	146.3	1,487.6	518.5	969.2	148.8	28.5	157.2	185.7	634.7	0.0	1,204.7	542.8	4.4	7.3
2034	26	1,354.1	147.4	1,501.5	521.2	980.3	150.2	18.0	117.4	135.4	694.8	0.0	737.6	521.7	6.1	10.0
2035	27	1,367.0	148.5	1,515.5	523.9	991.6	151.6	10.2	82.7	92.9	747.2	0.0	768.9	520.9	9.0	14.6
2036	28	1,380.0	149.7	1,529.6	526.6	1,003.1	153.0	4.9	49.7	54.5	795.6	0.0	816.5	520.8	15.6	25.1
2037	29	1,393.1	150.8	1,543.9	529.3	1,014.6	154.4	1.8	24.2	26.0	834.2	0.0	855.1	520.8	33.1	53.1
2038	30	1,406.3	152.0	1,558.3	532.0	1,026.3	155.8	0.4	6.8	7.1	863.4	0.0	884.2	520.8	--	--
2039	31	1,419.7	153.1	1,572.8	534.7	1,038.2	157.3	0.0	0.0	0.0	880.9	0.0	901.7	520.8	--	--
2040	32	1,433.2	154.3	1,587.5	537.4	1,050.2	158.8	0.0	0.0	0.0	891.4	0.0	912.2	520.8	--	--

Table J-20. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,446.9	155.5	1,602.3	540.0	1,062.3	160.2	0.0	0.0	0.0	902.0	0.0	922.9	520.8	--	--
2042	34	1,460.6	156.6	1,617.3	542.7	1,074.5	161.7	0.0	0.0	0.0	912.8	0.0	933.6	520.8	--	--
2043	35	1,474.5	157.8	1,632.3	545.4	1,086.9	163.2	0.0	0.0	0.0	923.7	0.0	944.5	520.8	--	--
2044	36	1,488.5	159.0	1,647.6	548.1	1,099.4	164.8	0.0	0.0	0.0	934.7	0.0	955.5	520.8	--	--
2045	37	1,502.7	160.2	1,662.9	550.8	1,112.1	166.3	0.0	0.0	0.0	945.8	0.0	966.6	520.8	--	--
2046	38	1,517.0	161.4	1,678.4	553.5	1,124.9	167.8	0.0	0.0	0.0	957.1	0.0	977.9	520.8	--	--
2047	39	1,531.4	162.7	1,694.1	556.2	1,137.9	169.4	0.0	0.0	0.0	968.5	0.0	989.3	520.8	--	--
2048	40	1,546.0	163.9	1,709.9	558.9	1,151.0	171.0	0.0	0.0	0.0	980.0	0.0	1,000.8	520.8	--	--
2049	41	1,560.7	165.2	1,725.9	561.6	1,164.2	172.6	0.0	0.0	0.0	991.6	0.0	1,012.5	520.8	--	--
2050	42	1,575.5	166.4	1,742.0	564.3	1,177.6	174.2	0.0	0.0	0.0	1,003.4	0.0	1,024.3	520.8	--	--
2051	43	1,590.5	167.7	1,758.2	567.0	1,191.2	175.8	0.0	0.0	0.0	1,015.4	0.0	1,036.2	520.8	--	--
2052	44	1,605.7	169.0	1,774.6	569.7	1,204.9	177.5	0.0	0.0	0.0	1,027.4	0.0	1,048.3	520.8	--	--
2053	45	1,620.9	170.2	1,791.2	572.4	1,218.7	179.1	0.0	0.0	0.0	1,039.6	0.0	1,060.5	520.8	--	--
2054	46	1,636.3	171.5	1,807.9	575.1	1,232.8	180.8	0.0	0.0	0.0	1,052.0	0.0	1,072.8	520.8	--	--
2055	47	1,651.9	172.8	1,824.7	577.8	1,246.9	182.5	0.0	0.0	0.0	1,064.5	0.0	1,085.3	520.8	--	--
2056	48	1,667.6	174.1	1,841.8	580.5	1,261.3	184.2	0.0	0.0	0.0	1,077.1	0.0	1,097.9	520.8	--	--
2057	49	1,683.5	175.5	1,859.0	583.2	1,275.7	185.9	0.0	0.0	0.0	1,089.9	0.0	1,110.7	520.8	--	--
2058	50	1,699.5	176.8	1,876.3	585.9	1,290.4	187.6	0.0	0.0	0.0	1,102.8	0.0	1,123.6	520.8	--	--
2059	51	1,715.7	178.1	1,893.8	588.6	1,305.2	189.4	0.0	0.0	0.0	1,115.8	0.0	1,136.7	520.8	--	--
2060	52	1,732.0	179.5	1,911.5	591.3	1,320.2	191.2	0.0	0.0	0.0	1,129.1	0.0	1,149.9	520.8	--	--
Total		71,707.1	8,611.7	80,318.8	29,230.0	51,088.9	8,031.9	5,536.1	7,958.2	13,494.3	29,562.7	2,723.9	27,730.5			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-21. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						83 7	83 7
1	2009	352 3	190 1	162 2	119 6	42 5	78 4	120 9
2	2010	377 6	194 6	183 0	122 3	60 7	246 0	306 7
3	2011	404 0	199 2	204 7	372 1	-167 4	836 3	668 9
4	2012	431 4	203 9	227 5	1,155 4	-927 8	1,111 7	183 9
5	2013	460 0	208 6	251 4	1,619 6	-1,368 2	939 6	-428 6
6	2014	489 7	213 4	276 4	1,604 9	-1,328 5	846 1	-482 4
7	2015	520 7	218 2	302 5	1,619 9	-1,317 4	700 8	-616 5
8	2016	552 9	223 1	329 8	1,606 5	-1,276 7	260 3	-1,016 4
9	2017	586 5	228 1	358 4	1,238 4	-880 0	-26 3	-906 2
10	2018	621 4	233 1	388 3	994 9	-606 6	-732 8	-1,339 4
11	2019	657 8	238 2	419 6	228 6	190 9	-956 5	-765 6
12	2020	835 2	243 4	591 8	0 0	591 8	-990 4	-398 6
13	2021	844 8	245 7	599 1	0 0	599 1	-1,015 7	-416 6
14	2022	854 5	248 0	606 5	0 0	606 5	-979 4	-372 9
15	2023	864 3	250 3	614 0	0 0	614 0	-918 0	-304 0
16	2024	874 3	252 6	621 7	0 0	621 7	-838 3	-216 6
17	2025	884 3	255 0	629 4	0 0	629 4	-737 9	-108 6
18	2026	894 5	257 3	637 2	0 0	637 2	-647 4	-10 2
19	2027	904 8	259 7	645 1	0 0	645 1	-558 4	86 6
20	2028	915 2	262 1	653 1	0 0	653 1	-469 5	183 6
21	2029	925 8	264 6	661 2	0 0	661 2	-401 4	259 8
22	2030	936 4	267 0	669 4	0 0	669 4	-338 3	331 1
23	2031	947 2	269 5	677 7	0 0	677 7	-289 6	388 1
24	2032	958 1	272 0	686 1	0 0	686 1	-237 4	448 7
25	2033	969 2	274 5	694 6	0 0	694 6	-185 7	508 9
26	2034	980 3	277 1	703 3	0 0	703 3	-135 4	567 9
27	2035	991 6	279 6	712 0	0 0	712 0	-92 9	619 1
28	2036	1003 1	282 2	720 9	0 0	720 9	-54 5	666 3
29	2037	1014 6	284 8	729 8	0 0	729 8	-26 0	703 8
30	2038	1026 3	287 5	738 9	0 0	738 9	-7 1	731 8
31	2039	1038 2	290 1	748 1	0 0	748 1	0 0	748 1
32	2040	1050 2	292 8	757 4	0 0	757 4	0 0	757 4
33	2041	1062 3	295 5	766 8	0 0	766 8	0 0	766 8
34	2042	1074 5	298 2	776 3	0 0	776 3	0 0	776 3
35	2043	1086 9	301 0	785 9	0 0	785 9	0 0	785 9
36	2044	1099 4	303 7	795 7	0 0	795 7	0 0	795 7
37	2045	1112 1	306 5	805 6	0 0	805 6	0 0	805 6
38	2046	1124 9	309 3	815 6	0 0	815 6	0 0	815 6
39	2047	1137 9	312 2	825 7	0 0	825 7	0 0	825 7
40	2048	1151 0	315 0	835 9	0 0	835 9	0 0	835 9

Table J-21. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1164.2	317.9	846.3	0.0	846.3	0.0	846.3
42	2050	1177.6	320.8	856.8	0.0	856.8	0.0	856.8
43	2051	1191.2	323.8	867.4	0.0	867.4	0.0	867.4
44	2052	1204.9	326.7	878.1	0.0	878.1	0.0	878.1
45	2053	1218.7	329.7	889.0	0.0	889.0	0.0	889.0
46	2054	1232.8	332.7	900.0	0.0	900.0	0.0	900.0
47	2055	1246.9	335.8	911.2	0.0	911.2	0.0	911.2
48	2056	1261.3	338.8	922.4	0.0	922.4	0.0	922.4
49	2057	1275.7	341.9	933.8	0.0	933.8	0.0	933.8
50	2058	1290.4	345.0	945.4	0.0	945.4	0.0	945.4
51	2059	1305.2	348.1	957.1	0.0	957.1	0.0	957.1
52	2060	1320.2	351.3	968.9	0.0	968.9	0.0	968.9
Total		48,905.4	14,420.6	34,484.8	10,682.1	23,802.7		18,266.6
				Financial Internal Rate of Return		6.4%		5.9%
				Net Present Value at 8 percent discount rate		-1,099.9		-753.5

a/ From Table J-20.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-22. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005	1	470.7	105.0	575.6	355.1	220.5	57.6	5.5	0.9	6.4	156.6	31.7	0.0	850.3	25.6	159.1
2006	2	483.4	106.6	590.0	356.2	233.8	59.0	11.0	1.8	12.9	161.9	32.7	0.0	1,013.6	13.6	92.4
2007	3	496.4	108.3	604.7	357.2	247.5	60.5	34.8	5.7	40.5	146.5	138.3	0.0	1,062.2	4.6	30.8
2008	4	509.8	110.0	619.8	358.3	261.5	62.0	187.9	83.0	270.9	-71.3	577.6	0.0	455.7	0.7	2.4
2009	5	523.6	111.7	635.3	359.4	275.9	63.5	268.5	115.6	384.1	-171.7	388.7	0.0	-86.4	0.6	0.3
2010	6	537.7	113.5	651.2	360.5	290.7	65.1	327.7	138.5	466.2	-240.6	347.4	0.0	-677.8	0.5	-1.0
2011	7	552.3	115.3	667.5	361.5	306.0	66.8	395.9	283.4	679.3	-440.1	410.0	0.0	-1,555.1	0.4	-1.9
2012	8	567.2	117.1	684.2	362.6	321.6	68.4	432.1	359.4	791.5	-538.3	308.7	0.0	-2,464.3	0.3	-2.8
2013	9	582.5	118.9	701.4	363.7	337.7	70.1	476.7	401.0	877.7	-610.1	358.5	0.0	-3,531.5	0.3	-3.7
2014	10	598.2	120.8	719.0	364.8	354.2	71.9	511.2	469.3	980.5	-698.1	327.1	0.0	-4,698.0	0.3	-4.5
2015	11	614.4	122.7	737.1	365.8	371.2	73.7	546.4	541.7	1,088.1	-790.6	345.2	0.0	-6,021.7	0.3	-5.3
2016	12	631.0	124.6	755.6	366.9	388.7	75.6	590.2	641.5	1,231.7	-918.6	376.7	0.0	-7,557.8	0.3	-5.9
2017	13	648.0	126.5	774.6	368.0	406.6	77.5	614.6	718.8	1,333.3	-1,004.2	351.5	0.0	-9,215.9	0.2	-6.7
2018	14	665.5	128.5	794.1	369.1	425.0	79.4	628.2	727.8	1,355.9	-1,010.3	314.9	0.0	-10,909.7	0.3	-7.8
2019	15	683.5	130.5	814.1	370.1	443.9	81.4	576.6	776.1	1,352.7	-990.2	10.4	0.0	-12,346.7	0.3	-8.9
2020	16	938.0	132.6	1,070.6	525.8	544.8	107.1	521.0	742.3	1,263.3	-825.5	0.0	0.0	-13,666.1	0.3	-10.5
2021	17	946.3	133.6	1,079.9	528.3	551.6	108.0	466.9	744.5	1,211.3	-767.7	0.0	0.0	-14,980.4	0.4	-12.0
2022	18	954.7	134.6	1,089.3	530.8	558.6	108.9	412.3	752.1	1,164.4	-714.8	0.0	0.0	-16,294.4	0.4	-13.6
2023	19	963.2	135.6	1,098.8	533.2	565.6	109.9	357.5	734.3	1,091.8	-636.2	0.0	0.0	-17,582.3	0.4	-15.7
2024	20	971.7	136.7	1,108.4	535.7	572.7	110.8	304.4	698.0	1,002.4	-540.6	0.0	0.0	-18,826.2	0.5	-18.3
2025	21	980.3	137.7	1,118.0	538.2	579.8	111.8	254.2	645.8	900.1	-432.0	0.0	0.0	-20,011.3	0.5	-21.7
2026	22	989.0	138.8	1,127.8	540.7	587.1	112.8	208.2	578.4	786.7	-312.4	0.0	0.0	-21,124.1	0.6	-26.2
2027	23	997.8	139.8	1,137.6	543.2	594.4	113.8	167.1	511.0	678.1	-197.4	0.0	0.0	-22,166.5	0.7	-32.0
2028	24	1,006.6	140.9	1,147.5	545.6	601.8	114.7	131.5	412.6	544.0	-57.0	0.0	0.0	-23,110.1	0.9	-41.6
2029	25	1,015.5	141.9	1,157.5	548.1	609.4	115.7	102.2	351.5	453.7	39.9	0.0	0.0	-23,994.6	1.1	-51.8
2030	26	1,024.5	143.0	1,167.5	550.6	616.9	116.8	77.6	288.9	366.5	133.7	0.0	0.0	-24,820.7	1.4	-66.4
2031	27	1,033.6	144.1	1,177.7	553.1	624.6	117.8	57.4	236.4	293.8	213.1	0.0	0.0	-25,600.5	1.7	-85.4
2032	28	1,042.8	145.2	1,188.0	555.6	632.4	118.8	41.0	190.6	231.6	282.1	0.0	0.0	-26,342.4	2.2	-111.5
2033	29	1,052.0	146.3	1,198.3	558.0	640.3	119.8	28.1	144.1	172.2	348.3	0.0	0.0	-27,047.8	3.0	-154.1
2034	30	1,061.3	147.4	1,208.7	560.5	648.2	120.9	18.3	114.6	132.9	394.4	0.0	0.0	-27,735.3	--	--
2035	31	1,070.7	148.5	1,219.3	563.0	656.3	121.9	10.6	85.2	95.9	438.5	0.0	0.0	-28,406.3	--	--
2036	32	1,080.2	149.7	1,229.9	565.5	664.4	123.0	5.1	56.9	61.9	479.5	0.0	0.0	-29,063.0	--	--
2037	33	1,089.8	150.8	1,240.6	568.0	672.6	124.1	1.5	27.1	28.6	519.9	0.0	0.0	-29,705.6	--	--
2038	34	1,099.4	152.0	1,251.4	570.4	681.0	125.1	0.1	1.0	1.1	554.7	0.0	0.0	-30,339.1	--	--
2039	35	1,109.2	153.1	1,262.3	572.9	689.4	126.2	0.0	0.0	0.0	563.2	0.0	0.0	-30,989.5	--	--
2040	36	1,119.0	154.3	1,273.3	575.4	697.9	127.3	0.0	0.0	0.0	570.6	0.0	0.0	-31,658.5	--	--
2041	37	1,128.9	155.5	1,284.4	577.9	706.5	128.4	0.0	0.0	0.0	578.1	0.0	0.0	-32,346.8	--	--
2042	38	1,138.9	156.6	1,295.6	580.4	715.2	129.6	0.0	0.0	0.0	585.7	0.0	0.0	-33,055.0	--	--

Table J-22. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ.	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2043	39	1,149.0	157.8	1,306.9	582.8	724.0	130.7	0.0	0.0	0.0	593.3	0.0	0.0	-33,783.9	- -	- -
2044	40	1,159.2	159.0	1,318.2	585.3	732.9	131.8	0.0	0.0	0.0	601.1	0.0	0.0	-34,534.1	- -	- -
2045	41	1,169.5	160.2	1,329.7	587.8	741.9	133.0	0.0	0.0	0.0	608.9	0.0	0.0	-35,306.6	- -	- -
2046	42	1,179.9	161.4	1,341.3	590.3	751.0	134.1	0.0	0.0	0.0	616.9	0.0	0.0	-36,101.9	- -	- -
2047	43	1,190.3	162.7	1,353.0	592.8	760.2	135.3	0.0	0.0	0.0	624.9	0.0	0.0	-36,921.1	- -	- -
2048	44	1,200.9	163.9	1,364.8	595.2	769.5	136.5	0.0	0.0	0.0	633.1	0.0	0.0	-37,764.9	- -	- -
2049	45	1,211.5	165.2	1,376.7	597.7	778.9	137.7	0.0	0.0	0.0	641.3	0.0	0.0	-38,634.2	- -	- -
2050	46	1,222.2	166.4	1,388.7	600.2	788.5	138.9	0.0	0.0	0.0	649.6	0.0	0.0	-39,530.0	- -	- -
2051	47	1,233.1	167.7	1,400.7	602.7	798.1	140.1	0.0	0.0	0.0	658.0	0.0	0.0	-40,453.2	- -	- -
2052	48	1,244.0	169.0	1,412.9	605.2	807.8	141.3	0.0	0.0	0.0	666.5	0.0	0.0	-41,404.8	- -	- -
2053	49	1,255.0	170.2	1,425.3	607.6	817.6	142.5	0.0	0.0	0.0	675.1	0.0	0.0	-42,385.9	- -	- -
2054	50	1,266.1	171.5	1,437.7	610.1	827.6	143.8	0.0	0.0	0.0	683.8	0.0	0.0	-43,397.6	- -	- -
2055	51	1,277.4	172.8	1,450.2	612.6	837.6	145.0	0.0	0.0	0.0	692.6	0.0	0.0	-44,440.9	- -	- -
2056	52	1,288.7	174.1	1,462.8	615.1	847.8	146.3	0.0	0.0	0.0	701.5	0.0	0.0	-45,517.1	- -	- -
2057	53	1,300.1	175.5	1,475.6	617.6	858.0	147.6	0.0	0.0	0.0	710.5	0.0	0.0	-46,627.3	- -	- -
2058	54	1,311.6	176.8	1,488.4	620.0	868.4	148.8	0.0	0.0	0.0	719.5	0.0	0.0	-47,772.8	- -	- -
2059	55	1,323.2	178.1	1,501.4	622.5	878.9	150.1	0.0	0.0	0.0	728.7	0.0	0.0	-48,955.0	- -	- -
2060	56	1,335.0	179.5	1,514.5	625.0	889.5	151.5	0.0	0.0	0.0	738.1	0.0	0.0	-50,175.2	- -	- -
	Total	56,868.5	8,611.7	65,480.2	30,790.0	34,690.2	6,548.0	8,772.2	12,579.9	21,352.1	6,790.1	4,319.4	0.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-23. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							73.9	73.9
2005	1	220.5	172.6	47.9	105.6	-57.7	69.8	12.1
2006	2	233.8	176.9	56.9	108.9	-51.9	309.9	258.0
2007	3	247.5	181.2	66.2	461.1	-394.9	2,158.5	1,763.6
2008	4	261.5	185.6	75.9	2,776.6	-2,700.8	938.9	-1,761.9
2009	5	275.9	190.1	85.8	1,598.4	-1,512.6	541.6	-970.9
2010	6	290.7	194.6	96.1	1,273.1	-1,177.0	633.7	-543.3
2011	7	306.0	199.2	106.8	1,509.9	-1,403.1	98.3	-1,304.8
2012	8	321.6	203.9	117.8	1,086.4	-968.6	175.1	-793.5
2013	9	337.7	208.6	129.1	1,325.1	-1,196.0	0.3	-1,195.6
2014	10	354.2	213.4	140.9	1,205.1	-1,064.2	-18.0	-1,082.2
2015	11	371.2	218.2	153.0	1,307.8	-1,154.7	86.7	-1,068.0
2016	12	388.7	223.1	165.6	1,551.5	-1,385.9	-245.0	-1,630.9
2017	13	406.6	228.1	178.5	1,338.3	-1,159.7	-431.4	-1,591.2
2018	14	425.0	233.1	191.9	1,216.8	-1,024.9	-1,331.6	-2,356.5
2019	15	443.9	238.2	205.7	34.8	171.0	-1,352.7	-1,181.8
2020	16	544.8	243.4	301.4	0.0	301.4	-1,263.3	-961.9
2021	17	551.6	245.7	306.0	0.0	306.0	-1,211.3	-905.4
2022	18	558.6	248.0	310.6	0.0	310.6	-1,164.4	-853.8
2023	19	565.6	250.3	315.3	0.0	315.3	-1,091.8	-776.5
2024	20	572.7	252.6	320.0	0.0	320.0	-1,002.4	-682.4
2025	21	579.8	255.0	324.9	0.0	324.9	-900.1	-575.2
2026	22	587.1	257.3	329.7	0.0	329.7	-786.7	-456.9
2027	23	594.4	259.7	334.7	0.0	334.7	-678.1	-343.4
2028	24	601.8	262.1	339.7	0.0	339.7	-544.0	-204.3
2029	25	609.4	264.6	344.8	0.0	344.8	-453.7	-109.0
2030	26	616.9	267.0	349.9	0.0	349.9	-366.5	-16.6
2031	27	624.6	269.5	355.1	0.0	355.1	-293.8	61.3
2032	28	632.4	272.0	360.4	0.0	360.4	-231.6	128.8
2033	29	640.3	274.5	365.7	0.0	365.7	-172.2	193.6
2034	30	648.2	277.1	371.2	0.0	371.2	-132.9	238.2
2035	31	656.3	279.6	376.6	0.0	376.6	-95.9	280.7
2036	32	664.4	282.2	382.2	0.0	382.2	-61.9	320.3
2037	33	672.6	284.8	387.8	0.0	387.8	-28.6	359.2
2038	34	681.0	287.5	393.5	0.0	393.5	-1.1	392.4
2039	35	689.4	290.1	399.3	0.0	399.3	0.0	399.3
2040	36	697.9	292.8	405.1	0.0	405.1	0.0	405.1
2041	37	706.5	295.5	411.0	0.0	411.0	0.0	411.0
2042	38	715.2	298.2	417.0	0.0	417.0	0.0	417.0
2043	39	724.0	301.0	423.0	0.0	423.0	0.0	423.0
2044	40	732.9	303.7	429.2	0.0	429.2	0.0	429.2
2045	41	741.9	306.5	435.4	0.0	435.4	0.0	435.4
2046	42	751.0	309.3	441.7	0.0	441.7	0.0	441.7

Table J-23. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	760.2	312.2	448.0	0.0	448.0	0.0	448.0
2048	44	769.5	315.0	454.5	0.0	454.5	0.0	454.5
2049	45	778.9	317.9	461.0	0.0	461.0	0.0	461.0
2050	46	788.5	320.8	467.6	0.0	467.6	0.0	467.6
2051	47	798.1	323.8	474.3	0.0	474.3	0.0	474.3
2052	48	807.8	326.7	481.0	0.0	481.0	0.0	481.0
2053	49	817.6	329.7	487.9	0.0	487.9	0.0	487.9
2054	50	827.6	332.7	494.8	0.0	494.8	0.0	494.8
2055	51	837.6	335.8	501.8	0.0	501.8	0.0	501.8
2056	52	847.8	338.8	508.9	0.0	508.9	0.0	508.9
2057	53	858.0	341.9	516.1	0.0	516.1	0.0	516.1
2058	54	868.4	345.0	523.4	0.0	523.4	0.0	523.4
2059	55	878.9	348.1	530.7	0.0	530.7	0.0	530.7
2060	56	889.5	351.3	538.2	0.0	538.2	0.0	538.2
	Total	33,774.7	15,136.9	18,637.7	16,899.3	1,738.5		-7,033.7
				Financial Internal Rate of Return		0.4%		-1.5%
				Net Present Value at 8 percent discount rate		-7,022.9		-6,120.1

a/ From Table J-22.
b/ From Table 6-6.
c/ From Appendix H (base case only)
d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-24. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ.	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005	1	510.7	105.0	615.7	355.1	260.6	61.6	5.5	0.9	6.4	192.6	31.7	0.0	977.6	31.3	184.8
2006	2	531.7	106.6	638.3	356.2	282.1	63.8	11.0	1.8	12.9	205.4	32.7	0.0	1,189.5	17.0	109.4
2007	3	553.5	108.3	661.8	357.2	304.6	66.2	34.8	5.7	40.5	197.9	138.3	0.0	1,296.6	5.9	37.9
2008	4	576.3	110.0	686.3	358.3	327.9	68.6	187.9	83.0	270.9	-11.6	577.6	0.0	759.3	1.0	3.8
2009	5	599.9	111.7	711.7	359.4	352.3	71.2	268.5	115.6	384.1	-103.0	388.7	0.0	298.0	0.7	1.5
2010	6	624.6	113.5	738.1	360.5	377.6	73.8	327.7	138.5	466.2	-162.4	347.4	0.0	-199.9	0.7	0.2
2011	7	650.3	115.3	765.5	361.5	404.0	76.6	395.9	283.4	679.3	-351.9	410.0	0.0	-969.8	0.5	-0.9
2012	8	677.0	117.1	794.0	362.6	431.4	79.4	432.1	359.4	791.5	-439.5	308.7	0.0	-1,756.8	0.4	-1.8
2013	9	704.8	118.9	823.7	363.7	460.0	82.4	476.7	401.0	877.7	-500.1	358.5	0.0	-2,685.7	0.4	-2.6
2014	10	733.7	120.8	854.5	364.8	489.7	85.5	511.2	469.3	980.5	-576.2	327.1	0.0	-3,696.4	0.4	-3.4
2015	11	763.9	122.7	886.5	365.8	520.7	88.7	546.4	541.7	1,088.1	-656.0	345.2	0.0	-4,845.5	0.4	-4.1
2016	12	795.3	124.6	919.9	366.9	552.9	92.0	590.2	641.5	1,231.7	-770.7	376.7	0.0	-6,186.7	0.4	-4.6
2017	13	827.9	126.5	954.5	368.0	586.5	95.4	614.6	718.8	1,333.3	-842.3	351.5	0.0	-7,628.0	0.4	-5.4
2018	14	862.0	128.5	990.5	369.1	621.4	99.0	628.2	727.8	1,355.9	-833.6	314.9	0.0	-9,081.5	0.4	-6.3
2019	15	897.4	130.5	1,027.9	370.1	657.8	102.8	576.6	776.1	1,352.7	-797.7	10.4	0.0	-10,253.0	0.4	-7.2
2020	16	1,221.0	132.6	1,353.6	525.8	827.8	135.4	521.0	742.3	1,263.3	-570.8	0.0	0.0	-11,233.9	0.5	-8.3
2021	17	1,232.1	133.6	1,365.7	528.3	837.4	136.6	466.9	744.5	1,211.3	-510.5	0.0	0.0	-12,193.8	0.6	-9.5
2022	18	1,243.3	134.6	1,377.9	530.8	847.2	137.8	412.3	752.1	1,164.4	-455.0	0.0	0.0	-13,136.5	0.6	-10.7
2023	19	1,254.6	135.6	1,390.3	533.2	857.0	139.0	357.5	734.3	1,091.8	-373.8	0.0	0.0	-14,035.8	0.7	-12.2
2024	20	1,266.0	136.7	1,402.7	535.7	867.0	140.3	304.4	698.0	1,002.4	-275.7	0.0	0.0	-14,872.9	0.7	-14.1
2025	21	1,277.6	137.7	1,415.3	538.2	877.1	141.5	254.2	645.8	900.1	-164.5	0.0	0.0	-15,632.3	0.8	-16.6
2026	22	1,289.2	138.8	1,427.9	540.7	887.3	142.8	208.2	578.4	786.7	-42.2	0.0	0.0	-16,299.8	0.9	-19.8
2027	23	1,300.9	139.8	1,440.7	543.2	897.6	144.1	167.1	511.0	678.1	75.4	0.0	0.0	-16,876.4	1.1	-23.8
2028	24	1,312.7	140.9	1,453.6	545.6	908.0	145.4	131.5	412.6	544.0	218.6	0.0	0.0	-17,332.9	1.4	-30.5
2029	25	1,324.7	141.9	1,466.6	548.1	918.5	146.7	102.2	351.5	453.7	318.1	0.0	0.0	-17,708.1	1.7	-37.3
2030	26	1,336.7	143.0	1,479.8	550.6	929.2	148.0	77.6	288.9	366.5	414.7	0.0	0.0	-18,001.7	2.1	-47.0
2031	27	1,348.9	144.1	1,493.0	553.1	939.9	149.3	57.4	236.4	293.8	496.9	0.0	0.0	-18,224.9	2.7	-59.3
2032	28	1,361.2	145.2	1,506.4	555.6	950.8	150.6	41.0	190.6	231.6	568.6	0.0	0.0	-18,385.3	3.5	-75.9
2033	29	1,373.5	146.3	1,519.9	558.0	961.8	152.0	28.1	144.1	172.2	637.7	0.0	0.0	-18,483.1	4.7	-102.7
2034	30	1,386.0	147.4	1,533.5	560.5	972.9	153.3	18.3	114.6	132.9	686.7	0.0	0.0	-18,535.7	--	--
2035	31	1,398.7	148.5	1,547.2	563.0	984.2	154.7	10.6	85.2	95.9	733.6	0.0	0.0	-18,543.6	--	--
2036	32	1,411.4	149.7	1,561.1	565.5	995.6	156.1	5.1	56.9	61.9	777.5	0.0	0.0	-18,507.8	--	--
2037	33	1,424.2	150.8	1,575.0	568.0	1,007.1	157.5	1.5	27.1	28.6	820.9	0.0	0.0	-18,427.1	--	--
2038	34	1,437.2	152.0	1,589.1	570.4	1,018.7	158.9	0.1	1.0	1.1	858.7	0.0	0.0	-18,305.5	--	--
2039	35	1,450.2	153.1	1,603.4	572.9	1,030.4	160.3	0.0	0.0	0.0	870.1	0.0	0.0	-18,167.7	--	--
2040	36	1,463.4	154.3	1,617.7	575.4	1,042.3	161.8	0.0	0.0	0.0	880.5	0.0	0.0	-18,013.8	--	--
2041	37	1,476.7	155.5	1,632.2	577.9	1,054.3	163.2	0.0	0.0	0.0	891.1	0.0	0.0	-17,843.3	--	--
2042	38	1,490.2	156.6	1,646.8	580.4	1,066.5	164.7	0.0	0.0	0.0	901.8	0.0	0.0	-17,655.2	--	--

Table J-24. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,503.7	157.8	1,661.6	582.8	1,078.7	166.2	0.0	0.0	0.0	912.6	0.0	0.0	-17,448.9	--	--
2044	40	1,517.4	159.0	1,676.4	585.3	1,091.1	167.6	0.0	0.0	0.0	923.5	0.0	0.0	-17,223.4	--	--
2045	41	1,531.2	160.2	1,691.5	587.8	1,103.7	169.1	0.0	0.0	0.0	934.5	0.0	0.0	-16,977.8	--	--
2046	42	1,545.2	161.4	1,706.6	590.3	1,116.3	170.7	0.0	0.0	0.0	945.7	0.0	0.0	-16,711.2	--	--
2047	43	1,559.2	162.7	1,721.9	592.8	1,129.1	172.2	0.0	0.0	0.0	956.9	0.0	0.0	-16,422.7	--	--
2048	44	1,573.4	163.9	1,737.3	595.2	1,142.1	173.7	0.0	0.0	0.0	968.3	0.0	0.0	-16,111.3	--	--
2049	45	1,587.7	165.2	1,752.9	597.7	1,155.1	175.3	0.0	0.0	0.0	979.9	0.0	0.0	-15,775.9	--	--
2050	46	1,602.1	166.4	1,768.6	600.2	1,168.4	176.9	0.0	0.0	0.0	991.5	0.0	0.0	-15,415.4	--	--
2051	47	1,616.7	167.7	1,784.4	602.7	1,181.7	178.4	0.0	0.0	0.0	1,003.3	0.0	0.0	-15,028.8	--	--
2052	48	1,631.4	169.0	1,800.4	605.2	1,195.2	180.0	0.0	0.0	0.0	1,015.2	0.0	0.0	-14,614.7	--	--
2053	49	1,646.3	170.2	1,816.5	607.6	1,208.9	181.7	0.0	0.0	0.0	1,027.2	0.0	0.0	-14,172.1	--	--
2054	50	1,661.2	171.5	1,832.8	610.1	1,222.7	183.3	0.0	0.0	0.0	1,039.4	0.0	0.0	-13,699.6	--	--
2055	51	1,676.4	172.8	1,849.2	612.6	1,236.6	184.9	0.0	0.0	0.0	1,051.7	0.0	0.0	-13,195.9	--	--
2056	52	1,691.6	174.1	1,865.8	615.1	1,250.7	186.6	0.0	0.0	0.0	1,064.1	0.0	0.0	-12,659.7	--	--
2057	53	1,707.0	175.5	1,882.5	617.6	1,264.9	188.2	0.0	0.0	0.0	1,076.7	0.0	0.0	-12,089.4	--	--
2058	54	1,722.5	176.8	1,899.3	620.0	1,279.3	189.9	0.0	0.0	0.0	1,089.4	0.0	0.0	-11,483.6	--	--
2059	55	1,738.2	178.1	1,916.3	622.5	1,293.8	191.6	0.0	0.0	0.0	1,102.2	0.0	0.0	-10,840.8	--	--
2060	56	1,754.0	179.5	1,933.5	625.0	1,308.5	193.4	0.0	0.0	0.0	1,115.2	0.0	0.0	-10,159.2	--	--
	Total	72,921.4	8,611.7	81,533.1	30,790.0	50,743.1	8,153.3	8,772.2	12,579.9	21,352.1	21,237.7	4,319.4	0.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-25. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							73 9	73 9
2005	1	260.6	172 6	88 0	105 6	-17 6	69 8	52 2
2006	2	282.1	176 9	105 2	108 9	-3 6	309 9	306 3
2007	3	304 6	181 2	123 3	461 1	-337 8	2,158 5	1,820 7
2008	4	327.9	185 6	142 3	2,776 6	-2,634 3	938 9	-1,695 5
2009	5	352 3	190 1	162 2	1,598 4	-1,436 2	541 6	-894 6
2010	6	377 6	194 6	183 0	1,273 1	-1,090 2	633.7	-456 5
2011	7	404 0	199.2	204 7	1,509 9	-1,305 1	98 3	-1,206 8
2012	8	431 4	203 9	227 5	1,086 4	-858 8	175.1	-683 7
2013	9	460 0	208 6	251 4	1,325 1	-1,073 7	0 3	-1,073 4
2014	10	489 7	213 4	276 4	1,205 1	-928.7	-18 0	-946 7
2015	11	520 7	218 2	302 5	1,307 8	-1,005 2	86 7	-918 5
2016	12	552 9	223 1	329 8	1,551 5	-1,221 7	-245 0	-1,466 7
2017	13	586 5	228 1	358 4	1,338 3	-979 8	-431 4	-1,411 3
2018	14	621 4	233 1	388 3	1,216 8	-828 4	-1,331 6	-2,160 0
2019	15	657 8	238 2	419.6	34 8	384 8	-1,352 7	-967 9
2020	16	827 8	243 4	584 4	0 0	584 4	-1,263 3	-678 9
2021	17	837 4	245 7	591 8	0 0	591 8	-1,211 3	-619 6
2022	18	847 2	248 0	599 2	0 0	599.2	-1,164 4	-565 2
2023	19	857.0	250 3	606 8	0 0	606 8	-1,091 8	-485 1
2024	20	867 0	252 6	614 4	0 0	614 4	-1,002 4	-388 0
2025	21	877.1	255 0	622 1	0 0	622 1	-900 1	-277 9
2026	22	887 3	257 3	629 9	0 0	629 9	-786 7	-156 7
2027	23	897.6	259 7	637 8	0 0	637 8	-678 1	-40 2
2028	24	908 0	262 1	645 8	0 0	645 8	-544 0	101 8
2029	25	918 5	264 6	653 9	0 0	653 9	-453 7	200 2
2030	26	929 2	267 0	662 1	0 0	662 1	-366 5	295 7
2031	27	939 9	269 5	670 4	0 0	670 4	-293 8	376 6
2032	28	950 8	272 0	678 8	0 0	678 8	-231 6	447 2
2033	29	961 8	274 5	687 3	0 0	687 3	-172 2	515 1
2034	30	972 9	277 1	695 9	0 0	695 9	-132 9	562 9
2035	31	984 2	279 6	704 6	0 0	704 6	-95 9	608 7
2036	32	995 6	282 2	713 3	0 0	713.3	-61 9	651 4
2037	33	1,007 1	284 8	722 2	0 0	722 2	-28 6	693 6
2038	34	1,018 7	287 5	731 2	0 0	731 2	-1 1	730 1
2039	35	1,030 4	290 1	740 3	0 0	740 3	0 0	740 3
2040	36	1,042 3	292 8	749 5	0 0	749 5	0 0	749 5
2041	37	1,054 3	295 5	758 8	0 0	758 8	0 0	758 8
2042	38	1,066 5	298 2	768 2	0 0	768 2	0 0	768 2
2043	39	1,078 7	301 0	777 8	0 0	777 8	0 0	777 8
2044	40	1,091 1	303 7	787 4	0 0	787 4	0 0	787 4
2045	41	1,103 7	306 5	797 1	0 0	797 1	0 0	797 1
2046	42	1,116 3	309 3	807 0	0 0	807 0	0 0	807 0

Table J-25. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	1,129.1	312.2	816.9	0.0	816.9	0.0	816.9
2048	44	1,142.1	315.0	827.0	0.0	827.0	0.0	827.0
2049	45	1,155.1	317.9	837.2	0.0	837.2	0.0	837.2
2050	46	1,168.4	320.8	847.5	0.0	847.5	0.0	847.5
2051	47	1,181.7	323.8	857.9	0.0	857.9	0.0	857.9
2052	48	1,195.2	326.7	868.5	0.0	868.5	0.0	868.5
2053	49	1,208.9	329.7	879.1	0.0	879.1	0.0	879.1
2054	50	1,222.7	332.7	889.9	0.0	889.9	0.0	889.9
2055	51	1,236.6	335.8	900.8	0.0	900.8	0.0	900.8
2056	52	1,250.7	338.8	911.9	0.0	911.9	0.0	911.9
2057	53	1,264.9	341.9	923.0	0.0	923.0	0.0	923.0
2058	54	1,279.3	345.0	934.3	0.0	934.3	0.0	934.3
2059	55	1,293.8	348.1	945.7	0.0	945.7	0.0	945.7
2060	56	1,308.5	351.3	957.2	0.0	957.2	0.0	957.2
	Total	49,734.9	15,136.9	34,597.9	16,899.3	17,698.7		8,926.5
				Financial Internal Rate of Return		3.1%		1.6%
				Net Present Value at 8 percent discount rate		-4,982.3		-4,230.7

a/ From Table J-24.
b/ From Table 6-6.
c/ From Appendix H (base case only)
d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-26. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net	Payment	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Income from Operations	to Panama d/	Int.	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009		523.6	111.7	635.3	359.4	275.9	63.5	0.0	0.0	0.0	212.4	0.0	0.0	1,858.0	--	--
2010	1	537.7	113.5	651.2	360.5	290.7	65.1	3.4	0.6	4.0	221.6	19.9	0.0	2,134.1	56.4	590.3
2011	2	552.3	115.3	667.5	361.5	306.0	66.8	6.9	1.1	8.0	231.2	20.3	0.0	2,430.3	29.8	332.3
2012	3	567.2	117.1	684.2	362.6	321.6	68.4	17.5	2.9	20.3	232.9	61.7	0.0	2,698.8	12.4	145.1
2013	4	582.5	118.9	701.4	363.7	337.7	70.1	55.8	16.9	72.7	194.9	177.6	0.0	2,824.0	3.7	42.5
2014	5	598.2	120.8	719.0	364.8	354.2	71.9	107.3	39.2	146.4	135.9	222.8	0.0	2,850.0	1.9	21.4
2015	6	614.4	122.7	737.1	365.8	371.2	73.7	150.6	55.6	206.2	91.3	231.8	0.0	2,823.6	1.4	15.1
2016	7	631.0	124.6	755.6	366.9	388.7	75.6	193.4	90.0	283.4	29.7	235.6	0.0	2,730.7	1.1	10.7
2017	8	648.0	126.5	774.6	368.0	406.6	77.5	227.3	144.4	371.7	-42.6	193.2	0.0	2,604.2	0.9	7.9
2018	9	665.5	128.5	794.1	369.1	425.0	79.4	246.0	184.0	429.9	-84.3	131.3	0.0	2,492.7	0.8	6.6
2019	10	683.5	130.5	814.1	370.1	443.9	81.4	256.9	221.6	478.5	-116.0	101.0	0.0	2,375.4	0.8	5.7
2020	11	904.0	132.6	1,036.6	475.1	561.5	103.7	240.4	264.4	504.8	-47.0	0.0	0.0	2,423.5	0.9	5.7
2021	12	911.9	133.6	1,045.5	477.8	567.7	104.5	220.8	305.6	526.4	-63.3	0.0	0.0	2,457.1	0.9	5.5
2022	13	919.8	134.6	1,054.4	480.5	573.9	105.4	198.3	338.8	537.1	-68.5	0.0	0.0	2,486.9	0.9	5.5
2023	14	927.8	135.6	1,063.5	483.2	580.3	106.3	173.9	336.0	509.9	-36.0	0.0	0.0	2,550.4	0.9	5.9
2024	15	935.9	136.7	1,072.6	485.9	586.7	107.3	150.0	319.1	469.1	10.4	0.0	2,060.8	602.0	1.0	2.3
2025	16	944.1	137.7	1,081.8	488.6	593.2	108.2	127.3	293.4	420.7	64.4	0.0	166.4	524.1	1.2	2.4
2026	17	952.3	138.8	1,091.1	491.3	599.8	109.1	106.5	258.1	364.7	126.0	0.0	150.1	521.0	1.3	2.8
2027	18	960.6	139.8	1,100.4	494.0	606.4	110.0	88.1	231.3	319.5	176.9	0.0	197.9	520.8	1.6	3.2
2028	19	969.0	140.9	1,109.8	496.7	613.2	111.0	71.6	202.7	274.3	227.8	0.0	248.7	520.8	1.8	3.7
2029	20	977.4	141.9	1,119.4	499.4	620.0	111.9	57.2	172.2	229.5	278.6	0.0	299.4	520.8	2.2	4.5
2030	21	985.9	143.0	1,129.0	502.1	626.9	112.9	44.9	149.5	194.4	319.6	0.0	340.4	520.8	2.6	5.3
2031	22	994.5	144.1	1,138.6	504.8	633.9	113.9	34.4	126.0	160.3	359.7	0.0	380.5	520.8	3.2	6.5
2032	23	1,003.2	145.2	1,148.4	507.5	640.9	114.8	25.5	111.0	136.4	389.7	0.0	410.5	520.8	3.9	7.7
2033	24	1,011.9	146.3	1,158.2	510.2	648.1	115.8	17.8	91.5	109.3	423.0	0.0	443.8	520.8	4.9	9.6
2034	25	1,020.7	147.4	1,168.2	512.9	655.3	116.8	11.6	72.3	83.9	454.6	0.0	475.5	520.8	6.4	12.6
2035	26	1,029.6	148.5	1,178.2	515.6	662.6	117.8	6.8	52.3	59.1	485.7	0.0	506.6	520.8	9.2	18.0
2036	27	1,038.6	149.7	1,188.3	518.3	670.0	118.8	3.4	32.1	35.4	515.8	0.0	536.6	520.8	15.6	30.2
2037	28	1,047.7	150.8	1,198.5	521.0	677.5	119.8	1.4	16.5	17.9	539.8	0.0	560.6	520.8	31.2	60.3

Table J-26. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,056.8	152.0	1,208.7	523.7	685.1	120.9	0.4	6.7	7.0	557.2	0.0	578.0	520.8	80.2	154.2
2039	30	1,066.0	153.1	1,219.1	526.4	692.8	121.9	0.0	0.0	0.0	570.8	0.0	591.7	520.8	--	--
2040	31	1,075.3	154.3	1,229.6	529.1	700.5	123.0	0.0	0.0	0.0	577.6	0.0	598.4	520.8	--	--
2041	32	1,084.6	155.5	1,240.1	531.7	708.3	124.0	0.0	0.0	0.0	584.3	0.0	605.2	520.8	--	--
2042	33	1,094.1	156.6	1,250.7	534.4	716.3	125.1	0.0	0.0	0.0	591.2	0.0	612.0	520.8	--	--
2043	34	1,103.6	157.8	1,261.5	537.1	724.3	126.1	0.0	0.0	0.0	598.2	0.0	619.0	520.8	--	--
2044	35	1,113.2	159.0	1,272.3	539.8	732.4	127.2	0.0	0.0	0.0	605.2	0.0	626.0	520.8	--	--
2045	36	1,122.9	160.2	1,283.2	542.5	740.6	128.3	0.0	0.0	0.0	612.3	0.0	633.2	520.8	--	--
2046	37	1,132.7	161.4	1,294.2	545.2	748.9	129.4	0.0	0.0	0.0	619.5	0.0	640.4	520.8	--	--
2047	38	1,142.6	162.7	1,305.3	547.9	757.3	130.5	0.0	0.0	0.0	626.8	0.0	647.6	520.8	--	--
2048	39	1,152.6	163.9	1,316.5	550.6	765.8	131.6	0.0	0.0	0.0	634.2	0.0	655.0	520.8	--	--
2049	40	1,162.6	165.2	1,327.8	553.3	774.4	132.8	0.0	0.0	0.0	641.7	0.0	662.5	520.8	--	--
2050	41	1,172.7	166.4	1,339.1	556.0	783.1	133.9	0.0	0.0	0.0	649.2	0.0	670.0	520.8	--	--
2051	42	1,182.9	167.7	1,350.6	558.7	791.9	135.1	0.0	0.0	0.0	656.8	0.0	677.7	520.8	--	--
2052	43	1,193.3	169.0	1,362.2	561.4	800.8	136.2	0.0	0.0	0.0	664.6	0.0	685.4	520.8	--	--
2053	44	1,203.6	170.2	1,373.9	564.1	809.8	137.4	0.0	0.0	0.0	672.4	0.0	693.2	520.8	--	--
2054	45	1,214.1	171.5	1,385.7	566.8	818.9	138.6	0.0	0.0	0.0	680.3	0.0	701.1	520.8	--	--
2055	46	1,224.7	172.8	1,397.5	569.5	828.0	139.8	0.0	0.0	0.0	688.3	0.0	709.1	520.8	--	--
2056	47	1,235.4	174.1	1,409.5	572.2	837.3	141.0	0.0	0.0	0.0	696.4	0.0	717.2	520.8	--	--
2057	48	1,246.1	175.5	1,421.6	574.9	846.7	142.2	0.0	0.0	0.0	704.6	0.0	725.4	520.8	--	--
2058	49	1,257.0	176.8	1,433.8	577.6	856.2	143.4	0.0	0.0	0.0	712.8	0.0	733.7	520.8	--	--
2059	50	1,268.0	178.1	1,446.1	580.3	865.8	144.6	0.0	0.0	0.0	721.2	0.0	742.0	520.8	--	--
2060	51	1,279.0	179.5	1,458.5	583.0	875.5	145.9	0.0	0.0	0.0	729.7	0.0	750.5	520.8	--	--
	Total	55,057.3	8,611.7	63,669.0	28,889.7	34,779.3	6,366.9	2,845.1	4,135.6	6,980.8	21,431.7	1,395.1	22,052.0			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-27. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							46.4	46.4
2010	1	290.7	194.6	96.1	66.3	29.8	43.4	73.2
2011	2	306.0	199.2	106.8	67.7	39.1	135.8	174.9
2012	3	321.6	203.9	117.8	205.5	-87.7	519.3	431.6
2013	4	337.7	208.6	129.1	717.2	-588.1	671.0	82.9
2014	5	354.2	213.4	140.9	966.5	-825.6	490.7	-335.0
2015	6	371.2	218.2	153.0	868.9	-715.8	444.4	-271.5
2016	7	388.7	223.1	165.6	886.1	-720.6	285.8	-434.7
2017	8	406.6	228.1	178.5	762.4	-583.9	39.5	-544.4
2018	9	425.0	233.1	191.9	542.5	-350.6	-83.3	-433.8
2019	10	443.9	238.2	205.7	447.7	-242.0	-478.5	-720.5
2020	11	561.5	243.4	318.1	0.0	318.1	-504.8	-186.7
2021	12	567.7	245.7	322.0	0.0	322.0	-526.4	-204.4
2022	13	573.9	248.0	326.0	0.0	326.0	-537.1	-211.1
2023	14	580.3	250.3	330.0	0.0	330.0	-509.9	-179.9
2024	15	586.7	252.6	334.1	0.0	334.1	-469.1	-135.0
2025	16	593.2	255.0	338.2	0.0	338.2	-420.7	-82.4
2026	17	599.8	257.3	342.4	0.0	342.4	-364.7	-22.2
2027	18	606.4	259.7	346.7	0.0	346.7	-319.5	27.3
2028	19	613.2	262.1	351.0	0.0	351.0	-274.3	76.7
2029	20	620.0	264.6	355.4	0.0	355.4	-229.5	126.0
2030	21	626.9	267.0	359.8	0.0	359.8	-194.4	165.5
2031	22	633.9	269.5	364.3	0.0	364.3	-160.3	204.0
2032	23	640.9	272.0	368.9	0.0	368.9	-136.4	232.5
2033	24	648.1	274.5	373.5	0.0	373.5	-109.3	264.3
2034	25	655.3	277.1	378.2	0.0	378.2	-83.9	294.4
2035	26	662.6	279.6	383.0	0.0	383.0	-59.1	323.9
2036	27	670.0	282.2	387.8	0.0	387.8	-35.4	352.4
2037	28	677.5	284.8	392.7	0.0	392.7	-17.9	374.8
2038	29	685.1	287.5	397.6	0.0	397.6	-7.0	390.6
2039	30	692.8	290.1	402.6	0.0	402.6	0.0	402.6
2040	31	700.5	292.8	407.7	0.0	407.7	0.0	407.7
2041	32	708.3	295.5	412.8	0.0	412.8	0.0	412.8
2042	33	716.3	298.2	418.1	0.0	418.1	0.0	418.1
2043	34	724.3	301.0	423.3	0.0	423.3	0.0	423.3
2044	35	732.4	303.7	428.7	0.0	428.7	0.0	428.7
2045	36	740.6	306.5	434.1	0.0	434.1	0.0	434.1
2046	37	748.9	309.3	439.6	0.0	439.6	0.0	439.6

Table J-27. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	757 3	312 2	445 2	0 0	445 2	0 0	445 2
2048	39	765 8	315 0	450 8	0 0	450 8	0 0	450 8
2049	40	774 4	317 9	456 5	0 0	456 5	0 0	456 5
2050	41	783 1	320 8	462 3	0 0	462 3	0 0	462 3
2051	42	791 9	323 8	468 1	0 0	468 1	0 0	468 1
2052	43	800 8	326 7	474 0	0 0	474 0	0 0	474 0
2053	44	809 8	329 7	480 0	0 0	480 0	0 0	480 0
2054	45	818 9	332 7	486 1	0 0	486 1	0 0	486 1
2055	46	828 0	335 8	492 3	0 0	492 3	0 0	492 3
2056	47	837 3	338 8	498 5	0 0	498 5	0 0	498 5
2057	48	846 7	341 9	504 8	0 0	504 8	0 0	504 8
2058	49	856 2	345 0	511 2	0 0	511 2	0 0	511 2
2059	50	865 8	348 1	517 7	0 0	517 7	0 0	517 7
2060	51	875 5	351 3	524 2	0 0	524 2	0 0	524 2
	Total	32,624 5	14,230 5	18,394 0	5,530 7	12,863 3		9,971 8
				Financial Internal Rate of Return		6 7%		6 5%
				Net Present Value at 8 percent discount rate		-449 7		-275 1

a/ From Table J-26

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-28. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net	Payment	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Oper. & Maint. c/	Income from Operations	to Panama d/	Int	Princ.	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009		599.9	111.7	711.7	359.4	352.3	71.2	0.0	0.0	0.0	281.1	0.0	0.0	2,242.4	--	--
2010	1	624.6	113.5	738.1	360.5	377.6	73.8	3.4	0.6	4.0	299.8	19.9	0.0	2,612.0	76.0	729.5
2011	2	650.3	115.3	765.5	361.5	404.0	76.6	6.9	1.1	8.0	319.4	20.3	0.0	3,015.6	40.8	416.1
2012	3	677.0	117.1	794.0	362.6	431.4	79.4	17.5	2.9	20.3	331.7	61.7	0.0	3,406.2	17.3	184.8
2013	4	704.8	118.9	823.7	363.7	460.0	82.4	55.8	16.9	72.7	304.9	177.6	0.0	3,669.8	5.2	55.7
2014	5	733.7	120.8	854.5	364.8	489.7	85.5	107.3	39.2	146.4	257.9	222.8	0.0	3,851.6	2.8	29.1
2015	6	763.9	122.7	886.5	365.8	520.7	88.7	150.6	55.6	206.2	225.8	231.8	0.0	3,999.7	2.1	21.5
2016	7	795.3	124.6	919.9	366.9	552.9	92.0	193.4	90.0	283.4	177.6	235.6	0.0	4,101.8	1.6	16.1
2017	8	827.9	126.5	954.5	368.0	586.5	95.4	227.3	144.4	371.7	119.4	193.2	0.0	4,192.0	1.3	12.6
2018	9	862.0	128.5	990.5	369.1	621.4	99.0	246.0	184.0	429.9	92.5	131.3	0.0	4,320.9	1.2	11.3
2019	10	897.4	130.5	1,027.9	370.1	657.8	102.8	256.9	221.6	478.5	76.5	101.0	0.0	4,469.2	1.2	10.5
2020	11	1,175.0	132.6	1,307.6	475.1	832.5	130.8	240.4	264.4	504.8	196.9	0.0	4,166.1	678.8	1.4	2.7
2021	12	1,184.8	133.6	1,318.4	477.8	840.6	131.8	220.8	305.6	526.4	182.4	0.0	361.1	527.2	1.3	2.3
2022	13	1,194.7	134.6	1,329.3	480.5	848.8	132.9	198.3	338.8	537.1	178.8	0.0	206.0	521.1	1.3	2.3
2023	14	1,204.6	135.6	1,340.3	483.2	857.1	134.0	173.9	336.0	509.9	213.2	0.0	234.3	520.8	1.4	2.4
2024	15	1,214.7	136.7	1,351.4	485.9	865.5	135.1	150.0	319.1	469.1	261.3	0.0	282.1	520.8	1.6	2.7
2025	16	1,224.8	137.7	1,362.5	488.6	873.9	136.3	127.3	293.4	420.7	317.0	0.0	337.9	520.8	1.8	3.0
2026	17	1,235.0	138.8	1,373.8	491.3	882.5	137.4	106.5	258.1	364.7	380.5	0.0	401.3	520.8	2.0	3.5
2027	18	1,245.3	139.8	1,385.2	494.0	891.2	138.5	88.1	231.3	319.5	433.2	0.0	454.0	520.8	2.4	4.0
2028	19	1,255.7	140.9	1,396.6	496.7	899.9	139.7	71.6	202.7	274.3	485.9	0.0	506.8	520.8	2.8	4.7
2029	20	1,266.2	141.9	1,408.1	499.4	908.8	140.8	57.2	172.2	229.5	538.5	0.0	559.3	520.8	3.3	5.6
2030	21	1,276.8	143.0	1,419.8	502.1	917.7	142.0	44.9	149.5	194.4	581.4	0.0	602.2	520.8	4.0	6.7
2031	22	1,287.4	144.1	1,431.5	504.8	926.7	143.2	34.4	126.0	160.3	623.3	0.0	644.1	520.8	4.9	8.1
2032	23	1,298.1	145.2	1,443.4	507.5	935.9	144.3	25.5	111.0	136.4	655.1	0.0	676.0	520.8	5.8	9.6
2033	24	1,309.0	146.3	1,455.3	510.2	945.1	145.5	17.8	91.5	109.3	690.3	0.0	711.1	520.8	7.3	12.1
2034	25	1,319.9	147.4	1,467.3	512.9	954.4	146.7	11.6	72.3	83.9	723.9	0.0	744.7	520.8	9.6	15.8
2035	26	1,330.9	148.5	1,479.4	515.6	963.9	147.9	6.8	52.3	59.1	756.9	0.0	777.7	520.8	13.8	22.6
2036	27	1,342.0	149.7	1,491.7	518.3	973.4	149.2	3.4	32.1	35.4	788.8	0.0	809.6	520.8	23.3	38.0
2037	28	1,353.2	150.8	1,504.0	521.0	983.0	150.4	1.4	16.5	17.9	814.8	0.0	835.6	520.8	46.6	75.7

Table J-28. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364.5	152.0	1,516.4	523.7	992.8	151.6	0.4	6.7	7.0	834.1	0.0	854.9	520.8	119.6	193.6
2039	30	1,375.8	153.1	1,529.0	526.4	1,002.6	152.9	0.0	0.0	0.0	849.7	0.0	870.5	520.8	- -	- -
2040	31	1,387.3	154.3	1,541.6	529.1	1,012.6	154.2	0.0	0.0	0.0	858.4	0.0	879.2	520.8	- -	- -
2041	32	1,398.9	155.5	1,554.3	531.7	1,022.6	155.4	0.0	0.0	0.0	867.2	0.0	888.0	520.8	- -	- -
2042	33	1,410.6	156.6	1,567.2	534.4	1,032.7	156.7	0.0	0.0	0.0	876.0	0.0	896.9	520.8	- -	- -
2043	34	1,422.3	157.8	1,580.1	537.1	1,043.0	158.0	0.0	0.0	0.0	885.0	0.0	905.8	520.8	- -	- -
2044	35	1,434.2	159.0	1,593.2	539.8	1,053.4	159.3	0.0	0.0	0.0	894.0	0.0	914.9	520.8	- -	- -
2045	36	1,446.1	160.2	1,606.4	542.5	1,063.8	160.6	0.0	0.0	0.0	903.2	0.0	924.0	520.8	- -	- -
2046	37	1,458.2	161.4	1,619.7	545.2	1,074.4	162.0	0.0	0.0	0.0	912.5	0.0	933.3	520.8	- -	- -
2047	38	1,470.4	162.7	1,633.0	547.9	1,085.1	163.3	0.0	0.0	0.0	921.8	0.0	942.6	520.8	- -	- -
2048	39	1,482.6	163.9	1,646.5	550.6	1,095.9	164.7	0.0	0.0	0.0	931.3	0.0	952.1	520.8	- -	- -
2049	40	1,495.0	165.2	1,660.2	553.3	1,106.8	166.0	0.0	0.0	0.0	940.8	0.0	961.6	520.8	- -	- -
2050	41	1,507.5	166.4	1,673.9	556.0	1,117.9	167.4	0.0	0.0	0.0	950.5	0.0	971.3	520.8	- -	- -
2051	42	1,520.0	167.7	1,687.7	558.7	1,129.0	168.8	0.0	0.0	0.0	960.2	0.0	981.1	520.8	- -	- -
2052	43	1,532.7	169.0	1,701.7	561.4	1,140.2	170.2	0.0	0.0	0.0	970.1	0.0	990.9	520.8	- -	- -
2053	44	1,545.5	170.2	1,715.7	564.1	1,151.6	171.6	0.0	0.0	0.0	980.0	0.0	1,000.9	520.8	- -	- -
2054	45	1,558.4	171.5	1,729.9	566.8	1,163.1	173.0	0.0	0.0	0.0	990.1	0.0	1,010.9	520.8	- -	- -
2055	46	1,571.4	172.8	1,744.2	569.5	1,174.7	174.4	0.0	0.0	0.0	1,000.3	0.0	1,021.1	520.8	- -	- -
2056	47	1,584.5	174.1	1,758.6	572.2	1,186.4	175.9	0.0	0.0	0.0	1,010.6	0.0	1,031.4	520.8	- -	- -
2057	48	1,597.7	175.5	1,773.2	574.9	1,198.3	177.3	0.0	0.0	0.0	1,021.0	0.0	1,041.8	520.8	- -	- -
2058	49	1,611.0	176.8	1,787.8	577.6	1,210.2	178.8	0.0	0.0	0.0	1,031.4	0.0	1,052.3	520.8	- -	- -
2059	50	1,624.5	178.1	1,802.6	580.3	1,222.3	180.3	0.0	0.0	0.0	1,042.0	0.0	1,062.9	520.8	- -	- -
2060	51	1,638.0	179.5	1,817.5	583.0	1,234.5	181.8	0.0	0.0	0.0	1,052.8	0.0	1,073.6	520.8	- -	- -
	Total	69,730.8	8,611.7	78,342.5	28,889.7	49,452.9	7,834.3	2,845.1	4,135.6	6,980.8	34,637.9	1,395.1	35,471.9			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-29. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							46 4	46 4
2010	1	377 6	194 6	183 0	66 3	116 7	43 4	160 0
2011	2	404 0	199 2	204 7	67 7	137 1	135 8	272 9
2012	3	431 4	203 9	227 5	205 5	22 0	519 3	541 3
2013	4	460 0	208 6	251 4	717 2	-465 8	671 0	205 2
2014	5	489 7	213 4	276 4	966 5	-690 1	490 7	-199 5
2015	6	520 7	218 2	302 5	868 9	-566 4	444 4	-122 0
2016	7	552 9	223 1	329 8	886 1	-556 3	285 8	-270 5
2017	8	586 5	228 1	358 4	762 4	-404 0	39 5	-364 5
2018	9	621 4	233 1	388 3	542 5	-154 2	-83 3	-237 4
2019	10	657 8	238 2	419 6	447 7	-28 1	-478 5	-506 6
2020	11	832 5	243 4	589 1	0 0	589 1	-504 8	84 3
2021	12	840 6	245 7	594 9	0 0	594 9	-526 4	68 5
2022	13	848 8	248 0	600 8	0 0	600 8	-537 1	63 8
2023	14	857 1	250 3	606 8	0 0	606 8	-509 9	96 9
2024	15	865 5	252 6	612 9	0 0	612 9	-469 1	143 8
2025	16	873 9	255 0	619 0	0 0	619 0	-420 7	198 3
2026	17	882 5	257 3	625 2	0 0	625 2	-364 7	260 5
2027	18	891 2	259 7	631 4	0 0	631 4	-319 5	312 0
2028	19	899 9	262 1	637 8	0 0	637 8	-274 3	363 4
2029	20	908 8	264 6	644 2	0 0	644 2	-229 5	414 7
2030	21	917 7	267 0	650 7	0 0	650 7	-194 4	456 3
2031	22	926 7	269 5	657 2	0 0	657 2	-160 3	496 9
2032	23	935 9	272 0	663 9	0 0	663 9	-136 4	527 5
2033	24	945 1	274 5	670 6	0 0	670 6	-109 3	561 3
2034	25	954 4	277 1	677 4	0 0	677 4	-83 9	593 5
2035	26	963 9	279 6	684 2	0 0	684 2	-59 1	625 2
2036	27	973 4	282 2	691 2	0 0	691 2	-35 4	655 7
2037	28	983 0	284 8	698 2	0 0	698 2	-17 9	680 3
2038	29	992 8	287 5	705 3	0 0	705 3	-7 0	698 3
2039	30	1,002 6	290 1	712 5	0 0	712 5	0 0	712 5
2040	31	1,012 6	292 8	719 7	0 0	719 7	0 0	719 7
2041	32	1,022 6	295 5	727 1	0 0	727 1	0 0	727 1
2042	33	1,032 7	298 2	734 5	0 0	734 5	0 0	734 5
2043	34	1,043 0	301 0	742 0	0 0	742 0	0 0	742 0
2044	35	1,053 4	303 7	749 6	0 0	749 6	0 0	749 6
2045	36	1,063 8	306 5	757 3	0 0	757 3	0 0	757 3
2046	37	1,074 4	309 3	765 1	0 0	765 1	0 0	765 1

Table J-29. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	312.2	772.9	0.0	772.9	0.0	772.9
2048	39	1,095.9	315.0	780.9	0.0	780.9	0.0	780.9
2049	40	1,106.8	317.9	788.9	0.0	788.9	0.0	788.9
2050	41	1,117.9	320.8	797.0	0.0	797.0	0.0	797.0
2051	42	1,129.0	323.8	805.2	0.0	805.2	0.0	805.2
2052	43	1,140.2	326.7	813.5	0.0	813.5	0.0	813.5
2053	44	1,151.6	329.7	821.9	0.0	821.9	0.0	821.9
2054	45	1,163.1	332.7	830.4	0.0	830.4	0.0	830.4
2055	46	1,174.7	335.8	838.9	0.0	838.9	0.0	838.9
2056	47	1,186.4	338.8	847.6	0.0	847.6	0.0	847.6
2057	48	1,198.3	341.9	856.4	0.0	856.4	0.0	856.4
2058	49	1,210.2	345.0	865.2	0.0	865.2	0.0	865.2
2059	50	1,222.3	348.1	874.2	0.0	874.2	0.0	874.2
2060	51	1,234.5	351.3	883.2	0.0	883.2	0.0	883.2
	Total	46,917.1	14,230.5	32,686.6	5,530.7	27,155.9		24,264.4
				Financial Internal Rate of Return		15.1%		28.2%
				Net Present Value at 8 percent discount rate		2,091.9		2,078.2

a/ From Table J-28.

b/ From Table 6-6.

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-30. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int.	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009	1	523.6	111.7	635.3	359.4	275.9	63.5	3.7	0.6	4.3	208.1	21.5	0.0	1,832.1	49.1	472.5
2010	2	537.7	113.5	651.2	360.5	290.7	65.1	7.5	1.2	8.7	216.9	22.0	0.0	2,100.3	25.9	267.2
2011	3	552.3	115.3	667.5	361.5	306.0	66.8	18.9	3.1	22.1	217.2	67.0	0.0	2,334.5	10.8	116.6
2012	4	567.2	117.1	684.2	362.6	321.6	68.4	56.1	17.1	73.2	180.0	169.4	0.0	2,438.5	3.5	36.8
2013	5	582.5	118.9	701.4	363.7	337.7	70.1	107.5	38.0	145.5	122.1	231.5	0.0	2,426.6	1.8	18.5
2014	6	598.2	120.8	719.0	364.8	354.2	71.9	156.0	56.8	212.8	69.5	253.7	0.0	2,339.5	1.3	12.3
2015	7	614.4	122.7	737.1	365.8	371.2	73.7	203.6	94.7	298.2	-0.7	251.4	0.0	2,181.0	1.0	8.3
2016	8	631.0	124.6	755.6	366.9	388.7	75.6	247.9	150.1	398.0	-84.9	245.2	0.0	1,938.1	0.8	5.7
2017	9	648.0	126.5	774.6	368.0	406.6	77.5	276.6	193.3	470.0	-140.8	188.8	0.0	1,686.0	0.7	4.3
2018	10	665.5	128.5	794.1	369.1	425.0	79.4	294.7	241.0	535.7	-190.1	142.7	0.0	1,420.6	0.6	3.3
2019	11	683.5	130.5	814.1	370.1	443.9	81.4	283.8	290.1	573.9	-211.4	41.2	0.0	1,224.9	0.6	2.8
2020	12	904.0	132.6	1,036.6	483.4	553.2	103.7	262.3	331.9	594.2	-144.7	0.0	0.0	1,129.2	0.8	2.7
2021	13	912.6	133.6	1,046.2	486.1	560.1	104.6	237.8	371.6	609.4	-153.9	0.0	0.0	1,020.4	0.7	2.4
2022	14	921.2	134.6	1,055.9	488.8	567.1	105.6	211.0	376.6	587.6	-126.2	0.0	0.0	935.1	0.8	2.4
2023	15	930.0	135.6	1,065.6	491.5	574.1	106.6	183.9	366.9	550.8	-83.2	0.0	0.0	889.2	0.8	2.5
2024	16	938.8	136.7	1,075.5	494.2	581.3	107.5	157.7	345.3	503.0	-29.2	0.0	0.0	895.6	0.9	2.7
2025	17	947.7	137.7	1,085.4	496.9	588.5	108.5	133.1	309.6	442.8	37.2	0.0	432.8	535.8	1.1	2.3
2026	18	956.7	138.8	1,095.5	499.6	595.9	109.5	111.0	277.4	388.4	97.9	0.0	133.7	521.4	1.3	2.6
2027	19	965.8	139.8	1,105.6	502.3	603.3	110.6	91.2	243.8	335.1	157.7	0.0	179.1	520.9	1.5	3.0
2028	20	975.0	140.9	1,115.8	505.0	610.9	111.6	73.9	207.8	281.7	217.6	0.0	238.4	520.8	1.8	3.6
2029	21	984.2	141.9	1,126.2	507.7	618.5	112.6	59.0	181.8	240.8	265.0	0.0	285.9	520.8	2.1	4.3
2030	22	993.5	143.0	1,136.6	510.4	626.2	113.7	46.0	156.9	203.0	309.6	0.0	330.4	520.8	2.5	5.1
2031	23	1,003.0	144.1	1,147.1	513.1	634.0	114.7	34.9	138.9	173.8	345.5	0.0	366.4	520.8	3.0	6.0
2032	24	1,012.5	145.2	1,157.7	515.8	641.9	115.8	25.2	117.3	142.4	383.7	0.0	404.6	520.8	3.7	7.4
2033	25	1,022.1	146.3	1,168.4	518.5	649.9	116.8	17.1	94.3	111.4	421.7	0.0	442.5	520.8	4.8	9.5
2034	26	1,031.8	147.4	1,179.2	521.2	658.1	117.9	10.8	70.5	81.2	458.9	0.0	479.7	520.8	6.6	13.1
2035	27	1,041.6	148.5	1,190.1	523.9	666.3	119.0	6.1	49.6	55.7	491.5	0.0	512.4	520.8	9.8	19.2
2036	28	1,051.5	149.7	1,201.2	526.6	674.6	120.1	2.9	29.8	32.7	521.8	0.0	542.6	520.8	16.9	32.9
2037	29	1,061.5	150.8	1,212.3	529.3	683.0	121.2	1.1	14.5	15.6	546.2	0.0	567.0	520.8	36.0	69.3
2038	30	1,071.5	152.0	1,223.5	532.0	691.5	122.3	0.2	4.1	4.3	564.9	0.0	585.7	520.8	--	--
2039	31	1,081.7	153.1	1,234.8	534.7	700.2	123.5	0.0	0.0	0.0	576.7	0.0	597.5	520.8	--	--
2040	32	1,092.0	154.3	1,246.2	537.4	708.9	124.6	0.0	0.0	0.0	584.3	0.0	605.1	520.8	--	--

Table J-30. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,102.3	155.5	1,257.8	540.0	717.7	125.8	0.0	0.0	0.0	592.0	0.0	612.8	520.8	--	--
2042	34	1,112.8	156.6	1,269.4	542.7	726.7	126.9	0.0	0.0	0.0	599.7	0.0	620.6	520.8	--	--
2043	35	1,123.3	157.8	1,281.2	545.4	735.7	128.1	0.0	0.0	0.0	607.6	0.0	628.4	520.8	--	--
2044	36	1,134.0	159.0	1,293.0	548.1	744.9	129.3	0.0	0.0	0.0	615.6	0.0	636.4	520.8	--	--
2045	37	1,144.8	160.2	1,305.0	550.8	754.2	130.5	0.0	0.0	0.0	623.7	0.0	644.5	520.8	--	--
2046	38	1,155.6	161.4	1,317.1	553.5	763.5	131.7	0.0	0.0	0.0	631.8	0.0	652.7	520.8	--	--
2047	39	1,166.6	162.7	1,329.3	556.2	773.0	132.9	0.0	0.0	0.0	640.1	0.0	661.0	520.8	--	--
2048	40	1,177.7	163.9	1,341.6	558.9	782.7	134.2	0.0	0.0	0.0	648.5	0.0	669.3	520.8	--	--
2049	41	1,188.8	165.2	1,354.0	561.6	792.4	135.4	0.0	0.0	0.0	657.0	0.0	677.8	520.8	--	--
2050	42	1,200.1	166.4	1,366.5	564.3	802.2	136.7	0.0	0.0	0.0	665.6	0.0	686.4	520.8	--	--
2051	43	1,211.5	167.7	1,379.2	567.0	812.2	137.9	0.0	0.0	0.0	674.3	0.0	695.1	520.8	--	--
2052	44	1,223.0	169.0	1,392.0	569.7	822.3	139.2	0.0	0.0	0.0	683.1	0.0	703.9	520.8	--	--
2053	45	1,234.6	170.2	1,404.9	572.4	832.4	140.5	0.0	0.0	0.0	692.0	0.0	712.8	520.8	--	--
2054	46	1,246.3	171.5	1,417.9	575.1	842.8	141.8	0.0	0.0	0.0	701.0	0.0	721.8	520.8	--	--
2055	47	1,258.2	172.8	1,431.0	577.8	853.2	143.1	0.0	0.0	0.0	710.1	0.0	730.9	520.8	--	--
2056	48	1,270.1	174.1	1,444.3	580.5	863.7	144.4	0.0	0.0	0.0	719.3	0.0	740.2	520.8	--	--
2057	49	1,282.2	175.5	1,457.6	583.2	874.4	145.8	0.0	0.0	0.0	728.7	0.0	749.5	520.8	--	--
2058	50	1,294.3	176.8	1,471.1	585.9	885.2	147.1	0.0	0.0	0.0	738.1	0.0	758.9	520.8	--	--
2059	51	1,306.6	178.1	1,484.8	588.6	896.2	148.5	0.0	0.0	0.0	747.7	0.0	768.5	520.8	--	--
2060	52	1,319.0	179.5	1,498.5	591.3	907.2	149.9	0.0	0.0	0.0	757.4	0.0	778.2	520.8	--	--
Total		55,788.9	8,611.7	64,400.6	29,230.0	35,170.7	6,440.1	3,321.7	4,774.9	8,096.6	20,634.0	1,634.4	20,553.6			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-31. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						50 2	50 2
1	2009	275 9	190 1	85 8	71 8	14 0	47 0	61 1
2	2010	290.7	194 6	96 1	73 4	22 8	147 6	170 4
3	2011	306 0	199 2	106 8	223 3	-116 5	501 8	385 3
4	2012	321.6	203 9	117 8	693 2	-575 5	667 0	91 6
5	2013	337.7	208.6	129.1	971 8	-842 6	563 8	-278 9
6	2014	354 2	213 4	140 9	962 9	-822 0	507 7	-314 4
7	2015	371.2	218 2	153 0	971 9	-818 9	420 5	-398 4
8	2016	388.7	223 1	165 6	963 9	-798 3	156 2	-642 2
9	2017	406 6	228 1	178 5	743 0	-564 5	-15 8	-580 3
10	2018	425 0	233 1	191 9	596 9	-405 0	-439 7	-844 7
11	2019	443 9	238 2	205 7	137 2	68 5	-573 9	-505 4
12	2020	553 2	243 4	309 8	0 0	309 8	-594 2	-284 4
13	2021	560 1	245 7	314 4	0 0	314 4	-609 4	-295 0
14	2022	567 1	248 0	319 1	0 0	319.1	-587 6	-268 5
15	2023	574.1	250 3	323 9	0 0	323 9	-550 8	-227 0
16	2024	581.3	252 6	328 7	0 0	328 7	-503 0	-174 3
17	2025	588 5	255 0	333 6	0 0	333 6	-442 8	-109 2
18	2026	595 9	257 3	338 6	0 0	338 6	-388 4	-49 9
19	2027	603 3	259 7	343 6	0 0	343 6	-335 1	8 5
20	2028	610 9	262 1	348 7	0 0	348 7	-281 7	67 0
21	2029	618 5	264 6	353 9	0 0	353 9	-240 8	113 1
22	2030	626 2	267 0	359 2	0 0	359 2	-203 0	156 2
23	2031	634 0	269 5	364 5	0 0	364 5	-173 8	190 7
24	2032	641 9	272 0	369 9	0 0	369 9	-142 4	227 5
25	2033	649 9	274 5	375 4	0 0	375 4	-111 4	264 0
26	2034	658 1	277.1	381 0	0 0	381 0	-81 2	299 8
27	2035	666.3	279 6	386 6	0 0	386 6	-55 7	330 9
28	2036	674 6	282 2	392 4	0 0	392 4	-32 7	359 6
29	2037	683 0	284 8	398 2	0 0	398 2	-15 6	382 6
30	2038	691 5	287 5	404 1	0 0	404 1	-4 3	399 8
31	2039	700 2	290 1	410 0	0 0	410.0	0 0	410 0
32	2040	708 9	292 8	416.1	0 0	416 1	0 0	416 1
33	2041	717 7	295 5	422 2	0 0	422.2	0 0	422 2
34	2042	726 7	298 2	428 5	0 0	428 5	0 0	428 5
35	2043	735 7	301 0	434 8	0 0	434 8	0 0	434 8
36	2044	744 9	303 7	441 2	0 0	441 2	0 0	441 2
37	2045	754 2	306 5	447 6	0 0	447 6	0 0	447 6
38	2046	763 5	309 3	454 2	0 0	454 2	0 0	454 2
39	2047	773 0	312 2	460 9	0 0	460 9	0 0	460 9
40	2048	782 7	315 0	467 6	0 0	467 6	0 0	467 6

Table J-31. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	792 4	317 9	474 4	0 0	474 4	0 0	474 4
42	2050	802 2	320 8	481 4	0 0	481 4	0 0	481 4
43	2051	812 2	323 8	488 4	0 0	488 4	0 0	488 4
44	2052	822 3	326 7	495 5	0 0	495 5	0 0	495 5
45	2053	832 4	329 7	502 7	0 0	502 7	0 0	502 7
46	2054	842 8	332 7	510 0	0 0	510 0	0 0	510 0
47	2055	853 2	335 8	517 4	0 0	517 4	0 0	517 4
48	2056	863 7	338 8	524 9	0 0	524 9	0 0	524 9
49	2057	874 4	341 9	532 5	0 0	532 5	0 0	532 5
50	2058	885 2	345 0	540 2	0 0	540 2	0 0	540 2
51	2059	896 2	348 1	548 0	0 0	548 0	0 0	548 0
52	2060	907 2	351 3	555 9	0 0	555 9	0 0	555 9
Total		33,291 8	14,420 6	18,871 2	6,409 3	12,461 9		9,140 3
				Financial Internal Rate of Return		5 5%		4 6%
				Net Present Value at 8 percent discount rate		-1,044 0		-807 7

a/ From Table J-30.

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-32. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417 6	97 1	514 7	349 7	164 9	51 5	0 0	0 0	0 0	113 5	0 0	0 0	113 5	- -	- -
2001		434 7	98 6	533 4	350 8	182 6	53 3	0 0	0 0	0 0	129 2	0 0	0 0	247 2	- -	- -
2002		452 6	100 2	552 8	351 9	200 9	55 3	0 0	0 0	0 0	145 6	0 0	0 0	402 7	- -	- -
2003		471 2	101 7	572 9	353 0	220 0	57 3	0 0	0 0	0 0	162 7	0 0	0 0	581 5	- -	- -
2004		490 5	103 3	593 9	354 0	239 9	59 4	0 0	0 0	0 0	180 5	0 0	0 0	785 3	- -	- -
2005		510 7	105 0	615 7	355 1	260 6	61 6	0 0	0 0	0 0	199 0	0 0	0 0	1,015 7	- -	- -
2006		531 7	106 6	638.3	356 2	282 1	63 8	0 0	0 0	0 0	218 3	0 0	0 0	1,274 6	- -	- -
2007		553 5	108 3	661.8	357 2	304 6	66 2	0 0	0 0	0 0	238 4	0 0	0 0	1,564 0	- -	- -
2008		576 3	110 0	686 3	358 3	327 9	68 6	0 0	0 0	0 0	259 3	0 0	0 0	1,885 9	- -	- -
2009	1	599 9	111 7	711 7	359 4	352.3	71 2	3 7	0 6	4 3	276 8	21 5	0 0	2,216 5	65 0	577 2
2010	2	624 6	113 5	738 1	360 5	377 6	73 8	7 5	1 2	8 7	295 1	22 0	0 0	2,578 3	34 9	331 1
2011	3	650 3	115 3	765.5	361 5	404 0	76 6	18 9	3 1	22 1	305 3	67 0	0 0	2,919 8	14 8	147 1
2012	4	677 0	117 1	794.0	362 6	431.4	79.4	56 1	17 1	73 2	278 8	169 4	0 0	3,146 0	4 8	47 8
2013	5	704 8	118.9	823 7	363 7	460 0	82 4	107 5	38 0	145 5	232 1	231 5	0 0	3,272 4	2 6	25 1
2014	6	733 7	120 8	854 5	364 8	489 7	85 5	156 0	56 8	212 8	191 5	253 7	0 0	3,341 1	1 9	17 6
2015	7	763 9	122 7	886 5	365 8	520 7	88 7	203 6	94 7	298 2	133 8	251 4	0 0	3,357 2	1 4	12 7
2016	8	795 3	124 6	919 9	366.9	552 9	92 0	247 9	150 1	398 0	62 9	245 2	0 0	3,309 2	1 2	9 5
2017	9	827 9	126 5	954 5	368 0	586 5	95 4	276 6	193 3	470 0	21 1	188 8	0 0	3,273 8	1 0	8 0
2018	10	862 0	128 5	990 5	369 1	621.4	99 0	294 7	241 0	535 7	-13 3	142 7	0 0	3,248 7	1 0	7 0
2019	11	897 4	130 5	1,027 9	370 1	657 8	102 8	283 8	290 1	573 9	-18 9	41 2	0 0	3,318 6	1 0	6 7
2020	12	1,186 0	132 6	1,318 6	483 4	835 2	131 9	262 3	331 9	594 2	109 1	0 0	2,927 7	632 7	1 2	2 2
2021	13	1,197 3	133 6	1,330 9	486 1	844 8	133 1	237 8	371 6	609 4	102 3	0 0	235 0	525 3	1 2	2 0
2022	14	1,208 7	134 6	1,343 3	488 8	854 5	134 3	211 0	376 6	587 6	132 5	0 0	157 8	521 0	1 2	2 1
2023	15	1,220 2	135 6	1,355 8	491 5	864 3	135 6	183 9	366 9	550 8	177 9	0 0	198 9	520 8	1 3	2 3
2024	16	1,231 8	136 7	1,368 4	494 2	874 3	136 8	157 7	345 3	503 0	234 4	0 0	255 3	520 8	1 5	2 5
2025	17	1,243 5	137 7	1,381 2	496 9	884 3	138 1	133 1	309 6	442 8	303 4	0 0	324 3	520 8	1 7	2 9
2026	18	1,255 3	138 8	1,394 1	499 6	894 5	139 4	111 0	277 4	388 4	366 7	0 0	387 5	520 8	1 9	3 3
2027	19	1,267 3	139 8	1,407.1	502 3	904 8	140 7	91 2	243 8	335 1	429 0	0 0	449 9	520 8	2 3	3 8
2028	20	1,279 3	140 9	1,420 2	505 0	915 2	142 0	73 9	207 8	281 7	491 5	0 0	512 3	520 8	2 7	4 6
2029	21	1,291 5	141 9	1,433 4	507 7	925 8	143 3	59 0	181 8	240 8	541 6	0 0	562 4	520 8	3 2	5 4
2030	22	1,303 8	143 0	1,446 8	510 4	936 4	144 7	46 0	156 9	203 0	588 8	0 0	609 6	520 8	3 9	6 5
2031	23	1,316 2	144 1	1,460 3	513 1	947 2	146 0	34 9	138 9	173 8	627 4	0 0	648 2	520 8	4 6	7 6
2032	24	1,328 7	145 2	1,473 9	515 8	958.1	147 4	25 2	117 3	142 4	668 3	0 0	689 2	520 8	5 7	9 3
2033	25	1,341 3	146 3	1,487 6	518 5	969 2	148 8	17 1	94 3	111 4	709 0	0 0	729 8	520 8	7 4	12 0
2034	26	1,354 1	147 4	1,501 5	521 2	980 3	150 2	10 8	70 5	81 2	749 0	0 0	769 8	520 8	10 2	16 6
2035	27	1,367 0	148 5	1,515 5	523 9	991 6	151 6	6 1	49 6	55 7	784 4	0 0	805 2	520 8	15 1	24 4
2036	28	1,380 0	149 7	1,529 6	526 6	1,003 1	153 0	2 9	29 8	32 7	817 4	0 0	838 2	520 8	26 0	41 9
2037	29	1,393 1	150 8	1,543 9	529 3	1,014 6	154 4	1 1	14 5	15 6	844 6	0 0	865 5	520 8	55 1	88 5
2038	30	1,406 3	152 0	1,558 3	532 0	1,026 3	155 8	0 2	4 1	4 3	866 2	0 0	887 1	520 8	- -	- -
2039	31	1,419 7	153 1	1,572 8	534 7	1,038 2	157 3	0 0	0 0	0 0	880 9	0 0	901 7	520 8	- -	- -
2040	32	1,433 2	154 3	1,587 5	537 4	1,050 2	158 8	0 0	0 0	0 0	891 4	0 0	912 2	520 8	- -	- -

Table J-32. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2041	33	1,446.9	155.5	1,602.3	540.0	1,062.3	160.2	0.0	0.0	0.0	902.0	0.0	922.9	520.8	- -	- -
2042	34	1,460.6	156.6	1,617.3	542.7	1,074.5	161.7	0.0	0.0	0.0	912.8	0.0	933.6	520.8	- -	- -
2043	35	1,474.5	157.8	1,632.3	545.4	1,086.9	163.2	0.0	0.0	0.0	923.7	0.0	944.5	520.8	- -	- -
2044	36	1,488.5	159.0	1,647.6	548.1	1,099.4	164.8	0.0	0.0	0.0	934.7	0.0	955.5	520.8	- -	- -
2045	37	1,502.7	160.2	1,662.9	550.8	1,112.1	166.3	0.0	0.0	0.0	945.8	0.0	966.6	520.8	- -	- -
2046	38	1,517.0	161.4	1,678.4	553.5	1,124.9	167.8	0.0	0.0	0.0	957.1	0.0	977.9	520.8	- -	- -
2047	39	1,531.4	162.7	1,694.1	556.2	1,137.9	169.4	0.0	0.0	0.0	968.5	0.0	989.3	520.8	- -	- -
2048	40	1,546.0	163.9	1,709.9	558.9	1,151.0	171.0	0.0	0.0	0.0	980.0	0.0	1,000.8	520.8	- -	- -
2049	41	1,560.7	165.2	1,725.9	561.6	1,164.2	172.6	0.0	0.0	0.0	991.6	0.0	1,012.5	520.8	- -	- -
2050	42	1,575.5	166.4	1,742.0	564.3	1,177.6	174.2	0.0	0.0	0.0	1,003.4	0.0	1,024.3	520.8	- -	- -
2051	43	1,590.5	167.7	1,758.2	567.0	1,191.2	175.8	0.0	0.0	0.0	1,015.4	0.0	1,036.2	520.8	- -	- -
2052	44	1,605.7	169.0	1,774.6	569.7	1,204.9	177.5	0.0	0.0	0.0	1,027.4	0.0	1,048.3	520.8	- -	- -
2053	45	1,620.9	170.2	1,791.2	572.4	1,218.7	179.1	0.0	0.0	0.0	1,039.6	0.0	1,060.5	520.8	- -	- -
2054	46	1,636.3	171.5	1,807.9	575.1	1,232.8	180.8	0.0	0.0	0.0	1,052.0	0.0	1,072.8	520.8	- -	- -
2055	47	1,651.9	172.8	1,824.7	577.8	1,246.9	182.5	0.0	0.0	0.0	1,064.5	0.0	1,085.3	520.8	- -	- -
2056	48	1,667.6	174.1	1,841.8	580.5	1,261.3	184.2	0.0	0.0	0.0	1,077.1	0.0	1,097.9	520.8	- -	- -
2057	49	1,683.5	175.5	1,859.0	583.2	1,275.7	185.9	0.0	0.0	0.0	1,089.9	0.0	1,110.7	520.8	- -	- -
2058	50	1,699.5	176.8	1,876.3	585.9	1,290.4	187.6	0.0	0.0	0.0	1,102.8	0.0	1,123.6	520.8	- -	- -
2059	51	1,715.7	178.1	1,893.8	588.6	1,305.2	189.4	0.0	0.0	0.0	1,115.8	0.0	1,136.7	520.8	- -	- -
2060	52	1,732.0	179.5	1,911.5	591.3	1,320.2	191.2	0.0	0.0	0.0	1,129.1	0.0	1,149.9	520.8	- -	- -
Total		71,707.1	8,611.7	80,318.8	29,230.0	51,088.9	8,031.9	3,321.7	4,774.9	8,096.6	34,960.4	1,634.4	35,317.3			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-33. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						50 2	50 2
1	2009	352 3	190 1	162 2	71 8	90 4	47 0	137 4
2	2010	377 6	194 6	183 0	73 4	109 6	147 6	257 2
3	2011	404 0	199 2	204 7	223 3	-18 5	501 8	483 3
4	2012	431 4	203 9	227 5	693 2	-465 7	667 0	201 3
5	2013	460 0	208 6	251 4	971 8	-720 4	563 8	-156 6
6	2014	489 7	213 4	276 4	962 9	-686 5	507 7	-178 9
7	2015	520 7	218 2	302 5	971 9	-669 4	420 5	-248 9
8	2016	552 9	223 1	329 8	963 9	-634 1	156 2	-477 9
9	2017	586 5	228 1	358 4	743 0	-384 6	-15 8	-400 4
10	2018	621 4	233 1	388 3	596 9	-208 6	-439 7	-648 3
11	2019	657 8	238 2	419 6	137 2	282 4	-573 9	-291 5
12	2020	835 2	243 4	591 8	0 0	591 8	-594 2	-2 4
13	2021	844 8	245 7	599 1	0 0	599 1	-609 4	-10 3
14	2022	854 5	248 0	606 5	0 0	606 5	-587 6	18 9
15	2023	864 3	250 3	614 0	0 0	614 0	-550 8	63 2
16	2024	874 3	252 6	621 7	0 0	621 7	-503 0	118 7
17	2025	884 3	255 0	629 4	0 0	629 4	-442 8	186 6
18	2026	894 5	257 3	637 2	0 0	637 2	-388 4	248 7
19	2027	904 8	259 7	645 1	0 0	645 1	-335 1	310 0
20	2028	915 2	262 1	653 1	0 0	653 1	-281 7	371 4
21	2029	925 8	264 6	661 2	0 0	661 2	-240 8	420 4
22	2030	936 4	267 0	669 4	0 0	669 4	-203 0	466 4
23	2031	947 2	269 5	677 7	0 0	677 7	-173 8	503 9
24	2032	958 1	272 0	686 1	0 0	686 1	-142 4	543 7
25	2033	969 2	274 5	694 6	0 0	694 6	-111 4	583 2
26	2034	980 3	277 1	703 3	0 0	703 3	-81 2	622 0
27	2035	991 6	279 6	712 0	0 0	712 0	-55 7	656 3
28	2036	1003 1	282 2	720 9	0 0	720 9	-32 7	688 1
29	2037	1014 6	284 8	729 8	0 0	729 8	-15 6	714 2
30	2038	1026 3	287 5	738 9	0 0	738 9	-4 3	734 6
31	2039	1038 2	290 1	748 1	0 0	748 1	0 0	748 1
32	2040	1050 2	292 8	757 4	0 0	757 4	0 0	757 4
33	2041	1062 3	295 5	766 8	0 0	766 8	0 0	766 8
34	2042	1074 5	298 2	776 3	0 0	776 3	0 0	776 3
35	2043	1086 9	301 0	785 9	0 0	785 9	0 0	785 9
36	2044	1099 4	303 7	795 7	0 0	795 7	0 0	795 7
37	2045	1112 1	306 5	805 6	0 0	805 6	0 0	805 6
38	2046	1124 9	309 3	815 6	0 0	815 6	0 0	815 6
39	2047	1137 9	312 2	825 7	0 0	825 7	0 0	825 7
40	2048	1151 0	315 0	835 9	0 0	835 9	0 0	835 9

Table J-33. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1164 2	317 9	846 3	0 0	846 3	0 0	846 3
42	2050	1177 6	320 8	856 8	0 0	856 8	0 0	856 8
43	2051	1191 2	323 8	867 4	0 0	867 4	0 0	867 4
44	2052	1204 9	326 7	878 1	0 0	878 1	0 0	878 1
45	2053	1218.7	329 7	889 0	0 0	889 0	0 0	889 0
46	2054	1232 8	332 7	900 0	0 0	900 0	0 0	900 0
47	2055	1246 9	335 8	911 2	0 0	911 2	0 0	911 2
48	2056	1261 3	338 8	922 4	0 0	922 4	0 0	922 4
49	2057	1275.7	341 9	933 8	0 0	933 8	0 0	933 8
50	2058	1290 4	345 0	945 4	0 0	945 4	0 0	945 4
51	2059	1305 2	348 1	957 1	0 0	957 1	0 0	957 1
52	2060	1320 2	351 3	968 9	0 0	968 9	0 0	968 9
Total		48,905 4	14,420 6	34,484 8	6,409 3	28,075 5		24,753 9
				Financial Internal Rate of Return:		11 9%		21 1%
				Net Present Value at 8 percent discount rate:		1,486 2		1,535 1

a/ From Table J-32

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-34. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005	1	470.7	105.0	575.6	355.1	220.5	57.6	3.3	0.5	3.8	159.1	19.0	0.0	865.5	42.7	269.2
2006	2	483.4	106.6	590.0	356.2	233.8	59.0	6.6	1.1	7.7	167.1	19.6	0.0	1,047.6	22.6	158.4
2007	3	496.4	108.3	604.7	357.2	247.5	60.5	9.8	1.6	11.4	175.6	18.7	0.0	1,246.4	16.4	125.8
2008	4	509.8	110.0	619.8	358.3	261.5	62.0	22.4	3.7	26.2	173.4	74.0	0.0	1,395.6	7.6	61.0
2009	5	523.6	111.7	635.3	359.4	275.9	63.5	113.7	50.0	163.6	48.8	343.0	0.0	1,157.2	1.3	8.4
2010	6	537.7	113.5	651.2	360.5	290.7	65.1	161.9	72.4	234.3	-8.7	233.0	0.0	961.8	1.0	5.1
2011	7	552.3	115.3	667.5	361.5	306.0	66.8	197.2	86.2	283.4	-44.2	208.4	0.0	747.6	0.8	3.5
2012	8	567.2	117.1	684.2	362.6	321.6	68.4	237.9	173.2	411.1	-157.9	246.0	0.0	373.6	0.6	1.5
2013	9	582.5	118.9	701.4	363.7	337.7	70.1	259.4	217.5	476.9	-209.3	185.2	0.0	-6.0	0.6	0.5
2014	10	598.2	120.8	719.0	364.8	354.2	71.9	286.0	241.9	527.9	-245.6	215.1	0.0	-466.9	0.5	-0.3
2015	11	614.4	122.7	737.1	365.8	371.2	73.7	306.6	282.1	588.8	-291.2	196.2	0.0	-973.0	0.5	-1.1
2016	12	631.0	124.6	755.6	366.9	388.7	75.6	327.7	325.5	653.2	-340.1	207.1	0.0	-1,559.2	0.5	-1.9
2017	13	648.0	126.5	774.6	368.0	406.6	77.5	354.0	385.4	739.4	-410.3	226.0	0.0	-2,257.8	0.4	-2.6
2018	14	665.5	128.5	794.1	369.1	425.0	79.4	368.6	432.1	800.6	-455.0	210.9	0.0	-3,014.1	0.4	-3.3
2019	15	683.5	130.5	814.1	370.1	443.9	81.4	376.7	437.6	814.3	-451.8	189.2	0.0	-3,775.6	0.4	-4.2
2020	16	938.0	132.6	1,070.6	525.8	544.8	107.1	344.6	465.4	810.0	-372.2	0.0	0.0	-4,298.9	0.5	-4.8
2021	17	946.3	133.6	1,079.9	528.3	551.6	108.0	311.3	445.0	756.3	-312.7	0.0	0.0	-4,783.5	0.6	-5.7
2022	18	954.7	134.6	1,089.3	530.8	558.6	108.9	278.9	446.4	725.2	-275.6	0.0	0.0	-5,250.5	0.6	-6.6
2023	19	963.2	135.6	1,098.8	533.2	565.6	109.9	246.2	451.4	697.6	-241.9	0.0	0.0	-5,702.4	0.7	-7.5
2024	20	971.7	136.7	1,108.4	535.7	572.7	110.8	213.3	441.0	654.3	-192.5	0.0	0.0	-6,123.0	0.7	-8.7
2025	21	980.3	137.7	1,118.0	538.2	579.8	111.8	181.4	416.5	597.9	-129.8	0.0	0.0	-6,497.8	0.8	-10.1
2026	22	989.0	138.8	1,127.8	540.7	587.1	112.8	151.5	385.1	536.6	-62.3	0.0	0.0	-6,819.9	0.9	-11.8
2027	23	997.8	139.8	1,137.6	543.2	594.4	113.8	124.1	344.7	468.7	11.9	0.0	0.0	-7,080.8	1.0	-14.1
2028	24	1,006.6	140.9	1,147.5	545.6	601.8	114.7	99.5	305.1	404.6	82.5	0.0	0.0	-7,281.6	1.2	-16.8
2029	25	1,015.5	141.9	1,157.5	548.1	609.4	115.7	78.2	246.4	324.6	169.0	0.0	0.0	-7,403.9	1.5	-21.3
2030	26	1,024.5	143.0	1,167.5	550.6	616.9	116.8	60.8	210.0	270.8	229.4	0.0	0.0	-7,470.6	1.8	-25.7
2031	27	1,033.6	144.1	1,177.7	553.1	624.6	117.8	46.1	172.4	218.5	288.4	0.0	0.0	-7,481.1	2.3	-31.9
2032	28	1,042.8	145.2	1,188.0	555.6	632.4	118.8	34.0	140.9	174.9	338.7	0.0	0.0	-7,441.6	2.9	-39.6
2033	29	1,052.0	146.3	1,198.3	558.0	640.3	119.8	24.3	113.4	137.7	382.8	0.0	0.0	-7,356.5	3.8	-49.7
2034	30	1,061.3	147.4	1,208.7	560.5	648.2	120.9	16.6	85.5	102.1	425.3	0.0	0.0	-7,225.5	--	--
2035	31	1,070.7	148.5	1,219.3	563.0	656.3	121.9	10.8	68.2	79.0	455.4	0.0	0.0	-7,059.2	--	--
2036	32	1,080.2	149.7	1,229.9	565.5	664.4	123.0	6.2	50.6	56.8	484.6	0.0	0.0	-6,856.9	--	--
2037	33	1,089.8	150.8	1,240.6	568.0	672.6	124.1	2.9	33.5	36.4	512.1	0.0	0.0	-6,619.0	--	--
2038	34	1,099.4	152.0	1,251.4	570.4	681.0	125.1	0.8	15.7	16.5	539.3	0.0	0.0	-6,344.5	--	--
2039	35	1,109.2	153.1	1,262.3	572.9	689.4	126.2	0.0	0.0	0.0	563.2	0.0	0.0	-6,035.1	--	--
2040	36	1,119.0	154.3	1,273.3	575.4	697.9	127.3	0.0	0.0	0.0	570.6	0.0	0.0	-5,706.0	--	--
2041	37	1,128.9	155.5	1,284.4	577.9	706.5	128.4	0.0	0.0	0.0	578.1	0.0	0.0	-5,356.1	--	--
2042	38	1,138.9	156.6	1,295.6	580.4	715.2	129.6	0.0	0.0	0.0	585.7	0.0	0.0	-4,984.7	--	--

Table J-34. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,149.0	157.8	1,306.9	582.8	724.0	130.7	0.0	0.0	0.0	593.3	0.0	0.0	-4,590.8	- -	- -
2044	40	1,159.2	159.0	1,318.2	585.3	732.9	131.8	0.0	0.0	0.0	601.1	0.0	0.0	-4,173.3	- -	- -
2045	41	1,169.5	160.2	1,329.7	587.8	741.9	133.0	0.0	0.0	0.0	608.9	0.0	0.0	-3,731.3	- -	- -
2046	42	1,179.9	161.4	1,341.3	590.3	751.0	134.1	0.0	0.0	0.0	616.9	0.0	0.0	-3,263.7	- -	- -
2047	43	1,190.3	162.7	1,353.0	592.8	760.2	135.3	0.0	0.0	0.0	624.9	0.0	0.0	-2,769.3	- -	- -
2048	44	1,200.9	163.9	1,364.8	595.2	769.5	136.5	0.0	0.0	0.0	633.1	0.0	0.0	-2,247.0	- -	- -
2049	45	1,211.5	165.2	1,376.7	597.7	778.9	137.7	0.0	0.0	0.0	641.3	0.0	0.0	-1,695.6	- -	- -
2050	46	1,222.2	166.4	1,388.7	600.2	788.5	138.9	0.0	0.0	0.0	649.6	0.0	0.0	-1,113.8	- -	- -
2051	47	1,233.1	167.7	1,400.7	602.7	798.1	140.1	0.0	0.0	0.0	658.0	0.0	0.0	-500.4	- -	- -
2052	48	1,244.0	169.0	1,412.9	605.2	807.8	141.3	0.0	0.0	0.0	666.5	0.0	0.0	146.1	- -	- -
2053	49	1,255.0	170.2	1,425.3	607.6	817.6	142.5	0.0	0.0	0.0	675.1	0.0	0.0	827.0	- -	- -
2054	50	1,266.1	171.5	1,437.7	610.1	827.6	143.8	0.0	0.0	0.0	683.8	0.0	1,010.8	533.1	- -	- -
2055	51	1,277.4	172.8	1,450.2	612.6	837.6	145.0	0.0	0.0	0.0	692.6	0.0	725.7	521.3	- -	- -
2056	52	1,288.7	174.1	1,462.8	615.1	847.8	146.3	0.0	0.0	0.0	701.5	0.0	722.8	520.9	- -	- -
2057	53	1,300.1	175.5	1,475.6	617.6	858.0	147.6	0.0	0.0	0.0	710.5	0.0	731.3	520.8	- -	- -
2058	54	1,311.6	176.8	1,488.4	620.0	868.4	148.8	0.0	0.0	0.0	719.5	0.0	740.4	520.8	- -	- -
2059	55	1,323.2	178.1	1,501.4	622.5	878.9	150.1	0.0	0.0	0.0	728.7	0.0	749.6	520.8	- -	- -
2060	56	1,335.0	179.5	1,514.5	625.0	889.5	151.5	0.0	0.0	0.0	738.1	0.0	758.9	520.8	- -	- -
	Total	56,868.5	8,611.7	65,480.2	30,790.0	34,690.2	6,548.0	5,263.3	7,547.9	12,811.3	15,331.0	2,591.6	5,439.4			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-35. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							44 4	44 4
2005	1	220.5	172 6	47 9	63 4	-15 4	41 9	26 5
2006	2	233 8	176 9	56 9	65.3	-8 4	35 9	27 5
2007	3	247 5	181 2	66 2	62 3	4 0	161 4	165 4
2008	4	261 5	185 6	75 9	246 8	-171 0	1,284 9	1,113 9
2009	5	275 9	190 1	85 8	1,654 1	-1,568 2	561 8	-1,006 4
2010	6	290 7	194 6	96 1	958 4	-862 3	321 1	-541 2
2011	7	306 0	199.2	106 8	763 9	-657 1	376 5	-280 6
2012	8	321.6	203.9	117 8	905 9	-788 2	55 5	-732 7
2013	9	337 7	208 6	129 1	651 8	-522 7	103 1	-419 6
2014	10	354 2	213 4	140 9	795 1	-654 2	-1.1	-655 3
2015	11	371 2	218.2	153.0	723 1	-570 0	-11 2	-581 3
2016	12	388.7	223 1	165 6	784 7	-619 1	51 7	-567 4
2017	13	406 6	228 1	178.5	930 9	-752 4	-147 4	-899 7
2018	14	425 0	233 1	191 9	803 0	-611 1	-258 8	-869 8
2019	15	443 9	238 2	205 7	731 0	-525 3	-814 3	-1,339 6
2020	16	544.8	243 4	301 4	0 0	301 4	-810 0	-508 6
2021	17	551 6	245 7	306 0	0 0	306 0	-756 3	-450 4
2022	18	558 6	248 0	310 6	0 0	310 6	-725 2	-414 6
2023	19	565 6	250 3	315 3	0 0	315 3	-697 6	-382 3
2024	20	572 7	252 6	320 0	0 0	320 0	-654 3	-334 3
2025	21	579 8	255 0	324 9	0 0	324 9	-597 9	-273 0
2026	22	587 1	257 3	329 7	0 0	329 7	-536 6	-206 8
2027	23	594 4	259 7	334 7	0 0	334 7	-468 7	-134 0
2028	24	601 8	262 1	339 7	0 0	339 7	-404 6	-64 9
2029	25	609 4	264 6	344 8	0 0	344 8	-324 6	20 1
2030	26	616 9	267 0	349 9	0 0	349 9	-270 8	79 1
2031	27	624 6	269 5	355 1	0 0	355 1	-218 5	136 6
2032	28	632 4	272 0	360 4	0 0	360 4	-174 9	185 5
2033	29	640 3	274.5	365 7	0 0	365 7	-137 7	228 1
2034	30	648 2	277 1	371 2	0 0	371 2	-102 1	269 1
2035	31	656 3	279 6	376 6	0 0	376 6	-79 0	297 7
2036	32	664 4	282 2	382 2	0 0	382 2	-56 8	325 4
2037	33	672 6	284 8	387 8	0 0	387 8	-36 4	351 4
2038	34	681 0	287 5	393 5	0 0	393 5	-16 5	377 0
2039	35	689 4	290 1	399 3	0 0	399 3	0 0	399 3
2040	36	697 9	292 8	405 1	0 0	405 1	0 0	405 1
2041	37	706 5	295 5	411 0	0 0	411 0	0 0	411 0
2042	38	715 2	298 2	417 0	0 0	417 0	0 0	417 0
2043	39	724 0	301 0	423 0	0 0	423 0	0 0	423 0
2044	40	732 9	303 7	429 2	0 0	429 2	0 0	429 2
2045	41	741 9	306 5	435 4	0 0	435 4	0 0	435 4
2046	42	751 0	309 3	441 7	0 0	441 7	0 0	441 7

Table J-35. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	760.2	312.2	448.0	0.0	448.0	0.0	448.0
2048	44	769.5	315.0	454.5	0.0	454.5	0.0	454.5
2049	45	778.9	317.9	461.0	0.0	461.0	0.0	461.0
2050	46	788.5	320.8	467.6	0.0	467.6	0.0	467.6
2051	47	798.1	323.8	474.3	0.0	474.3	0.0	474.3
2052	48	807.8	326.7	481.0	0.0	481.0	0.0	481.0
2053	49	817.6	329.7	487.9	0.0	487.9	0.0	487.9
2054	50	827.6	332.7	494.8	0.0	494.8	0.0	494.8
2055	51	837.6	335.8	501.8	0.0	501.8	0.0	501.8
2056	52	847.8	338.8	508.9	0.0	508.9	0.0	508.9
2057	53	858.0	341.9	516.1	0.0	516.1	0.0	516.1
2058	54	868.4	345.0	523.4	0.0	523.4	0.0	523.4
2059	55	878.9	348.1	530.7	0.0	530.7	0.0	530.7
2060	56	889.5	351.3	538.2	0.0	538.2	0.0	538.2
	Total	33,774.7	15,136.9	18,637.7	10,139.6	8,498.2		3,234.9
				Financial Internal Rate of Return:		2.6%		1.0%
				Net Present Value at 8 percent discount rate:		-2,923.9		-2,494.0

a/ From Table J-34.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-36. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int.	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005	1	510.7	105.0	615.7	355.1	260.6	61.6	3.3	0.5	3.8	195.2	19.0	0.0	992.9	52.1	311.9
2006	2	531.7	106.6	638.3	356.2	282.1	63.8	6.6	1.1	7.7	210.6	19.6	0.0	1,223.6	28.3	186.8
2007	3	553.5	108.3	661.8	357.2	304.6	66.2	9.8	1.6	11.4	227.0	18.7	0.0	1,480.8	20.9	150.9
2008	4	576.3	110.0	686.3	358.3	327.9	68.6	22.4	3.7	26.2	233.2	74.0	0.0	1,699.2	9.9	74.9
2009	5	599.9	111.7	711.7	359.4	352.3	71.2	113.7	50.0	163.6	117.5	343.0	0.0	1,541.6	1.7	11.1
2010	6	624.6	113.5	738.1	360.5	377.6	73.8	161.9	72.4	234.3	69.5	233.0	0.0	1,439.7	1.3	7.4
2011	7	650.3	115.3	765.5	361.5	404.0	76.6	197.2	86.2	283.4	44.0	208.4	0.0	1,332.9	1.2	5.9
2012	8	677.0	117.1	794.0	362.6	431.4	79.4	237.9	173.2	411.1	-59.1	246.0	0.0	1,081.1	0.9	3.5
2013	9	704.8	118.9	823.7	363.7	460.0	82.4	259.4	217.5	476.9	-99.3	185.2	0.0	839.8	0.8	2.6
2014	10	733.7	120.8	854.5	364.8	489.7	85.5	286.0	241.9	527.9	-123.6	215.1	0.0	534.7	0.8	1.8
2015	11	763.9	122.7	886.5	365.8	520.7	88.7	306.6	282.1	588.8	-156.7	196.2	0.0	203.1	0.7	1.1
2016	12	795.3	124.6	919.9	366.9	552.9	92.0	327.7	325.5	653.2	-192.3	207.1	0.0	-188.1	0.7	0.4
2017	13	827.9	126.5	954.5	368.0	586.5	95.4	354.0	385.4	739.4	-248.3	226.0	0.0	-670.0	0.7	-0.2
2018	14	862.0	128.5	990.5	369.1	621.4	99.0	368.6	432.1	800.6	-278.2	210.9	0.0	-1,186.0	0.7	-0.8
2019	15	897.4	130.5	1,027.9	370.1	657.8	102.8	376.7	437.6	814.3	-259.3	189.2	0.0	-1,681.9	0.7	-1.4
2020	16	1,221.0	132.6	1,353.6	525.8	827.8	135.4	344.6	465.4	810.0	-117.5	0.0	0.0	-1,866.7	0.9	-1.4
2021	17	1,232.1	133.6	1,365.7	528.3	837.4	136.6	311.3	445.0	756.3	-55.5	0.0	0.0	-1,996.9	0.9	-1.7
2022	18	1,243.3	134.6	1,377.9	530.8	847.2	137.8	278.9	446.4	725.2	-15.9	0.0	0.0	-2,092.6	1.0	-1.9
2023	19	1,254.6	135.6	1,390.3	533.2	857.0	139.0	246.2	451.4	697.6	20.4	0.0	0.0	-2,155.9	1.0	-2.1
2024	20	1,266.0	136.7	1,402.7	535.7	867.0	140.3	213.3	441.0	654.3	72.4	0.0	0.0	-2,169.7	1.1	-2.2
2025	21	1,277.6	137.7	1,415.3	538.2	877.1	141.5	181.4	416.5	597.9	137.7	0.0	0.0	-2,118.8	1.2	-2.3
2026	22	1,289.2	138.8	1,427.9	540.7	887.3	142.8	151.5	385.1	536.6	207.9	0.0	0.0	-1,995.7	1.4	-2.3
2027	23	1,300.9	139.8	1,440.7	543.2	897.6	144.1	124.1	344.7	468.7	284.8	0.0	0.0	-1,790.7	1.6	-2.2
2028	24	1,312.7	140.9	1,453.6	545.6	908.0	145.4	99.5	305.1	404.6	358.0	0.0	0.0	-1,504.4	1.9	-1.8
2029	25	1,324.7	141.9	1,466.6	548.1	918.5	146.7	78.2	246.4	324.6	447.2	0.0	0.0	-1,117.3	2.4	-1.1
2030	26	1,336.7	143.0	1,479.8	550.6	929.2	148.0	60.8	210.0	270.8	510.4	0.0	0.0	-651.6	2.9	0.5
2031	27	1,348.9	144.1	1,493.0	553.1	939.9	149.3	46.1	172.4	218.5	572.1	0.0	0.0	-105.5	3.6	3.1
2032	28	1,361.2	145.2	1,506.4	555.6	950.8	150.6	34.0	140.9	174.9	625.2	0.0	0.0	515.5	4.6	7.5
2033	29	1,373.5	146.3	1,519.9	558.0	961.8	152.0	24.3	113.4	137.7	672.2	0.0	687.6	520.6	5.9	9.7
2034	30	1,386.0	147.4	1,533.5	560.5	972.9	153.3	16.6	85.5	102.1	717.5	0.0	738.1	520.8	--	--
2035	31	1,398.7	148.5	1,547.2	563.0	984.2	154.7	10.8	68.2	79.0	750.5	0.0	771.3	520.8	--	--
2036	32	1,411.4	149.7	1,561.1	565.5	995.6	156.1	6.2	50.6	56.8	782.7	0.0	803.5	520.8	--	--
2037	33	1,424.2	150.8	1,575.0	568.0	1,007.1	157.5	2.9	33.5	36.4	813.1	0.0	834.0	520.8	--	--
2038	34	1,437.2	152.0	1,589.1	570.4	1,018.7	158.9	0.8	15.7	16.5	843.3	0.0	864.1	520.8	--	--
2039	35	1,450.2	153.1	1,603.4	572.9	1,030.4	160.3	0.0	0.0	0.0	870.1	0.0	890.9	520.8	--	--
2040	36	1,463.4	154.3	1,617.7	575.4	1,042.3	161.8	0.0	0.0	0.0	880.5	0.0	901.4	520.8	--	--
2041	37	1,476.7	155.5	1,632.2	577.9	1,054.3	163.2	0.0	0.0	0.0	891.1	0.0	911.9	520.8	--	--
2042	38	1,490.2	156.6	1,646.8	580.4	1,066.5	164.7	0.0	0.0	0.0	901.8	0.0	922.6	520.8	--	--

Table J-36. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,503.7	157.8	1,661.6	582.8	1,078.7	166.2	0.0	0.0	0.0	912.6	0.0	933.4	520.8	- -	- -
2044	40	1,517.4	159.0	1,676.4	585.3	1,091.1	167.6	0.0	0.0	0.0	923.5	0.0	944.3	520.8	- -	- -
2045	41	1,531.2	160.2	1,691.5	587.8	1,103.7	169.1	0.0	0.0	0.0	934.5	0.0	955.3	520.8	- -	- -
2046	42	1,545.2	161.4	1,706.6	590.3	1,116.3	170.7	0.0	0.0	0.0	945.7	0.0	966.5	520.8	- -	- -
2047	43	1,559.2	162.7	1,721.9	592.8	1,129.1	172.2	0.0	0.0	0.0	956.9	0.0	977.8	520.8	- -	- -
2048	44	1,573.4	163.9	1,737.3	595.2	1,142.1	173.7	0.0	0.0	0.0	968.3	0.0	989.2	520.8	- -	- -
2049	45	1,587.7	165.2	1,752.9	597.7	1,155.1	175.3	0.0	0.0	0.0	979.9	0.0	1,000.7	520.8	- -	- -
2050	46	1,602.1	166.4	1,768.6	600.2	1,168.4	176.9	0.0	0.0	0.0	991.5	0.0	1,012.3	520.8	- -	- -
2051	47	1,616.7	167.7	1,784.4	602.7	1,181.7	178.4	0.0	0.0	0.0	1,003.3	0.0	1,024.1	520.8	- -	- -
2052	48	1,631.4	169.0	1,800.4	605.2	1,195.2	180.0	0.0	0.0	0.0	1,015.2	0.0	1,036.0	520.8	- -	- -
2053	49	1,646.3	170.2	1,816.5	607.6	1,208.9	181.7	0.0	0.0	0.0	1,027.2	0.0	1,048.1	520.8	- -	- -
2054	50	1,661.2	171.5	1,832.8	610.1	1,222.7	183.3	0.0	0.0	0.0	1,039.4	0.0	1,060.2	520.8	- -	- -
2055	51	1,676.4	172.8	1,849.2	612.6	1,236.6	184.9	0.0	0.0	0.0	1,051.7	0.0	1,072.5	520.8	- -	- -
2056	52	1,691.6	174.1	1,865.8	615.1	1,250.7	186.6	0.0	0.0	0.0	1,064.1	0.0	1,084.9	520.8	- -	- -
2057	53	1,707.0	175.5	1,882.5	617.6	1,264.9	188.2	0.0	0.0	0.0	1,076.7	0.0	1,097.5	520.8	- -	- -
2058	54	1,722.5	176.8	1,899.3	620.0	1,279.3	189.9	0.0	0.0	0.0	1,089.4	0.0	1,110.2	520.8	- -	- -
2059	55	1,738.2	178.1	1,916.3	622.5	1,293.8	191.6	0.0	0.0	0.0	1,102.2	0.0	1,123.0	520.8	- -	- -
2060	56	1,754.0	179.5	1,933.5	625.0	1,308.5	193.4	0.0	0.0	0.0	1,115.2	0.0	1,136.0	520.8	- -	- -
	Total	72,921.4	8,611.7	81,533.1	30,790.0	50,743.1	8,153.3	5,263.3	7,547.9	12,811.3	29,778.6	2,591.6	26,897.5			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-37. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							44.4	44.4
2005	1	260.6	172.6	88.0	63.4	24.6	41.9	66.5
2006	2	282.1	176.9	105.2	65.3	39.9	35.9	75.8
2007	3	304.6	181.2	123.3	62.3	61.1	161.4	222.5
2008	4	327.9	185.6	142.3	246.8	-104.5	1,284.9	1,180.4
2009	5	352.3	190.1	162.2	1,654.1	-1,491.9	561.8	-930.1
2010	6	377.6	194.6	183.0	958.4	-775.5	321.1	-454.3
2011	7	404.0	199.2	204.7	763.9	-559.1	376.5	-182.6
2012	8	431.4	203.9	227.5	905.9	-678.4	55.5	-622.9
2013	9	460.0	208.6	251.4	651.8	-400.4	103.1	-297.3
2014	10	489.7	213.4	276.4	795.1	-518.7	-1.1	-519.8
2015	11	520.7	218.2	302.5	723.1	-420.6	-11.2	-431.8
2016	12	552.9	223.1	329.8	784.7	-454.8	51.7	-403.2
2017	13	586.5	228.1	358.4	930.9	-572.5	-147.4	-719.8
2018	14	621.4	233.1	388.3	803.0	-414.6	-258.8	-673.4
2019	15	657.8	238.2	419.6	731.0	-311.5	-814.3	-1,125.8
2020	16	827.8	243.4	584.4	0.0	584.4	-810.0	-225.6
2021	17	837.4	245.7	591.8	0.0	591.8	-756.3	-164.6
2022	18	847.2	248.0	599.2	0.0	599.2	-725.2	-126.0
2023	19	857.0	250.3	606.8	0.0	606.8	-697.6	-90.8
2024	20	867.0	252.6	614.4	0.0	614.4	-654.3	-39.9
2025	21	877.1	255.0	622.1	0.0	622.1	-597.9	24.3
2026	22	887.3	257.3	629.9	0.0	629.9	-536.6	93.4
2027	23	897.6	259.7	637.8	0.0	637.8	-468.7	169.1
2028	24	908.0	262.1	645.8	0.0	645.8	-404.6	241.2
2029	25	918.5	264.6	653.9	0.0	653.9	-324.6	329.3
2030	26	929.2	267.0	662.1	0.0	662.1	-270.8	391.4
2031	27	939.9	269.5	670.4	0.0	670.4	-218.5	451.9
2032	28	950.8	272.0	678.8	0.0	678.8	-174.9	503.9
2033	29	961.8	274.5	687.3	0.0	687.3	-137.7	549.6
2034	30	972.9	277.1	695.9	0.0	695.9	-102.1	593.8
2035	31	984.2	279.6	704.6	0.0	704.6	-79.0	625.6
2036	32	995.6	282.2	713.3	0.0	713.3	-56.8	656.6
2037	33	1,007.1	284.8	722.2	0.0	722.2	-36.4	685.8
2038	34	1,018.7	287.5	731.2	0.0	731.2	-16.5	714.7
2039	35	1,030.4	290.1	740.3	0.0	740.3	0.0	740.3
2040	36	1,042.3	292.8	749.5	0.0	749.5	0.0	749.5
2041	37	1,054.3	295.5	758.8	0.0	758.8	0.0	758.8
2042	38	1,066.5	298.2	768.2	0.0	768.2	0.0	768.2
2043	39	1,078.7	301.0	777.8	0.0	777.8	0.0	777.8
2044	40	1,091.1	303.7	787.4	0.0	787.4	0.0	787.4
2045	41	1,103.7	306.5	797.1	0.0	797.1	0.0	797.1
2046	42	1,116.3	309.3	807.0	0.0	807.0	0.0	807.0

Table J-37. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	1,129.1	312.2	816.9	0.0	816.9	0.0	816.9
2048	44	1,142.1	315.0	827.0	0.0	827.0	0.0	827.0
2049	45	1,155.1	317.9	837.2	0.0	837.2	0.0	837.2
2050	46	1,168.4	320.8	847.5	0.0	847.5	0.0	847.5
2051	47	1,181.7	323.8	857.9	0.0	857.9	0.0	857.9
2052	48	1,195.2	326.7	868.5	0.0	868.5	0.0	868.5
2053	49	1,208.9	329.7	879.1	0.0	879.1	0.0	879.1
2054	50	1,222.7	332.7	889.9	0.0	889.9	0.0	889.9
2055	51	1,236.6	335.8	900.8	0.0	900.8	0.0	900.8
2056	52	1,250.7	338.8	911.9	0.0	911.9	0.0	911.9
2057	53	1,264.9	341.9	923.0	0.0	923.0	0.0	923.0
2058	54	1,279.3	345.0	934.3	0.0	934.3	0.0	934.3
2059	55	1,293.8	348.1	945.7	0.0	945.7	0.0	945.7
2060	56	1,308.5	351.3	957.2	0.0	957.2	0.0	957.2
	Total	49,734.9	15,136.9	34,597.9	10,139.6	24,458.4		19,195.1
				Financial Internal Rate of Return:		6.4%		6.0%
				Net Present Value at 8 percent discount rate:		-883.4		-604.6

a/ From Table J-36.
b/ From Table 6-6.
c/ From Appendix H (base case only).
d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-38. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net	Payment	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Income from Operations	to Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		411.9	97.1	509.0	437.2	71.9	50.9	0.0	0.0	0.0	21.0	0.0	0.0	21.0	--	--
2001		423.1	98.6	521.7	438.5	83.2	52.2	0.0	0.0	0.0	31.0	0.0	0.0	52.8	--	--
2002		434.5	100.2	534.7	439.9	94.8	53.5	0.0	0.0	0.0	41.3	0.0	0.0	96.3	--	--
2003		446.2	101.7	548.0	441.2	106.8	54.8	0.0	0.0	0.0	52.0	0.0	0.0	152.1	--	--
2004		458.3	103.3	561.6	442.5	119.1	56.2	0.0	0.0	0.0	62.9	0.0	0.0	221.1	--	--
2005		470.7	105.0	575.6	443.9	131.7	57.6	0.0	0.0	0.0	74.2	0.0	0.0	304.1	--	--
2006		483.4	106.6	590.0	445.2	144.8	59.0	0.0	0.0	0.0	85.8	0.0	0.0	402.1	--	--
2007		496.4	108.3	604.7	446.6	158.2	60.5	0.0	0.0	0.0	97.7	0.0	0.0	515.8	--	--
2008		509.8	110.0	619.8	447.9	171.9	62.0	0.0	0.0	0.0	109.9	0.0	0.0	646.4	--	--
2009		523.6	111.7	635.3	449.2	186.1	63.5	0.0	0.0	0.0	122.5	0.0	0.0	794.8	--	--
2010	1	537.7	113.5	651.2	450.6	200.6	65.1	4.6	0.8	5.3	130.2	26.5	0.0	930.3	25.4	200.0
2011	2	552.3	115.3	667.5	451.9	215.6	66.8	9.2	1.5	10.7	138.1	27.1	0.0	1,078.5	13.9	114.6
2012	3	567.2	117.1	684.2	453.3	231.0	68.4	23.3	3.8	27.1	135.4	82.2	0.0	1,174.9	6.0	49.3
2013	4	582.5	118.9	701.4	454.6	246.8	70.1	74.4	22.5	96.9	79.7	236.8	0.0	1,064.9	1.8	12.8
2014	5	598.2	120.8	719.0	456.0	263.1	71.9	143.0	52.2	195.3	-4.1	297.1	0.0	806.2	1.0	5.1
2015	6	614.4	122.7	737.1	457.3	279.8	73.7	200.8	74.2	275.0	-68.9	309.0	0.0	460.6	0.7	2.4
2016	7	631.0	124.6	755.6	458.6	296.9	75.6	257.9	119.9	377.8	-156.4	314.1	0.0	8.5	0.6	0.6
2017	8	648.0	126.5	774.6	460.0	314.6	77.5	303.0	192.6	495.6	-258.5	257.6	0.0	-507.2	0.5	-0.5
2018	9	665.5	128.5	794.1	461.3	332.8	79.4	327.9	245.3	573.2	-319.9	175.1	0.0	-1,022.4	0.4	-1.3
2019	10	683.5	130.5	814.1	462.7	351.4	81.4	342.6	295.4	638.0	-368.0	134.7	0.0	-1,566.0	0.4	-2.0
2020	11	904.0	132.6	1,036.6	593.9	442.7	103.7	320.5	352.6	673.1	-334.0	0.0	0.0	-1,962.7	0.5	-2.4
2021	12	911.9	133.6	1,045.5	597.2	448.2	104.5	294.4	407.5	701.9	-358.2	0.0	0.0	-2,399.4	0.5	-2.9
2022	13	919.8	134.6	1,054.4	600.6	453.8	105.4	264.3	451.7	716.1	-367.7	0.0	0.0	-2,863.1	0.5	-3.5
2023	14	927.8	135.6	1,063.5	604.0	459.5	106.3	231.9	447.9	679.9	-326.7	0.0	0.0	-3,304.3	0.5	-4.3
2024	15	935.9	136.7	1,072.6	607.4	465.2	107.3	200.0	425.5	625.4	-267.5	0.0	0.0	-3,704.0	0.6	-5.3
2025	16	944.1	137.7	1,081.8	610.7	471.1	108.2	169.7	391.2	560.9	-198.0	0.0	0.0	-4,050.2	0.6	-6.6
2026	17	952.3	138.8	1,091.1	614.1	477.0	109.1	142.1	344.2	486.2	-118.4	0.0	0.0	-4,330.5	0.8	-8.1
2027	18	960.6	139.8	1,100.4	617.5	482.9	110.0	117.5	308.5	425.9	-53.0	0.0	0.0	-4,556.8	0.9	-9.8
2028	19	969.0	140.9	1,109.8	620.9	489.0	111.0	95.5	270.3	365.8	12.2	0.0	0.0	-4,726.8	1.0	-11.9
2029	20	977.4	141.9	1,119.4	624.2	495.1	111.9	76.3	229.6	305.9	77.3	0.0	0.0	-4,838.7	1.3	-14.6
2030	21	985.9	143.0	1,129.0	627.6	501.4	112.9	59.9	199.3	259.2	129.3	0.0	0.0	-4,902.9	1.5	-17.4
2031	22	994.5	144.1	1,138.6	631.0	507.7	113.9	45.8	168.0	213.8	180.0	0.0	0.0	-4,919.0	1.8	-21.2
2032	23	1,003.2	145.2	1,148.4	634.3	514.1	114.8	33.9	147.9	181.9	217.3	0.0	0.0	-4,898.4	2.2	-24.7
2033	24	1,011.9	146.3	1,158.2	637.7	520.5	115.8	23.7	122.0	145.7	259.0	0.0	0.0	-4,835.4	2.8	-30.4
2034	25	1,020.7	147.4	1,168.2	641.1	527.1	116.8	15.4	96.4	111.8	298.5	0.0	0.0	-4,730.3	3.7	-38.6
2035	26	1,029.6	148.5	1,178.2	644.5	533.7	117.8	9.0	69.7	78.7	337.2	0.0	0.0	-4,582.4	5.3	-52.9
2036	27	1,038.6	149.7	1,188.3	647.8	540.5	118.8	4.5	42.8	47.3	374.4	0.0	0.0	-4,391.3	8.9	-84.0
2037	28	1,047.7	150.8	1,198.5	651.2	547.3	119.8	1.8	22.0	23.8	403.6	0.0	0.0	-4,163.4	17.9	-156.7

Table J-38. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,056.8	152.0	1,208.7	654.6	554.2	120.9	0.5	8.9	9.4	423.9	0.0	0.0	-3,906.0	46.2	-370.2
2039	30	1,066.0	153.1	1,219.1	657.9	561.2	121.9	0.0	0.0	0.0	439.3	0.0	0.0	-3,623.0	--	--
2040	31	1,075.3	154.3	1,229.6	661.3	568.2	123.0	0.0	0.0	0.0	445.3	0.0	0.0	-3,322.6	--	--
2041	32	1,084.6	155.5	1,240.1	664.7	575.4	124.0	0.0	0.0	0.0	451.4	0.0	0.0	-3,004.1	--	--
2042	33	1,094.1	156.6	1,250.7	668.1	582.7	125.1	0.0	0.0	0.0	457.6	0.0	0.0	-2,666.7	--	--
2043	34	1,103.6	157.8	1,261.5	671.4	590.0	126.1	0.0	0.0	0.0	463.9	0.0	0.0	-2,309.4	--	--
2044	35	1,113.2	159.0	1,272.3	674.8	597.5	127.2	0.0	0.0	0.0	470.2	0.0	0.0	-1,931.6	--	--
2045	36	1,122.9	160.2	1,283.2	678.2	605.0	128.3	0.0	0.0	0.0	476.7	0.0	0.0	-1,532.2	--	--
2046	37	1,132.7	161.4	1,294.2	681.5	612.6	129.4	0.0	0.0	0.0	483.2	0.0	0.0	-1,110.2	--	--
2047	38	1,142.6	162.7	1,305.3	684.9	620.4	130.5	0.0	0.0	0.0	489.8	0.0	0.0	-664.8	--	--
2048	39	1,152.6	163.9	1,316.5	688.3	628.2	131.6	0.0	0.0	0.0	496.5	0.0	0.0	-194.9	--	--
204[illegible]	[illegible]	1,162.6	165.2	1,327.8	691.7	636.1	132.8	0.0	0.0	0.0	503.3	0.0	0.0	300.7	--	--
2050	41	1,172.7	166.4	1,339.1	695.0	644.1	133.9	0.0	0.0	0.0	510.2	0.0	0.0	822.9	--	--
2051	42	1,182.9	167.7	1,350.6	698.4	652.2	135.1	0.0	0.0	0.0	517.2	0.0	840.0	532.9	--	--
2052	43	1,193.3	169.0	1,362.2	701.8	660.4	136.2	0.0	0.0	0.0	524.2	0.0	557.1	521.3	--	--
2053	44	1,203.6	170.2	1,373.9	705.1	668.7	137.4	0.0	0.0	0.0	531.3	0.0	552.7	520.9	--	--
20[illegible]	[illegible]	1,214.1	171.5	1,385.7	708.5	677.1	138.6	0.0	0.0	0.0	538.6	0.0	559.4	520.8	--	--
2055	46	1,224.7	172.8	1,397.5	711.9	685.7	139.8	0.0	0.0	0.0	545.9	0.0	566.7	520.8	--	--
2056	47	1,235.4	174.1	1,409.5	715.3	694.3	141.0	0.0	0.0	0.0	553.3	0.0	574.1	520.8	--	--
2057	48	1,246.1	175.5	1,421.6	718.6	703.0	142.2	0.0	0.0	0.0	560.8	0.0	581.7	520.8	--	--
2058	49	1,257.0	176.8	1,433.8	722.0	711.8	143.4	0.0	0.0	0.0	568.4	0.0	589.3	520.8	--	--
2059	50	1,268.0	178.1	1,446.1	725.4	720.7	144.6	0.0	0.0	0.0	576.1	0.0	597.0	520.8	--	--
2060	51	1,279.0	179.5	1,458.5	728.8	729.8	145.9	0.0	0.0	0.0	583.9	0.0	604.7	520.8	--	--
	[illegible]al	55,057.3	8,611.7	63,669.0	36,112.1	27,556.9	6,366.9	3,793.5	5,514.2	9,307.7	11,882.3	1,860.1	6,022.7			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14 (base case only)

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-39. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							61.9	61.9
2010	1	200.6	104.5	96.1	88.4	7.7	57.8	65.5
2011	2	215.6	108.8	106.8	90.2	16.6	181.1	197.6
2012	3	231.0	113.2	117.8	274.0	-156.2	692.4	536.2
2013	4	246.8	117.7	129.1	956.3	-827.2	894.7	67.5
2014	5	263.1	122.2	140.9	1,288.7	-1,147.8	654.2	-493.6
2015	6	279.8	126.7	153.0	1,158.5	-1,005.5	592.5	-413.0
2016	7	296.9	131.4	165.6	1,181.5	-1,015.9	381.1	-634.8
2017	8	314.6	136.1	178.5	1,016.5	-838.0	52.6	-785.4
2018	9	332.8	140.9	191.9	723.3	-531.4	-111.0	-642.4
2019	10	351.4	145.7	205.7	596.9	-391.2	-638.0	-1,029.2
2020	11	442.7	150.6	292.1	0.0	292.1	-673.1	-381.0
2021	12	448.2	152.6	295.7	0.0	295.7	-701.9	-406.2
2022	13	453.8	154.6	299.3	0.0	299.3	-716.1	-416.8
2023	14	459.5	156.6	302.9	0.0	302.9	-679.9	-377.0
2024	15	465.2	158.6	306.6	0.0	306.6	-625.4	-318.8
2025	16	471.1	160.7	310.4	0.0	310.4	-560.9	-250.5
2026	17	477.0	162.7	314.2	0.0	314.2	-486.2	-172.0
2027	18	482.9	164.8	318.1	0.0	318.1	-425.9	-107.8
2028	19	489.0	166.9	322.1	0.0	322.1	-365.8	-43.7
2029	20	495.1	169.1	326.1	0.0	326.1	-305.9	20.1
2030	21	501.4	171.2	330.1	0.0	330.1	-259.2	71.0
2031	22	507.7	173.4	334.3	0.0	334.3	-213.8	120.5
2032	23	514.1	175.6	338.4	0.0	338.4	-181.9	156.6
2033	24	520.5	177.8	342.7	0.0	342.7	-145.7	197.0
2034	25	527.1	180.1	347.0	0.0	347.0	-111.8	235.2
2035	26	533.7	182.3	351.4	0.0	351.4	-78.7	272.6
2036	27	540.5	184.6	355.8	0.0	355.8	-47.3	308.6
2037	28	547.3	186.9	360.3	0.0	360.3	-23.8	336.5
2038	29	554.2	189.3	364.9	0.0	364.9	-9.4	355.5
2039	30	561.2	191.6	369.5	0.0	369.5	0.0	369.5
2040	31	568.2	194.0	374.2	0.0	374.2	0.0	374.2
2041	32	575.4	196.4	379.0	0.0	379.0	0.0	379.0
2042	33	582.7	198.8	383.8	0.0	383.8	0.0	383.8
2043	34	590.0	201.3	388.8	0.0	388.8	0.0	388.8
2044	35	597.5	203.7	393.7	0.0	393.7	0.0	393.7
2045	36	605.0	206.2	398.8	0.0	398.8	0.0	398.8
2046	37	612.6	208.7	403.9	0.0	403.9	0.0	403.9

Table J-39. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	620 4	211 3	409 1	0 0	409 1	0 0	409 1
2048	39	628 2	213 8	414 3	0 0	414 3	0 0	414 3
2049	40	636 1	216 4	419 7	0 0	419 7	0 0	419 7
2050	41	644 1	219.0	425 1	0 0	425 1	0 0	425 1
2051	42	652 2	221 7	430 5	0 0	430 5	0 0	430 5
2052	43	660 4	224 3	436 1	0 0	436 1	0 0	436 1
2053	44	668 7	227 0	441 7	0 0	441 7	0 0	441 7
2054	45	677.1	229 7	447 4	0 0	447 4	0 0	447 4
2055	46	685 7	232 5	453 2	0 0	453 2	0 0	453 2
2056	47	694 3	235 2	459 1	0 0	459 1	0 0	459 1
2057	48	703 0	238.0	465 0	0 0	465 0	0 0	465 0
2058	49	711 8	240.8	471.0	0 0	471 0	0 0	471 0
2059	50	720 7	243 6	477 1	0 0	477 1	0 0	477 1
2060	51	729 8	246 5	483 3	0 0	483 3	0 0	483 3
	Total	26,288 5	9,266 5	17,022 1	7,374 3	9,647 8		5,792 4
				Financial Internal Rate of Return		4 2%		2 8%
				Net Present Value at 8 percent discount rate		-1,756 7		-1,438 3

a/ From Table J-38

b/ From Table 6-6 (base case only)

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-40. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	437.2	77.5	51.5	0.0	0.0	0.0	26.0	0.0	0.0	26.0	--	--
2001		434.7	98.6	533.4	438.5	94.9	53.3	0.0	0.0	0.0	41.5	0.0	0.0	68.6	--	--
2002		452.6	100.2	552.8	439.9	112.9	55.3	0.0	0.0	0.0	57.6	0.0	0.0	129.0	--	--
2003		471.2	101.7	572.9	441.2	131.7	57.3	0.0	0.0	0.0	74.5	0.0	0.0	208.6	--	--
2004		490.5	103.3	593.9	442.5	151.4	59.4	0.0	0.0	0.0	92.0	0.0	0.0	308.9	--	--
2005		510.7	105.0	615.7	443.9	171.8	61.6	0.0	0.0	0.0	110.2	0.0	0.0	431.5	--	--
2006		531.7	106.6	638.3	445.2	193.1	63.8	0.0	0.0	0.0	129.3	0.0	0.0	578.0	--	--
2007		553.5	108.3	661.8	446.6	215.3	66.2	0.0	0.0	0.0	149.1	0.0	0.0	750.2	--	--
2008		576.3	110.0	686.3	447.9	238.4	68.6	0.0	0.0	0.0	169.7	0.0	0.0	950.0	--	--
2009		599.9	111.7	711.7	449.2	262.4	71.2	0.0	0.0	0.0	191.3	0.0	0.0	1,179.2	--	--
2010	1	624.6	113.5	738.1	450.6	287.5	73.8	4.6	0.8	5.3	208.3	26.5	0.0	1,408.2	40.1	304.3
2011	2	650.3	115.3	765.5	451.9	313.6	76.6	9.2	1.5	10.7	226.3	27.1	0.0	1,663.8	22.1	177.4
2012	3	677.0	117.1	794.0	453.3	340.8	79.4	23.3	3.8	27.1	234.2	82.2	0.0	1,882.4	9.6	79.0
2013	4	704.8	118.9	823.7	454.6	369.1	82.4	74.4	22.5	96.9	189.8	236.8	0.0	1,910.7	3.0	22.7
2014	5	733.7	120.8	854.5	456.0	398.6	85.5	143.0	52.2	195.3	117.8	297.1	0.0	1,807.8	1.6	10.9
2015	6	763.9	122.7	886.5	457.3	429.3	88.7	200.8	74.2	275.0	65.6	309.0	0.0	1,636.8	1.2	7.2
2016	7	795.3	124.6	919.9	458.6	461.2	92.0	257.9	119.9	377.8	-8.6	314.1	0.0	1,379.6	1.0	4.6
2017	8	827.9	126.5	954.5	460.0	494.5	95.4	303.0	192.6	495.6	-96.5	257.6	0.0	1,080.6	0.8	3.0
2018	9	862.0	128.5	990.5	461.3	529.2	99.0	327.9	245.3	573.2	-143.1	175.1	0.0	805.7	0.8	2.2
2019	10	897.4	130.5	1,027.9	462.7	565.3	102.8	342.6	295.4	638.0	-175.5	134.7	0.0	527.7	0.7	1.6
2020	11	1,175.0	132.6	1,307.6	593.9	713.7	130.8	320.5	352.6	673.1	-90.1	0.0	0.0	458.6	0.9	1.5
2021	12	1,184.8	133.6	1,318.4	597.2	721.2	131.8	294.4	407.5	701.9	-112.6	0.0	0.0	364.4	0.8	1.4
2022	13	1,194.7	134.6	1,329.3	600.6	728.7	132.9	264.3	451.7	716.1	-120.3	0.0	0.0	258.7	0.8	1.2
2023	14	1,204.6	135.6	1,340.3	604.0	736.3	134.0	231.9	447.9	679.9	-77.6	0.0	0.0	191.4	0.9	1.2
2024	15	1,214.7	136.7	1,351.4	607.4	744.0	135.1	200.0	425.5	625.4	-16.6	0.0	0.0	182.5	1.0	1.3
2025	16	1,224.8	137.7	1,362.5	610.7	751.8	136.3	169.7	391.2	560.9	54.7	0.0	0.0	244.5	1.1	1.5
2026	17	1,235.0	138.8	1,373.8	614.1	759.7	137.4	142.1	344.2	486.2	136.1	0.0	0.0	390.3	1.3	2.1
2027	18	1,245.3	139.8	1,385.2	617.5	767.7	138.5	117.5	308.5	425.9	203.2	0.0	0.0	609.2	1.5	2.9
2028	19	1,255.7	140.9	1,396.6	620.9	775.8	139.7	95.5	270.3	365.8	270.3	0.0	379.5	524.4	1.7	3.2
2029	20	1,266.2	141.9	1,408.1	624.2	783.9	140.8	76.3	229.6	305.9	337.2	0.0	361.5	521.0	2.1	3.8
2030	21	1,276.8	143.0	1,419.8	627.6	792.2	142.0	59.9	199.3	259.2	391.0	0.0	412.0	520.8	2.5	4.5
2031	22	1,287.4	144.1	1,431.5	631.0	800.6	143.2	45.8	168.0	213.8	443.6	0.0	464.5	520.8	3.1	5.5
2032	23	1,298.1	145.2	1,443.4	634.3	809.0	144.3	33.9	147.9	181.9	482.8	0.0	503.6	520.8	3.7	6.5
2033	24	1,309.0	146.3	1,455.3	637.7	817.6	145.5	23.7	122.0	145.7	526.3	0.0	547.2	520.8	4.6	8.2
2034	25	1,319.9	147.4	1,467.3	641.1	826.2	146.7	15.4	96.4	111.8	567.7	0.0	588.5	520.8	6.1	10.7
2035	26	1,330.9	148.5	1,479.4	644.5	835.0	147.9	9.0	69.7	78.7	608.3	0.0	629.1	520.8	8.7	15.3
2036	27	1,342.0	149.7	1,491.7	647.8	843.8	149.2	4.5	42.8	47.3	647.4	0.0	668.3	520.8	14.7	25.7
2037	28	1,353.2	150.8	1,504.0	651.2	852.8	150.4	1.8	22.0	23.8	678.6	0.0	699.4	520.8	29.5	51.3

Table J-40. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int.	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364.5	152.0	1,516.4	654.6	861.9	151.6	0.5	8.9	9.4	700.8	0.0	721.7	520.8	75.7	131.2
2039	30	1,375.8	153.1	1,529.0	657.9	871.0	152.9	0.0	0.0	0.0	718.1	0.0	739.0	520.8	--	--
2040	31	1,387.3	154.3	1,541.6	661.3	880.3	154.2	0.0	0.0	0.0	726.1	0.0	747.0	520.8	--	--
2041	32	1,398.9	155.5	1,554.3	664.7	889.7	155.4	0.0	0.0	0.0	734.2	0.0	755.1	520.8	--	--
2042	33	1,410.6	156.6	1,567.2	668.1	899.1	156.7	0.0	0.0	0.0	742.4	0.0	763.3	520.8	--	--
2043	34	1,422.3	157.8	1,580.1	671.4	908.7	158.0	0.0	0.0	0.0	750.7	0.0	771.5	520.8	--	--
2044	35	1,434.2	159.0	1,593.2	674.8	918.4	159.3	0.0	0.0	0.0	759.1	0.0	779.9	520.8	--	--
2045	36	1,446.1	160.2	1,606.4	678.2	928.2	160.6	0.0	0.0	0.0	767.6	0.0	788.4	520.8	--	--
2046	37	1,458.2	161.4	1,619.7	681.5	938.1	162.0	0.0	0.0	0.0	776.1	0.0	797.0	520.8	--	--
2047	38	1,470.4	162.7	1,633.0	684.9	948.1	163.3	0.0	0.0	0.0	784.8	0.0	805.7	520.8	--	--
2048	39	1,482.6	163.9	1,646.5	688.3	958.3	164.7	0.0	0.0	0.0	793.6	0.0	814.4	520.8	--	--
2049	40	1,495.0	165.2	1,660.2	691.7	968.5	166.0	0.0	0.0	0.0	802.5	0.0	823.3	520.8	--	--
2050	41	1,507.5	166.4	1,673.9	695.0	978.8	167.4	0.0	0.0	0.0	811.5	0.0	832.3	520.8	--	--
2051	42	1,520.0	167.7	1,687.7	698.4	989.3	168.8	0.0	0.0	0.0	820.5	0.0	841.4	520.8	--	--
2052	43	1,532.7	169.0	1,701.7	701.8	999.9	170.2	0.0	0.0	0.0	829.7	0.0	850.6	520.8	--	--
2053	44	1,545.5	170.2	1,715.7	705.1	1,010.6	171.6	0.0	0.0	0.0	839.0	0.0	859.8	520.8	--	--
2054	45	1,558.4	171.5	1,729.9	708.5	1,021.4	173.0	0.0	0.0	0.0	848.4	0.0	869.2	520.8	--	--
2055	46	1,571.4	172.8	1,744.2	711.9	1,032.3	174.4	0.0	0.0	0.0	857.9	0.0	878.7	520.8	--	--
2056	47	1,584.5	174.1	1,758.6	715.3	1,043.4	175.9	0.0	0.0	0.0	867.5	0.0	888.3	520.8	--	--
2057	48	1,597.7	175.5	1,773.2	718.6	1,054.5	177.3	0.0	0.0	0.0	877.2	0.0	898.1	520.8	--	--
2058	49	1,611.0	176.8	1,787.8	722.0	1,065.8	178.8	0.0	0.0	0.0	887.0	0.0	907.9	520.8	--	--
2059	50	1,624.5	178.1	1,802.6	725.4	1,077.2	180.3	0.0	0.0	0.0	897.0	0.0	917.8	520.8	--	--
2060	51	1,638.0	179.5	1,817.5	728.8	1,088.8	181.8	0.0	0.0	0.0	907.0	0.0	927.8	520.8	--	--
	Total	69,730.8	8,611.7	78,342.5	36,112.1	42,230.4	7,834.3	3,793.5	5,514.2	9,307.7	25,088.5	1,860.1	24,231.7			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14 (base case only)

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distribu

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-41. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							61.9	61.9
2010	1	287.5	104.5	183.0	88.4	94.6	57.8	152.4
2011	2	313.6	108.8	204.7	90.2	114.5	181.1	295.6
2012	3	340.8	113.2	227.5	274.0	-46.5	692.4	645.9
2013	4	369.1	117.7	251.4	956.3	-704.9	894.7	189.8
2014	5	398.6	122.2	276.4	1,288.7	-1,012.3	654.2	-358.1
2015	6	429.3	126.7	302.5	1,158.5	-856.0	592.5	-263.5
2016	7	461.2	131.4	329.8	1,181.5	-851.7	381.1	-470.6
2017	8	494.5	136.1	358.4	1,016.5	-658.1	52.6	-605.5
2018	9	529.2	140.9	388.3	723.3	-335.0	-111.0	-446.0
2019	10	565.3	145.7	419.6	596.9	-177.3	-638.0	-815.3
2020	11	713.7	150.6	563.1	0.0	563.1	-673.1	-110.0
2021	12	721.2	152.6	568.6	0.0	568.6	-701.9	-133.3
2022	13	728.7	154.6	574.1	0.0	574.1	-716.1	-141.9
2023	14	736.3	156.6	579.7	0.0	579.7	-679.9	-100.1
2024	15	744.0	158.6	585.4	0.0	585.4	-625.4	-40.0
2025	16	751.8	160.7	591.1	0.0	591.1	-560.9	30.3
2026	17	759.7	162.7	597.0	0.0	597.0	-486.2	110.7
2027	18	767.7	164.8	602.9	0.0	602.9	-425.9	176.9
2028	19	775.8	166.9	608.8	0.0	608.8	-365.8	243.0
2029	20	783.9	169.1	614.8	0.0	614.8	-305.9	308.9
2030	21	792.2	171.2	621.0	0.0	621.0	-259.2	361.8
2031	22	800.6	173.4	627.1	0.0	627.1	-213.8	413.4
2032	23	809.0	175.6	633.4	0.0	633.4	-181.9	451.5
2033	24	817.6	177.8	639.7	0.0	639.7	-145.7	494.0
2034	25	826.2	180.1	646.2	0.0	646.2	-111.8	534.3
2035	26	835.0	182.3	652.6	0.0	652.6	-78.7	573.9
2036	27	843.8	184.6	659.2	0.0	659.2	-47.3	612.0
2037	28	852.8	186.9	665.9	0.0	665.9	-23.8	642.0
2038	29	861.9	189.3	672.6	0.0	672.6	-9.4	663.2
2039	30	871.0	191.6	679.4	0.0	679.4	0.0	679.4
2040	31	880.3	194.0	686.3	0.0	686.3	0.0	686.3
2041	32	889.7	196.4	693.3	0.0	693.3	0.0	693.3
2042	33	899.1	198.8	700.3	0.0	700.3	0.0	700.3
2043	34	908.7	201.3	707.4	0.0	707.4	0.0	707.4
2044	35	918.4	203.7	714.7	0.0	714.7	0.0	714.7
2045	36	928.2	206.2	722.0	0.0	722.0	0.0	722.0
2046	37	938.1	208.7	729.4	0.0	729.4	0.0	729.4

Table J-41. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	948 1	211 3	736 8	0 0	736 8	0 0	736 8
2048	39	958 3	213 8	744 4	0 0	744 4	0 0	744 4
2049	40	968 5	216 4	752 1	0 0	752 1	0 0	752 1
2050	41	978 8	219 0	759 8	0 0	759 8	0 0	759 8
2051	42	989 3	221 7	767 6	0 0	767 6	0 0	767 6
2052	43	999 9	224 3	775 6	0 0	775 6	0 0	775 6
2053	44	1,010 6	227 0	783 6	0 0	783 6	0 0	783 6
2054	45	1,021 4	229 7	791 7	0 0	791 7	0 0	791 7
2055	46	1,032 3	232 5	799 9	0 0	799 9	0 0	799 9
2056	47	1,043 4	235 2	808 2	0 0	808 2	0 0	808 2
2057	48	1,054 5	238 0	816 5	0 0	816 5	0 0	816 5
2058	49	1,065 8	240 8	825 0	0 0	825 0	0 0	825 0
2059	50	1,077 2	243 6	833 6	0 0	833 6	0 0	833 6
2060	51	1,088 8	246 5	842 3	0 0	842 3	0 0	842 3
	Total	40,581 1	9,266 5	31,314 7	7,374 3	23,940 4		20,085 0
				Financial Internal Rate of Return		9 8%		17 0%
				Net Present Value at 8 percent discount rate		784 9		915 0

a/ From Table J-40

b/ From Table 6-6 (base case only)

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-42. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	437.2	71.9	50.9	0.0	0.0	0.0	21.0	0.0	0.0	21.0	--	--
2001		423.1	98.6	521.7	438.5	83.2	52.2	0.0	0.0	0.0	31.0	0.0	0.0	52.8	--	--
2002		434.5	100.2	534.7	439.9	94.8	53.5	0.0	0.0	0.0	41.3	0.0	0.0	96.3	--	--
2003		446.2	101.7	548.0	441.2	106.8	54.8	0.0	0.0	0.0	52.0	0.0	0.0	152.1	--	--
2004		458.3	103.3	561.6	442.5	119.1	56.2	0.0	0.0	0.0	62.9	0.0	0.0	221.1	--	--
2005		470.7	105.0	575.6	443.9	131.7	57.6	0.0	0.0	0.0	74.2	0.0	0.0	304.1	--	--
2006		483.4	106.6	590.0	445.2	144.8	59.0	0.0	0.0	0.0	85.8	0.0	0.0	402.1	--	--
2007		496.4	108.3	604.7	446.6	158.2	60.5	0.0	0.0	0.0	97.7	0.0	0.0	515.8	--	--
2008		509.8	110.0	619.8	447.9	171.9	62.0	0.0	0.0	0.0	109.9	0.0	0.0	646.4	--	--
2009	1	523.6	111.7	635.3	449.2	186.1	63.5	5.0	0.8	5.8	116.8	28.7	0.0	760.3	21.2	153.0
2010	2	537.7	113.5	651.2	450.6	200.6	65.1	10.0	1.6	11.6	123.9	29.3	0.0	885.3	11.7	88.0
2011	3	552.3	115.3	667.5	451.9	215.6	66.8	25.3	4.2	29.4	119.4	89.3	0.0	950.8	5.1	37.4
2012	4	567.2	117.1	684.2	453.3	231.0	68.4	74.8	22.8	97.6	64.9	225.8	0.0	828.0	1.7	10.1
2013	5	582.5	118.9	701.4	454.6	246.8	70.1	143.3	50.7	194.0	-17.3	308.7	0.0	535.0	0.9	3.7
2014	6	598.2	120.8	719.0	456.0	263.1	71.9	208.0	75.7	283.8	-92.6	338.2	0.0	125.6	0.7	1.1
2015	7	614.4	122.7	737.1	457.3	279.8	73.7	271.4	126.2	397.7	-191.6	335.2	0.0	-396.2	0.5	-0.5
2016	8	631.0	124.6	755.6	458.6	296.9	75.6	330.5	200.2	530.7	-309.3	326.9	0.0	-1,048.3	0.4	-1.6
2017	9	648.0	126.5	774.6	460.0	314.6	77.5	368.9	257.8	626.6	-389.5	251.7	0.0	-1,731.4	0.4	-2.4
2018	10	665.5	128.5	794.1	461.3	332.8	79.4	392.9	321.4	714.3	-460.9	190.3	0.0	-2,451.9	0.4	-3.1
2019	11	683.5	130.5	814.1	462.7	351.4	81.4	378.4	386.8	765.2	-495.2	54.9	0.0	-3,100.1	0.4	-3.7
2020	12	904.0	132.6	1,036.6	604.3	432.3	103.7	349.8	442.6	792.3	-463.6	0.0	0.0	-3,687.7	0.4	-4.2
2021	13	912.6	133.6	1,046.2	607.6	438.6	104.6	317.1	495.5	812.6	-478.6	0.0	0.0	-4,313.9	0.4	-4.9
2022	14	921.2	134.6	1,055.9	611.0	444.9	105.6	281.3	502.2	783.5	-444.2	0.0	0.0	-4,930.6	0.4	-5.9
2023	15	930.0	135.6	1,065.6	614.4	451.3	106.6	245.3	489.2	734.4	-389.7	0.0	0.0	-5,517.6	0.5	-7.0
2024	16	938.8	136.7	1,075.5	617.7	457.7	107.5	210.2	460.4	670.6	-320.4	0.0	0.0	-6,058.7	0.5	-8.5
2025	17	947.7	137.7	1,085.4	621.1	464.3	108.5	177.5	412.8	590.4	-234.6	0.0	0.0	-6,535.7	0.6	-10.5
2026	18	956.7	138.8	1,095.5	624.5	471.0	109.5	148.1	369.8	517.9	-156.4	0.0	0.0	-6,953.5	0.7	-12.7
2027	19	965.8	139.8	1,105.6	627.9	477.8	110.6	121.6	325.1	446.7	-79.6	0.0	0.0	-7,311.2	0.8	-15.5
2028	20	975.0	140.9	1,115.8	631.2	484.6	111.6	98.5	277.1	375.6	-2.6	0.0	0.0	-7,606.3	1.0	-19.3
2029	21	984.2	141.9	1,126.2	634.6	491.6	112.6	78.6	242.5	321.1	57.8	0.0	0.0	-7,852.7	1.2	-23.3
2030	22	993.5	143.0	1,136.6	638.0	498.6	113.7	61.4	209.2	270.6	114.3	0.0	0.0	-8,052.4	1.4	-28.3
2031	23	1,003.0	144.1	1,147.1	641.3	505.8	114.7	46.5	185.2	231.7	159.3	0.0	0.0	-8,215.2	1.7	-33.8
2032	24	1,012.5	145.2	1,157.7	644.7	513.0	115.8	33.5	156.4	189.9	207.3	0.0	0.0	-8,336.5	2.1	-41.8
2033	25	1,022.1	146.3	1,168.4	648.1	520.3	116.8	22.8	125.8	148.6	254.9	0.0	0.0	-8,415.0	2.7	-53.9
2034	26	1,031.8	147.4	1,179.2	651.5	527.8	117.9	14.4	93.9	108.3	301.5	0.0	0.0	-8,450.1	3.8	-74.2
2035	27	1,041.6	148.5	1,190.1	654.8	535.3	119.0	8.2	66.2	74.3	342.0	0.0	0.0	-8,446.1	5.6	-108.0
2036	28	1,051.5	149.7	1,201.2	658.2	543.0	120.1	3.9	39.7	43.6	379.2	0.0	0.0	-8,404.7	9.7	-183.0
2037	29	1,061.5	150.8	1,212.3	661.6	550.7	121.2	1.4	19.4	20.8	408.7	0.0	0.0	-8,332.3	20.6	-379.6
2038	30	1,071.5	152.0	1,223.5	664.9	558.5	122.3	0.3	5.4	5.7	430.5	0.0	0.0	-8,235.1	--	--
2039	31	1,081.7	153.1	1,234.8	668.3	566.5	123.5	0.0	0.0	0.0	443.0	0.0	0.0	-8,121.5	--	--
2040	32	1,092.0	154.3	1,246.2	671.7	574.6	124.6	0.0	0.0	0.0	449.9	0.0	0.0	-7,996.4	--	--

Table J-42. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,102 3	155 5	1,257 8	675 1	582 7	125 8	0 0	0 0	0 0	456 9	0 0	0 0	-7,859 3	- -	- -
2042	34	1,112 8	156 6	1,269 4	678 4	591 0	126 9	0 0	0 0	0 0	464 0	0 0	0 0	-7,709 6	- -	- -
2043	35	1,123 3	157 8	1,281 2	681 8	599 4	128 1	0 0	0 0	0 0	471 3	0 0	0 0	-7,546 8	- -	- -
2044	36	1,134 0	159 0	1,293 0	685 2	607 9	129 3	0 0	0 0	0 0	478 6	0 0	0 0	-7,370 1	- -	- -
2045	37	1,144 8	160 2	1,305 0	688 5	616 5	130 5	0 0	0 0	0 0	486 0	0 0	0 0	-7,178 9	- -	- -
2046	38	1,155 6	161 4	1,317 1	691 9	625 2	131 7	0 0	0 0	0 0	493 5	0 0	0 0	-6,972 6	- -	- -
2047	39	1,166 6	162 7	1,329 3	695 3	634 0	132 9	0 0	0 0	0 0	501 1	0 0	0 0	-6,750 5	- -	- -
2048	40	1,177 7	163 9	1,341 6	698 7	642 9	134 2	0 0	0 0	0 0	508 8	0 0	0 0	-6,511 7	- -	- -
2049	41	1,188 8	165 2	1,354 0	702 0	652 0	135 4	0 0	0 0	0 0	516 6	0 0	0 0	-6,255 6	- -	- -
2050	42	1,200 1	166 4	1,366 5	705 4	661 1	136 7	0 0	0 0	0 0	524 5	0 0	0 0	-5,981 4	- -	- -
2051	43	1,211 5	167 7	1,379 2	708 8	670 4	137 9	0 0	0 0	0 0	532 5	0 0	0 0	-5,688 1	- -	- -
2052	44	1,223 0	169 0	1,392 0	712 2	679 8	139 2	0 0	0 0	0 0	540 6	0 0	0 0	-5,375 0	- -	- -
2053	45	1,234 6	170 2	1,404 9	715 5	689 3	140 5	0 0	0 0	0 0	548 9	0 0	0 0	-5,041 2	- -	- -
2054	46	1,246 3	171 5	1,417 9	718 9	699 0	141 8	0 0	0 0	0 0	557 2	0 0	0 0	-4,685 6	- -	- -
2055	47	1,258 2	172 8	1,431 0	722 3	708 7	143 1	0 0	0 0	0 0	565 6	0 0	0 0	-4,307 4	- -	- -
2056	48	1,270 1	174 1	1,444 3	725 6	718 6	144 4	0 0	0 0	0 0	574 2	0 0	0 0	-3,905 5	- -	- -
2057	49	1,282 2	175 5	1,457 6	729 0	728 6	145 8	0 0	0 0	0 0	582 9	0 0	0 0	-3,478 9	- -	- -
2058	50	1,294 3	176 8	1,471 1	732 4	738 8	147 1	0 0	0 0	0 0	591 6	0 0	0 0	-3,026 4	- -	- -
2059	51	1,306 6	178 1	1,484 8	735 8	749 0	148 5	0 0	0 0	0 0	600 5	0 0	0 0	-2,546 9	- -	- -
2060	52	1,319 0	179 5	1,498 5	739 1	759 4	149 9	0 0	0 0	0 0	609 5	0 0	0 0	-2,039 3	- -	- -
Total		55,788 9	8,611 7	64,400 6	36,537 4	27,863 2	6,440 1	4,428 9	6,366 6	10,795 4	10,627 7	2,179 1	0 0			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14 (base case only)

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-43. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						67 0	67 0
1	2009	186 1	100 3	85 8	95 7	-9 9	62 7	52 8
2	2010	200 6	104 5	96 1	97 8	-1 7	196 8	195 1
3	2011	215 6	108 8	106 8	297 7	-190 9	669 0	478 1
4	2012	231 0	113 2	117 8	924 3	-806 5	889 4	82 8
5	2013	246 8	117 7	129 1	1,295 7	-1,166 6	751 7	-414 9
6	2014	263 1	122 2	140 9	1,283 9	-1,143 0	676 9	-466 1
7	2015	279 8	126 7	153 0	1,295 9	-1,142 9	560 7	-582 2
8	2016	296 9	131 4	165 6	1,285 2	-1,119 6	208 2	-911 4
9	2017	314 6	136 1	178 5	990 7	-812 2	-21 0	-833 2
10	2018	332 8	140 9	191 9	795 9	-604 0	-586 3	-1,190 3
11	2019	351 4	145 7	205 7	182 9	22 8	-765 2	-742 4
12	2020	432 3	150 6	281 8	0 0	281 8	-792 3	-510 6
13	2021	438 6	152 6	286 0	0 0	286 0	-812 6	-526 6
14	2022	444 9	154 6	290 3	0 0	290 3	-783 5	-493 2
15	2023	451 3	156 6	294 7	0 0	294 7	-734 4	-439 7
16	2024	457 7	158 6	299 1	0 0	299 1	-670 6	-371 5
17	2025	464 3	160 7	303 7	0 0	303 7	-590 4	-286 7
18	2026	471 0	162 7	308 3	0 0	308 3	-517 9	-209 6
19	2027	477 8	164 8	312 9	0 0	312 9	-446 7	-133 8
20	2028	484 6	166 9	317 7	0 0	317 7	-375 6	-57 9
21	2029	491 6	169 1	322 5	0 0	322 5	-321 1	1 4
22	2030	498 6	171 2	327 4	0 0	327 4	-270 6	56 8
23	2031	505 8	173 4	332 3	0 0	332 3	-231 7	100 6
24	2032	513 0	175 6	337 4	0 0	337 4	-189 9	147 5
25	2033	520 3	177 8	342 5	0 0	342 5	-148 6	193 9
26	2034	527 8	180 1	347 7	0 0	347 7	-108 3	239 4
27	2035	535 3	182 3	353 0	0 0	353 0	-74 3	278 6
28	2036	543 0	184 6	358 3	0 0	358 3	-43 6	314 7
29	2037	550 7	186 9	363 8	0 0	363 8	-20 8	342 9
30	2038	558 5	189 3	369 3	0 0	369 3	-5 7	363 6
31	2039	566 5	191 6	374 9	0 0	374 9	0 0	374 9
32	2040	574 6	194 0	380 6	0 0	380 6	0 0	380 6
33	2041	582 7	196 4	386 3	0 0	386 3	0 0	386 3
34	2042	591 0	198 8	392 2	0 0	392 2	0 0	392 2
35	2043	599 4	201 3	398 1	0 0	398 1	0 0	398 1
36	2044	607 9	203 7	404 1	0 0	404 1	0 0	404 1
37	2045	616 5	206 2	410 2	0 0	410 2	0 0	410 2
38	2046	625 2	208 7	416 4	0 0	416 4	0 0	416 4
39	2047	634 0	211 3	422 7	0 0	422 7	0 0	422 7
40	2048	642 9	213 8	429 1	0 0	429 1	0 0	429 1

Table J-43. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	652 0	216 4	435 5	0 0	435 5	0 0	435 5
42	2050	661 1	219 0	442 1	0 0	442 1	0 0	442 1
43	2051	670 4	221 7	448 7	0 0	448 7	0 0	448 7
44	2052	679 8	224 3	455 5	0 0	455 5	0 0	455 5
45	2053	689 3	227 0	462 3	0 0	462 3	0 0	462 3
46	2054	699 0	229 7	469 2	0 0	469 2	0 0	469 2
47	2055	708 7	232 5	476 3	0 0	476 3	0 0	476 3
48	2056	718 6	235 2	483 4	0 0	483 4	0 0	483 4
49	2057	728 6	238 0	490 6	0 0	490 6	0 0	490 6
50	2058	738 8	240 8	497 9	0 0	497 9	0 0	497 9
51	2059	749 0	243 6	505 4	0 0	505 4	0 0	505 4
52	2060	759 4	246 5	512 9	0 0	512 9	0 0	512 9
Total		26,780 9	9,366 7	17,414 2	8,545 7	8,868 5		4,439 6
				Financial Internal Rate of Return		3 3%		1 8%
				Net Present Value at 8 percent discount rate		-2,501 5		-2,104 3

a/ From Table J-42

b/ From Table 6-6 (base case only)

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-44. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417.6	97.1	514.7	437.2	77.5	51.5	0.0	0.0	0.0	26.0	0.0	0.0	26.0	--	--
2001		434.7	98.6	533.4	438.5	94.9	53.3	0.0	0.0	0.0	41.5	0.0	0.0	68.6	--	--
2002		452.6	100.2	552.8	439.9	112.9	55.3	0.0	0.0	0.0	57.6	0.0	0.0	129.0	--	--
2003		471.2	101.7	572.9	441.2	131.7	57.3	0.0	0.0	0.0	74.5	0.0	0.0	208.6	--	--
2004		490.5	103.3	593.9	442.5	151.4	59.4	0.0	0.0	0.0	92.0	0.0	0.0	308.9	--	--
2005		510.7	105.0	615.7	443.9	171.8	61.6	0.0	0.0	0.0	110.2	0.0	0.0	431.5	--	--
2006		531.7	106.6	638.3	445.2	193.1	63.8	0.0	0.0	0.0	129.3	0.0	0.0	578.0	--	--
2007		553.5	108.3	661.8	446.6	215.3	66.2	0.0	0.0	0.0	149.1	0.0	0.0	750.2	--	--
2008		576.3	110.0	686.3	447.9	238.4	68.6	0.0	0.0	0.0	169.7	0.0	0.0	950.0	--	--
2009	1	599.9	111.7	711.7	449.2	262.4	71.2	5.0	0.8	5.8	185.5	28.7	0.0	1,144.7	33.1	231.6
2010	2	624.6	113.5	738.1	450.6	287.5	73.8	10.0	1.6	11.6	202.1	29.3	0.0	1,363.2	18.4	135.9
2011	3	650.3	115.3	765.5	451.9	313.6	76.6	25.3	4.2	29.4	207.6	89.3	0.0	1,536.1	8.1	60.2
2012	4	677.0	117.1	794.0	453.3	340.8	79.4	74.8	22.8	97.6	163.7	225.8	0.0	1,535.4	2.7	18.4
2013	5	704.8	118.9	823.7	454.6	369.1	82.4	143.3	50.7	194.0	92.7	308.7	0.0	1,380.8	1.5	8.6
2014	6	733.7	120.8	854.5	456.0	398.6	85.5	208.0	75.7	283.8	29.3	338.2	0.0	1,127.2	1.1	5.1
2015	7	763.9	122.7	886.5	457.3	429.3	88.7	271.4	126.2	397.7	-57.1	335.2	0.0	780.0	0.9	2.8
2016	8	795.3	124.6	919.9	458.6	461.2	92.0	330.5	200.2	530.7	-161.5	326.9	0.0	322.8	0.7	1.3
2017	9	827.9	126.5	954.5	460.0	494.5	95.4	368.9	257.8	626.6	-227.6	251.7	0.0	-143.6	0.6	0.4
2018	10	862.0	128.5	990.5	461.3	529.2	99.0	392.9	321.4	714.3	-284.2	190.3	0.0	-623.8	0.6	-0.3
2019	11	897.4	130.5	1,027.9	462.7	565.3	102.8	378.4	386.8	765.2	-302.8	54.9	0.0	-1,006.4	0.6	-0.7
2020	12	1,186.0	132.6	1,318.6	604.3	714.3	131.9	349.8	442.6	792.3	-209.8	0.0	0.0	-1,256.5	0.7	-0.9
2021	13	1,197.3	133.6	1,330.9	607.6	723.3	133.1	317.1	495.5	812.6	-222.4	0.0	0.0	-1,529.1	0.7	-1.2
2022	14	1,208.7	134.6	1,343.3	611.0	732.3	134.3	281.3	502.2	783.5	-185.5	0.0	0.0	-1,775.8	0.8	-1.5
2023	15	1,220.2	135.6	1,355.8	614.4	741.4	135.6	245.3	489.2	734.4	-128.6	0.0	0.0	-1,975.4	0.8	-1.9
2024	16	1,231.8	136.7	1,368.4	617.7	750.7	136.8	210.2	460.4	670.6	-56.8	0.0	0.0	-2,111.2	0.9	-2.2
2025	17	1,243.5	137.7	1,381.2	621.1	760.1	138.1	177.5	412.8	590.4	31.6	0.0	0.0	-2,164.0	1.1	-2.6
2026	18	1,255.3	138.8	1,394.1	624.5	769.6	139.4	148.1	369.8	517.9	112.3	0.0	0.0	-2,138.3	1.2	-2.9
2027	19	1,267.3	139.8	1,407.1	627.9	779.2	140.7	121.6	325.1	446.7	191.8	0.0	0.0	-2,032.0	1.4	-3.1
2028	20	1,279.3	140.9	1,420.2	631.2	789.0	142.0	98.5	277.1	375.6	271.3	0.0	0.0	-1,842.0	1.7	-3.2
2029	21	1,291.5	141.9	1,433.4	634.6	798.8	143.3	78.6	242.5	321.1	334.4	0.0	0.0	-1,581.3	2.0	-2.9
2030	22	1,303.8	143.0	1,446.8	638.0	808.8	144.7	61.4	209.2	270.6	393.5	0.0	0.0	-1,251.0	2.5	-2.2
2031	23	1,316.2	144.1	1,460.3	641.3	818.9	146.0	46.5	185.2	231.7	441.2	0.0	0.0	-859.8	2.9	-0.8
2032	24	1,328.7	145.2	1,473.9	644.7	829.2	147.4	33.5	156.4	189.9	491.9	0.0	0.0	-402.3	3.6	1.5
2033	25	1,341.3	146.3	1,487.6	648.1	839.6	148.8	22.8	125.8	148.6	542.2	0.0	0.0	123.8	4.6	5.5
2034	26	1,354.1	147.4	1,501.5	651.5	850.1	150.2	14.4	93.9	108.3	591.6	0.0	0.0	720.3	6.5	13.1
2035	27	1,367.0	148.5	1,515.5	654.8	860.7	151.6	8.2	66.2	74.3	634.8	0.0	855.1	528.8	9.5	16.7
2036	28	1,380.0	149.7	1,529.6	658.2	871.4	153.0	3.9	39.7	43.6	674.8	0.0	703.7	521.2	16.5	28.4
2037	29	1,393.1	150.8	1,543.9	661.6	882.3	154.4	1.4	19.4	20.8	707.1	0.0	728.3	520.8	35.0	60.0
2038	30	1,406.3	152.0	1,558.3	664.9	893.4	155.8	0.3	5.4	5.7	731.8	0.0	752.7	520.8	--	--
2039	31	1,419.7	153.1	1,572.8	668.3	904.5	157.3	0.0	0.0	0.0	747.2	0.0	768.1	520.8	--	--
2040	32	1,433.2	154.3	1,587.5	671.7	915.8	158.8	0.0	0.0	0.0	757.1	0.0	777.9	520.8	--	--

Table J-44. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int.	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,446 9	155 5	1,602 3	675 1	927 2	160 2	0 0	0 0	0 0	767 0	0 0	787 9	520 8	- -	- -
2042	34	1,460 6	156 6	1,617 3	678 4	938 8	161 7	0 0	0 0	0 0	777 1	0 0	797 9	520 8	- -	- -
2043	35	1,474 5	157 8	1,632 3	681 8	950 5	163 2	0 0	0 0	0 0	787 3	0 0	808 1	520 8	- -	- -
2044	36	1,488 5	159 0	1,647 6	685 2	962 4	164 8	0 0	0 0	0 0	797 6	0 0	818 5	520 8	- -	- -
2045	37	1,502 7	160 2	1,662 9	688 5	974 4	166 3	0 0	0 0	0 0	808 1	0 0	828 9	520 8	- -	- -
2046	38	1,517 0	161 4	1,678 4	691 9	986 5	167 8	0 0	0 0	0 0	818 7	0 0	839 5	520 8	- -	- -
2047	39	1,531 4	162 7	1,694 1	695 3	998 8	169 4	0 0	0 0	0 0	829 4	0 0	850 2	520 8	- -	- -
2048	40	1,546 0	163 9	1,709 9	698 7	1,011 2	171 0	0 0	0 0	0 0	840 2	0 0	861 1	520 8	- -	- -
2049	41	1,560 7	165 2	1,725 9	702 0	1,023 8	172 6	0 0	0 0	0 0	851 2	0 0	872 1	520 8	- -	- -
2050	42	1,575 5	166 4	1,742 0	705 4	1,036 5	174 2	0 0	0 0	0 0	862 4	0 0	883 2	520 8	- -	- -
2051	43	1,590 5	167 7	1,758 2	708 8	1,049 4	175 8	0 0	0 0	0 0	873 6	0 0	894 4	520 8	- -	- -
2052	44	1,605 7	169 0	1,774 6	712 2	1,062 5	177 5	0 0	0 0	0 0	885 0	0 0	905 8	520 8	- -	- -
2053	45	1,620 9	170 2	1,791 2	715 5	1,075 6	179 1	0 0	0 0	0 0	896 5	0 0	917 4	520 8	- -	- -
2054	46	1,636 3	171 5	1,807 9	718 9	1,089 0	180 8	0 0	0 0	0 0	908 2	0 0	929 0	520 8	- -	- -
2055	47	1,651 9	172 8	1,824 7	722 3	1,102 5	182 5	0 0	0 0	0 0	920 0	0 0	940 8	520 8	- -	- -
2056	48	1,667 6	174 1	1,841 8	725 6	1,116 1	184 2	0 0	0 0	0 0	932 0	0 0	952 8	520 8	- -	- -
2057	49	1,683 5	175 5	1,859 0	729 0	1,129 9	185 9	0 0	0 0	0 0	944 1	0 0	964 9	520 8	- -	- -
2058	50	1,699 5	176 8	1,876 3	732 4	1,143 9	187 6	0 0	0 0	0 0	956 3	0 0	977 1	520 8	- -	- -
2059	51	1,715 7	178 1	1,893 8	735 8	1,158 1	189 4	0 0	0 0	0 0	968 7	0 0	989 5	520 8	- -	- -
2060	52	1,732 0	179 5	1,911 5	739 1	1,172 4	191 2	0 0	0 0	0 0	981 2	0 0	1,002 1	520 8	- -	- -
Total		71,707 1	8,611 7	80,318 8	36,537 4	43,781 4	8,031 9	4,428 9	6,366 6	10,795 4	24,954 1	2,179 1	22,407 0			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14 (base case only)

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-45. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						67 0	67 0
1	2009	262 4	100 3	162 2	95.7	66 5	62 7	129 2
2	2010	287 5	104 5	183 0	97 8	85 2	196 8	282 0
3	2011	313.6	108 8	204 7	297 7	-93 0	669 0	576 1
4	2012	340 8	113 2	227 5	924 3	-696 8	889 4	192 6
5	2013	369 1	117 7	251 4	1,295 7	-1,044 3	751 7	-292 6
6	2014	398 6	122 2	276 4	1,283 9	-1,007 5	676 9	-330 6
7	2015	429 3	126.7	302 5	1,295 9	-993 4	560 7	-432 7
8	2016	461 2	131 4	329 8	1,285 2	-955 4	208 2	-747 1
9	2017	494 5	136 1	358 4	990 7	-632 3	-21 0	-653 3
10	2018	529 2	140 9	388 3	795 9	-407 6	-586 3	-993 8
11	2019	565 3	145 7	419 6	182 9	236 7	-765 2	-528 6
12	2020	714 3	150 6	563 8	0 0	563 8	-792 3	-228 6
13	2021	723 3	152 6	570 7	0 0	570 7	-812 6	-241 9
14	2022	732 3	154 6	577 7	0 0	577 7	-783 5	-205 8
15	2023	741 4	156 6	584 9	0 0	584 9	-734 4	-149 5
16	2024	750 7	158 6	592 1	0 0	592 1	-670 6	-78 5
17	2025	760 1	160 7	599 4	0 0	599 4	-590 4	9 1
18	2026	769 6	162 7	606 9	0 0	606 9	-517 9	89 0
19	2027	779 2	164 8	614 4	0 0	614 4	-446 7	167 7
20	2028	789 0	166 9	622 0	0 0	622 0	-375 6	246 4
21	2029	798 8	169 1	629 8	0 0	629 8	-321 1	308 7
22	2030	808 8	171 2	637 6	0 0	637 6	-270 6	367 0
23	2031	818 9	173 4	645 5	0 0	645 5	-231 7	413 8
24	2032	829 2	175 6	653 6	0 0	653 6	-189 9	463 7
25	2033	839 6	177 8	661 7	0 0	661 7	-148 6	513 1
26	2034	850 1	180 1	670 0	0 0	670 0	-108 3	561 7
27	2035	860 7	182 3	678 3	0 0	678 3	-74 3	604 0
28	2036	871 4	184 6	686 8	0 0	686 8	-43 6	643 2
29	2037	882 3	186 9	695 4	0 0	695 4	-20 8	674 6
30	2038	893 4	189 3	704 1	0 0	704 1	-5 7	698 4
31	2039	904 5	191 6	712 9	0 0	712 9	0 0	712 9
32	2040	915 8	194 0	721 8	0 0	721 8	0 0	721 8
33	2041	927 2	196 4	730 8	0 0	730 8	0 0	730 8
34	2042	938 8	198 8	740 0	0 0	740 0	0 0	740 0
35	2043	950 5	201 3	749 3	0 0	749 3	0 0	749 3
36	2044	962 4	203 7	758 6	0 0	758 6	0 0	758 6
37	2045	974 4	206 2	768 2	0 0	768 2	0 0	768 2
38	2046	986 5	208 7	777 8	0 0	777 8	0 0	777 8
39	2047	998 8	211 3	787 5	0 0	787 5	0 0	787 5
40	2048	1011 2	213 8	797 4	0 0	797 4	0 0	797 4

Table J-45. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1023.8	216.4	807.4	0.0	807.4	0.0	807.4
42	2050	1036.5	219.0	817.5	0.0	817.5	0.0	817.5
43	2051	1049.4	221.7	827.7	0.0	827.7	0.0	827.7
44	2052	1062.5	224.3	838.1	0.0	838.1	0.0	838.1
45	2053	1075.6	227.0	848.6	0.0	848.6	0.0	848.6
46	2054	1089.0	229.7	859.3	0.0	859.3	0.0	859.3
47	2055	1102.5	232.5	870.0	0.0	870.0	0.0	870.0
48	2056	1116.1	235.2	880.9	0.0	880.9	0.0	880.9
49	2057	1129.9	238.0	891.9	0.0	891.9	0.0	891.9
50	2058	1143.9	240.8	903.1	0.0	903.1	0.0	903.1
51	2059	1158.1	243.6	914.4	0.0	914.4	0.0	914.4
52	2060	1172.4	246.5	925.9	0.0	925.9	0.0	925.9
Total		42,394.5	9,366.7	33,027.8	8,545.7	24,482.1		20,053.2
				Financial Internal Rate of Return:		8.1%		9.1%
				Net Present Value at 8 percent discount rate:		28.7		238.5

a/ From Table J-44.

b/ From Table 6-6 (base case only).

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-46. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	437.2	71.9	50.9	0.0	0.0	0.0	21.0	0.0	0.0	21.0	--	--
2001		423.1	98.6	521.7	438.5	83.2	52.2	0.0	0.0	0.0	31.0	0.0	0.0	52.8	--	--
2002		434.5	100.2	534.7	439.9	94.8	53.5	0.0	0.0	0.0	41.3	0.0	0.0	96.3	--	--
2003		446.2	101.7	548.0	441.2	106.8	54.8	0.0	0.0	0.0	52.0	0.0	0.0	152.1	--	--
2004		458.3	103.3	561.6	442.5	119.1	56.2	0.0	0.0	0.0	62.9	0.0	0.0	221.1	--	--
2005	1	470.7	105.0	575.6	443.9	131.7	57.6	4.4	0.7	5.1	69.1	25.4	0.0	273.7	14.6	68.3
2006	2	483.4	106.6	590.0	445.2	144.8	59.0	8.8	1.5	10.3	75.5	26.1	0.0	334.0	8.3	40.8
2007	3	496.4	108.3	604.7	446.6	158.2	60.5	13.0	2.2	15.2	82.5	24.9	0.0	404.9	6.4	33.1
2008	4	509.8	110.0	619.8	447.9	171.9	62.0	29.9	5.0	34.9	75.1	98.7	0.0	397.5	3.2	14.6
2009	5	523.6	111.7	635.3	449.2	186.1	63.5	151.5	66.6	218.2	-95.6	457.3	0.0	-139.6	0.6	-0.1
2010	6	537.7	113.5	651.2	450.6	200.6	65.1	215.9	96.5	312.4	-176.9	310.7	0.0	-632.7	0.4	-1.6
2011	7	552.3	115.3	667.5	451.9	215.6	66.8	263.0	114.9	377.9	-229.1	277.9	0.0	-1,165.0	0.4	-2.7
2012	8	567.2	117.1	684.2	453.3	231.0	68.4	317.2	231.0	548.2	-385.6	328.0	0.0	-1,925.2	0.3	-3.2
2013	9	582.5	118.9	701.4	454.6	246.8	70.1	345.9	290.0	635.9	-459.2	247.0	0.0	-2,708.4	0.3	-4.0
2014	10	598.2	120.8	719.0	456.0	263.1	71.9	381.4	322.5	703.9	-512.8	286.8	0.0	-3,616.3	0.3	-4.9
2015	11	614.4	122.7	737.1	457.3	279.8	73.7	408.9	376.2	785.0	-579.0	261.7	0.0	-4,601.6	0.3	-5.6
2016	12	631.0	124.6	755.6	458.6	296.9	75.6	437.0	434.0	871.0	-649.6	276.2	0.0	-5,711.4	0.3	-6.3
2017	13	648.0	126.5	774.6	460.0	314.6	77.5	472.0	513.9	985.9	-748.7	301.4	0.0	-6,989.9	0.2	-6.8
2018	14	665.5	128.5	794.1	461.3	332.8	79.4	491.4	576.1	1,067.5	-814.1	281.2	0.0	-8,364.9	0.2	-7.6
2019	15	683.5	130.5	814.1	462.7	351.4	81.4	502.3	583.5	1,085.7	-815.7	252.3	0.0	-9,767.5	0.2	-8.7
2020	16	938.0	132.6	1,070.6	657.3	413.3	107.1	459.5	620.5	1,080.0	-773.7	0.0	0.0	-10,931.9	0.3	-9.8
2021	17	946.3	133.6	1,079.9	660.4	419.6	108.0	415.1	593.4	1,008.4	-696.9	0.0	0.0	-12,066.0	0.3	-11.7
2022	18	954.7	134.6	1,089.3	663.5	425.9	108.9	371.8	595.2	967.0	-650.1	0.0	0.0	-13,198.7	0.3	-13.3
2023	19	963.2	135.6	1,098.8	666.6	432.3	109.9	328.2	601.9	930.1	-607.8	0.0	0.0	-14,334.4	0.3	-15.1
2024	20	971.7	136.7	1,108.4	669.7	438.7	110.8	284.4	588.0	872.4	-544.5	0.0	0.0	-15,452.3	0.4	-17.3
2025	21	980.3	137.7	1,118.0	672.8	445.3	111.8	241.8	555.3	797.1	-463.7	0.0	0.0	-16,534.0	0.4	-20.3
2026	22	989.0	138.8	1,127.8	675.9	451.9	112.8	202.0	513.5	715.4	-376.3	0.0	0.0	-17,571.7	0.5	-24.1
2027	23	997.8	139.8	1,137.6	679.0	458.6	113.8	165.4	459.6	625.0	-280.1	0.0	0.0	-18,554.7	0.6	-29.1
2028	24	1,006.6	140.9	1,147.5	682.1	465.4	114.7	132.7	406.8	539.5	-188.8	0.0	0.0	-19,485.7	0.7	-35.5
2029	25	1,015.5	141.9	1,157.5	685.2	472.3	115.7	104.3	328.5	432.9	-76.3	0.0	0.0	-20,341.4	0.8	-46.2
2030	26	1,024.5	143.0	1,167.5	688.3	479.3	116.8	81.1	280.0	361.0	1.5	0.0	0.0	-21,153.6	1.0	-57.6
2031	27	1,033.6	144.1	1,177.7	691.4	486.4	117.8	61.4	229.9	291.3	77.3	0.0	0.0	-21,922.4	1.3	-74.0
2032	28	1,042.8	145.2	1,188.0	694.5	493.5	118.8	45.4	187.9	233.2	141.5	0.0	0.0	-22,657.8	1.6	-95.5
2033	29	1,052.0	146.3	1,198.3	697.6	500.8	119.8	32.3	151.2	183.6	197.4	0.0	0.0	-23,366.8	2.1	-125.2
2034	30	1,061.3	147.4	1,208.7	700.7	508.1	120.9	22.1	114.0	136.1	251.1	0.0	0.0	-24,050.3	--	--
2035	31	1,070.7	148.5	1,219.3	703.8	515.5	121.9	14.4	90.9	105.3	288.3	0.0	0.0	-24,724.1	--	--
2036	32	1,080.2	149.7	1,229.9	706.9	523.0	123.0	8.3	67.4	75.7	324.3	0.0	0.0	-25,388.7	--	--
2037	33	1,089.8	150.8	1,240.6	710.0	530.7	124.1	3.9	44.7	48.6	358.0	0.0	0.0	-26,046.2	--	--
2038	34	1,099.4	152.0	1,251.4	713.1	538.4	125.1	1.1	20.9	22.0	391.2	0.0	0.0	-26,696.9	--	--
2039	35	1,109.2	153.1	1,262.3	716.2	546.2	126.2	0.0	0.0	0.0	419.9	0.0	0.0	-27,344.9	--	--
2040	36	1,119.0	154.3	1,273.3	719.3	554.0	127.3	0.0	0.0	0.0	426.7	0.0	0.0	-28,011.9	--	--
2041	37	1,128.9	155.5	1,284.4	722.4	562.0	128.4	0.0	0.0	0.0	433.6	0.0	0.0	-28,698.8	--	--
2042	38	1,138.9	156.6	1,295.6	725.5	570.1	129.6	0.0	0.0	0.0	440.6	0.0	0.0	-29,406.2	--	--

Table J-46. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,149.0	157.8	1,306.9	728.6	578.3	130.7	0.0	0.0	0.0	447.6	0.0	0.0	-30,134.8	- -	- -
2044	40	1,159.2	159.0	1,318.2	731.7	586.6	131.8	0.0	0.0	0.0	454.8	0.0	0.0	-30,885.4	- -	- -
2045	41	1,169.5	160.2	1,329.7	734.8	595.0	133.0	0.0	0.0	0.0	462.0	0.0	0.0	-31,658.9	- -	- -
2046	42	1,179.9	161.4	1,341.3	737.9	603.5	134.1	0.0	0.0	0.0	469.3	0.0	0.0	-32,455.9	- -	- -
2047	43	1,190.3	162.7	1,353.0	741.0	612.0	135.3	0.0	0.0	0.0	476.7	0.0	0.0	-33,277.4	- -	- -
2048	44	1,200.9	163.9	1,364.8	744.1	620.7	136.5	0.0	0.0	0.0	484.2	0.0	0.0	-34,124.2	- -	- -
2049	45	1,211.5	165.2	1,376.7	747.2	629.5	137.7	0.0	0.0	0.0	491.8	0.0	0.0	-34,997.4	- -	- -
2050	46	1,222.2	166.4	1,388.7	750.3	638.4	138.9	0.0	0.0	0.0	499.5	0.0	0.0	-35,897.7	- -	- -
2051	47	1,233.1	167.7	1,400.7	753.4	647.4	140.1	0.0	0.0	0.0	507.3	0.0	0.0	-36,826.3	- -	- -
2052	48	1,244.0	169.0	1,412.9	756.5	656.5	141.3	0.0	0.0	0.0	515.2	0.0	0.0	-37,784.2	- -	- -
2053	49	1,255.0	170.2	1,425.3	759.6	665.7	142.5	0.0	0.0	0.0	523.2	0.0	0.0	-38,772.4	- -	- -
2054	50	1,266.1	171.5	1,437.7	762.7	675.0	143.8	0.0	0.0	0.0	531.3	0.0	0.0	-39,792.0	- -	- -
2055	51	1,277.4	172.8	1,450.2	765.8	684.4	145.0	0.0	0.0	0.0	539.4	0.0	0.0	-40,844.2	- -	- -
2056	52	1,288.7	174.1	1,462.8	768.9	694.0	146.3	0.0	0.0	0.0	547.7	0.0	0.0	-41,930.3	- -	- -
2057	53	1,300.1	175.5	1,475.6	772.0	703.6	147.6	0.0	0.0	0.0	556.1	0.0	0.0	43,051.5	- -	- -
2058	54	1,311.6	176.8	1,488.4	775.1	713.4	148.8	0.0	0.0	0.0	564.5	0.0	0.0	-44,209.0	- -	- -
2059	55	1,323.2	178.1	1,501.4	778.2	723.2	150.1	0.0	0.0	0.0	573.1	0.0	0.0	-45,404.2	- -	- -
2060	56	1,335.0	179.5	1,514.5	781.3	733.3	151.5	0.0	0.0	0.0	581.8	0.0	0.0	-46,638.6	- -	- -
	Total	56,868.5	8,611.7	65,480.2	38,487.5	26,992.7	6,548.0	7,017.8	10,063.9	17,081.7	3,363.1	3,455.5	0.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14 (base case only).

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-47. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							59 2	59 2
2005	1	131 7	83 8	47 9	84 5	-36 6	55 9	19 3
2006	2	144 8	87 8	56 9	87 1	-30 2	47 8	17 6
2007	3	158 2	91 9	66 2	83 0	-16 8	215 2	198 4
2008	4	171 9	96 1	75 9	329 1	-253 2	1,713 2	1,460 0
2009	5	186 1	100 3	85 8	2,205 4	-2,119 6	749 1	-1,370 5
2010	6	200 6	104 5	96 1	1,277 9	-1,181 8	428 2	-753 6
2011	7	215 6	108 8	106 8	1,018 5	-911 7	502 0	-409 7
2012	8	231 0	113 2	117 8	1,207 9	-1,090 1	74 0	-1,016 2
2013	9	246 8	117 7	129 1	869 1	-740 0	137 5	-602 5
2014	10	263 1	122 2	140 9	1,060 1	-919 2	-1 5	-920 7
2015	11	279 8	126 7	153 0	964 1	-811 1	-15 0	-826 1
2016	12	296 9	131 4	165 6	1,046 2	-880 6	68 9	-811 8
2017	13	314 6	136 1	178 5	1,241 2	-1,062 7	-196 5	-1,259 2
2018	14	332 8	140 9	191 9	1,070 6	-878 7	-345 1	-1,223 8
2019	15	351 4	145 7	205 7	974 7	-769 0	-1,085 7	-1,854 7
2020	16	413 3	150 6	262 8	0 0	262 8	-1,080 0	-817 2
2021	17	419 6	152 6	267 0	0 0	267 0	-1,008 4	-741 4
2022	18	425 9	154 6	271 3	0 0	271 3	-967 0	-695 7
2023	19	432 3	156 6	275 7	0 0	275 7	-930 1	-654 4
2024	20	438 7	158 6	280 1	0 0	280 1	-872 4	-592 3
2025	21	445 3	160 7	284 6	0 0	284 6	-797 1	-512 5
2026	22	451 9	162 7	289 2	0 0	289 2	-715 4	-426 2
2027	23	458 6	164 8	293 8	0 0	293 8	-625 0	-331 2
2028	24	465 4	166 9	298 5	0 0	298 5	-539 5	-241 0
2029	25	472 3	169 1	303 2	0 0	303 2	-432 9	-129 6
2030	26	479 3	171 2	308 1	0 0	308 1	-361 0	-53 0
2031	27	486 4	173 4	313 0	0 0	313 0	-291 3	21 6
2032	28	493 5	175 6	317 9	0 0	317 9	-233 2	84 7
2033	29	500 8	177 8	322 9	0 0	322 9	-183 6	139 4
2034	30	508 1	180 1	328 0	0 0	328 0	-136 1	191 9
2035	31	515 5	182 3	333 2	0 0	333 2	-105 3	227 9
2036	32	523 0	184 6	338 4	0 0	338 4	-75 7	262 7
2037	33	530 7	186 9	343 7	0 0	343 7	-48 6	295 1
2038	34	538 4	189 3	349 1	0 0	349 1	-22 0	327 1
2039	35	546 2	191 6	354 5	0 0	354 5	0 0	354 5
2040	36	554 0	194 0	360 0	0 0	360 0	0 0	360 0
2041	37	562 0	196 4	365 6	0 0	365 6	0 0	365 6
2042	38	570 1	198 8	371 3	0 0	371 3	0 0	371 3
2043	39	578 3	201 3	377 0	0 0	377 0	0 0	377 0
2044	40	586 6	203 7	382 9	0 0	382 9	0 0	382 9
2045	41	595 0	206 2	388 7	0 0	388 7	0 0	388 7
2046	42	603 5	208 7	394 7	0 0	394 7	0 0	394 7

Table J-47. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	612.0	211.3	400.8	0.0	400.8	0.0	400.8
2048	44	620.7	213.8	406.9	0.0	406.9	0.0	406.9
2049	45	629.5	216.4	413.1	0.0	413.1	0.0	413.1
2050	46	638.4	219.0	419.4	0.0	419.4	0.0	419.4
2051	47	647.4	221.7	425.7	0.0	425.7	0.0	425.7
2052	48	656.5	224.3	432.2	0.0	432.2	0.0	432.2
2053	49	665.7	227.0	438.7	0.0	438.7	0.0	438.7
2054	50	675.0	229.7	445.3	0.0	445.3	0.0	445.3
2055	51	684.4	232.5	452.0	0.0	452.0	0.0	452.0
2056	52	694.0	235.2	458.8	0.0	458.8	0.0	458.8
2057	53	703.6	238.0	465.6	0.0	465.6	0.0	465.6
2058	54	713.4	240.8	472.6	0.0	472.6	0.0	472.6
2059	55	723.2	243.6	479.6	0.0	479.6	0.0	479.6
2060	56	733.3	246.5	486.8	0.0	486.8	0.0	486.8
	Total	26,517.0	9,726.3	16,790.7	13,519.4	3,271.3		-3,746.5
				Financial Internal Rate of Return:		0.9%		-1.0%
				Net Present Value at 8 percent discount rate:		-4,806.8		-4,166.3

a/ From Table J-46

b/ From Table 6-6 (base case only)

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-48. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	437.2	77.5	51.5	0.0	0.0	0.0	26.0	0.0	0.0	26.0	--	--
2001		434.7	98.6	533.4	438.5	94.9	53.3	0.0	0.0	0.0	41.5	0.0	0.0	68.6	--	--
2002		452.6	100.2	552.8	439.9	112.9	55.3	0.0	0.0	0.0	57.6	0.0	0.0	129.0	--	--
2003		471.2	101.7	572.9	441.2	131.7	57.3	0.0	0.0	0.0	74.5	0.0	0.0	208.6	--	--
2004		490.5	103.3	593.9	442.5	151.4	59.4	0.0	0.0	0.0	92.0	0.0	0.0	308.9	--	--
2005	1	510.7	105.0	615.7	443.9	171.8	61.6	4.4	0.7	5.1	105.1	25.4	0.0	401.1	21.6	100.4
2006	2	531.7	106.6	638.3	445.2	193.1	63.8	8.8	1.5	10.3	119.0	26.1	0.0	509.9	12.6	62.1
2007	3	553.5	108.3	661.8	446.6	215.3	66.2	13.0	2.2	15.2	133.9	24.9	0.0	639.3	9.8	51.9
2008	4	576.3	110.0	686.3	447.9	238.4	68.6	29.9	5.0	34.9	134.9	98.7	0.0	701.0	4.9	25.0
2009	5	599.9	111.7	711.7	449.2	262.4	71.2	151.5	66.6	218.2	-26.9	457.3	0.0	244.8	0.9	2.0
2010	6	624.6	113.5	738.1	450.6	287.5	73.8	215.9	96.5	312.4	-98.7	310.7	0.0	-154.8	0.7	0.2
2011	7	650.3	115.3	765.5	451.9	313.6	76.6	263.0	114.9	377.9	-140.9	277.9	0.0	-579.8	0.6	-0.9
2012	8	677.0	117.1	794.0	453.3	340.8	79.4	317.2	231.0	548.2	-286.8	328.0	0.0	-1,217.8	0.5	-1.7
2013	9	704.8	118.9	823.7	454.6	369.1	82.4	345.9	290.0	635.9	-349.1	247.0	0.0	-1,862.6	0.5	-2.5
2014	10	733.7	120.8	854.5	456.0	398.6	85.5	381.4	322.5	703.9	-390.8	286.8	0.0	-2,614.7	0.4	-3.3
2015	11	763.9	122.7	886.5	457.3	429.3	88.7	408.9	376.2	785.0	-444.4	261.7	0.0	-3,425.4	0.4	-3.9
2016	12	795.3	124.6	919.9	458.6	461.2	92.0	437.0	434.0	871.0	-501.7	276.2	0.0	-4,340.3	0.4	-4.6
2017	13	827.9	126.5	954.5	460.0	494.5	95.4	472.0	513.9	985.9	-586.8	301.4	0.0	-5,402.1	0.4	-5.1
2018	14	862.0	128.5	990.5	461.3	529.2	99.0	491.4	576.1	1,067.5	-637.4	281.2	0.0	-6,536.8	0.4	-5.7
2019	15	897.4	130.5	1,027.9	462.7	565.3	102.8	502.3	583.5	1,085.7	-623.3	252.3	0.0	-7,673.8	0.4	-6.6
2020	16	1,221.0	132.6	1,353.6	657.3	696.3	135.4	459.5	620.5	1,080.0	-519.0	0.0	0.0	-8,499.7	0.5	-7.4
2021	17	1,232.1	133.6	1,365.7	660.4	705.4	136.6	415.1	593.4	1,008.4	-439.6	0.0	0.0	-9,279.3	0.6	-8.6
2022	18	1,243.3	134.6	1,377.9	663.5	714.5	137.8	371.8	595.2	967.0	-390.3	0.0	0.0	-10,040.8	0.6	-9.8
2023	19	1,254.6	135.6	1,390.3	666.6	723.7	139.0	328.2	601.9	930.1	-345.4	0.0	0.0	-10,787.9	0.6	-11.0
2024	20	1,266.0	136.7	1,402.7	669.7	733.1	140.3	284.4	588.0	872.4	-279.6	0.0	0.0	-11,499.0	0.7	-12.5
2025	21	1,277.6	137.7	1,415.3	672.8	742.5	141.5	241.8	555.3	797.1	-196.1	0.0	0.0	-12,155.1	0.8	-14.5
2026	22	1,289.2	138.8	1,427.9	675.9	752.1	142.8	202.0	513.5	715.4	-106.1	0.0	0.0	-12,747.4	0.9	-17.0
2027	23	1,300.9	139.8	1,440.7	679.0	761.8	144.1	165.4	459.6	625.0	-7.3	0.0	0.0	-13,264.6	1.0	-20.2
2028	24	1,312.7	140.9	1,453.6	682.1	771.6	145.4	132.7	406.8	539.5	86.7	0.0	0.0	-13,708.5	1.2	-24.2
2029	25	1,324.7	141.9	1,466.6	685.2	781.5	146.7	104.3	328.5	432.9	202.0	0.0	0.0	-14,054.9	1.5	-31.0
2030	26	1,336.7	143.0	1,479.8	688.3	791.5	148.0	81.1	280.0	361.0	282.5	0.0	0.0	-14,334.6	1.8	-37.9
2031	27	1,348.9	144.1	1,493.0	691.4	801.7	149.3	61.4	229.9	291.3	361.0	0.0	0.0	-14,546.9	2.2	-47.7
2032	28	1,361.2	145.2	1,506.4	694.5	811.9	150.6	45.4	187.9	233.2	428.0	0.0	0.0	-14,700.7	2.8	-60.2
2033	29	1,373.5	146.3	1,519.9	697.6	822.3	152.0	32.3	151.2	183.6	486.8	0.0	0.0	-14,802.0	3.7	-77.0
2034	30	1,386.0	147.4	1,533.5	700.7	832.8	153.3	22.1	114.0	136.1	543.4	0.0	0.0	-14,850.7	--	--
2035	31	1,398.7	148.5	1,547.2	703.8	843.4	154.7	14.4	90.9	105.3	583.4	0.0	0.0	-14,861.3	--	--
2036	32	1,411.4	149.7	1,561.1	706.9	854.2	156.1	8.3	67.4	75.7	622.4	0.0	0.0	-14,833.4	--	--
2037	33	1,424.2	150.8	1,575.0	710.0	865.1	157.5	3.9	44.7	48.6	659.0	0.0	0.0	-14,767.7	--	--
2038	34	1,437.2	152.0	1,589.1	713.1	876.1	158.9	1.1	20.9	22.0	695.1	0.0	0.0	-14,663.3	--	--
2039	35	1,450.2	153.1	1,603.4	716.2	887.2	160.3	0.0	0.0	0.0	726.9	0.0	0.0	-14,523.0	--	--
2040	36	1,463.4	154.3	1,617.7	719.3	898.5	161.8	0.0	0.0	0.0	736.7	0.0	0.0	-14,367.2	--	--
2041	37	1,476.7	155.5	1,632.2	722.4	909.9	163.2	0.0	0.0	0.0	746.6	0.0	0.0	-14,195.3	--	--
2042	38	1,490.2	156.6	1,646.8	725.5	921.4	164.7	0.0	0.0	0.0	756.7	0.0	0.0	-14,006.4	--	--

Table J-48. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2043	39	1,503.7	157.8	1,661.6	728.6	933.0	166.2	0.0	0.0	0.0	766.9	0.0	0.0	-13,799.8	- -	- -
2044	40	1,517.4	159.0	1,676.4	731.7	944.8	167.6	0.0	0.0	0.0	777.1	0.0	0.0	-13,574.6	- -	- -
2045	41	1,531.2	160.2	1,691.5	734.8	956.7	169.1	0.0	0.0	0.0	787.6	0.0	0.0	-13,330.1	- -	- -
2046	42	1,545.2	161.4	1,706.6	737.9	968.8	170.7	0.0	0.0	0.0	798.1	0.0	0.0	-13,065.2	- -	- -
2047	43	1,559.2	162.7	1,721.9	741.0	980.9	172.2	0.0	0.0	0.0	808.7	0.0	0.0	-12,779.0	- -	- -
2048	44	1,573.4	163.9	1,737.3	744.1	993.3	173.7	0.0	0.0	0.0	819.5	0.0	0.0	-12,470.7	- -	- -
2049	45	1,587.7	165.2	1,752.9	747.2	1,005.7	175.3	0.0	0.0	0.0	830.4	0.0	0.0	-12,139.1	- -	- -
2050	46	1,602.1	166.4	1,768.6	750.3	1,018.3	176.9	0.0	0.0	0.0	841.5	0.0	0.0	-11,783.2	- -	- -
2051	47	1,616.7	167.7	1,784.4	753.4	1,031.1	178.4	0.0	0.0	0.0	852.6	0.0	0.0	-11,401.9	- -	- -
2052	48	1,631.4	169.0	1,800.4	756.5	1,043.9	180.0	0.0	0.0	0.0	863.9	0.0	0.0	-10,994.1	- -	- -
2053	49	1,646.3	170.2	1,816.5	759.6	1,057.0	181.7	0.0	0.0	0.0	875.3	0.0	0.0	-10,558.5	- -	- -
2054	50	1,661.2	171.5	1,832.8	762.7	1,070.1	183.3	0.0	0.0	0.0	886.9	0.0	0.0	-10,094.0	- -	- -
2055	51	1,676.4	172.8	1,849.2	765.8	1,083.4	184.9	0.0	0.0	0.0	898.5	0.0	0.0	-9,599.3	- -	- -
2056	52	1,691.6	174.1	1,865.8	768.9	1,096.9	186.6	0.0	0.0	0.0	910.3	0.0	0.0	-9,072.9	- -	- -
2057	53	1,707.0	175.5	1,882.5	772.0	1,110.5	188.2	0.0	0.0	0.0	922.3	0.0	0.0	-8,513.6	- -	- -
2058	54	1,722.5	176.8	1,899.3	775.1	1,124.3	189.9	0.0	0.0	0.0	934.3	0.0	0.0	-7,919.7	- -	- -
2059	55	1,738.2	178.1	1,916.3	778.2	1,138.2	191.6	0.0	0.0	0.0	946.6	0.0	0.0	-7,290.0	- -	- -
2060	56	1,754.0	179.5	1,933.5	781.3	1,152.3	193.4	0.0	0.0	0.0	958.9	0.0	0.0	-6,622.7	- -	- -
	Total	72,921.4	8,611.7	81,533.1	38,487.5	43,045.6	8,153.3	7,017.8	10,063.9	17,081.7	17,810.7	3,455.5	0.0			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14 (base case only)

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-49. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							59 2	59 2
2005	1	171 8	83 8	88 0	84 5	3 5	55 9	59 4
2006	2	193 1	87 8	105 2	87 1	18 1	47 8	66 0
2007	3	215 3	91 9	123 3	83 0	40 3	215 2	255 5
2008	4	238 4	96 1	142 3	329 1	-186 8	1,713 2	1,526 4
2009	5	262 4	100 3	162 2	2,205 4	-2,043 2	749 1	-1,294 2
2010	6	287 5	104 5	183 0	1,277 9	-1,094 9	428 2	-666 8
2011	7	313 6	108 8	204 7	1,018 5	-813 8	502 0	-311 8
2012	8	340 8	113 2	227 5	1,207 9	-980 4	74 0	-906 4
2013	9	369 1	117 7	251 4	869 1	-617 7	137 5	-480 2
2014	10	398 6	122 2	276 4	1,060 1	-783 7	-1 5	-785 2
2015	11	429 3	126 7	302 5	964 1	-661 6	-15 0	-676 6
2016	12	461 2	131 4	329 8	1,046 2	-716 4	68 9	-647 5
2017	13	494 5	136 1	358 4	1,241 2	-882 8	-196 5	-1,079 3
2018	14	529 2	140 9	388 3	1,070 6	-682 3	-345 1	-1,027 3
2019	15	565 3	145 7	419 6	974 7	-555 1	-1,085 7	-1,640 9
2020	16	696 3	150 6	545 8	0 0	545 8	-1,080 0	-534 2
2021	17	705 4	152 6	552 8	0 0	552 8	-1,008 4	-455 6
2022	18	714 5	154 6	559 9	0 0	559 9	-967 0	-407 1
2023	19	723 7	156 6	567 1	0 0	567 1	-930 1	-363 0
2024	20	733 1	158 6	574 5	0 0	574 5	-872 4	-297 9
2025	21	742 5	160 7	581 9	0 0	581 9	-797 1	-215 3
2026	22	752 1	162 7	589 4	0 0	589 4	-715 4	-126 1
2027	23	761 8	164 8	596 9	0 0	596 9	-625 0	-28 0
2028	24	771 6	166 9	604 6	0 0	604 6	-539 5	65 1
2029	25	781 5	169 1	612 4	0 0	612 4	-432 9	179 5
2030	26	791 5	171 2	620 3	0 0	620 3	-361 0	259 2
2031	27	801 7	173 4	628 2	0 0	628 2	-291 3	336 9
2032	28	811 9	175 6	636 3	0 0	636 3	-233 2	403 1
2033	29	822 3	177 8	644 5	0 0	644 5	-183 6	460 9
2034	30	832 8	180 1	652 7	0 0	652 7	-136 1	516 6
2035	31	843 4	182 3	661 1	0 0	661 1	-105 3	555 8
2036	32	854 2	184 6	669 6	0 0	669 6	-75 7	593 9
2037	33	865 1	186 9	678 1	0 0	678 1	-48 6	629 5
2038	34	876 1	189 3	686 8	0 0	686 8	-22 0	664 8
2039	35	887 2	191 6	695 6	0 0	695 6	0 0	695 6
2040	36	898 5	194 0	704 5	0 0	704 5	0 0	704 5
2041	37	909 9	196 4	713 4	0 0	713 4	0 0	713 4
2042	38	921 4	198 8	722 5	0 0	722 5	0 0	722 5
2043	39	933 0	201 3	731 7	0 0	731 7	0 0	731 7
2044	40	944 8	203 7	741 1	0 0	741 1	0 0	741 1
2045	41	956 7	206 2	750 5	0 0	750 5	0 0	750 5
2046	42	968 8	208 7	760 0	0 0	760 0	0 0	760 0

Table J-49. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Operation and Maintenance Costs Increased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	980.9	211.3	769.6	0.0	769.6	0.0	769.6
2048	44	993.3	213.8	779.4	0.0	779.4	0.0	779.4
2049	45	1,005.7	216.4	789.3	0.0	789.3	0.0	789.3
2050	46	1,018.3	219.0	799.3	0.0	799.3	0.0	799.3
2051	47	1,031.1	221.7	809.4	0.0	809.4	0.0	809.4
2052	48	1,043.9	224.3	819.6	0.0	819.6	0.0	819.6
2053	49	1,057.0	227.0	829.9	0.0	829.9	0.0	829.9
2054	50	1,070.1	229.7	840.4	0.0	840.4	0.0	840.4
2055	51	1,083.4	232.5	851.0	0.0	851.0	0.0	851.0
2056	52	1,096.9	235.2	861.7	0.0	861.7	0.0	861.7
2057	53	1,110.5	238.0	872.5	0.0	872.5	0.0	872.5
2058	54	1,124.3	240.8	883.5	0.0	883.5	0.0	883.5
2059	55	1,138.2	243.6	894.6	0.0	894.6	0.0	894.6
2060	56	1,152.3	246.5	905.8	0.0	905.8	0.0	905.8
	Total	42,477.2	9,726.3	32,750.9	13,519.4	19,231.5		12,213.7
				Financial Internal Rate of Return:		4.2%		2.9%
				Net Present Value at 8 percent discount rate:		-2,766.2		-2,276.9

a/ From Table J-48

b/ From Table 6-6 (base case only)

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-50. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Oper & Maint. c/	Operations	Panama d/	Int.	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009		523.6	111.7	635.3	359.4	275.9	63.5	0.0	0.0	0.0	212.4	0.0	0.0	1,858.0	--	--
2010	1	537.7	113.5	651.2	360.5	290.7	65.1	4.2	0.6	4.8	220.8	19.9	0.0	2,133.3	47.0	491.0
2011	2	552.3	115.3	667.5	361.5	306.0	66.8	8.5	1.1	9.7	229.6	20.3	0.0	2,427.9	24.8	276.2
2012	3	567.2	117.1	684.2	362.6	321.6	68.4	21.6	2.9	24.4	228.8	61.7	0.0	2,692.1	10.4	120.5
2013	4	582.5	118.9	701.4	363.7	337.7	70.1	68.8	16.9	85.7	181.9	177.6	0.0	2,804.1	3.1	35.9
2014	5	598.2	120.8	719.0	364.8	354.2	71.9	132.1	39.2	171.3	111.1	222.8	0.0	2,804.5	1.6	18.0
2015	6	614.4	122.7	737.1	365.8	371.2	73.7	185.6	55.6	241.2	56.3	231.8	0.0	2,741.2	1.2	12.6
2016	7	631.0	124.6	755.6	366.9	388.7	75.6	238.5	90.0	328.5	-15.4	235.6	0.0	2,599.9	1.0	8.9
2017	8	648.0	126.5	774.6	368.0	406.6	77.5	280.3	144.4	424.7	-95.6	193.2	0.0	2,415.1	0.8	6.5
2018	9	665.5	128.5	794.1	369.1	425.0	79.4	303.4	184.0	487.4	-141.8	131.3	0.0	2,238.7	0.7	5.3
2019	10	683.5	130.5	814.1	370.1	443.9	81.4	317.0	221.6	538.6	-176.0	101.0	0.0	2,051.2	0.7	4.5
2020	11	904.0	132.6	1,036.6	475.1	561.5	103.7	296.7	264.4	561.1	-103.3	0.0	0.0	2,029.9	0.8	4.4
2021	12	911.9	133.6	1,045.5	477.8	567.7	104.5	272.6	305.6	578.2	-115.1	0.0	0.0	1,996.1	0.8	4.3
2022	13	919.8	134.6	1,054.4	480.5	573.9	105.4	244.8	338.8	583.6	-115.1	0.0	0.0	1,960.8	0.8	4.2
2023	14	927.8	135.6	1,063.5	483.2	580.3	106.3	214.8	336.0	550.8	-76.8	0.0	0.0	1,962.4	0.9	4.4
2024	15	935.9	136.7	1,072.6	485.9	586.7	107.3	185.2	319.1	504.3	-24.9	0.0	0.0	2,016.0	1.0	4.9
2025	16	944.1	137.7	1,081.8	488.6	593.2	108.2	157.2	293.4	450.6	34.5	0.0	1,550.5	580.6	1.1	2.4
2026	17	952.3	138.8	1,091.1	491.3	599.8	109.1	131.5	258.1	389.7	101.0	0.0	181.7	523.2	1.3	2.6
2027	18	960.6	139.8	1,100.4	494.0	606.4	110.0	108.8	231.3	340.1	156.3	0.0	179.5	520.9	1.5	3.0
2028	19	969.0	140.9	1,109.8	496.7	613.2	111.0	88.3	202.7	291.1	211.1	0.0	232.0	520.8	1.7	3.5
2029	20	977.4	141.9	1,119.4	499.4	620.0	111.9	70.5	172.2	242.8	265.3	0.0	286.1	520.8	2.1	4.2
2030	21	985.9	143.0	1,129.0	502.1	626.9	112.9	55.3	149.5	204.8	309.2	0.0	330.0	520.8	2.5	5.1
2031	22	994.5	144.1	1,138.6	504.8	633.9	113.9	42.3	126.0	168.3	351.7	0.0	372.6	520.8	3.1	6.2
2032	23	1,003.2	145.2	1,148.4	507.5	640.9	114.8	31.3	111.0	142.3	383.8	0.0	404.6	520.8	3.7	7.4
2033	24	1,011.9	146.3	1,158.2	510.2	648.1	115.8	21.9	91.5	113.4	418.9	0.0	439.7	520.8	4.7	9.3
2034	25	1,020.7	147.4	1,168.2	512.9	655.3	116.8	14.2	72.3	86.5	452.0	0.0	472.8	520.8	6.2	12.2
2035	26	1,029.6	148.5	1,178.2	515.6	662.6	117.8	8.3	52.3	60.6	484.2	0.0	505.0	520.8	9.0	17.6
2036	27	1,038.6	149.7	1,188.3	518.3	670.0	118.8	4.2	32.1	36.2	515.0	0.0	535.8	520.8	15.2	29.6
2037	28	1,047.7	150.8	1,198.5	521.0	677.5	119.8	1.7	16.5	18.2	539.5	0.0	560.3	520.8	30.6	59.3

Table J-50. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service Coverage	Overall Debt Service Coverage
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Ratio i/	Ratio j/
2038	29	1,056 8	152 0	1,208 7	523 7	685 1	120 9	0 4	6 7	7 1	557 1	0 0	577 9	520 8	79 3	152 5
2039	30	1,066 0	153 1	1,219 1	526 4	692 8	121 9	0 0	0 0	0 0	570 8	0 0	591 7	520 8	- -	- -
2040	31	1,075 3	154 3	1,229 6	529 1	700 5	123 0	0 0	0 0	0 0	577 6	0 0	598 4	520 8	- -	- -
2041	32	1,084 6	155 5	1,240 1	531 7	708 3	124 0	0 0	0 0	0 0	584 3	0 0	605 2	520 8	- -	- -
2042	33	1,094 1	156 6	1,250 7	534 4	716 3	125 1	0 0	0 0	0 0	591 2	0 0	612 0	520 8	- -	- -
2043	34	1,103 6	157 8	1,261 5	537 1	724 3	126 1	0 0	0 0	0 0	598 2	0 0	619 0	520 8	- -	- -
2044	35	1,113 2	159 0	1,272 3	539 8	732 4	127 2	0 0	0 0	0 0	605 2	0 0	626 0	520 8	- -	- -
2045	36	1,122 9	160 2	1,283 2	542 5	740 6	128 3	0 0	0 0	0 0	612 3	0 0	633 2	520 8	- -	- -
2046	37	1,132 7	161 4	1,294 2	545 2	748 9	129 4	0 0	0 0	0 0	619 5	0 0	640 4	520 8	- -	- -
2047	38	1,142 6	162 7	1,305 3	547 9	757 3	130 5	0 0	0 0	0 0	626 8	0 0	647 6	520 8	- -	- -
2048	39	1,152 6	163 9	1,316 5	550 6	765 8	131 6	0 0	0 0	0 0	634 2	0 0	655 0	520 8	- -	- -
2049	40	1,162 6	165 2	1,327 8	553 3	774 4	132 8	0 0	0 0	0 0	641 7	0 0	662 5	520 8	- -	- -
2050	41	1,172 7	166 4	1,339 1	556 0	783 1	133 9	0 0	0 0	0 0	649 2	0 0	670 0	520 8	- -	- -
2051	42	1,182 9	167 7	1,350 6	558 7	791 9	135 1	0 0	0 0	0 0	656 8	0 0	677 7	520 8	- -	- -
2052	43	1,193 3	169 0	1,362 2	561 4	800 8	136 2	0 0	0 0	0 0	664 6	0 0	685 4	520 8	- -	- -
2053	44	1,203 6	170 2	1,373 9	564 1	809 8	137 4	0 0	0 0	0 0	672 4	0 0	693 2	520 8	- -	- -
2054	45	1,214 1	171 5	1,385 7	566 8	818 9	138 6	0 0	0 0	0 0	680 3	0 0	701 1	520 8	- -	- -
2055	46	1,224 7	172 8	1,397 5	569 5	828 0	139 8	0 0	0 0	0 0	688 3	0 0	709 1	520 8	- -	- -
2056	47	1,235 4	174 1	1,409 5	572 2	837 3	141 0	0 0	0 0	0 0	696 4	0 0	717 2	520 8	- -	- -
2057	48	1,246 1	175 5	1,421 6	574 9	846 7	142 2	0 0	0 0	0 0	704 6	0 0	725 4	520 8	- -	- -
2058	49	1,257 0	176 8	1,433 8	577 6	856 2	143 4	0 0	0 0	0 0	712 8	0 0	733 7	520 8	- -	- -
2059	50	1,268 0	178 1	1,446 1	580 3	865 8	144 6	0 0	0 0	0 0	721 2	0 0	742 0	520 8	- -	- -
2060	51	1,279 0	179 5	1,458 5	583 0	875 5	145 9	0 0	0 0	0 0	729 7	0 0	750 5	520 8	- -	- -
	Total	55,057 3	8,611 7	63,669 0	28,889 7	34,779 3	6,366 9	3,510 1	4,135 6	7,645 8	20,766 7	1,395 1	21,324 9			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-51. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							46.4	46.4
2010	1	290.7	194.6	96.1	66.3	29.8	42.6	72.4
2011	2	306.0	199.2	106.8	67.7	39.1	134.2	173.3
2012	3	321.6	203.9	117.8	205.5	-87.7	515.2	427.5
2013	4	337.7	208.6	129.1	717.2	-588.1	658.0	69.9
2014	5	354.2	213.4	140.9	966.5	-825.6	465.8	-359.8
2015	6	371.2	218.2	153.0	868.9	-715.8	409.3	-306.5
2016	7	388.7	223.1	165.6	886.1	-720.6	240.7	-479.8
2017	8	406.6	228.1	178.5	762.4	-583.9	-13.6	-597.4
2018	9	425.0	233.1	191.9	542.5	-350.6	-140.7	-491.3
2019	10	443.9	238.2	205.7	447.7	-242.0	-538.6	-780.5
2020	11	561.5	243.4	318.1	0.0	318.1	-561.1	-243.0
2021	12	567.7	245.7	322.0	0.0	322.0	-578.2	-256.2
2022	13	573.9	248.0	326.0	0.0	326.0	-583.6	-257.6
2023	14	580.3	250.3	330.0	0.0	330.0	-550.8	-220.8
2024	15	586.7	252.6	334.1	0.0	334.1	-504.3	-170.2
2025	16	593.2	255.0	338.2	0.0	338.2	-450.6	-112.3
2026	17	599.8	257.3	342.4	0.0	342.4	-389.7	-47.2
2027	18	606.4	259.7	346.7	0.0	346.7	-340.1	6.6
2028	19	613.2	262.1	351.0	0.0	351.0	-291.1	60.0
2029	20	620.0	264.6	355.4	0.0	355.4	-242.8	112.6
2030	21	626.9	267.0	359.8	0.0	359.8	-204.8	155.1
2031	22	633.9	269.5	364.3	0.0	364.3	-168.3	196.1
2032	23	640.9	272.0	368.9	0.0	368.9	-142.3	226.6
2033	24	648.1	274.5	373.5	0.0	373.5	-113.4	260.2
2034	25	655.3	277.1	378.2	0.0	378.2	-86.5	291.7
2035	26	662.6	279.6	383.0	0.0	383.0	-60.6	322.4
2036	27	670.0	282.2	387.8	0.0	387.8	-36.2	351.6
2037	28	677.5	284.8	392.7	0.0	392.7	-18.2	374.5
2038	29	685.1	287.5	397.6	0.0	397.6	-7.1	390.5
2039	30	692.8	290.1	402.6	0.0	402.6	0.0	402.6
2040	31	700.5	292.8	407.7	0.0	407.7	0.0	407.7
2041	32	708.3	295.5	412.8	0.0	412.8	0.0	412.8
2042	33	716.3	298.2	418.1	0.0	418.1	0.0	418.1
2043	34	724.3	301.0	423.3	0.0	423.3	0.0	423.3
2044	35	732.4	303.7	428.7	0.0	428.7	0.0	428.7
2045	36	740.6	306.5	434.1	0.0	434.1	0.0	434.1
2046	37	748.9	309.3	439.6	0.0	439.6	0.0	439.6

Table J-51. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	757.3	312.2	445.2	0.0	445.2	0.0	445.2
2048	39	765.8	315.0	450.8	0.0	450.8	0.0	450.8
2049	40	774.4	317.9	456.5	0.0	456.5	0.0	456.5
2050	41	783.1	320.8	462.3	0.0	462.3	0.0	462.3
2051	42	791.9	323.8	468.1	0.0	468.1	0.0	468.1
2052	43	800.8	326.7	474.0	0.0	474.0	0.0	474.0
2053	44	809.8	329.7	480.0	0.0	480.0	0.0	480.0
2054	45	818.9	332.7	486.1	0.0	486.1	0.0	486.1
2055	46	828.0	335.8	492.3	0.0	492.3	0.0	492.3
2056	47	837.3	338.8	498.5	0.0	498.5	0.0	498.5
2057	48	846.7	341.9	504.8	0.0	504.8	0.0	504.8
2058	49	856.2	345.0	511.2	0.0	511.2	0.0	511.2
2059	50	865.8	348.1	517.7	0.0	517.7	0.0	517.7
2060	51	875.5	351.3	524.2	0.0	524.2	0.0	524.2
	Total	32,624.5	14,230.5	18,394.0	5,530.7	12,863.3		9,306.8
				Financial Internal Rate of Return		6.7%		5.3%
				Net Present Value at 8 percent discount rate		-449.7		-539.6

a/ From Table J-50.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-52. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

	Project	Revenues				Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Oper & Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		417 6	97 1	514 7	349 7	164 9	51.5	0 0	0 0	0 0	113 5	0 0	0 0	113 5	- -	- -
2001		434 7	98 6	533 4	350 8	182.6	53.3	0 0	0 0	0 0	129 2	0 0	0 0	247 2	- -	- -
2002		452 6	100 2	552 8	351 9	200 9	55 3	0 0	0 0	0 0	145 6	0 0	0 0	402 7	- -	- -
2003		471 2	101 7	572 9	353 0	220.0	57.3	0 0	0 0	0 0	162 7	0 0	0 0	581 5	- -	- -
2004		490 5	103 3	593 9	354 0	239.9	59.4	0 0	0 0	0 0	180 5	0 0	0 0	785 3	- -	- -
2005		510 7	105 0	615 7	355.1	260 6	61 6	0 0	0 0	0 0	199 0	0 0	0 0	1,015 7	- -	- -
2006		531 7	106 6	638.3	356 2	282.1	63.8	0 0	0 0	0 0	218 3	0 0	0 0	1,274 6	- -	- -
2007		553 5	108 3	661 8	357 2	304 6	66 2	0 0	0 0	0 0	238 4	0 0	0 0	1,564 0	- -	- -
2008		576 3	110 0	686 3	358.3	327.9	68.6	0 0	0 0	0 0	259 3	0 0	0 0	1,885 9	- -	- -
2009		599 9	111 7	711 7	359.4	352.3	71.2	0 0	0 0	0 0	281 1	0 0	0 0	2,242 4	- -	- -
2010	1	624 6	113.5	738.1	360.5	377 6	73.8	4.2	0 6	4 8	299 0	19.9	0 0	2,611 2	63 2	[illegible]
2011	2	650 3	115.3	765.5	361 5	404 0	76 6	8 5	1.1	9 7	317 8	20 3	0 0	3,013 1	33 9	346 0
2012	3	677 0	117 1	794 0	362 6	431 4	79 4	21 6	2 9	24 4	327.6	61 7	0 0	3,399 5	14 4	153 5
2013	4	704 8	118.9	823 7	363 7	460 0	82 4	68.8	16 9	85 7	292 0	177 6	0 0	3,649 9	4 4	47 0
2014	5	733 7	120 8	854 5	364 8	489 7	85 5	132.1	39.2	171 3	233 0	222 8	0 0	3,806 1	2 4	24 6
2015	6	763 9	122 7	886 5	365.8	520 7	88 7	185.6	55 6	241 2	190 8	231 8	0 0	3,917 4	1 8	18 0
2016	7	795.3	124 6	919 9	366 9	552 9	92 0	238 5	90 0	328 5	132 5	235 6	0 0	3,971 0	1 4	13 5
2017	8	827 9	126.5	954 5	368 0	586 5	95 4	280.3	144 4	424 7	66 3	193 2	0 0	4,003 0	1 2	10 6
2018	9	862 0	128 5	990 5	369 1	621 4	99 0	303 4	184.0	487 4	35 0	131 3	0 0	4,066 8	1 1	9 4
2019	10	897.4	130.5	1,027 9	370 1	657 8	102 8	317 0	221 6	538 6	16 4	101 0	0 0	4,144 9	1 0	8 7
2020	11	1,175 0	132 6	1,307 6	475 1	832 5	130 8	296 7	264 4	561 1	140 6	0 0	3,785 5	665 8	1 3	2 4
2021	12	1,184 8	133 6	1,318 4	477 8	840 6	131 8	272 6	305 6	578 2	130 6	0 0	296 4	526 6	1 2	2 1
2022	13	1,194 7	134 6	1,329 3	480 5	848 8	132 9	244 8	338 8	583 6	132 3	0 0	158 9	521 1	1 2	2 1
2023	14	1,204 6	135 6	1,340 3	483 2	857 1	134 0	214 8	336 0	550 8	172 3	0 0	193 3	520 8	1 3	2 3
2024	15	1,214 7	136 7	1,351 4	485 9	865 5	135 1	185 2	319 1	504 3	226 0	0 0	246 9	520 8	1 4	2 5
2025	16	1,224 8	137 7	1,362 5	488 6	873 9	136 3	157 2	293 4	450 6	287 1	0 0	308 0	520 8	1 6	2 8
2026	17	1,235 0	138 8	1,373 8	491 3	882 5	137 4	131 5	258.1	389 7	355 5	0 0	376 3	520 8	1 9	3 2
2027	18	1,245 3	139 8	1,385.2	494 0	891 2	138 5	108 8	231 3	340 1	412 6	0 0	433 4	520 8	2 2	3 7
2028	19	1,255 7	140 9	1,396.6	496 7	899 9	139 7	88 3	202 7	291 1	469 2	0 0	490 0	520 8	2 6	4 4
2029	20	1,266 2	141 9	1,408 1	499 4	908.8	140 8	70 5	172 2	242 8	525 2	0 0	546 0	520 8	3 2	5 3
2030	21	1,276 8	143 0	1,419 8	502 1	917 7	142 0	55 3	149 5	204 8	570 9	0 0	591 8	520 8	3 8	6 3
2031	22	1,287 4	144 1	1,431 5	504 8	926 7	143 2	42 3	126 0	168 3	615 3	0 0	636 2	520 8	4 7	7 8
2032	23	1,298 1	145 2	1,443 4	507 5	935 9	144 3	31 3	111 0	142 3	649 3	0 0	670 1	520 8	5 6	9 2
2033	24	1,309 0	146 3	1,455 3	510 2	945 1	145 5	21 9	91 5	113 4	686 2	0 0	707 1	520 8	7 1	11 6
2034	25	1,319 9	147 4	1,467 3	512 9	954 4	146 7	14 2	72 3	86 5	721 2	0 0	742 0	520 8	9 3	15 4
2035	26	1,330 9	148 5	1,479 4	515 6	963 9	147 9	8 3	52 3	60 6	755 3	0 0	776 2	520 8	13 5	22 1
2036	27	1,342 0	149 7	1,491 7	518 3	973 4	149 2	4 2	32 1	36 2	788 0	0 0	808 9	520 8	22 8	37 1
2037	28	1,353 2	150 8	1,504 0	521 0	983 0	150 4	1 7	16 5	18 2	814 4	0 0	835 3	520 8	45 8	74 4

Table J-52. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

		Revenues						Debt Service Requirements e/				Toll Reserve Trust Fund				
Year	Project Year	Tolls a/	Other b/	Total	Oper & Maint. c/	Net Income from Operations	Payment to Panama d/	Int	Princ.	Total	Net Income After Debt Service and Payment to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364 5	152 0	1,516 4	523 7	992 8	151 6	0 4	6 7	7 1	834 0	0 0	854 8	520 8	118 2	191 4
2039	30	1,375 8	153 1	1,529 0	526 4	1,002 6	152 9	0 0	0 0	0 0	849 7	0 0	870 5	520 8	- -	- -
2040	31	1,387 3	154 3	1,541 6	529 1	1,012 6	154 2	0 0	0 0	0 0	858 4	0 0	879 2	520 8	- -	- -
2041	32	1,398 9	155 5	1,554 3	531 7	1,022 6	155 4	0 0	0 0	0 0	867 2	0 0	888 0	520 8	- -	- -
2042	33	1,410 6	156 6	1,567 2	534 4	1,032 7	156 7	0 0	0 0	0 0	876 0	0 0	896 9	520 8	- -	- -
2043	34	1,422 3	157 8	1,580 1	537 1	1,043 0	158 0	0 0	0 0	0 0	885 0	0 0	905 8	520 8	- -	- -
2044	35	1,434 2	159 0	1,593 2	539 8	1,053 4	159 3	0 0	0 0	0 0	894 0	0 0	914 9	520 8	- -	- -
2045	36	1,446 1	160 2	1,606 4	542 5	1,063 8	160 6	0 0	0 0	0 0	903 2	0 0	924 0	520 8	- -	- -
2046	37	1,458 2	161 4	1,619 7	545 2	1,074 4	162 0	0 0	0 0	0 0	912 5	0 0	933 3	520 8	- -	- -
2047	38	1,470 4	162 7	1,633 0	547 9	1,085 1	163 3	0 0	0 0	0 0	921 8	0 0	942 6	520 8	- -	- -
2048	39	1,482 6	163 9	1,646 5	550 6	1,095 9	164 7	0 0	0 0	0 0	931 3	0 0	952 1	520 8	- -	- -
2049	40	1,495 0	165 2	1,660 2	553 3	1,106 8	166 0	0 0	0 0	0 0	940 8	0 0	961 6	520 8	- -	- -
2050	41	1,507 5	166 4	1,673 9	556 0	1,117 9	167 4	0 0	0 0	0 0	950 5	0 0	971 3	520 8	- -	- -
2051	42	1,520 0	167 7	1,687 7	558 7	1,129 0	168 8	0 0	0 0	0 0	960 2	0 0	981 1	520 8	- -	- -
2052	43	1,532 7	169 0	1,701 7	561 4	1,140 2	170 2	0 0	0 0	0 0	970 1	0 0	990 9	520 8	- -	- -
2053	44	1,545 5	170 2	1,715 7	564 1	1,151 6	171 6	0 0	0 0	0 0	980 0	0 0	1,000 9	520 8	- -	- -
2054	45	1,558 4	171 5	1,729 9	566 8	1,163 1	173 0	0 0	0 0	0 0	990 1	0 0	1,010 9	520 8	- -	- -
2055	46	1,571 4	172 8	1,744 2	569 5	1,174 7	174 4	0 0	0 0	0 0	1,000 3	0 0	1,021 1	520 8	- -	- -
2056	47	1,584 5	174 1	1,758 6	572 2	1,186 4	175 9	0 0	0 0	0 0	1,010 6	0 0	1,031 4	520 8	- -	- -
2057	48	1,597 7	175 5	1,773 2	574 9	1,198 3	177 3	0 0	0 0	0 0	1,021 0	0 0	1,041 8	520 8	- -	- -
2058	49	1,611 0	176 8	1,787 8	577 6	1,210 2	178 8	0 0	0 0	0 0	1,031 4	0 0	1,052 3	520 8	- -	- -
2059	50	1,624 5	178 1	1,802 6	580 3	1,222 3	180 3	0 0	0 0	0 0	1,042 0	0 0	1,062 9	520 8	- -	- -
2060	51	1,638 0	179 5	1,817 5	583 0	1,234 5	181 8	0 0	0 0	0 0	1,052 8	0 0	1,073 6	520 8	- -	- -
	Total	69,730 8	8,611 7	78,342 5	28,889 7	49,452 9	7,834 3	3,510 1	4,135 6	7,645 8	33,972 9	1,395 1	34,764 1			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991 Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-53. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							46.4	46.4
2010	1	377.6	194.6	183.0	66.3	116.7	42.6	159.2
2011	2	404.0	199.2	204.7	67.7	137.1	134.2	271.3
2012	3	431.4	203.9	227.5	205.5	22.0	515.2	537.2
2013	4	460.0	208.6	251.4	717.2	-465.8	658.0	192.2
2014	5	489.7	213.4	276.4	966.5	-690.1	465.8	-224.3
2015	6	520.7	218.2	302.5	868.9	-566.4	409.3	-157.0
2016	7	552.9	223.1	329.8	886.1	-556.3	240.7	-315.5
2017	8	586.5	228.1	358.4	762.4	-404.0	-13.6	-417.5
2018	9	621.4	233.1	388.3	542.5	-154.2	-140.7	-294.9
2019	10	657.8	238.2	419.6	447.7	-28.1	-538.6	-566.7
2020	11	832.5	243.4	589.1	0.0	589.1	-561.1	28.0
2021	12	840.6	245.7	594.9	0.0	594.9	-578.2	16.7
2022	13	848.8	248.0	600.8	0.0	600.8	-583.6	17.2
2023	14	857.1	250.3	606.8	0.0	606.8	-550.8	56.0
2024	15	865.5	252.6	612.9	0.0	612.9	-504.3	108.5
2025	16	873.9	255.0	619.0	0.0	619.0	-450.6	168.4
2026	17	882.5	257.3	625.2	0.0	625.2	-389.7	235.5
2027	18	891.2	259.7	631.4	0.0	631.4	-340.1	291.4
2028	19	899.9	262.1	637.8	0.0	637.8	-291.1	346.7
2029	20	908.8	264.6	644.2	0.0	644.2	-242.8	401.4
2030	21	917.7	267.0	650.7	0.0	650.7	-204.8	445.9
2031	22	926.7	269.5	657.2	0.0	657.2	-168.3	489.0
2032	23	935.9	272.0	663.9	0.0	663.9	-142.3	521.6
2033	24	945.1	274.5	670.6	0.0	670.6	-113.4	557.2
2034	25	954.4	277.1	677.4	0.0	677.4	-86.5	590.9
2035	26	963.9	279.6	684.2	0.0	684.2	-60.6	623.6
2036	27	973.4	282.2	691.2	0.0	691.2	-36.2	655.0
2037	28	983.0	284.8	698.2	0.0	698.2	-18.2	680.0
2038	29	992.8	287.5	705.3	0.0	705.3	-7.1	698.2
2039	30	1,002.6	290.1	712.5	0.0	712.5	0.0	712.5
2040	31	1,012.6	292.8	719.7	0.0	719.7	0.0	719.7
2041	32	1,022.6	295.5	727.1	0.0	727.1	0.0	727.1
2042	33	1,032.7	298.2	734.5	0.0	734.5	0.0	734.5
2043	34	1,043.0	301.0	742.0	0.0	742.0	0.0	742.0
2044	35	1,053.4	303.7	749.6	0.0	749.6	0.0	749.6
2045	36	1,063.8	306.5	757.3	0.0	757.3	0.0	757.3
2046	37	1,074.4	309.3	765.1	0.0	765.1	0.0	765.1

Table J-53. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	312.2	772.9	0.0	772.9	0.0	772.9
2048	39	1,095.9	315.0	780.9	0.0	780.9	0.0	780.9
2049	40	1,106.8	317.9	788.9	0.0	788.9	0.0	788.9
2050	41	1,117.9	320.8	797.0	0.0	797.0	0.0	797.0
2051	42	1,129.0	323.8	805.2	0.0	805.2	0.0	805.2
2052	43	1,140.2	326.7	813.5	0.0	813.5	0.0	813.5
2053	44	1,151.6	329.7	821.9	0.0	821.9	0.0	821.9
2054	45	1,163.1	332.7	830.4	0.0	830.4	0.0	830.4
2055	46	1,174.7	335.8	838.9	0.0	838.9	0.0	838.9
2056	47	1,186.4	338.8	847.6	0.0	847.6	0.0	847.6
2057	48	1,198.3	341.9	856.4	0.0	856.4	0.0	856.4
2058	49	1,210.2	345.0	865.2	0.0	865.2	0.0	865.2
2059	50	1,222.3	348.1	874.2	0.0	874.2	0.0	874.2
2060	51	1,234.5	351.3	883.2	0.0	883.2	0.0	883.2
	Total	46,917.1	14,230.5	32,686.6	5,530.7	27,155.9		23,599.4
				Financial Internal Rate of Return:		15.1%		24.6%
				Net Present Value at 8 percent discount rate:		2,091.9		1,813.8

a/ From Table J-52.

b/ From Table 6-6.

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-54. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005		470.7	105.0	575.6	355.1	220.5	57.6	0.0	0.0	0.0	163.0	0.0	0.0	888.3	--	--
2006		483.4	106.6	590.0	356.2	233.8	59.0	0.0	0.0	0.0	174.8	0.0	0.0	1,098.7	--	--
2007		496.4	108.3	604.7	357.2	247.5	60.5	0.0	0.0	0.0	187.0	0.0	0.0	1,329.6	--	--
2008		509.8	110.0	619.8	358.3	261.5	62.0	0.0	0.0	0.0	199.5	0.0	0.0	1,582.3	--	--
2009	1	523.6	111.7	635.3	359.4	275.9	63.5	4.6	0.6	5.2	207.2	21.5	0.0	1,831.3	40.8	393.0
2010	2	537.7	113.5	651.2	360.5	290.7	65.1	9.2	1.2	10.5	215.2	22.0	0.0	2,097.7	21.6	222.1
2011	3	552.3	115.3	667.5	361.5	306.0	66.8	23.4	3.1	26.5	212.7	67.0	0.0	2,327.3	9.0	96.7
2012	4	567.2	117.1	684.2	362.6	321.6	68.4	69.1	17.1	86.3	167.0	169.4	0.0	2,418.0	2.9	31.0
2013	5	582.5	118.9	701.4	363.7	337.7	70.1	132.4	38.0	170.4	97.2	231.5	0.0	2,380.3	1.6	15.5
2014	6	598.2	120.8	719.0	364.8	354.2	71.9	192.3	56.8	249.1	33.2	253.7	0.0	2,255.1	1.1	10.2
2015	7	614.4	122.7	737.1	365.8	371.2	73.7	251.0	94.7	345.7	-48.2	251.4	0.0	2,045.7	0.9	6.8
2016	8	631.0	124.6	755.6	366.9	388.7	75.6	305.7	150.1	455.9	-142.8	245.2	0.0	1,739.6	0.7	4.5
2017	9	648.0	126.5	774.6	368.0	406.6	77.5	341.2	193.3	534.6	-205.4	188.8	0.0	1,415.0	0.6	3.3
2018	10	665.5	128.5	794.1	369.1	425.0	79.4	363.5	241.0	604.6	-259.0	142.7	0.0	1,069.9	0.6	2.3
2019	11	683.5	130.5	814.1	370.1	443.9	81.4	350.3	290.1	640.4	-277.9	41.2	0.0	793.7	0.6	1.8
2020	12	904.0	132.6	1,036.6	483.4	553.2	103.7	323.9	331.9	655.8	-206.3	0.0	0.0	619.1	0.7	1.6
2021	13	912.6	133.6	1,046.2	486.1	560.1	104.6	293.7	371.6	665.3	-209.8	0.0	0.0	434.1	0.7	1.3
2022	14	921.2	134.6	1,055.9	488.8	567.1	105.6	260.6	376.6	637.2	-175.8	0.0	0.0	275.7	0.7	1.2
2023	15	930.0	135.6	1,065.6	491.5	574.1	106.6	227.2	366.9	594.1	-126.5	0.0	0.0	160.2	0.8	1.1
2024	16	938.8	136.7	1,075.5	494.2	581.3	107.5	194.7	345.3	540.0	-66.3	0.0	0.0	100.3	0.9	1.1
2025	17	947.7	137.7	1,085.4	496.9	588.5	108.5	164.4	309.6	474.0	6.0	0.0	0.0	110.3	1.0	1.2
2026	18	956.7	138.8	1,095.5	499.6	595.9	109.5	137.1	277.4	414.5	71.9	0.0	0.0	186.6	1.2	1.6
2027	19	965.8	139.8	1,105.6	502.3	603.3	110.6	112.6	243.8	356.4	136.4	0.0	0.0	330.4	1.4	2.3
2028	20	975.0	140.9	1,115.8	505.0	610.9	111.6	91.1	207.8	298.9	200.3	0.0	0.0	544.0	1.7	3.5
2029	21	984.2	141.9	1,126.2	507.7	618.5	112.6	72.7	181.8	254.5	251.3	0.0	295.4	521.8	2.0	4.0
2030	22	993.5	143.0	1,136.6	510.4	626.2	113.7	56.7	156.9	213.6	298.9	0.0	320.7	520.9	2.4	4.8
2031	23	1,003.0	144.1	1,147.1	513.1	634.0	114.7	42.9	138.9	181.8	337.5	0.0	358.4	520.8	2.9	5.7
2032	24	1,012.5	145.2	1,157.7	515.8	641.9	115.8	30.9	117.3	148.2	378.0	0.0	398.8	520.8	3.6	7.1
2033	25	1,022.1	146.3	1,168.4	518.5	649.9	116.8	21.0	94.3	115.4	417.7	0.0	438.6	520.8	4.6	9.1
2034	26	1,031.8	147.4	1,179.2	521.2	658.1	117.9	13.3	70.5	83.7	456.4	0.0	477.3	520.8	6.5	12.7
2035	27	1,041.6	148.5	1,190.1	523.9	666.3	119.0	7.5	49.6	57.1	490.1	0.0	511.0	520.8	9.6	18.7
2036	28	1,051.5	149.7	1,201.2	526.6	674.6	120.1	3.6	29.8	33.4	521.1	0.0	541.9	520.8	16.6	32.2
2037	29	1,061.5	150.8	1,212.3	529.3	683.0	121.2	1.3	14.5	15.9	545.9	0.0	566.8	520.8	35.4	68.3
2038	30	1,071.5	152.0	1,223.5	532.0	691.5	122.3	0.3	4.1	4.3	564.9	0.0	585.7	520.8	--	--
2039	31	1,081.7	153.1	1,234.8	534.7	700.2	123.5	0.0	0.0	0.0	576.7	0.0	597.5	520.8	--	--
2040	32	1,092.0	154.3	1,246.2	537.4	708.9	124.6	0.0	0.0	0.0	584.3	0.0	605.1	520.8	--	--

Table J-54. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,102.3	155.5	1,257.8	540.0	717.7	125.8	0.0	0.0	0.0	592.0	0.0	612.8	520.8	--	--
2042	34	1,112.8	156.6	1,269.4	542.7	726.7	126.9	0.0	0.0	0.0	599.7	0.0	620.6	520.8	--	--
2043	35	1,123.3	157.8	1,281.2	545.4	735.7	128.1	0.0	0.0	0.0	607.6	0.0	628.4	520.8	--	--
2044	36	1,134.0	159.0	1,293.0	548.1	744.9	129.3	0.0	0.0	0.0	615.6	0.0	636.4	520.8	--	--
2045	37	1,144.8	160.2	1,305.0	550.8	754.2	130.5	0.0	0.0	0.0	623.7	0.0	644.5	520.8	--	--
2046	38	1,155.6	161.4	1,317.1	553.5	763.5	131.7	0.0	0.0	0.0	631.8	0.0	652.7	520.8	--	--
2047	39	1,166.6	162.7	1,329.3	556.2	773.0	132.9	0.0	0.0	0.0	640.1	0.0	661.0	520.8	--	--
2048	40	1,177.7	163.9	1,341.6	558.9	782.7	134.2	0.0	0.0	0.0	648.5	0.0	669.3	520.8	--	--
2049	41	1,188.8	165.2	1,354.0	561.6	792.4	135.4	0.0	0.0	0.0	657.0	0.0	677.8	520.8	--	--
2050	42	1,200.1	166.4	1,366.5	564.3	802.2	136.7	0.0	0.0	0.0	665.6	0.0	686.4	520.8	--	--
2051	43	1,211.5	167.7	1,379.2	567.0	812.2	137.9	0.0	0.0	0.0	674.3	0.0	695.1	520.8	--	--
2052	44	1,223.0	169.0	1,392.0	569.7	822.3	139.2	0.0	0.0	0.0	683.1	0.0	703.9	520.8	--	--
2053	45	1,234.6	170.2	1,404.9	572.4	832.4	140.5	0.0	0.0	0.0	692.0	0.0	712.8	520.8	--	--
2054	46	1,246.3	171.5	1,417.9	575.1	842.8	141.8	0.0	0.0	0.0	701.0	0.0	721.8	520.8	--	--
2055	47	1,258.2	172.8	1,431.0	577.8	853.2	143.1	0.0	0.0	0.0	710.1	0.0	730.9	520.8	--	--
2056	48	1,270.1	174.1	1,444.3	580.5	863.7	144.4	0.0	0.0	0.0	719.3	0.0	740.2	520.8	--	--
2057	49	1,282.2	175.5	1,457.6	583.2	874.4	145.8	0.0	0.0	0.0	728.7	0.0	749.5	520.8	--	--
2058	50	1,294.3	176.8	1,471.1	585.9	885.2	147.1	0.0	0.0	0.0	738.1	0.0	758.9	520.8	--	--
2059	51	1,306.6	178.1	1,484.8	588.6	896.2	148.5	0.0	0.0	0.0	747.7	0.0	768.5	520.8	--	--
2060	52	1,319.0	179.5	1,498.5	591.3	907.2	149.9	0.0	0.0	0.0	757.4	0.0	778.2	520.8	--	--
Total		55,788.9	8,611.7	64,400.6	29,230.0	35,170.7	6,440.1	4,098.4	4,774.9	8,873.3	19,857.3	1,634.4	19,546.7			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-55. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						50 2	50 2
1	2009	275 9	190 1	85 8	71 8	14 0	46 1	60 2
2	2010	290 7	194 6	96 1	73 4	22 8	145 8	168 6
3	2011	306 0	199 2	106 8	223 3	-116 5	497 3	380 8
4	2012	321 6	203 9	117 8	693 2	-575 5	654 0	78 5
5	2013	337 7	208 6	129 1	971 8	-842 6	538 8	-303 8
6	2014	354 2	213 4	140 9	962 9	-822 0	471 4	-350 6
7	2015	371 2	218 2	153 0	971 9	-818 9	373 1	-445 8
8	2016	388 7	223 1	165 6	963 9	-798 3	98 3	-700 0
9	2017	406 6	228 1	178 5	743 0	-564 5	-80 4	-644 9
10	2018	425 0	233 1	191 9	596 9	-405 0	-508 6	-913 6
11	2019	443 9	238 2	205 7	137 2	68 5	-640 4	-571 8
12	2020	553 2	243 4	309 8	0 0	309 8	-655 8	-346 0
13	2021	560 1	245 7	314 4	0 0	314 4	-665 3	-350 9
14	2022	567 1	248 0	319 1	0 0	319 1	-637 2	-318 1
15	2023	574 1	250 3	323 9	0 0	323 9	-594 1	-270 2
16	2024	581 3	252 6	328 7	0 0	328 7	-540 0	-211 4
17	2025	588 5	255 0	333 6	0 0	333 6	-474 0	-140 4
18	2026	595 9	257 3	338 6	0 0	338 6	-414 5	-75 9
19	2027	603 3	259 7	343 6	0 0	343 6	-356 4	-12 8
20	2028	610 9	262 1	348 7	0 0	348 7	-298 9	49 8
21	2029	618 5	264 6	353 9	0 0	353 9	-254 5	99 4
22	2030	626 2	267 0	359 2	0 0	359 2	-213 6	145 6
23	2031	634 0	269 5	364 5	0 0	364 5	-181 8	182 7
24	2032	641 9	272 0	369 9	0 0	369 9	-148 2	221 7
25	2033	649 9	274 5	375 4	0 0	375 4	-115 4	260 1
26	2034	658 1	277 1	381 0	0 0	381 0	-83 7	297 3
27	2035	666 3	279 6	386 6	0 0	386 6	-57 1	329 5
28	2036	674 6	282 2	392 4	0 0	392 4	-33 4	359 0
29	2037	683 0	284 8	398 2	0 0	398 2	-15 9	382 3
30	2038	691 5	287 5	404 1	0 0	404 1	-4 3	399 7
31	2039	700 2	290 1	410 0	0 0	410 0	0 0	410 0
32	2040	708 9	292 8	416 1	0 0	416 1	0 0	416 1
33	2041	717 7	295 5	422 2	0 0	422 2	0 0	422 2
34	2042	726 7	298 2	428 5	0 0	428 5	0 0	428 5
35	2043	735 7	301 0	434 8	0 0	434 8	0 0	434 8
36	2044	744 9	303 7	441 2	0 0	441 2	0 0	441 2
37	2045	754 2	306 5	447 6	0 0	447 6	0 0	447 6
38	2046	763 5	309 3	454 2	0 0	454 2	0 0	454 2
39	2047	773 0	312 2	460 9	0 0	460 9	0 0	460 9
40	2048	782 7	315 0	467 6	0 0	467 6	0 0	467 6

Table J-55. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	792 4	317 9	474 4	0 0	474 4	0 0	474 4
42	2050	802 2	320 8	481 4	0 0	481 4	0 0	481 4
43	2051	812 2	323 8	488 4	0 0	488 4	0 0	488 4
44	2052	822 3	326 7	495 5	0 0	495 5	0 0	495 5
45	2053	832 4	329 7	502 7	0 0	502 7	0 0	502 7
46	2054	842 8	332 7	510 0	0 0	510 0	0 0	510 0
47	2055	853 2	335 8	517 4	0 0	517 4	0 0	517 4
48	2056	863 7	338 8	524 9	0 0	524 9	0 0	524 9
49	2057	874 4	341 9	532 5	0 0	532 5	0 0	532 5
50	2058	885 2	345 0	540 2	0 0	540 2	0 0	540 2
51	2059	896 2	348 1	548 0	0 0	548 0	0 0	548 0
52	2060	907 2	351 3	555 9	0 0	555 9	0 0	555 9
Total		33,291 8	14,420 6	18,871 2	6,409 3	12,461 9		8,363 6
				Financial Internal Rate of Return		5 5%		3 9%
				Net Present Value at 8 percent discount rate		-1,044 0		-1,108 6

a/ From Table J-54

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-56. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009	1	599.9	111.7	711.7	359.4	352.3	71.2	4.6	0.6	5.2	275.9	21.5	0.0	2,215.7	54.1	480.1
2010	2	624.6	113.5	738.1	360.5	377.6	73.8	9.2	1.2	10.5	293.3	22.0	0.0	2,575.6	29.0	275.2
2011	3	650.3	115.3	765.5	361.5	404.0	76.6	23.4	3.1	26.5	300.9	67.0	0.0	2,912.5	12.3	122.1
2012	4	677.0	117.1	794.0	362.6	431.4	79.4	69.1	17.1	86.3	265.8	169.4	0.0	3,125.4	4.1	40.3
2013	5	704.8	118.9	823.7	363.7	460.0	82.4	132.4	38.0	170.4	207.2	231.5	0.0	3,226.1	2.2	21.1
2014	6	733.7	120.8	854.5	364.8	489.7	85.5	192.3	56.8	249.1	155.2	253.7	0.0	3,256.7	1.6	14.7
2015	7	763.9	122.7	886.5	365.8	520.7	88.7	251.0	94.7	345.7	86.4	251.4	0.0	3,221.9	1.2	10.6
2016	8	795.3	124.6	919.9	366.9	552.9	92.0	305.7	150.1	455.9	5.1	245.2	0.0	3,110.7	1.0	7.8
2017	9	827.9	126.5	954.5	368.0	586.5	95.4	341.2	193.3	534.6	-43.5	188.8	0.0	3,002.8	0.9	6.5
2018	10	862.0	128.5	990.5	369.1	621.4	99.0	363.5	241.0	604.6	-82.2	142.7	0.0	2,898.0	0.9	5.7
2019	11	897.4	130.5	1,027.9	370.1	657.8	102.8	350.3	290.1	640.4	-85.4	41.2	0.0	2,887.4	0.9	5.4
2020	12	1,186.0	132.6	1,318.6	483.4	835.2	131.9	323.9	331.9	655.8	47.5	0.0	2,434.9	615.5	1.1	2.0
2021	13	1,197.3	133.6	1,330.9	486.1	844.8	133.1	293.7	371.6	665.3	46.4	0.0	161.9	524.6	1.1	1.9
2022	14	1,208.7	134.6	1,343.3	488.8	854.5	134.3	260.6	376.6	637.2	82.9	0.0	107.5	521.0	1.1	1.9
2023	15	1,220.2	135.6	1,355.8	491.5	864.3	135.6	227.2	366.9	594.1	134.7	0.0	155.6	520.8	1.2	2.1
2024	16	1,231.8	136.7	1,368.4	494.2	874.3	136.8	194.7	345.3	540.0	197.4	0.0	218.2	520.8	1.4	2.3
2025	17	1,243.5	137.7	1,381.2	496.9	884.3	138.1	164.4	309.6	474.0	272.2	0.0	293.0	520.8	1.6	2.7
2026	18	1,255.3	138.8	1,394.1	499.6	894.5	139.4	137.1	277.4	414.5	340.6	0.0	361.5	520.8	1.8	3.1
2027	19	1,267.3	139.8	1,407.1	502.3	904.8	140.7	112.6	243.8	356.4	407.7	0.0	428.5	520.8	2.1	3.6
2028	20	1,279.3	140.9	1,420.2	505.0	915.2	142.0	91.1	207.8	298.9	474.3	0.0	495.1	520.8	2.6	4.3
2029	21	1,291.5	141.9	1,433.4	507.7	925.8	143.3	72.7	181.8	254.5	527.9	0.0	548.7	520.8	3.1	5.1
2030	22	1,303.8	143.0	1,446.8	510.4	936.4	144.7	56.7	156.9	213.6	578.1	0.0	599.0	520.8	3.7	6.1
2031	23	1,316.2	144.1	1,460.3	513.1	947.2	146.0	42.9	138.9	181.8	619.4	0.0	640.2	520.8	4.4	7.3
2032	24	1,328.7	145.2	1,473.9	515.8	958.1	147.4	30.9	117.3	148.2	662.5	0.0	683.4	520.8	5.5	9.0
2033	25	1,341.3	146.3	1,487.6	518.5	969.2	148.8	21.0	94.3	115.4	705.0	0.0	725.9	520.8	7.1	11.6
2034	26	1,354.1	147.4	1,501.5	521.2	980.3	150.2	13.3	70.5	83.7	746.5	0.0	767.3	520.8	9.9	16.1
2035	27	1,367.0	148.5	1,515.5	523.9	991.6	151.6	7.5	49.6	57.1	782.9	0.0	803.8	520.8	14.7	23.8
2036	28	1,380.0	149.7	1,529.6	526.6	1,003.1	153.0	3.6	29.8	33.4	816.7	0.0	837.6	520.8	25.5	41.1
2037	29	1,393.1	150.8	1,543.9	529.3	1,014.6	154.4	1.3	14.5	15.9	844.4	0.0	865.2	520.8	54.2	87.1
2038	30	1,406.3	152.0	1,558.3	532.0	1,026.3	155.8	0.3	4.1	4.3	866.2	0.0	887.0	520.8	--	--
2039	31	1,419.7	153.1	1,572.8	534.7	1,038.2	157.3	0.0	0.0	0.0	880.9	0.0	901.7	520.8	--	--
2040	32	1,433.2	154.3	1,587.5	537.4	1,050.2	158.8	0.0	0.0	0.0	891.4	0.0	912.2	520.8	--	--

Table J-56. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int.	Princ.	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,446.9	155.5	1,602.3	540.0	1,062.3	160.2	0.0	0.0	0.0	902.0	0.0	922.9	520.8	--	--
2042	34	1,460.6	156.6	1,617.3	542.7	1,074.5	161.7	0.0	0.0	0.0	912.8	0.0	933.6	520.8	--	--
2043	35	1,474.5	157.8	1,632.3	545.4	1,086.9	163.2	0.0	0.0	0.0	923.7	0.0	944.5	520.8	--	--
2044	36	1,488.5	159.0	1,647.6	548.1	1,099.4	164.8	0.0	0.0	0.0	934.7	0.0	955.5	520.8	--	--
2045	37	1,502.7	160.2	1,662.9	550.8	1,112.1	166.3	0.0	0.0	0.0	945.8	0.0	966.6	520.8	--	--
2046	38	1,517.0	161.4	1,678.4	553.5	1,124.9	167.8	0.0	0.0	0.0	957.1	0.0	977.9	520.8	--	--
2047	39	1,531.4	162.7	1,694.1	556.2	1,137.9	169.4	0.0	0.0	0.0	968.5	0.0	989.3	520.8	--	--
2048	40	1,546.0	163.9	1,709.9	558.9	1,151.0	171.0	0.0	0.0	0.0	980.0	0.0	1,000.8	520.8	--	--
2049	41	1,560.7	165.2	1,725.9	561.6	1,164.2	172.6	0.0	0.0	0.0	991.6	0.0	1,012.5	520.8	--	--
2050	42	1,575.5	166.4	1,742.0	564.3	1,177.6	174.2	0.0	0.0	0.0	1,003.4	0.0	1,024.3	520.8	--	--
2051	43	1,590.5	167.7	1,758.2	567.0	1,191.2	175.8	0.0	0.0	0.0	1,015.4	0.0	1,036.2	520.8	--	--
2052	44	1,605.7	169.0	1,774.6	569.7	1,204.9	177.5	0.0	0.0	0.0	1,027.4	0.0	1,048.3	520.8	--	--
2053	45	1,620.9	170.2	1,791.2	572.4	1,218.7	179.1	0.0	0.0	0.0	1,039.6	0.0	1,060.5	520.8	--	--
2054	46	1,636.3	171.5	1,807.9	575.1	1,232.8	180.8	0.0	0.0	0.0	1,052.0	0.0	1,072.8	520.8	--	--
2055	47	1,651.9	172.8	1,824.7	577.8	1,246.9	182.5	0.0	0.0	0.0	1,064.5	0.0	1,085.3	520.8	--	--
2056	48	1,667.6	174.1	1,841.8	580.5	1,261.3	184.2	0.0	0.0	0.0	1,077.1	0.0	1,097.9	520.8	--	--
2057	49	1,683.5	175.5	1,859.0	583.2	1,275.7	185.9	0.0	0.0	0.0	1,089.9	0.0	1,110.7	520.8	--	--
2058	50	1,699.5	176.8	1,876.3	585.9	1,290.4	187.6	0.0	0.0	0.0	1,102.8	0.0	1,123.6	520.8	--	--
2059	51	1,715.7	178.1	1,893.8	588.6	1,305.2	189.4	0.0	0.0	0.0	1,115.8	0.0	1,136.7	520.8	--	--
2060	52	1,732.0	179.5	1,911.5	591.3	1,320.2	191.2	0.0	0.0	0.0	1,129.1	0.0	1,149.9	520.8	--	--
Total		71,707.1	8,611.7	80,318.8	29,230.0	51,088.9	8,031.9	4,098.4	4,774.9	8,873.3	34,183.7	1,634.4	34,477.9			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only).

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-57. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						50 2	50 2
1	2009	352 3	190 1	162 2	71 8	90 4	46 1	136 5
2	2010	377 6	194 6	183 0	73 4	109 6	145 8	255 4
3	2011	404 0	199 2	204 7	223 3	-18 5	497 3	478 8
4	2012	431.4	203 9	227 5	693 2	-465 7	654 0	188 3
5	2013	460 0	208 6	251 4	971.8	-720 4	538 8	-181 5
6	2014	489.7	213 4	276 4	962 9	-686 5	471 4	-215 2
7	2015	520.7	218 2	302 5	971 9	-669 4	373 1	-296 3
8	2016	552 9	223 1	329 8	963 9	-634 1	98 3	-535 7
9	2017	586 5	228 1	358 4	743 0	-384 6	-80 4	-465 0
10	2018	621.4	233 1	388 3	596 9	-208 6	-508 6	-717 2
11	2019	657 8	238 2	419 6	137 2	282 4	-640 4	-358 0
12	2020	835 2	243 4	591 8	0 0	591 8	-655 8	-64 0
13	2021	844 8	245 7	599 1	0 0	599 1	-665 3	-66 2
14	2022	854 5	248 0	606 5	0 0	606 5	-637 2	-30 7
15	2023	864 3	250 3	614 0	0 0	614 0	-594 1	20 0
16	2024	874.3	252 6	621 7	0 0	621 7	-540 0	81 6
17	2025	884.3	255 0	629 4	0 0	629 4	-474 0	155 3
18	2026	894 5	257 3	637.2	0 0	637 2	-414 5	222 7
19	2027	904 8	259 7	645.1	0 0	645 1	-356 4	288 7
20	2028	915 2	262 1	653.1	0 0	653 1	-298 9	354 1
21	2029	925 8	264 6	661.2	0 0	661 2	-254 5	406 7
22	2030	936 4	267 0	669 4	0 0	669 4	-213 6	455 8
23	2031	947 2	269 5	677.7	0 0	677 7	-181.8	495 9
24	2032	958 1	272 0	686.1	0 0	686 1	-148 2	537 9
25	2033	969 2	274 5	694.6	0 0	694 6	-115 4	579 3
26	2034	980 3	277 1	703 3	0 0	703 3	-83 7	619 6
27	2035	991 6	279 6	712.0	0 0	712 0	-57 1	654 9
28	2036	1003 1	282 2	720 9	0 0	720 9	-33 4	687 5
29	2037	1014 6	284 8	729 8	0 0	729 8	-15 9	714 0
30	2038	1026.3	287 5	738 9	0 0	738 9	-4 3	734 6
31	2039	1038 2	290 1	748 1	0 0	748 1	0 0	748 1
32	2040	1050 2	292 8	757 4	0 0	757 4	0 0	757 4
33	2041	1062 3	295 5	766 8	0 0	766 8	0 0	766 8
34	2042	1074 5	298 2	776 3	0 0	776 3	0 0	776 3
35	2043	1086 9	301 0	785 9	0 0	785 9	0 0	785 9
36	2044	1099 4	303 7	795 7	0 0	795 7	0 0	795 7
37	2045	1112 1	306 5	805 6	0 0	805 6	0 0	805 6
38	2046	1124 9	309 3	815 6	0 0	815 6	0 0	815 6
39	2047	1137 9	312 2	825 7	0 0	825 7	0 0	825 7
40	2048	1151 0	315 0	835 9	0 0	835 9	0 0	835 9

Table J-57. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1164 2	317 9	846 3	0 0	846 3	0 0	846 3
42	2050	1177 6	320 8	856 8	0 0	856 8	0 0	856 8
43	2051	1191 2	323 8	867 4	0 0	867 4	0 0	867 4
44	2052	1204 9	326 7	878 1	0 0	878 1	0 0	878 1
45	2053	1218 7	329 7	889 0	0 0	889 0	0 0	889 0
46	2054	1232 8	332 7	900 0	0 0	900 0	0 0	900 0
47	2055	1246 9	335 8	911 2	0 0	911 2	0 0	911 2
48	2056	1261 3	338 8	922 4	0 0	922 4	0 0	922 4
49	2057	1275 7	341 9	933 8	0 0	933 8	0 0	933 8
50	2058	1290 4	345 0	945 4	0 0	945 4	0 0	945 4
51	2059	1305 2	348 1	957 1	0 0	957 1	0 0	957 1
52	2060	1320 2	351 3	968 9	0 0	968 9	0 0	968 9
Total		48,905 4	14,420 6	34,484 8	6,409 3	28,075 5		23,977 2
				Financial Internal Rate of Return		11 9%		19 0%
				Net Present Value at 8 percent discount rate		1,486 2		1,234 2

a/ From Table J-56

b/ From Table 6-6

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-58. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		411.9	97.1	509.0	349.7	159.3	50.9	0.0	0.0	0.0	108.4	0.0	0.0	108.4	--	--
2001		423.1	98.6	521.7	350.8	170.9	52.2	0.0	0.0	0.0	118.7	0.0	0.0	231.4	--	--
2002		434.5	100.2	534.7	351.9	182.8	53.5	0.0	0.0	0.0	129.3	0.0	0.0	370.0	--	--
2003		446.2	101.7	548.0	353.0	195.0	54.8	0.0	0.0	0.0	140.2	0.0	0.0	525.0	--	--
2004		458.3	103.3	561.6	354.0	207.6	56.2	0.0	0.0	0.0	151.4	0.0	0.0	697.5	--	--
2005	1	470.7	105.0	575.6	355.1	220.5	57.6	4.1	0.5	4.6	158.4	19.0	0.0	864.7	35.5	223.8
2006	2	483.4	106.6	590.0	356.2	233.8	59.0	8.2	1.1	9.3	165.5	19.6	0.0	1,045.3	18.8	131.5
2007	3	496.4	108.3	604.7	357.2	247.5	60.5	12.1	1.6	13.7	173.3	18.7	0.0	1,241.7	13.7	104.3
2008	4	509.8	110.0	619.8	358.3	261.5	62.0	27.7	3.7	31.4	168.1	74.0	0.0	1,385.4	6.3	50.4
2009	5	523.6	111.7	635.3	359.4	275.9	63.5	139.8	50.0	189.7	22.7	343.0	0.0	1,120.5	1.1	7.0
2010	6	537.7	113.5	651.2	360.5	290.7	65.1	199.3	72.4	271.7	-46.1	233.0	0.0	886.2	0.8	4.1
2011	7	552.3	115.3	667.5	361.5	306.0	66.8	243.0	86.2	329.2	-90.0	208.4	0.0	623.3	0.7	2.6
2012	8	567.2	117.1	684.2	362.6	321.6	68.4	293.3	173.2	466.5	-213.3	246.0	0.0	188.9	0.5	0.9
2013	9	582.5	118.9	701.4	363.7	337.7	70.1	320.0	217.5	537.5	-269.9	185.2	0.0	-258.7	0.5	0.0
2014	10	598.2	120.8	719.0	364.8	354.2	71.9	353.0	241.9	594.8	-312.5	215.1	0.0	-796.6	0.5	-0.9
2015	11	614.4	122.7	737.1	365.8	371.2	73.7	378.5	282.1	660.6	-363.1	196.2	0.0	-1,387.8	0.5	-1.7
2016	12	631.0	124.6	755.6	366.9	388.7	75.6	404.6	325.5	730.1	-416.9	207.1	0.0	-2,067.4	0.4	-2.4
2017	13	648.0	126.5	774.6	368.0	406.6	77.5	436.9	385.4	822.3	-493.2	226.0	0.0	-2,869.3	0.4	-3.1
2018	14	665.5	128.5	794.1	369.1	425.0	79.4	455.0	432.1	887.0	-541.4	210.9	0.0	-3,736.4	0.4	-3.8
2019	15	683.5	130.5	814.1	370.1	443.9	81.4	465.1	437.6	902.7	-540.1	189.2	0.0	-4,615.2	0.4	-4.7
2020	16	938.0	132.6	1,070.6	525.8	544.8	107.1	425.5	465.4	890.9	-453.1	0.0	0.0	-5,253.0	0.5	-5.4
2021	17	946.3	133.6	1,079.9	528.3	551.6	108.0	384.4	445.0	829.4	-385.8	0.0	0.0	-5,848.8	0.5	-6.5
2022	18	954.7	134.6	1,089.3	530.8	558.6	108.9	344.3	446.4	790.7	-341.1	0.0	0.0	-6,423.9	0.6	-7.6
2023	19	963.2	135.6	1,098.8	533.2	565.6	109.9	303.9	451.4	755.4	-299.7	0.0	0.0	-6,980.5	0.6	-8.6
2024	20	971.7	136.7	1,108.4	535.7	572.7	110.8	263.3	441.0	704.3	-242.5	0.0	0.0	-7,502.2	0.7	-10.0
2025	21	980.3	137.7	1,118.0	538.2	579.8	111.8	223.9	416.5	640.3	-172.3	0.0	0.0	-7,974.7	0.7	-11.7
2026	22	989.0	138.8	1,127.8	540.7	587.1	112.8	186.9	385.1	572.0	-97.7	0.0	0.0	-8,391.4	0.8	-13.8
2027	23	997.8	139.8	1,137.6	543.2	594.4	113.8	153.1	344.7	497.7	-17.1	0.0	0.0	-8,744.1	1.0	-16.6
2028	24	1,006.6	140.9	1,147.5	545.6	601.8	114.7	122.8	305.1	427.9	59.2	0.0	0.0	-9,034.6	1.1	-20.0
2029	25	1,015.5	141.9	1,157.5	548.1	609.4	115.7	96.5	246.4	342.9	150.7	0.0	0.0	-9,245.3	1.4	-25.5
2030	26	1,024.5	143.0	1,167.5	550.6	616.9	116.8	74.9	210.0	284.9	215.3	0.0	0.0	-9,399.8	1.8	-31.2
2031	27	1,033.6	144.1	1,177.7	553.1	624.6	117.8	56.7	172.4	229.1	277.7	0.0	0.0	-9,498.1	2.2	-39.2
2032	28	1,042.8	145.2	1,188.0	555.6	632.4	118.8	41.9	140.9	182.8	330.8	0.0	0.0	-9,547.1	2.8	-49.4
2033	29	1,052.0	146.3	1,198.3	558.0	640.3	119.8	29.8	113.4	143.3	377.2	0.0	0.0	-9,551.8	3.6	-63.0
2034	30	1,061.3	147.4	1,208.7	560.5	648.2	120.9	20.4	85.5	105.9	421.5	0.0	0.0	-9,512.5	--	--
2035	31	1,070.7	148.5	1,219.3	563.0	656.3	121.9	13.3	68.2	81.5	452.9	0.0	0.0	-9,440.1	--	--
2036	32	1,080.2	149.7	1,229.9	565.5	664.4	123.0	7.7	50.6	58.2	483.2	0.0	0.0	-9,334.4	--	--
2037	33	1,089.8	150.8	1,240.6	568.0	672.6	124.1	3.6	33.5	37.1	511.5	0.0	0.0	-9,196.4	--	--
2038	34	1,099.4	152.0	1,251.4	570.4	681.0	125.1	1.0	15.7	16.7	539.1	0.0	0.0	-9,025.1	--	--
2039	35	1,109.2	153.1	1,262.3	572.9	689.4	126.2	0.0	0.0	0.0	563.2	0.0	0.0	-8,823.0	--	--
2040	36	1,119.0	154.3	1,273.3	575.4	697.9	127.3	0.0	0.0	0.0	570.6	0.0	0.0	-8,605.3	--	--
2041	37	1,128.9	155.5	1,284.4	577.9	706.5	128.4	0.0	0.0	0.0	578.1	0.0	0.0	-8,371.4	--	--
2042	38	1,138.9	156.6	1,295.6	580.4	715.2	129.6	0.0	0.0	0.0	585.7	0.0	0.0	-8,120.6	--	--

Table J-58. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ.	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,149.0	157.8	1,306.9	582.8	724.0	130.7	0.0	0.0	0.0	593.3	0.0	0.0	-7,852.1	--	--
2044	40	1,159.2	159.0	1,318.2	585.3	732.9	131.8	0.0	0.0	0.0	601.1	0.0	0.0	-7,565.1	--	--
2045	41	1,169.5	160.2	1,329.7	587.8	741.9	133.0	0.0	0.0	0.0	608.9	0.0	0.0	-7,258.8	--	--
2046	42	1,179.9	161.4	1,341.3	590.3	751.0	134.1	0.0	0.0	0.0	616.9	0.0	0.0	-6,932.2	--	--
2047	43	1,190.3	162.7	1,353.0	592.8	760.2	135.3	0.0	0.0	0.0	624.9	0.0	0.0	-6,584.6	--	--
2048	44	1,200.9	163.9	1,364.8	595.2	769.5	136.5	0.0	0.0	0.0	633.1	0.0	0.0	-6,214.9	--	--
2049	45	1,211.5	165.2	1,376.7	597.7	778.9	137.7	0.0	0.0	0.0	641.3	0.0	0.0	-5,822.3	--	--
2050	46	1,222.2	166.4	1,388.7	600.2	788.5	138.9	0.0	0.0	0.0	649.6	0.0	0.0	-5,405.6	--	--
2051	47	1,233.1	167.7	1,400.7	602.7	798.1	140.1	0.0	0.0	0.0	658.0	0.0	0.0	-4,963.8	--	--
2052	48	1,244.0	169.0	1,412.9	605.2	807.8	141.3	0.0	0.0	0.0	666.5	0.0	0.0	-4,495.9	--	--
2053	49	1,255.0	170.2	1,425.3	607.6	817.6	142.5	0.0	0.0	0.0	675.1	0.0	0.0	-4,000.6	--	--
2054	50	1,266.1	171.5	1,437.7	610.1	827.6	143.8	0.0	0.0	0.0	683.8	0.0	0.0	-3,476.8	--	--
2055	51	1,277.4	172.8	1,450.2	612.6	837.6	145.0	0.0	0.0	0.0	692.6	0.0	0.0	-2,923.3	--	--
2056	52	1,288.7	174.1	1,462.8	615.1	847.8	146.3	0.0	0.0	0.0	701.5	0.0	0.0	-2,338.8	--	--
2057	53	1,300.1	175.5	1,475.6	617.6	858.0	147.6	0.0	0.0	0.0	710.5	0.0	0.0	-1,721.9	--	--
2058	54	1,311.6	176.8	1,488.4	620.0	868.4	148.8	0.0	0.0	0.0	719.5	0.0	0.0	-1,071.2	--	--
2059	55	1,323.2	178.1	1,501.4	622.5	878.9	150.1	0.0	0.0	0.0	728.7	0.0	0.0	-385.3	--	--
2060	56	1,335.0	179.5	1,514.5	625.0	889.5	151.5	0.0	0.0	0.0	738.1	0.0	0.0	337.3	--	--
	Total	56,868.5	8,611.7	65,480.2	30,790.0	34,690.2	6,548.0	6,494.1	7,547.9	14,042.1	14,100.1	2,591.6	0.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-59. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							44.4	44.4
2005	1	220.5	172.6	47.9	63.4	-15.4	41.1	25.7
2006	2	233.8	176.9	56.9	65.3	-8.4	34.3	25.9
2007	3	247.5	181.2	66.2	62.3	4.0	159.1	163.1
2008	4	261.5	185.6	75.9	246.8	-171.0	1,279.6	1,108.7
2009	5	275.9	190.1	85.8	1,654.1	-1,568.2	535.7	-1,032.5
2010	6	290.7	194.6	96.1	958.4	-862.3	283.8	-578.6
2011	7	306.0	199.2	106.8	763.9	-657.1	330.7	-326.4
2012	8	321.6	203.9	117.8	905.9	-788.2	0.1	-788.1
2013	9	337.7	208.6	129.1	651.8	-522.7	42.5	-480.2
2014	10	354.2	213.4	140.9	795.1	-654.2	-68.0	-722.2
2015	11	371.2	218.2	153.0	723.1	-570.0	-83.1	-653.1
2016	12	388.7	223.1	165.6	784.7	-619.1	-25.2	-644.2
2017	13	406.6	228.1	178.5	930.9	-752.4	-230.3	-982.7
2018	14	425.0	233.1	191.9	803.0	-611.1	-345.2	-956.3
2019	15	443.9	238.2	205.7	731.0	-525.3	-902.7	-1,428.0
2020	16	544.8	243.4	301.4	0.0	301.4	-890.9	-589.5
2021	17	551.6	245.7	306.0	0.0	306.0	-829.4	-523.4
2022	18	558.6	248.0	310.6	0.0	310.6	-790.7	-480.1
2023	19	565.6	250.3	315.3	0.0	315.3	-755.4	-440.1
2024	20	572.7	252.6	320.0	0.0	320.0	-704.3	-384.3
2025	21	579.8	255.0	324.9	0.0	324.9	-640.3	-315.5
2026	22	587.1	257.3	329.7	0.0	329.7	-572.0	-242.3
2027	23	594.4	259.7	334.7	0.0	334.7	-497.7	-163.1
2028	24	601.8	262.1	339.7	0.0	339.7	-427.9	-88.2
2029	25	609.4	264.6	344.8	0.0	344.8	-342.9	1.9
2030	26	616.9	267.0	349.9	0.0	349.9	-284.9	65.0
2031	27	624.6	269.5	355.1	0.0	355.1	-229.1	126.0
2032	28	632.4	272.0	360.4	0.0	360.4	-182.8	177.6
2033	29	640.3	274.5	365.7	0.0	365.7	-143.3	222.5
2034	30	648.2	277.1	371.2	0.0	371.2	-105.9	265.3
2035	31	656.3	279.6	376.6	0.0	376.6	-81.5	295.2
2036	32	664.4	282.2	382.2	0.0	382.2	-58.2	324.0
2037	33	672.6	284.8	387.8	0.0	387.8	-37.1	350.7
2038	34	681.0	287.5	393.5	0.0	393.5	-16.7	376.8
2039	35	689.4	290.1	399.3	0.0	399.3	0.0	399.3
2040	36	697.9	292.8	405.1	0.0	405.1	0.0	405.1
2041	37	706.5	295.5	411.0	0.0	411.0	0.0	411.0
2042	38	715.2	298.2	417.0	0.0	417.0	0.0	417.0
2043	39	724.0	301.0	423.0	0.0	423.0	0.0	423.0
2044	40	732.9	303.7	429.2	0.0	429.2	0.0	429.2
2045	41	741.9	306.5	435.4	0.0	435.4	0.0	435.4
2046	42	751.0	309.3	441.7	0.0	441.7	0.0	441.7

Table J-59. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, a 50 Percent Increase in Tolls, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	760 2	312 2	448 0	0 0	448 0	0 0	448 0
2048	44	769 5	315 0	454 5	0 0	454 5	0 0	454 5
2049	45	778 9	317 9	461 0	0 0	461 0	0 0	461 0
2050	46	788 5	320 8	467 6	0 0	467 6	0 0	467 6
2051	47	798 1	323 8	474 3	0 0	474 3	0 0	474 3
2052	48	807 8	326 7	481 0	0 0	481 0	0 0	481 0
2053	49	817 6	329 7	487 9	0 0	487 9	0 0	487 9
2054	50	827 6	332 7	494 8	0 0	494 8	0 0	494 8
2055	51	837 6	335 8	501 8	0 0	501 8	0 0	501 8
2056	52	847 8	338 8	508 9	0 0	508 9	0 0	508 9
2057	53	858 0	341 9	516 1	0 0	516 1	0 0	516 1
2058	54	868 4	345 0	523 4	0 0	523 4	0 0	523 4
2059	55	878 9	348 1	530 7	0 0	530 7	0 0	530 7
2060	56	889 5	351 3	538 2	0 0	538 2	0 0	538 2
	Total	33,774 7	15,136 9	18,637 7	10,139 6	8,498 2		2,004 0
				Financial Internal Rate of Return		2 6%		0 6%
				Net Present Value at 8 percent discount rate		-2,923 9		-2,893 8

a/ From Table J-58

b/ From Table 6-6

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-60. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int.	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005	1	510.7	105.0	615.7	355.1	260.6	61.6	4.1	0.5	4.6	194.4	19.0	0.0	992.1	43.3	259.4
2006	2	531.7	106.6	638.3	356.2	282.1	63.8	8.2	1.1	9.3	209.0	19.6	0.0	1,221.2	23.5	155.2
2007	3	553.5	108.3	661.8	357.2	304.6	66.2	12.1	1.6	13.7	224.7	18.7	0.0	1,476.1	17.4	125.2
2008	4	576.3	110.0	686.3	358.3	327.9	68.6	27.7	3.7	31.4	227.9	74.0	0.0	1,688.9	8.2	62.0
2009	5	599.9	111.7	711.7	359.4	352.3	71.2	139.8	50.0	189.7	91.4	343.0	0.0	1,504.9	1.5	9.4
2010	6	624.6	113.5	738.1	360.5	377.6	73.8	199.3	72.4	271.7	32.1	233.0	0.0	1,364.2	1.1	6.1
2011	7	650.3	115.3	765.5	361.5	404.0	76.6	243.0	86.2	329.2	-1.8	208.4	0.0	1,208.5	1.0	4.7
2012	8	677.0	117.1	794.0	362.6	431.4	79.4	293.3	173.2	466.5	-114.5	246.0	0.0	896.3	0.8	2.7
2013	9	704.8	118.9	823.7	363.7	460.0	82.4	320.0	217.5	537.5	-159.9	185.2	0.0	587.1	0.7	1.8
2014	10	733.7	120.8	854.5	364.8	489.7	85.5	353.0	241.9	594.8	-190.5	215.1	0.0	205.0	0.7	1.0
2015	11	763.9	122.7	886.5	365.8	520.7	88.7	378.5	282.1	660.6	-228.5	196.2	0.0	-211.6	0.7	0.3
2016	12	795.3	124.6	919.9	366.9	552.9	92.0	404.6	325.5	730.1	-269.1	207.1	0.0	-696.3	0.6	-0.3
2017	13	827.9	126.5	954.5	368.0	586.5	95.4	436.9	385.4	822.3	-331.3	226.0	0.0	-1,281.5	0.6	-1.0
2018	14	862.0	128.5	990.5	369.1	621.4	99.0	455.0	432.1	887.0	-364.7	210.9	0.0	-1,908.3	0.6	-1.6
2019	15	897.4	130.5	1,027.9	370.1	657.8	102.8	465.1	437.6	902.7	-347.7	189.2	0.0	-2,521.5	0.6	-2.2
2020	16	1,221.0	132.6	1,353.6	525.8	827.8	135.4	425.5	465.4	890.9	-198.4	0.0	0.0	-2,820.8	0.8	-2.4
2021	17	1,232.1	133.6	1,365.7	528.3	837.4	136.6	384.4	445.0	829.4	-128.5	0.0	0.0	-3,062.2	0.8	-2.8
2022	18	1,243.3	134.6	1,377.9	530.8	847.2	137.8	344.3	446.4	790.7	-81.3	0.0	0.0	-3,266.0	0.9	-3.2
2023	19	1,254.6	135.6	1,390.3	533.2	857.0	139.0	303.9	451.4	755.4	-37.4	0.0	0.0	-3,434.0	1.0	-3.6
2024	20	1,266.0	136.7	1,402.7	535.7	867.0	140.3	263.3	441.0	704.3	22.4	0.0	0.0	-3,548.9	1.0	-4.0
2025	21	1,277.6	137.7	1,415.3	538.2	877.1	141.5	223.9	416.5	640.3	95.2	0.0	0.0	-3,595.7	1.1	-4.5
2026	22	1,289.2	138.8	1,427.9	540.7	887.3	142.8	186.9	385.1	572.0	172.4	0.0	0.0	-3,567.1	1.3	-4.9
2027	23	1,300.9	139.8	1,440.7	543.2	897.6	144.1	153.1	344.7	497.7	255.7	0.0	0.0	-3,454.0	1.5	-5.4
2028	24	1,312.7	140.9	1,453.6	545.6	908.0	145.4	122.8	305.1	427.9	334.8	0.0	0.0	-3,257.4	1.8	-5.8
2029	25	1,324.7	141.9	1,466.6	548.1	918.5	146.7	96.5	246.4	342.9	429.0	0.0	0.0	-2,958.7	2.3	-6.4
2030	26	1,336.7	143.0	1,479.8	550.6	929.2	148.0	74.9	210.0	284.9	496.3	0.0	0.0	-2,580.8	2.7	-6.3
2031	27	1,348.9	144.1	1,493.0	553.1	939.9	149.3	56.7	172.4	229.1	561.5	0.0	0.0	-2,122.5	3.5	-5.8
2032	28	1,361.2	145.2	1,506.4	555.6	950.8	150.6	41.9	140.9	182.8	617.4	0.0	0.0	-1,590.0	4.4	-4.3
2033	29	1,373.5	146.3	1,519.9	558.0	961.8	152.0	29.8	113.4	143.3	666.6	0.0	0.0	-987.1	5.7	-1.2
2034	30	1,386.0	147.4	1,533.5	560.5	972.9	153.3	20.4	85.5	105.9	713.7	0.0	0.0	-312.8	--	--
2035	31	1,398.7	148.5	1,547.2	563.0	984.2	154.7	13.3	68.2	81.5	748.0	0.0	0.0	422.7	--	--
2036	32	1,411.4	149.7	1,561.1	565.5	995.6	156.1	7.7	50.6	58.2	781.3	0.0	0.0	1,220.8	--	--
2037	33	1,424.2	150.8	1,575.0	568.0	1,007.1	157.5	3.6	33.5	37.1	812.5	0.0	1,533.3	548.8	--	--
2038	34	1,437.2	152.0	1,589.1	570.4	1,018.7	158.9	1.0	15.7	16.7	843.1	0.0	891.9	522.0	--	--
2039	35	1,450.2	153.1	1,603.4	572.9	1,030.4	160.3	0.0	0.0	0.0	870.1	0.0	892.1	520.9	--	--
2040	36	1,463.4	154.3	1,617.7	575.4	1,042.3	161.8	0.0	0.0	0.0	880.5	0.0	901.4	520.8	--	--
2041	37	1,476.7	155.5	1,632.2	577.9	1,054.3	163.2	0.0	0.0	0.0	891.1	0.0	911.9	520.8	--	--
2042	38	1,490.2	156.6	1,646.8	580.4	1,066.5	164.7	0.0	0.0	0.0	901.8	0.0	922.6	520.8	--	--

Table J-60. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int.	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2043	39	1,503.7	157.8	1,661.6	582.8	1,078.7	166.2	0.0	0.0	0.0	912.6	0.0	933.4	520.8	--	--
2044	40	1,517.4	159.0	1,676.4	585.3	1,091.1	167.6	0.0	0.0	0.0	923.5	0.0	944.3	520.8	--	--
2045	41	1,531.2	160.2	1,691.5	587.8	1,103.7	169.1	0.0	0.0	0.0	934.5	0.0	955.3	520.8	--	--
2046	42	1,545.2	161.4	1,706.6	590.3	1,116.3	170.7	0.0	0.0	0.0	945.7	0.0	966.5	520.8	--	--
2047	43	1,559.2	162.7	1,721.9	592.8	1,129.1	172.2	0.0	0.0	0.0	956.9	0.0	977.8	520.8	--	--
2048	44	1,573.4	163.9	1,737.3	595.2	1,142.1	173.7	0.0	0.0	0.0	968.3	0.0	989.2	520.8	--	--
2049	45	1,587.7	165.2	1,752.9	597.7	1,155.1	175.3	0.0	0.0	0.0	979.9	0.0	1,000.7	520.8	--	--
2050	46	1,602.1	166.4	1,768.6	600.2	1,168.4	176.9	0.0	0.0	0.0	991.5	0.0	1,012.3	520.8	--	--
2051	47	1,616.7	167.7	1,784.4	602.7	1,181.7	178.4	0.0	0.0	0.0	1,003.3	0.0	1,024.1	520.8	--	--
2052	48	1,631.4	169.0	1,800.4	605.2	1,195.2	180.0	0.0	0.0	0.0	1,015.2	0.0	1,036.0	520.8	--	--
2053	49	1,646.3	170.2	1,816.5	607.6	1,208.9	181.7	0.0	0.0	0.0	1,027.2	0.0	1,048.1	520.8	--	--
2054	50	1,661.2	171.5	1,832.8	610.1	1,222.7	183.3	0.0	0.0	0.0	1,039.4	0.0	1,060.2	520.8	--	--
2055	51	1,676.4	172.8	1,849.2	612.6	1,236.6	184.9	0.0	0.0	0.0	1,051.7	0.0	1,072.5	520.8	--	--
2056	52	1,691.6	174.1	1,865.8	615.1	1,250.7	186.6	0.0	0.0	0.0	1,064.1	0.0	1,084.9	520.8	--	--
2057	53	1,707.0	175.5	1,882.5	617.6	1,264.9	188.2	0.0	0.0	0.0	1,076.7	0.0	1,097.5	520.8	--	--
2058	54	1,722.5	176.8	1,899.3	620.0	1,279.3	189.9	0.0	0.0	0.0	1,089.4	0.0	1,110.2	520.8	--	--
2059	55	1,738.2	178.1	1,916.3	622.5	1,293.8	191.6	0.0	0.0	0.0	1,102.2	0.0	1,123.0	520.8	--	--
2060	56	1,754.0	179.5	1,933.5	625.0	1,308.5	193.4	0.0	0.0	0.0	1,115.2	0.0	1,136.0	520.8	--	--
	Total	72,921.4	8,611.7	81,533.1	30,790.0	50,743.1	8,153.3	6,494.1	7,547.9	14,042.1	28,547.7	2,591.6	24,625.3			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-61. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							44.4	44.4
2005	1	260.6	172.6	88.0	63.4	24.6	41.1	65.7
2006	2	282.1	176.9	105.2	65.3	39.9	34.3	74.2
2007	3	304.6	181.2	123.3	62.3	61.1	159.1	220.2
2008	4	327.9	185.6	142.3	246.8	-104.5	1,279.6	1,175.1
2009	5	352.3	190.1	162.2	1,654.1	-1,491.9	535.7	-956.2
2010	6	377.6	194.6	183.0	958.4	-775.5	283.8	-491.7
2011	7	404.0	199.2	204.7	763.9	-559.1	330.7	-228.4
2012	8	431.4	203.9	227.5	905.9	-678.4	0.1	-678.3
2013	9	460.0	208.6	251.4	651.8	-400.4	42.5	-357.9
2014	10	489.7	213.4	276.4	795.1	-518.7	-68.0	-586.7
2015	11	520.7	218.2	302.5	723.1	-420.6	-83.1	-503.6
2016	12	552.9	223.1	329.8	784.7	-454.8	-25.2	-480.0
2017	13	586.5	228.1	358.4	930.9	-572.5	-230.3	-802.8
2018	14	621.4	233.1	388.3	803.0	-414.6	-345.2	-759.9
2019	15	657.8	238.2	419.6	731.0	-311.5	-902.7	-1,214.1
2020	16	827.8	243.4	584.4	0.0	584.4	-890.9	-306.5
2021	17	837.4	245.7	591.8	0.0	591.8	-829.4	-237.6
2022	18	847.2	248.0	599.2	0.0	599.2	-790.7	-191.5
2023	19	857.0	250.3	606.8	0.0	606.8	-755.4	-148.6
2024	20	867.0	252.6	614.4	0.0	614.4	-704.3	-89.9
2025	21	877.1	255.0	622.1	0.0	622.1	-640.3	-18.2
2026	22	887.3	257.3	629.9	0.0	629.9	-572.0	57.9
2027	23	897.6	259.7	637.8	0.0	637.8	-497.7	140.1
2028	24	908.0	262.1	645.8	0.0	645.8	-427.9	218.0
2029	25	918.5	264.6	653.9	0.0	653.9	-342.9	311.1
2030	26	929.2	267.0	662.1	0.0	662.1	-284.9	377.2
2031	27	939.9	269.5	670.4	0.0	670.4	-229.1	441.3
2032	28	950.8	272.0	678.8	0.0	678.8	-182.8	496.0
2033	29	961.8	274.5	687.3	0.0	687.3	-143.3	544.0
2034	30	972.9	277.1	695.9	0.0	695.9	-105.9	590.0
2035	31	984.2	279.6	704.6	0.0	704.6	-81.5	623.1
2036	32	995.6	282.2	713.3	0.0	713.3	-58.2	655.1
2037	33	1,007.1	284.8	722.2	0.0	722.2	-37.1	685.1
2038	34	1,018.7	287.5	731.2	0.0	731.2	-16.7	714.5
2039	35	1,030.4	290.1	740.3	0.0	740.3	0.0	740.3
2040	36	1,042.3	292.8	749.5	0.0	749.5	0.0	749.5
2041	37	1,054.3	295.5	758.8	0.0	758.8	0.0	758.8
2042	38	1,066.5	298.2	768.2	0.0	768.2	0.0	768.2
2043	39	1,078.7	301.0	777.8	0.0	777.8	0.0	777.8
2044	40	1,091.1	303.7	787.4	0.0	787.4	0.0	787.4
2045	41	1,103.7	306.5	797.1	0.0	797.1	0.0	797.1
2046	42	1,116.3	309.3	807.0	0.0	807.0	0.0	807.0

Table J-61. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, Interest Rates Increased by 25 Percent and Capital Costs Decreased by 25 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	1,129 1	312 2	816 9	0 0	816 9	0 0	816 9
2048	44	1,142 1	315 0	827 0	0 0	827 0	0 0	827 0
2049	45	1,155 1	317 9	837 2	0 0	837 2	0 0	837 2
2050	46	1,168 4	320 8	847 5	0 0	847 5	0 0	847 5
2051	47	1,181 7	323 8	857 9	0 0	857 9	0 0	857 9
2052	48	1,195 2	326 7	868 5	0 0	868 5	0 0	868 5
2053	49	1,208 9	329 7	879 1	0 0	879 1	0 0	879 1
2054	50	1,222 7	332 7	889 9	0 0	889 9	0 0	889 9
2055	51	1,236 6	335 8	900 8	0 0	900 8	0 0	900 8
2056	52	1,250 7	338 8	911 9	0 0	911 9	0 0	911 9
2057	53	1,264 9	341 9	923 0	0 0	923 0	0 0	923 0
2058	54	1,279 3	345 0	934 3	0 0	934 3	0 0	934 3
2059	55	1,293 8	348 1	945 7	0 0	945 7	0 0	945 7
2060	56	1,308.5	351 3	957 2	0 0	957 2	0 0	957 2
	Total	49,734 9	15,136.9	34,597 9	10,139 6	24,458.4		17,964 2
				Financial Internal Rate of Return		6 4%		5 1%
				Net Present Value at 8 percent discount rate		-883 4		-1,004 4

a/ From Table J-60.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-62. Status Quo Canal: Estimated Net Income, 2000-2060 Assuming a 50 Percent Increase in Tolls (1990 US$ millions)

Year	Revenues			Oper. & Maint. c/	Net Income from Operations
	Tolls a/	Other b/	Total		
2000	411.9	97.1	509.0	349.7	159.3
2001	423.1	98.6	521.7	350.8	170.9
2002	434.5	100.2	534.7	351.9	182.8
2003	446.2	101.7	548.0	353.0	195.0
2004	458.3	103.3	561.6	354.0	207.6
2005	470.7	105.0	575.6	355.1	220.5
2006	483.4	106.6	590.0	356.2	233.8
2007	496.4	108.3	604.7	357.2	247.5
2008	509.8	110.0	619.8	358.3	261.5
2009	523.6	111.7	635.3	359.4	275.9
2010	537.7	113.5	651.2	360.5	290.7
2011	552.3	115.3	667.5	361.5	306.0
2012	567.2	117.1	684.2	362.6	321.6
2013	582.5	118.9	701.4	363.7	337.7
2014	598.2	120.8	719.0	364.8	354.2
2015	614.4	122.7	737.1	365.8	371.2
2016	631.0	124.6	755.6	366.9	388.7
2017	648.0	126.5	774.6	368.0	406.6
2018	665.5	128.5	794.1	369.1	425.0
2019	683.5	130.5	814.1	370.1	443.9
2020	702.0	132.6	834.6	371.2	463.4
2021	705.6	133.6	839.2	372.4	466.8
2022	709.2	134.6	843.8	373.6	470.2
2023	712.8	135.6	848.5	374.8	473.7
2024	716.5	136.7	853.2	376.0	477.2
2025	720.1	137.7	857.9	377.2	480.7
2026	723.8	138.8	862.6	378.4	484.2
2027	727.5	139.8	867.4	379.6	487.8
2028	731.3	140.9	872.1	380.8	491.3
2029	735.0	141.9	876.9	382.0	494.9
2030	738.8	143.0	881.8	383.2	498.6
2031	742.5	144.1	886.7	384.4	502.3
2032	746.3	145.2	891.6	385.6	506.0
2033	750.2	146.3	896.5	386.8	509.7
2034	754.0	147.4	901.4	388.0	513.4

Table J-62. Status Quo Canal: Estimated Net Income, 2000-2060 Assuming a 50 Percent Increase in Tolls (1990 US$ millions)

Year	Revenues			Oper. & Maint. c/	Net Income from Operations
	Tolls a/	Other b/	Total		
2035	757.9	148.5	906.4	389.2	517.2
2036	761.7	149.7	911.4	390.4	521.0
2037	765.6	150.8	916.4	391.6	524.8
2038	769.5	152.0	921.5	392.8	528.7
2039	773.5	153.1	926.6	394.0	532.6
2040	777.4	154.3	931.7	395.2	536.5
2041	781.4	155.5	936.9	396.4	540.5
2042	785.4	156.6	942.1	397.6	544.5
2043	789.4	157.8	947.3	398.8	548.5
2044	793.5	159.0	952.5	400.0	552.5
2045	797.5	160.2	957.8	401.2	556.6
2046	801.6	161.4	963.1	402.4	560.7
2047	805.7	162.7	968.4	403.6	564.8
2048	809.8	163.9	973.8	404.8	569.0
2049	814.0	165.2	979.1	406.0	573.1
2050	818.2	166.4	984.6	407.2	577.4
2051	822.3	167.7	990.0	408.4	581.6
2052	826.5	169.0	995.5	409.6	585.9
2053	830.8	170.2	1,001.0	410.8	590.2
2054	835.0	171.5	1,006.6	412.0	594.6
2055	839.3	172.8	1,012.1	413.2	598.9
2056	843.6	174.1	1,017.7	414.4	603.3
2057	847.9	175.5	1,023.4	415.6	607.8
2058	852.3	176.8	1,029.1	416.8	612.3
2059	856.6	178.1	1,034.8	418.0	616.8
2060	861.0	179.5	1,040.5	419.2	621.3
Total	42,671.6	8,611.7	51,283.4	23,401.8	27,881.6

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

Table J-63. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

	Project	Revenues			Oper &	Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		417 6	97 1	514 7	349.7	164 9	51 5	0 0	0 0	0 0	113 5	0 0	0 0	113 5	- -	- -
2001		434 7	98 6	533 4	350 8	182.6	53 3	0 0	0 0	0 0	129 2	0 0	0 0	247 2	- -	- -
2002		452 6	100 2	552 8	351 9	200 9	55 3	0 0	0 0	0 0	145 6	0 0	0 0	402 7	- -	- -
2003		471 2	101 7	572 9	353 0	220.0	57 3	0 0	0 0	0 0	162 7	0 0	0 0	581 5	- -	- -
2004		490.5	103 3	593 9	354 0	239 9	59 4	0 0	0 0	0 0	180 5	0 0	0 0	785 3	- -	- -
2005		510 7	105 0	615 7	355.1	260 6	61 6	0 0	0 0	0 0	199 0	0 0	0 0	1,015.7	- -	- -
2006		531 7	106 6	638 3	356.2	282.1	63.8	0 0	0 0	0 0	218 3	0 0	0 0	1,274 6	- -	- -
2007		553 5	108 3	661 8	357 2	304 6	66 2	0 0	0 0	0 0	238 4	0 0	0 0	1,564 0	- -	- -
2008		576 3	110 0	686 3	358 3	327.9	68 6	0 0	0 0	0 0	259 3	0 0	0 0	1,885 9	- -	- -
2009		599 9	111 7	711.7	359.4	352.3	71 2	0.0	0 0	0 0	281 1	0 0	0 0	2,242 4	- -	- -
2010	1	624 6	113 5	738 1	360.5	377.6	73 8	4.6	0 8	5 3	298.5	26.5	0 0	2,604 0	57 0	545 6
2011	2	650.3	115 3	765 5	361.5	404.0	76 6	9 2	1 5	10.7	316.7	27 1	0 0	2,997 8	30 6	310 4
2012	3	677 0	117 1	794 0	362 6	431.4	79 4	23.3	3 8	27 1	324 9	82.2	0 0	3,360 5	13 0	136 9
2013	4	704 8	118 9	823 7	363 7	460 0	82 4	74 4	22 5	96 9	280 7	236 8	0 0	3,538 8	3 9	40 4
2014	5	733 7	120 8	854 5	364 8	489 7	85 5	143 0	52 2	195 3	209 0	297.1	0 0	3,592 3	2 1	20 5
2015	6	763 9	122 7	886 5	365 8	520.7	88 7	200 8	74 2	275 0	157.1	309 0	0 0	3,584 0	1 6	14 6
2016	7	795 3	124 6	919 9	366 9	552.9	92 0	257 9	119 9	377 8	83 1	314 1	0 0	3,496 4	1 2	10 5
2017	8	827 9	126 5	954 5	368 0	586 5	95 4	303 0	192 6	495 6	-4 5	257 6	0 0	3,374 2	1 0	7 8
2018	9	862 0	128 5	990 5	369 1	621 4	99 0	327 9	245 3	573 2	-50 8	175 1	0 0	3,283 2	0 9	6 6
2019	10	897 4	130 5	1,027 9	370.1	657 8	102 8	342 6	295 4	638 0	-83 0	134 7	0 0	3,196 9	0 9	5 9
2020	11	1,175 0	132 6	1,307 6	475 1	832 5	130 8	320 5	352 6	673 1	28 6	0 0	2,725 5	627 9	1 0	2 0
2021	12	1,184 8	133 6	1,318 4	477 8	840.6	131 8	294 4	407 5	701 9	6 9	0 0	134 8	525 1	1 0	1 8
2022	13	1,194 7	134 6	1,329 3	480 5	848 8	132 9	264 3	451 7	716 1	-0 2	0 0	0 0	545 9	1 0	1 8
2023	14	1,204 6	135 6	1,340 3	483 2	857 1	134 0	231 9	447 9	679 9	43 2	0 0	89 1	521 8	1 1	1 8
2024	15	1,214 7	136 7	1,351 4	485 9	865 5	135 1	200 0	425 5	625 4	104 9	0 0	126 7	520 9	1 2	2 0
2025	16	1,224 8	137 7	1,362 5	488 6	873 9	136 3	169 7	391 2	560 9	176 8	0 0	197 7	520 8	1 3	2 2
2026	17	1,235 0	138 8	1,373 8	491 3	882 5	137 4	142 1	344 2	486 2	258 9	0 0	279 7	520 8	1 5	2 6
2027	18	1,245 3	139 8	1,385 2	494 0	891 2	138 5	117 5	308 5	425 9	326 7	0 0	347 5	520 8	1 8	3 0
2028	19	1,255 7	140 9	1,396 6	496 7	899 9	139 7	95 5	270 3	365 8	394 5	0 0	415 3	520 8	2 1	3 5
2029	20	1,266 2	141 9	1,408 1	499 4	908 8	140 8	76 3	229 6	305 9	462 0	0 0	482 9	520 8	2 5	4 2
2030	21	1,276 8	143 0	1,419 8	502 1	917 7	142 0	59 9	199 3	259 2	516 6	0 0	537 4	520 8	3 0	5 0
2031	22	1,287 4	144 1	1,431 5	504 8	926 7	143 2	45 8	168 0	213 8	569 8	0 0	590 7	520 8	3 7	6 1
2032	23	1,298 1	145 2	1,443 4	507 5	935 9	144 3	33 9	147 9	181 9	609 7	0 0	630 5	520 8	4 4	7 2
2033	24	1,309 0	146 3	1,455 3	510 2	945 1	145 5	23 7	122 0	145 7	653 9	0 0	674 7	520 8	5 5	9 1
2034	25	1,319 9	147 4	1,467 3	512 9	954 4	146 7	15 4	96 4	111 8	695 9	0 0	716 7	520 8	7 2	11 9
2035	26	1,330 9	148 5	1,479 4	515 6	963 9	147 9	9 0	69 7	78 7	737 2	0 0	758 0	520 8	10 4	17 0
2036	27	1,342 0	149 7	1,491 7	518 3	973 4	149 2	4 5	42 8	47 3	777 0	0 0	797 8	520 8	17 4	28 5
2037	28	1,353 2	150 8	1,504 0	521 0	983 0	150 4	1 8	22 0	23 8	808 8	0 0	829 6	520 8	34 9	56 8

Table J-63. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364.5	152.0	1,516.4	523.7	992.8	151.6	0.5	8.9	9.4	831.8	0.0	852.6	520.8	89.7	145.2
2039	30	1,375.8	153.1	1,529.0	526.4	1,002.6	152.9	0.0	0.0	0.0	849.7	0.0	870.5	520.8	- -	- -
2040	31	1,387.3	154.3	1,541.6	529.1	1,012.6	154.2	0.0	0.0	0.0	858.4	0.0	879.2	520.8	- -	- -
2041	32	1,398.9	155.5	1,554.3	531.7	1,022.6	155.4	0.0	0.0	0.0	867.2	0.0	888.0	520.8	- -	- -
2042	33	1,410.6	156.6	1,567.2	534.4	1,032.7	156.7	0.0	0.0	0.0	876.0	0.0	896.9	520.8	- -	- -
2043	34	1,422.3	157.8	1,580.1	537.1	1,043.0	158.0	0.0	0.0	0.0	885.0	0.0	905.8	520.8	- -	- -
2044	35	1,434.2	159.0	1,593.2	539.8	1,053.4	159.3	0.0	0.0	0.0	894.0	0.0	914.9	520.8	- -	- -
2045	36	1,446.1	160.2	1,606.4	542.5	1,063.8	160.6	0.0	0.0	0.0	903.2	0.0	924.0	520.8	- -	- -
2046	37	1,458.2	161.4	1,619.7	545.2	1,074.4	162.0	0.0	0.0	0.0	912.5	0.0	933.3	520.8	- -	- -
2047	38	1,470.4	162.7	1,633.0	547.9	1,085.1	163.3	0.0	0.0	0.0	921.8	0.0	942.6	520.8	- -	- -
2048	39	1,482.6	163.9	1,646.5	550.6	1,095.9	164.7	0.0	0.0	0.0	931.3	0.0	952.1	520.8	- -	- -
2049	40	1,495.0	165.2	1,660.2	553.3	1,106.8	166.0	0.0	0.0	0.0	940.8	0.0	961.6	520.8	- -	- -
2050	41	1,507.5	166.4	1,673.9	556.0	1,117.9	167.4	0.0	0.0	0.0	950.5	0.0	971.3	520.8	- -	- -
2051	42	1,520.0	167.7	1,687.7	558.7	1,129.0	168.8	0.0	0.0	0.0	960.2	0.0	981.1	520.8	- -	- -
2052	43	1,532.7	169.0	1,701.7	561.4	1,140.2	170.2	0.0	0.0	0.0	970.1	0.0	990.9	520.8	- -	- -
2053	44	1,545.5	170.2	1,715.7	564.1	1,151.6	171.6	0.0	0.0	0.0	980.0	0.0	1,000.9	520.8	- -	- -
2054	45	1,558.4	171.5	1,729.9	566.8	1,163.1	173.0	0.0	0.0	0.0	990.1	0.0	1,010.9	520.8	- -	- -
2055	46	1,571.4	172.8	1,744.2	569.5	1,174.7	174.4	0.0	0.0	0.0	1,000.3	0.0	1,021.1	520.8	- -	- -
2056	47	1,584.5	174.1	1,758.6	572.2	1,186.4	175.9	0.0	0.0	0.0	1,010.6	0.0	1,031.4	520.8	- -	- -
2057	48	1,597.7	175.5	1,773.2	574.9	1,198.3	177.3	0.0	0.0	0.0	1,021.0	0.0	1,041.8	520.8	- -	- -
2058	49	1,611.0	176.8	1,787.8	577.6	1,210.2	178.8	0.0	0.0	0.0	1,031.4	0.0	1,052.3	520.8	- -	- -
2059	50	1,624.5	178.1	1,802.6	580.3	1,222.3	180.3	0.0	0.0	0.0	1,042.0	0.0	1,062.9	520.8	- -	- -
2060	51	1,638.0	179.5	1,817.5	583.0	1,234.5	181.8	0.0	0.0	0.0	1,052.8	0.0	1,073.6	520.8	- -	- -
	Total	69,730.8	8,611.7	78,342.5	28,889.7	49,452.9	7,834.3	3,793.5	5,514.2	9,307.7	32,310.9	1,860.1	32,494.5			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-64. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							61.9	61.9
2010	1	377.6	290.7	86.8	88.4	-1.6	57.8	56.3
2011	2	404.0	306.0	98.0	90.2	7.8	181.1	188.9
2012	3	431.4	321.6	109.8	274.0	-164.2	692.4	528.2
2013	4	460.0	337.7	122.3	956.3	-834.0	894.7	60.6
2014	5	489.7	354.2	135.5	1,288.7	-1,153.2	654.2	-499.0
2015	6	520.7	371.2	149.5	1,158.5	-1,009.0	592.5	-416.5
2016	7	552.9	388.7	164.3	1,181.5	-1,017.2	381.1	-636.1
2017	8	586.5	406.6	179.9	1,016.5	-836.6	52.6	-784.0
2018	9	621.4	425.0	196.4	723.3	-526.9	-111.0	-637.9
2019	10	657.8	443.9	213.9	596.9	-383.0	-638.0	-1,021.1
2020	11	832.5	463.4	369.1	0.0	369.1	-673.1	-304.0
2021	12	840.6	486.8	373.8	0.0	373.8	-701.9	-328.1
2022	13	848.8	470.2	378.6	0.0	378.6	-716.1	-337.5
2023	14	857.1	473.7	383.4	0.0	383.4	-679.9	-296.4
2024	15	865.5	477.2	388.3	0.0	388.3	-625.4	-237.1
2025	16	873.9	480.7	393.3	0.0	393.3	-560.9	-167.6
2026	17	882.5	484.2	398.3	0.0	398.3	-486.2	-87.9
2027	18	891.2	487.8	403.4	0.0	403.4	-425.9	-22.5
2028	19	899.9	491.3	408.6	0.0	408.6	-365.8	42.8
2029	20	908.8	494.9	413.8	0.0	413.8	-305.9	107.9
2030	21	917.7	498.6	419.1	0.0	419.1	-259.2	159.9
2031	22	926.7	502.3	424.5	0.0	424.5	-213.8	210.7
2032	23	935.9	506.0	429.9	0.0	429.9	-181.9	248.0
2033	24	945.1	509.7	435.4	0.0	435.4	-145.7	289.7
2034	25	954.4	513.4	441.0	0.0	441.0	-111.8	329.2
2035	26	963.9	517.2	446.7	0.0	446.7	-78.7	367.9
2036	27	973.4	521.0	452.4	0.0	452.4	-47.3	405.1
2037	28	983.0	524.8	458.2	0.0	458.2	-23.8	434.3
2038	29	992.8	528.7	464.1	0.0	464.1	-9.4	454.7
2039	30	1,002.6	532.6	470.0	0.0	470.0	0.0	470.0
2040	31	1,012.6	536.5	476.0	0.0	476.0	0.0	476.0
2041	32	1,022.6	540.5	482.1	0.0	482.1	0.0	482.1
2042	33	1,032.7	544.5	488.3	0.0	488.3	0.0	488.3
2043	34	1,043.0	548.5	494.5	0.0	494.5	0.0	494.5
2044	35	1,053.4	552.5	500.9	0.0	500.9	0.0	500.9
2045	36	1,063.8	556.6	507.3	0.0	507.3	0.0	507.3
2046	37	1,074.4	560.7	513.8	0.0	513.8	0.0	513.8

Table J-64. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	564.8	520.3	0.0	520.3	0.0	520.3
2048	39	1,095.9	569.0	527.0	0.0	527.0	0.0	527.0
2049	40	1,106.8	573.1	533.7	0.0	533.7	0.0	533.7
2050	41	1,117.9	577.4	540.5	0.0	540.5	0.0	540.5
2051	42	1,129.0	581.6	547.4	0.0	547.4	0.0	547.4
2052	43	1,140.2	585.9	554.3	0.0	554.3	0.0	554.3
2053	44	1,151.6	590.2	561.4	0.0	561.4	0.0	561.4
2054	45	1,163.1	594.6	568.5	0.0	568.5	0.0	568.5
2055	46	1,174.7	598.9	575.8	0.0	575.8	0.0	575.8
2056	47	1,186.4	603.3	583.1	0.0	583.1	0.0	583.1
2057	48	1,198.3	607.8	590.5	0.0	590.5	0.0	590.5
2058	49	1,210.2	612.3	598.0	0.0	598.0	0.0	598.0
2059	50	1,222.3	616.8	605.5	0.0	605.5	0.0	605.5
2060	51	1,234.5	621.3	613.2	0.0	613.2	0.0	613.2
	Total	46,917.1	25,726.8	21,190.4	7,374.3	13,816.1		9,960.7
				Financial Internal Rate of Return		5.4%		4.5%
				Net Present Value at 8 percent discount rate		-1,284.1		-1,000.7

a/ From Table J-63.

b/ From Table J-62.

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)

Table J-65. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009	1	599.9	111.7	711.7	359.4	352.3	71.2	5.0	0.8	5.8	275.3	28.7	0.0	2,207.9	48.7	431.4
2010	2	624.6	113.5	738.1	360.5	377.6	73.8	10.0	1.6	11.6	292.2	29.3	0.0	2,559.1	26.2	246.7
2011	3	650.3	115.3	765.5	361.5	404.0	76.6	25.3	4.2	29.4	298.0	89.3	0.0	2,870.1	11.1	108.6
2012	4	677.0	117.1	794.0	362.6	431.4	79.4	74.8	22.8	97.6	254.4	225.8	0.0	3,013.5	3.6	34.5
2013	5	704.8	118.9	823.7	363.7	460.0	82.4	143.3	50.7	194.0	183.6	308.7	0.0	3,008.9	1.9	17.5
2014	6	733.7	120.8	854.5	364.8	489.7	85.5	208.0	75.7	283.8	120.5	338.2	0.0	2,911.6	1.4	11.7
2015	7	763.9	122.7	886.5	365.8	520.7	88.7	271.4	126.2	397.7	34.4	335.2	0.0	2,727.2	1.1	7.9
2016	8	795.3	124.6	919.9	366.9	552.9	92.0	330.5	200.2	530.7	-69.8	326.9	0.0	2,439.7	0.9	5.5
2017	9	827.9	126.5	954.5	368.0	586.5	95.4	368.9	257.8	626.6	-135.6	251.7	0.0	2,150.0	0.8	4.2
2018	10	862.0	128.5	990.5	369.1	621.4	99.0	392.9	321.4	714.3	-191.9	190.3	0.0	1,853.8	0.7	3.3
2019	11	897.4	130.5	1,027.9	370.1	657.8	102.8	378.4	386.8	765.2	-210.2	54.9	0.0	1,662.8	0.7	2.9
2020	12	1,186.0	132.6	1,318.6	483.4	835.2	131.9	349.8	442.6	792.3	-89.0	0.0	0.0	1,640.3	0.9	3.0
2021	13	1,197.3	133.6	1,330.9	486.1	844.8	133.1	317.1	495.5	812.6	-100.9	0.0	0.0	1,605.1	0.9	2.9
2022	14	1,208.7	134.6	1,343.3	488.8	854.5	134.3	281.3	502.2	783.5	-63.3	0.0	0.0	1,606.0	0.9	3.0
2023	15	1,220.2	135.6	1,355.8	491.5	864.3	135.6	245.3	489.2	734.4	-5.7	0.0	0.0	1,664.5	1.0	3.3
2024	16	1,231.8	136.7	1,368.4	494.2	874.3	136.8	210.2	460.4	670.6	66.8	0.0	1,231.3	566.6	1.1	1.9
2025	17	1,243.5	137.7	1,381.2	496.9	884.3	138.1	177.5	412.8	590.4	155.8	0.0	222.4	522.7	1.3	2.1
2026	18	1,255.3	138.8	1,394.1	499.6	894.5	139.4	148.1	369.8	517.9	237.2	0.0	259.9	520.9	1.5	2.5
2027	19	1,267.3	139.8	1,407.1	502.3	904.8	140.7	121.6	325.1	446.7	317.3	0.0	338.2	520.8	1.7	2.9
2028	20	1,279.3	140.9	1,420.2	505.0	915.2	142.0	98.5	277.1	375.6	397.6	0.0	418.4	520.8	2.1	3.4
2029	21	1,291.5	141.9	1,433.4	507.7	925.8	143.3	78.6	242.5	321.1	461.3	0.0	482.1	520.8	2.4	4.1
2030	22	1,303.8	143.0	1,446.8	510.4	936.4	144.7	61.4	209.2	270.6	521.1	0.0	542.0	520.8	2.9	4.9
2031	23	1,316.2	144.1	1,460.3	513.1	947.2	146.0	46.5	185.2	231.7	569.5	0.0	590.3	520.8	3.5	5.7
2032	24	1,328.7	145.2	1,473.9	515.8	958.1	147.4	33.5	156.4	189.9	620.8	0.0	641.7	520.8	4.3	7.0
2033	25	1,341.3	146.3	1,487.6	518.5	969.2	148.8	22.8	125.8	148.6	671.8	0.0	692.7	520.8	5.5	9.0
2034	26	1,354.1	147.4	1,501.5	521.2	980.3	150.2	14.4	93.9	108.3	721.9	0.0	742.7	520.8	7.7	12.5
2035	27	1,367.0	148.5	1,515.5	523.9	991.6	151.6	8.2	66.2	74.3	765.8	0.0	786.6	520.8	11.3	18.3
2036	28	1,380.0	149.7	1,529.6	526.6	1,003.1	153.0	3.9	39.7	43.6	806.5	0.0	827.3	520.8	19.5	31.4
2037	29	1,393.1	150.8	1,543.9	529.3	1,014.6	154.4	1.4	19.4	20.8	839.4	0.0	860.3	520.8	41.3	66.3
2038	30	1,406.3	152.0	1,558.3	532.0	1,026.3	155.8	0.3	5.4	5.7	864.8	0.0	885.7	520.8	--	--
2039	31	1,419.7	153.1	1,572.8	534.7	1,038.2	157.3	0.0	0.0	0.0	880.9	0.0	901.7	520.8	--	--
2040	32	1,433.2	154.3	1,587.5	537.4	1,050.2	158.8	0.0	0.0	0.0	891.4	0.0	912.2	520.8	--	--

Table J-65. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ.	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,446.9	155.5	1,602.3	540.0	1,062.3	160.2	0.0	0.0	0.0	902.0	0.0	922.9	520.8	- -	- -
2042	34	1,460.6	156.6	1,617.3	542.7	1,074.5	161.7	0.0	0.0	0.0	912.8	0.0	933.6	520.8	- -	- -
2043	35	1,474.5	157.8	1,632.3	545.4	1,086.9	163.2	0.0	0.0	0.0	923.7	0.0	944.5	520.8	- -	- -
2044	36	1,488.5	159.0	1,647.6	548.1	1,099.4	164.8	0.0	0.0	0.0	934.7	0.0	955.5	520.8	- -	- -
2045	37	1,502.7	160.2	1,662.9	550.8	1,112.1	166.3	0.0	0.0	0.0	945.8	0.0	966.6	520.8	- -	- -
2046	38	1,517.0	161.4	1,678.4	553.5	1,124.9	167.8	0.0	0.0	0.0	957.1	0.0	977.9	520.8	- -	- -
2047	39	1,531.4	162.7	1,694.1	556.2	1,137.9	169.4	0.0	0.0	0.0	968.5	0.0	989.3	520.8	- -	- -
2048	40	1,546.0	163.9	1,709.9	558.9	1,151.0	171.0	0.0	0.0	0.0	980.0	0.0	1,000.8	520.8	- -	- -
2049	41	1,560.7	165.2	1,725.9	561.6	1,164.2	172.6	0.0	0.0	0.0	991.6	0.0	1,012.5	520.8	- -	- -
2050	42	1,575.5	166.4	1,742.0	564.3	1,177.6	174.2	0.0	0.0	0.0	1,003.4	0.0	1,024.3	520.8	- -	- -
2051	43	1,590.5	167.7	1,758.2	567.0	1,191.2	175.8	0.0	0.0	0.0	1,015.4	0.0	1,036.2	520.8	- -	- -
2052	44	1,605.7	169.0	1,774.6	569.7	1,204.9	177.5	0.0	0.0	0.0	1,027.4	0.0	1,048.3	520.8	- -	- -
2053	45	1,620.9	170.2	1,791.2	572.4	1,218.7	179.1	0.0	0.0	0.0	1,039.6	0.0	1,060.5	520.8	- -	- -
2054	46	1,636.3	171.5	1,807.9	575.1	1,232.8	180.8	0.0	0.0	0.0	1,052.0	0.0	1,072.8	520.8	- -	- -
2055	47	1,651.9	172.8	1,824.7	577.8	1,246.9	182.5	0.0	0.0	0.0	1,064.5	0.0	1,085.3	520.8	- -	- -
2056	48	1,667.6	174.1	1,841.8	580.5	1,261.3	184.2	0.0	0.0	0.0	1,077.1	0.0	1,097.9	520.8	- -	- -
2057	49	1,683.5	175.5	1,859.0	583.2	1,275.7	185.9	0.0	0.0	0.0	1,089.9	0.0	1,110.7	520.8	- -	- -
2058	50	1,699.5	176.8	1,876.3	585.9	1,290.4	187.6	0.0	0.0	0.0	1,102.8	0.0	1,123.6	520.8	- -	- -
2059	51	1,715.7	178.1	1,893.8	588.6	1,305.2	189.4	0.0	0.0	0.0	1,115.8	0.0	1,136.7	520.8	- -	- -
2060	52	1,732.0	179.5	1,911.5	591.3	1,320.2	191.2	0.0	0.0	0.0	1,129.1	0.0	1,149.9	520.8	- -	- -
Total		71,707.1	8,611.7	80,318.8	29,230.0	51,088.9	8,031.9	4,428.9	6,366.6	10,795.4	32,261.5	2,179.1	31,985.1			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-66. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						67 0	67 0
1	2009	352 3	275 9	76 3	95 7	-19 4	62 7	43 3
2	2010	377 6	290 7	86 8	97 8	-11 0	196 8	185 8
3	2011	404 0	306 0	98 0	297 7	-199 7	669 0	469 3
4	2012	431 4	321 6	109 8	924 3	-814 5	889 4	74 8
5	2013	460 0	337 7	122 3	1,295 7	-1,173 4	751 7	-421 8
6	2014	489 7	354 2	135 5	1,283 9	-1,148 4	676 9	-471 5
7	2015	520 7	371 2	149 5	1,295 9	-1,146 4	560 7	-585 7
8	2016	552 9	388 7	164 3	1,285 2	-1,120 9	208 2	-912 7
9	2017	586 5	406 6	179 9	990 7	-810 8	-21 0	-831 8
10	2018	621 4	425 0	196 4	795 9	-599 5	-586 3	-1,185 7
11	2019	657 8	443 9	213 9	182 9	31 0	-765 2	-734 3
12	2020	835 2	463 4	371 8	0 0	371 8	-792 3	-420 5
13	2021	844 8	466 8	378 0	0 0	378 0	-812 6	-434 6
14	2022	854 5	470 2	384 3	0 0	384 3	-783 5	-399 2
15	2023	864 3	473 7	390 6	0 0	390 6	-734 4	-343 8
16	2024	874 3	477 2	397 1	0 0	397 1	-670 6	-273 5
17	2025	884 3	480 7	403 7	0 0	403 7	-590 4	-186 7
18	2026	894 5	484 2	410 3	0 0	410 3	-517 9	-107 6
19	2027	904 8	487 8	417 0	0 0	417 0	-446 7	-29 7
20	2028	915 2	491 3	423 9	0 0	423 9	-375 6	48 3
21	2029	925 8	494 9	430 8	0 0	430 8	-321 1	109 7
22	2030	936 4	498 6	437 8	0 0	437 8	-270 6	167 2
23	2031	947 2	502 3	445 0	0 0	445 0	-231 7	213 2
24	2032	958 1	506 0	452 2	0 0	452 2	-189 9	262 3
25	2033	969 2	509 7	459 5	0 0	459 5	-148 6	310 9
26	2034	980 3	513 4	466 9	0 0	466 9	-108 3	358 6
27	2035	991 6	517 2	474 4	0 0	474 4	-74 3	400 1
28	2036	1003 1	521 0	482 1	0 0	482 1	-43 6	438 4
29	2037	1014 6	524 8	489 8	0 0	489 8	-20 8	469 0
30	2038	1026 3	528 7	497 6	0 0	497 6	-5 7	491 9
31	2039	1038 2	532 6	505 6	0 0	505 6	0 0	505 6
32	2040	1050 2	536 5	513 6	0 0	513 6	0 0	513 6
33	2041	1062 3	540 5	521 8	0 0	521 8	0 0	521 8
34	2042	1074 5	544 5	530 1	0 0	530 1	0 0	530 1
35	2043	1086 9	548 5	538 4	0 0	538 4	0 0	538 4
36	2044	1099 4	552 5	546 9	0 0	546 9	0 0	546 9
37	2045	1112 1	556 6	555 5	0 0	555 5	0 0	555 5
38	2046	1124 9	560 7	564 2	0 0	564 2	0 0	564 2
39	2047	1137 9	564 8	573 1	0 0	573 1	0 0	573 1
40	2048	1151 0	569 0	582 0	0 0	582 0	0 0	582 0

Table J-66. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1164 2	573 1	591 1	0 0	591 1	0 0	591 1
42	2050	1177 6	577 4	600 3	0 0	600 3	0 0	600 3
43	2051	1191 2	581 6	609 6	0 0	609 6	0 0	609 6
44	2052	1204 9	585 9	619 0	0 0	619 0	0 0	619 0
45	2053	1218 7	590 2	628 5	0 0	628 5	0 0	628 5
46	2054	1232 8	594 6	638 2	0 0	638 2	0 0	638 2
47	2055	1246 9	598 9	648 0	0 0	648 0	0 0	648 0
48	2056	1261 3	603 3	657 9	0 0	657 9	0 0	657 9
49	2057	1275 7	607 8	668 0	0 0	668 0	0 0	668 0
50	2058	1290 4	612 3	678 1	0 0	678 1	0 0	678 1
51	2059	1305 2	616 8	688 4	0 0	688 4	0 0	688 4
52	2060	1320 2	621 3	698 9	0 0	698 9	0 0	698 9
Total		48,905 4	26,002 7	22,902 7	8,545 7	14,357 0		9,928 1
				Financial Internal Rate of Return		4 7%		3 6%
				Net Present Value at 8 percent discount rate		-1,955 9		-1,599 0

a/ From Table J-65.

b/ From Table J-62.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-67. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005	1	510.7	105.0	615.7	355.1	260.6	61.6	4.4	0.7	5.1	193.9	25.4	0.0	985.3	39.1	232.5
2006	2	531.7	106.6	638.3	356.2	282.1	63.8	8.8	1.5	10.3	208.0	26.1	0.0	1,206.5	21.2	138.4
2007	3	553.5	108.3	661.8	357.2	304.6	66.2	13.0	2.2	15.2	223.2	24.9	0.0	1,453.1	15.7	111.4
2008	4	576.3	110.0	686.3	358.3	327.9	68.6	29.9	5.0	34.9	224.4	98.7	0.0	1,636.9	7.4	54.4
2009	5	599.9	111.7	711.7	359.4	352.3	71.2	151.5	66.6	218.2	62.9	457.3	0.0	1,308.0	1.3	7.3
2010	6	624.6	113.5	738.1	360.5	377.6	73.8	215.9	96.5	312.4	-8.6	310.7	0.0	1,041.0	1.0	4.3
2011	7	650.3	115.3	765.5	361.5	404.0	76.6	263.0	114.9	377.9	-50.5	277.9	0.0	754.3	0.9	2.9
2012	8	677.0	117.1	794.0	362.6	431.4	79.4	317.2	231.0	548.2	-196.2	328.0	0.0	260.3	0.6	1.1
2013	9	704.8	118.9	823.7	363.7	460.0	82.4	345.9	290.0	635.9	-258.2	247.0	0.0	-234.5	0.6	0.2
2014	10	733.7	120.8	854.5	364.8	489.7	85.5	381.4	322.5	703.9	-299.6	286.8	0.0	-830.3	0.6	-0.6
2015	11	763.9	122.7	886.5	365.8	520.7	88.7	408.9	376.2	785.0	-353.0	261.7	0.0	-1,478.1	0.6	-1.3
2016	12	795.3	124.6	919.9	366.9	552.9	92.0	437.0	434.0	871.0	-410.0	276.2	0.0	-2,223.4	0.5	-2.0
2017	13	827.9	126.5	954.5	368.0	586.5	95.4	472.0	513.9	985.9	-494.8	301.4	0.0	-3,108.5	0.5	-2.7
2018	14	862.0	128.5	990.5	369.1	621.4	99.0	491.4	576.1	1,067.5	-545.1	281.2	0.0	-4,059.2	0.5	-3.3
2019	15	897.4	130.5	1,027.9	370.1	657.8	102.8	502.3	583.5	1,085.7	-530.7	252.3	0.0	-5,004.6	0.5	-4.1
2020	16	1,221.0	132.6	1,353.6	525.8	827.8	135.4	459.5	620.5	1,080.0	-387.5	0.0	0.0	-5,592.3	0.6	-4.5
2021	17	1,232.1	133.6	1,365.7	528.3	837.4	136.6	415.1	593.4	1,008.4	-307.6	0.0	0.0	-6,123.6	0.7	-5.4
2022	18	1,243.3	134.6	1,377.9	530.8	847.2	137.8	371.8	595.2	967.0	-257.6	0.0	0.0	-6,626.1	0.7	-6.1
2023	19	1,254.6	135.6	1,390.3	533.2	857.0	139.0	328.2	601.9	930.1	-212.1	0.0	0.0	-7,103.3	0.8	-6.9
2024	20	1,266.0	136.7	1,402.7	535.7	867.0	140.3	284.4	588.0	872.4	-145.7	0.0	0.0	-7,533.1	0.8	-7.8
2025	21	1,277.6	137.7	1,415.3	538.2	877.1	141.5	241.8	555.3	797.1	-61.6	0.0	0.0	-7,896.0	0.9	-9.0
2026	22	1,289.2	138.8	1,427.9	540.7	887.3	142.8	202.0	513.5	715.4	29.0	0.0	0.0	-8,182.8	1.0	-10.4
2027	23	1,300.9	139.8	1,440.7	543.2	897.6	144.1	165.4	459.6	625.0	128.5	0.0	0.0	-8,381.6	1.2	-12.2
2028	24	1,312.7	140.9	1,453.6	545.6	908.0	145.4	132.7	406.8	539.5	223.1	0.0	0.0	-8,493.7	1.4	-14.3
2029	25	1,324.7	141.9	1,466.6	548.1	918.5	146.7	104.3	328.5	432.9	339.0	0.0	0.0	-8,494.5	1.8	-17.8
2030	26	1,336.7	143.0	1,479.8	550.6	929.2	148.0	81.1	280.0	361.0	420.2	0.0	0.0	-8,414.1	2.2	-21.1
2031	27	1,348.9	144.1	1,493.0	553.1	939.9	149.3	61.4	229.9	291.3	499.3	0.0	0.0	-8,251.4	2.7	-25.6
2032	28	1,361.2	145.2	1,506.4	555.6	950.8	150.6	45.4	187.9	233.2	566.9	0.0	0.0	-8,014.5	3.4	-30.9
2033	29	1,373.5	146.3	1,519.9	558.0	961.8	152.0	32.3	151.2	183.6	626.3	0.0	0.0	-7,708.8	4.4	-37.6
2034	30	1,386.0	147.4	1,533.5	560.5	972.9	153.3	22.1	114.0	136.1	683.5	0.0	0.0	-7,333.7	--	--
2035	31	1,398.7	148.5	1,547.2	563.0	984.2	154.7	14.4	90.9	105.3	724.2	0.0	0.0	-6,902.9	--	--
2036	32	1,411.4	149.7	1,561.1	565.5	995.6	156.1	8.3	67.4	75.7	763.8	0.0	0.0	-6,415.2	--	--
2037	33	1,424.2	150.8	1,575.0	568.0	1,007.1	157.5	3.9	44.7	48.6	801.0	0.0	0.0	-5,870.9	--	--
2038	34	1,437.2	152.0	1,589.1	570.4	1,018.7	158.9	1.1	20.9	22.0	837.7	0.0	0.0	-5,268.0	--	--
2039	35	1,450.2	153.1	1,603.4	572.9	1,030.4	160.3	0.0	0.0	0.0	870.1	0.0	0.0	-4,608.6	--	--
2040	36	1,463.4	154.3	1,617.7	575.4	1,042.3	161.8	0.0	0.0	0.0	880.5	0.0	0.0	-3,912.4	--	--
2041	37	1,476.7	155.5	1,632.2	577.9	1,054.3	163.2	0.0	0.0	0.0	891.1	0.0	0.0	-3,177.8	--	--
2042	38	1,490.2	156.6	1,646.8	580.4	1,066.5	164.7	0.0	0.0	0.0	901.8	0.0	0.0	-2,403.1	--	--

Table J-67. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2043	39	1,503.7	157.8	1,661.6	582.8	1,078.7	166.2	0.0	0.0	0.0	912.6	0.0	0.0	-1,586.7	- -	- -
2044	40	1,517.4	159.0	1,676.4	585.3	1,091.1	167.6	0.0	0.0	0.0	923.5	0.0	0.0	-726.7	- -	- -
2045	41	1,531.2	160.2	1,691.5	587.8	1,103.7	169.1	0.0	0.0	0.0	934.5	0.0	0.0	178.8	- -	- -
2046	42	1,545.2	161.4	1,706.6	590.3	1,116.3	170.7	0.0	0.0	0.0	945.7	0.0	0.0	1,131.6	- -	- -
2047	43	1,559.2	162.7	1,721.9	592.8	1,129.1	172.2	0.0	0.0	0.0	956.9	0.0	1,588.5	545.3	- -	- -
2048	44	1,573.4	163.9	1,737.3	595.2	1,142.1	173.7	0.0	0.0	0.0	968.3	0.0	1,013.6	521.8	- -	- -
2049	45	1,587.7	165.2	1,752.9	597.7	1,155.1	175.3	0.0	0.0	0.0	979.9	0.0	1,001.7	520.9	- -	- -
2050	46	1,602.1	166.4	1,768.6	600.2	1,168.4	176.9	0.0	0.0	0.0	991.5	0.0	1,012.4	520.8	- -	- -
2051	47	1,616.7	167.7	1,784.4	602.7	1,181.7	178.4	0.0	0.0	0.0	1,003.3	0.0	1,024.1	520.8	- -	- -
2052	48	1,631.4	169.0	1,800.4	605.2	1,195.2	180.0	0.0	0.0	0.0	1,015.2	0.0	1,036.0	520.8	- -	- -
2053	49	1,646.3	170.2	1,816.5	607.6	1,208.9	181.7	0.0	0.0	0.0	1,027.2	0.0	1,048.1	520.8	- -	- -
2054	50	1,661.2	171.5	1,832.8	610.1	1,222.7	183.3	0.0	0.0	0.0	1,039.4	0.0	1,060.2	520.8	- -	- -
2055	51	1,676.4	172.8	1,849.2	612.6	1,236.6	184.9	0.0	0.0	0.0	1,051.7	0.0	1,072.5	520.8	- -	- -
2056	52	1,691.6	174.1	1,865.8	615.1	1,250.7	186.6	0.0	0.0	0.0	1,064.1	0.0	1,084.9	520.8	- -	- -
2057	53	1,707.0	175.5	1,882.5	617.6	1,264.9	188.2	0.0	0.0	0.0	1,076.7	0.0	1,097.5	520.8	- -	- -
2058	54	1,722.5	176.8	1,899.3	620.0	1,279.3	189.9	0.0	0.0	0.0	1,089.4	0.0	1,110.2	520.8	- -	- -
2059	55	1,738.2	178.1	1,916.3	622.5	1,293.8	191.6	0.0	0.0	0.0	1,102.2	0.0	1,123.0	520.8	- -	- -
2060	56	1,754.0	179.5	1,933.5	625.0	1,308.5	193.4	0.0	0.0	0.0	1,115.2	0.0	1,136.0	520.8	- -	- -
	Total	72,921.4	8,611.7	81,533.1	30,790.0	50,743.1	8,153.3	7,017.8	10,063.9	17,081.7	25,508.2	3,455.5	15,408.7			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-68. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							59 2	59 2
2005	1	260 6	220.5	40 0	84 5	-44 5	55 9	11 4
2006	2	282 1	233 8	48 3	87 1	-38 8	47 8	9 0
2007	3	304.6	247 5	57.1	83 0	-25 9	215 2	189 3
2008	4	327 9	261 5	66 4	329 1	-262 7	1,713 2	1,450 5
2009	5	352 3	275 9	76 3	2,205 4	-2,129 1	749 1	-1,380 0
2010	6	377 6	290 7	86 8	1,277 9	-1,191 1	428 2	-762 9
2011	7	404.0	306 0	98 0	1,018 5	-920 5	502 0	-418 5
2012	8	431 4	321 6	109 8	1,207 9	-1,098.1	74 0	-1,024 1
2013	9	460 0	337 7	122 3	869 1	-746 8	137 5	-609 4
2014	10	489 7	354 2	135 5	1,060 1	-924 6	-1 5	-926 1
2015	11	520.7	371 2	149 5	964 1	-814.6	-15 0	-829 6
2016	12	552 9	388 7	164.3	1,046 2	-881 9	68 9	-813 1
2017	13	586.5	406 6	179.9	1,241 2	-1,061 3	-196 5	-1,257 8
2018	14	621 4	425 0	196 4	1,070 6	-874 2	-345 1	-1,219 2
2019	15	657 8	443.9	213 9	974 7	-760.8	-1,085 7	-1,846 6
2020	16	827.8	463 4	364 4	0 0	364 4	-1,080 0	-715 6
2021	17	837 4	466.8	370 6	0 0	370.6	-1,008 4	-637 8
2022	18	847.2	470.2	377 0	0 0	377 0	-967 0	-590 0
2023	19	857 0	473 7	383 4	0.0	383 4	-930 1	-546 8
2024	20	867 0	477 2	389 8	0 0	389 8	-872 4	-482 6
2025	21	877 1	480 7	396.4	0 0	396 4	-797 1	-400 7
2026	22	887 3	484 2	403 1	0 0	403 1	-715 4	-312 4
2027	23	897 6	487 8	409 8	0.0	409 8	-625 0	-215 2
2028	24	908 0	491 3	416 6	0 0	416 6	-539 5	-122 9
2029	25	918 5	494 9	423 6	0 0	423 6	-432 9	-9 3
2030	26	929 2	498 6	430 6	0 0	430 6	-361 0	69 5
2031	27	939 9	502 3	437 7	0 0	437 7	-291 3	146 4
2032	28	950 8	506 0	444 9	0 0	444 9	-233 2	211 6
2033	29	961 8	509 7	452 1	0 0	452 1	-183 6	268 6
2034	30	972 9	513 4	459 5	0 0	459 5	-136 1	323 4
2035	31	984 2	517 2	467 0	0 0	467 0	-105 3	361 7
2036	32	995 6	521 0	474 6	0 0	474 6	-75 7	398 8
2037	33	1,007 1	524 8	482 2	0 0	482 2	-48 6	433 6
2038	34	1,018 7	528 7	490 0	0 0	490 0	-22 0	467 9
2039	35	1,030 4	532 6	497 8	0 0	497 8	0 0	497 8
2040	36	1,042 3	536 5	505 8	0 0	505 8	0 0	505 8
2041	37	1,054 3	540 5	513 8	0 0	513 8	0 0	513 8
2042	38	1,066 5	544 5	522 0	0 0	522 0	0 0	522 0
2043	39	1,078 7	548 5	530 3	0 0	530 3	0 0	530 3
2044	40	1,091 1	552 5	538 6	0 0	538 6	0 0	538 6
2045	41	1,103 7	556 6	547 1	0 0	547 1	0 0	547 1
2046	42	1,116 3	560 7	555 7	0 0	555 7	0 0	555 7

Table J-68. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Status Quo Canal Tolls Increased by 50 Percent (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	1,129.1	564.8	564.3	0.0	564.3	0.0	564.3
2048	44	1,142.1	569.0	573.1	0.0	573.1	0.0	573.1
2049	45	1,155.1	573.1	582.0	0.0	582.0	0.0	582.0
2050	46	1,168.4	577.4	591.0	0.0	591.0	0.0	591.0
2051	47	1,181.7	581.6	600.1	0.0	600.1	0.0	600.1
2052	48	1,195.2	585.9	609.3	0.0	609.3	0.0	609.3
2053	49	1,208.9	590.2	618.7	0.0	618.7	0.0	618.7
2054	50	1,222.7	594.6	628.1	0.0	628.1	0.0	628.1
2055	51	1,236.6	598.9	637.7	0.0	637.7	0.0	637.7
2056	52	1,250.7	603.3	647.3	0.0	647.3	0.0	647.3
2057	53	1,264.9	607.8	657.1	0.0	657.1	0.0	657.1
2058	54	1,279.3	612.3	667.0	0.0	667.0	0.0	667.0
2059	55	1,293.8	616.8	677.1	0.0	677.1	0.0	677.1
2060	56	1,308.5	621.3	687.2	0.0	687.2	0.0	687.2
	Total	49,734.9	26,966.0	22,768.9	13,519.4	9,249.5		2,231.8
				Financial Internal Rate of Return		2.1%		0.5%
				Net Present Value at 8 percent discount rate		-4,388.7		-3,779.2

a/ From Table J-67.

b/ From Table J-62

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-69. Single Lane High-Rise Lock Canal 150,000 DWT: Project Costs and Sources of Financing Assuming a Special Purpose Corporation

Cost component	Total Project Cost	Percent of Project Cost	Source of Financing: Export-Import Banks U.S	Export-Import Banks Japan	Commercial Banks	Equip Suppliers	Develop Banks	Foreign Bonds U.S	Foreign Bonds Japan	ODA Loans	Japan-EXIM Overseas Inv	Trust Fund	Outside Equity	Gov't Grants	Total
			Share of Financing by Source (Percent)												
Construction equipment	1,124.2	15.2	40.0	40.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	100.0
Other equipment	1,223.7	16.6	40.0	40.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	100.0
Other construction costs	4,558.3	61.8	0.0	0.0	5.0	0.0	29.5	17.0	17.0	0.0	1.5	15.0	15.0	0.0	100.0
Indirect costs	468.1	6.3	0.0	0.0	5.0	0.0	29.0	17.0	17.0	0.0	2.0	15.0	15.0	0.0	100.0
Total	7,374.3	100.0													
			Share of Financing by Source (1990 US$ millions)												
Construction equipment	1,124.2	15.2	449.7	449.7	0.0	56.2	0.0	0.0	0.0	0.0	0.0	168.6	0.0	0.0	1,124.2
Other equipment	1,223.7	16.6	489.5	489.5	0.0	61.2	0.0	0.0	0.0	0.0	0.0	183.6	0.0	0.0	1,223.7
Other construction costs	4,558.3	61.8	0.0	0.0	227.9	0.0	1,344.7	774.9	774.9	0.0	68.4	683.7	683.7	0.0	4,558.3
Indirect costs	468.1	6.3	0.0	0.0	23.4	0.0	135.7	79.6	79.6	0.0	9.4	70.2	70.2	0.0	468.1
Total	7,374.3	100.0	939.2	939.2	251.3	117.4	1,480.4	854.5	854.5	0.0	77.7	1,106.1	754.0	0.0	7,374.3
Financing source as a percent of total cost			12.7	12.7	3.4	1.6	20.1	11.6	11.6	0.0	1.1	15.0	10.2	0.0	100.0

Source: Project costs from Table 4-7 and financing sources from Table 6-1

Table J-70. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009		599.9	111.7	711.7	359.4	352.3	71.2	0.0	0.0	0.0	281.1	0.0	0.0	2,242.4	--	--
2010	1	624.6	113.5	738.1	360.5	377.6	73.8	4.7	0.9	5.6	298.2	13.3	0.0	2,617.0	54.3	522.0
2011	2	650.3	115.3	765.5	361.5	404.0	76.6	9.4	1.9	11.2	316.2	13.5	0.0	3,024.4	29.1	298.3
2012	3	677.0	117.1	794.0	362.6	431.4	79.4	23.7	4.7	28.4	323.7	41.1	0.0	3,427.9	12.4	133.3
2013	4	704.8	118.9	823.7	363.7	460.0	82.4	75.5	24.3	99.7	277.9	143.4	0.0	3,699.5	3.8	40.9
2014	5	733.7	120.8	854.5	364.8	489.7	85.5	144.6	55.1	199.7	204.6	193.3	0.0	3,858.7	2.0	21.3
2015	6	763.9	122.7	886.5	365.8	520.7	88.7	203.2	78.5	281.7	150.4	173.8	0.0	3,989.7	1.5	15.7
2016	7	795.3	124.6	919.9	366.9	552.9	92.0	261.0	125.7	386.7	74.3	177.2	0.0	4,046.3	1.2	11.7
2017	8	827.9	126.5	954.5	368.0	586.5	95.4	306.4	199.6	506.0	-15.0	152.5	0.0	4,040.7	1.0	9.0
2018	9	862.0	128.5	990.5	369.1	621.4	99.0	331.3	253.7	585.0	-62.7	108.5	0.0	4,031.2	0.9	7.8
2019	10	897.4	130.5	1,027.9	370.1	657.8	102.8	345.7	304.7	650.3	-95.3	89.5	0.0	4,007.6	0.9	7.0
2020	11	1,175.0	132.6	1,307.6	475.1	832.5	130.8	323.0	361.2	684.1	17.6	0.0	3,525.2	660.3	1.0	2.0
2021	12	1,184.8	133.6	1,318.4	477.8	840.6	131.8	296.1	415.3	711.4	-2.7	0.0	0.0	684.0	1.0	2.0
2022	13	1,194.7	134.6	1,329.3	480.5	848.8	132.9	265.4	457.5	722.9	-7.0	0.0	0.0	704.4	1.0	2.0
2023	14	1,204.6	135.6	1,340.3	483.2	857.1	134.0	232.4	450.7	683.1	40.0	0.0	244.4	528.2	1.1	1.8
2024	15	1,214.7	136.7	1,351.4	485.9	865.5	135.1	200.0	425.5	625.5	104.9	0.0	133.1	521.1	1.2	2.0
2025	16	1,224.8	137.7	1,362.5	488.6	873.9	136.3	169.4	388.5	557.9	179.8	0.0	201.0	520.8	1.3	2.3
2026	17	1,235.0	138.8	1,373.8	491.3	882.5	137.4	141.6	339.1	480.7	264.4	0.0	285.3	520.8	1.6	2.6
2027	18	1,245.3	139.8	1,385.2	494.0	891.2	138.5	117.0	302.4	419.3	333.3	0.0	354.2	520.8	1.8	3.0
2028	19	1,255.7	140.9	1,396.6	496.7	899.9	139.7	95.0	263.5	358.5	401.8	0.0	422.6	520.8	2.1	3.6
2029	20	1,266.2	141.9	1,408.1	499.4	908.8	140.8	75.8	222.4	298.2	469.7	0.0	490.6	520.8	2.6	4.3
2030	21	1,276.8	143.0	1,419.8	502.1	917.7	142.0	59.5	192.2	251.7	524.0	0.0	544.9	520.8	3.1	5.2
2031	22	1,287.4	144.1	1,431.5	504.8	926.7	143.2	45.5	161.0	206.5	577.0	0.0	597.9	520.8	3.8	6.3
2032	23	1,298.1	145.2	1,443.4	507.5	935.9	144.3	33.7	141.4	175.1	616.4	0.0	637.2	520.8	4.5	7.5
2033	24	1,309.0	146.3	1,455.3	510.2	945.1	145.5	23.6	116.4	139.9	659.7	0.0	680.5	520.8	5.7	9.4
2034	25	1,319.9	147.4	1,467.3	512.9	954.4	146.7	15.3	91.8	107.1	700.7	0.0	721.5	520.8	7.5	12.4
2035	26	1,330.9	148.5	1,479.4	515.6	963.9	147.9	8.9	66.4	75.3	740.6	0.0	761.5	520.8	10.8	17.8
2036	27	1,342.0	149.7	1,491.7	518.3	973.4	149.2	4.5	40.7	45.2	779.1	0.0	799.9	520.8	18.3	29.8
2037	28	1,353.2	150.8	1,504.0	521.0	983.0	150.4	1.8	21.0	22.8	809.9	0.0	830.7	520.8	36.6	59.5

Table J-70. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int.	Debt Service Requirements e/: Princ.	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364.5	152.0	1,516.4	523.7	992.8	151.6	0.5	8.5	8.9	832.2	0.0	853.0	520.8	94.1	152.3
2039	30	1,375.8	153.1	1,529.0	526.4	1,002.6	152.9	0.0	0.0	0.0	849.7	0.0	870.5	520.8	- -	- -
2040	31	1,387.3	154.3	1,541.6	529.1	1,012.6	154.2	0.0	0.0	0.0	858.4	0.0	879.2	520.8	- -	- -
2041	32	1,398.9	155.5	1,554.3	531.7	1,022.6	155.4	0.0	0.0	0.0	867.2	0.0	888.0	520.8	- -	- -
2042	33	1,410.6	156.6	1,567.2	534.4	1,032.7	156.7	0.0	0.0	0.0	876.0	0.0	896.9	520.8	- -	- -
2043	34	1,422.3	157.8	1,580.1	537.1	1,043.0	158.0	0.0	0.0	0.0	885.0	0.0	905.8	520.8	- -	- -
2044	35	1,434.2	159.0	1,583.2	539.8	1,053.4	159.3	0.0	0.0	0.0	894.0	0.0	914.9	520.8	- -	- -
2045	36	1,446.1	160.2	1,606.4	542.5	1,063.8	160.6	0.0	0.0	0.0	903.2	0.0	924.0	520.8	- -	- -
2046	37	1,458.2	161.4	1,619.7	545.2	1,074.4	162.0	0.0	0.0	0.0	912.5	0.0	933.3	520.8	- -	- -
2047	38	1,470.4	162.7	1,633.0	547.9	1,085.1	163.3	0.0	0.0	0.0	921.8	0.0	942.6	520.8	- -	- -
2048	39	1,482.6	163.9	1,646.5	550.6	1,095.9	164.7	0.0	0.0	0.0	931.3	0.0	952.1	520.8	- -	- -
2049	40	1,495.0	165.2	1,660.2	553.3	1,106.8	166.0	0.0	0.0	0.0	940.8	0.0	961.6	520.8	- -	- -
2050	41	1,507.5	166.4	1,673.9	556.0	1,117.9	167.4	0.0	0.0	0.0	950.5	0.0	971.3	520.8	- -	- -
2051	42	1,520.0	167.7	1,687.7	558.7	1,129.0	168.8	0.0	0.0	0.0	960.2	0.0	981.1	520.8	- -	- -
2052	43	1,532.7	169.0	1,701.7	561.4	1,140.2	170.2	0.0	0.0	0.0	970.1	0.0	990.9	520.8	- -	- -
2053	44	1,545.5	170.2	1,715.7	564.1	1,151.6	171.6	0.0	0.0	0.0	980.0	0.0	1,000.9	520.8	- -	- -
2054	45	1,558.4	171.5	1,729.9	566.8	1,163.1	173.0	0.0	0.0	0.0	990.1	0.0	1,010.9	520.8	- -	- -
2055	46	1,571.4	172.8	1,744.2	569.5	1,174.7	174.4	0.0	0.0	0.0	1,000.3	0.0	1,021.1	520.8	- -	- -
2056	47	1,584.5	174.1	1,758.6	572.2	1,186.4	175.9	0.0	0.0	0.0	1,010.6	0.0	1,031.4	520.8	- -	- -
2057	48	1,597.7	175.5	1,773.2	574.9	1,198.3	177.3	0.0	0.0	0.0	1,021.0	0.0	1,041.8	520.8	- -	- -
2058	49	1,611.0	176.8	1,787.8	577.6	1,210.2	178.8	0.0	0.0	0.0	1,031.4	0.0	1,052.3	520.8	- -	- -
2059	50	1,624.5	178.1	1,802.6	580.3	1,222.3	180.3	0.0	0.0	0.0	1,042.0	0.0	1,062.9	520.8	- -	- -
2060	51	1,638.0	179.5	1,817.5	583.0	1,234.5	181.8	0.0	0.0	0.0	1,052.8	0.0	1,073.6	520.8	- -	- -
	Total	69,730.8	8,611.7	78,342.5	28,889.7	49,452.9	7,834.3	3,814.3	5,514.2	9,328.5	32,290.1	1,106.1	33,390.4			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-71. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060
Assuming a Special Purpose Corporation and an Optimal Toll System
(1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							61 9	61 9
2010	1	377 6	194 6	183 0	88 4	94 6	57 5	152 1
2011	2	404 0	199 2	204 7	90 2	114 5	180 6	295 1
2012	3	431 4	203 9	227 5	274 0	-46 5	691 2	644 7
2013	4	460 0	208 6	251 4	956 3	-704 9	891 9	187 0
2014	5	489 7	213 4	276 4	1,288 7	-1,012 3	649 8	-362 5
2015	6	520 7	218 2	302 5	1,158 5	-856 0	585 8	-270 2
2016	7	552 9	223 1	329 8	1,181 5	-851 7	372 2	-479 4
2017	8	586 5	228 1	358 4	1,016 5	-658 1	42 2	-615 9
2018	9	621 4	233 1	388 3	723 3	-335 0	-122 8	-457 8
2019	10	657 8	238 2	419 6	596 9	-177 3	-650 3	-827 7
2020	11	832 5	243 4	589 1	0 0	589 1	-684 1	-95 0
2021	12	840 6	245 7	594 9	0 0	594 9	-711 4	-116 5
2022	13	848 8	248 0	600 8	0 0	600 8	-722 9	-122 0
2023	14	857 1	250 3	606 8	0 0	606 8	-683 1	-76 2
2024	15	865 5	252 6	612 9	0 0	612 9	-625 5	-12 6
2025	16	873 9	255 0	619 0	0 0	619 0	-557 9	61 1
2026	17	882 5	257 3	625 2	0 0	625 2	-480 7	144 5
2027	18	891 2	259 7	631 4	0 0	631 4	-419 3	212 1
2028	19	899 9	262 1	637 8	0 0	637 8	-358 5	279 3
2029	20	908 8	264 6	644 2	0 0	644 2	-298 2	346 0
2030	21	917 7	267 0	650 7	0 0	650 7	-251 7	399 0
2031	22	926 7	269 5	657 2	0 0	657 2	-206 5	450 7
2032	23	935 9	272 0	663 9	0 0	663 9	-175 1	488 7
2033	24	945 1	274 5	670 6	0 0	670 6	-139 9	530 7
2034	25	954 4	277 1	677 4	0 0	677 4	-107 1	570 3
2035	26	963 9	279 6	684 2	0 0	684 2	-75 3	608 9
2036	27	973 4	282 2	691 2	0 0	691 2	-45 2	646 0
2037	28	983 0	284 8	698 2	0 0	698 2	-22 8	675 4
2038	29	992 8	287 5	705 3	0 0	705 3	-8 9	696 4
2039	30	1,002 6	290 1	712 5	0 0	712 5	0 0	712 5
2040	31	1,012 6	292 8	719 7	0 0	719 7	0 0	719 7
2041	32	1,022 6	295 5	727 1	0 0	727 1	0 0	727 1
2042	33	1,032 7	298 2	734 5	0 0	734 5	0 0	734 5
2043	34	1,043 0	301 0	742 0	0 0	742 0	0 0	742 0
2044	35	1,053 4	303 7	749 6	0 0	749 6	0 0	749 6
2045	36	1,063 8	306 5	757 3	0 0	757 3	0 0	757 3
2046	37	1,074 4	309 3	765 1	0 0	765 1	0 0	765 1

Table J-71. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	312.2	772.9	0.0	772.9	0.0	772.9
2048	39	1,095.9	315.0	780.9	0.0	780.9	0.0	780.9
2049	40	1,106.8	317.9	788.9	0.0	788.9	0.0	788.9
2050	41	1,117.9	320.8	797.0	0.0	797.0	0.0	797.0
2051	42	1,129.0	323.8	805.2	0.0	805.2	0.0	805.2
2052	43	1,140.2	326.7	813.5	0.0	813.5	0.0	813.5
2053	44	1,151.6	329.7	821.9	0.0	821.9	0.0	821.9
2054	45	1,163.1	332.7	830.4	0.0	830.4	0.0	830.4
2055	46	1,174.7	335.8	838.9	0.0	838.9	0.0	838.9
2056	47	1,186.4	338.8	847.6	0.0	847.6	0.0	847.6
2057	48	1,198.3	341.9	856.4	0.0	856.4	0.0	856.4
2058	49	1,210.2	345.0	865.2	0.0	865.2	0.0	865.2
2059	50	1,222.3	348.1	874.2	0.0	874.2	0.0	874.2
2060	51	1,234.5	351.3	883.2	0.0	883.2	0.0	883.2
	Total	46,917.1	14,230.5	32,686.6	7,374.3	25,312.3		21,436.1
				Financial Internal Rate of Return:		10.1%		17.2%
				Net Present Value at 8 percent discount rate:		951.0		1,039.5

a/ From Table J-70.

b/ From Table 6-6.

c/ From Appendix H (base case only).

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-72. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005		510.7	105.0	615.7	355.1	260.6	61.6	0.0	0.0	0.0	199.0	0.0	0.0	1,015.7	--	--
2006		531.7	106.6	638.3	356.2	282.1	63.8	0.0	0.0	0.0	218.3	0.0	0.0	1,274.6	--	--
2007		553.5	108.3	661.8	357.2	304.6	66.2	0.0	0.0	0.0	238.4	0.0	0.0	1,564.0	--	--
2008		576.3	110.0	686.3	358.3	327.9	68.6	0.0	0.0	0.0	259.3	0.0	0.0	1,885.9	--	--
2009	1	599.9	111.7	711.7	359.4	352.3	71.2	5.1	1.0	6.1	275.0	14.4	0.0	2,222.0	46.4	413.2
2010	2	624.6	113.5	738.1	360.5	377.6	73.8	10.1	2.0	12.2	291.6	14.7	0.0	2,587.8	25.0	237.5
2011	3	650.3	115.3	765.5	361.5	404.0	76.6	25.7	5.1	30.8	296.6	44.7	0.0	2,943.3	10.6	106.3
2012	4	677.0	117.1	794.0	362.6	431.4	79.4	75.8	24.6	100.4	251.6	138.6	0.0	3,174.0	3.5	35.1
2013	5	704.8	118.9	823.7	363.7	460.0	82.4	145.0	53.6	198.6	179.0	194.4	0.0	3,285.6	1.9	18.4
2014	6	733.7	120.8	854.5	364.8	489.7	85.5	210.6	80.3	290.8	113.5	192.6	0.0	3,337.9	1.4	12.9
2015	7	763.9	122.7	886.5	365.8	520.7	88.7	274.6	132.3	406.9	25.1	194.4	0.0	3,302.2	1.1	9.2
2016	8	795.3	124.6	919.9	366.9	552.9	92.0	334.3	207.8	542.1	-81.1	192.8	0.0	3,160.4	0.9	6.7
2017	9	827.9	126.5	954.5	368.0	586.5	95.4	372.8	267.1	639.9	-148.8	148.6	0.0	2,989.4	0.8	5.4
2018	10	862.0	128.5	990.5	369.1	621.4	99.0	396.6	331.8	728.4	-206.0	119.4	0.0	2,783.5	0.7	4.5
2019	11	897.4	130.5	1,027.9	370.1	657.8	102.8	381.6	397.1	778.7	-223.7	27.4	0.0	2,643.7	0.7	4.1
2020	12	1,186.0	132.6	1,318.6	483.4	835.2	131.9	352.2	451.9	804.0	-100.7	0.0	0.0	2,648.8	0.9	4.2
2021	13	1,197.3	133.6	1,330.9	486.1	844.8	133.1	318.7	502.8	821.5	-109.8	0.0	0.0	2,644.9	0.9	4.1
2022	14	1,208.7	134.6	1,343.3	488.8	854.5	134.3	282.2	506.8	789.1	-68.9	0.0	0.0	2,681.8	0.9	4.3
2023	15	1,220.2	135.6	1,355.8	491.5	864.3	135.6	245.5	490.7	736.2	-7.5	0.0	0.0	2,781.6	1.0	4.8
2024	16	1,231.8	136.7	1,368.4	494.2	874.3	136.8	210.1	458.7	668.7	68.7	0.0	2,350.3	611.3	1.1	2.0
2025	17	1,243.5	137.7	1,381.2	496.9	884.3	138.1	177.1	408.2	585.3	160.9	0.0	272.2	524.5	1.3	2.2
2026	18	1,255.3	138.8	1,394.1	499.6	894.5	139.4	147.5	363.3	510.8	244.3	0.0	268.8	521.0	1.5	2.5
2027	19	1,267.3	139.8	1,407.1	502.3	904.8	140.7	121.1	317.5	438.5	325.5	0.0	346.5	520.8	1.7	2.9
2028	20	1,279.3	140.9	1,420.2	505.0	915.2	142.0	98.0	268.8	366.7	406.5	0.0	427.3	520.8	2.1	3.5
2029	21	1,291.5	141.9	1,433.4	507.7	925.8	143.3	78.2	234.0	312.2	470.2	0.0	491.1	520.8	2.5	4.2
2030	22	1,303.8	143.0	1,446.8	510.4	936.4	144.7	61.0	201.0	262.0	529.8	0.0	550.6	520.8	3.0	5.0
2031	23	1,316.2	144.1	1,460.3	513.1	947.2	146.0	46.2	177.4	223.6	577.6	0.0	598.4	520.8	3.6	5.9
2032	24	1,328.7	145.2	1,473.9	515.8	958.1	147.4	33.3	149.4	182.7	628.1	0.0	648.9	520.8	4.4	7.3
2033	25	1,341.3	146.3	1,487.6	518.5	969.2	148.8	22.7	119.9	142.5	677.9	0.0	698.7	520.8	5.8	9.4
2034	26	1,354.1	147.4	1,501.5	521.2	980.3	150.2	14.3	89.4	103.7	726.5	0.0	747.3	520.8	8.0	13.0
2035	27	1,367.0	148.5	1,515.5	523.9	991.6	151.6	8.1	63.0	71.1	769.0	0.0	789.9	520.8	11.8	19.1
2036	28	1,380.0	149.7	1,529.6	526.6	1,003.1	153.0	3.9	37.8	41.7	808.4	0.0	829.3	520.8	20.4	32.9
2037	29	1,393.1	150.8	1,543.9	529.3	1,014.6	154.4	1.4	18.4	19.9	840.4	0.0	861.2	520.8	43.3	69.5
2038	30	1,406.3	152.0	1,558.3	532.0	1,026.3	155.8	0.3	5.1	5.4	865.1	0.0	885.9	520.8	--	--
2039	31	1,419.7	153.1	1,572.8	534.7	1,038.2	157.3	0.0	0.0	0.0	880.9	0.0	901.7	520.8	-	-
2040	32	1,433.2	154.3	1,587.5	537.4	1,050.2	158.8	0.0	0.0	0.0	891.4	0.0	912.2	520.8	-	

Table J-72. Single Lane High-Rise Lock Canal 200,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Revenues			Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/			Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund			Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
		Tolls a/	Other b/	Total				Int	Princ	Total		Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/		
2041	33	1,446.9	155.5	1,602.3	540.0	1,062.3	160.2	0.0	0.0	0.0	902.0	0.0	922.9	520.8	--	--
2042	34	1,460.6	156.6	1,617.3	542.7	1,074.5	161.7	0.0	0.0	0.0	912.8	0.0	933.6	520.8	--	--
2043	35	1,474.5	157.8	1,632.3	545.4	1,086.9	163.2	0.0	0.0	0.0	923.7	0.0	944.5	520.8	--	--
2044	36	1,488.5	159.0	1,647.6	548.1	1,099.4	164.8	0.0	0.0	0.0	934.7	0.0	955.5	520.8	--	--
2045	37	1,502.7	160.2	1,662.9	550.8	1,112.1	166.3	0.0	0.0	0.0	945.8	0.0	966.6	520.8	--	--
2046	38	1,517.0	161.4	1,678.4	553.5	1,124.9	167.8	0.0	0.0	0.0	957.1	0.0	977.9	520.8	--	--
2047	39	1,531.4	162.7	1,694.1	556.2	1,137.9	169.4	0.0	0.0	0.0	968.5	0.0	989.3	520.8	--	--
2048	40	1,546.0	163.9	1,709.9	558.9	1,151.0	171.0	0.0	0.0	0.0	980.0	0.0	1,000.8	520.8	--	--
2049	41	1,560.7	165.2	1,725.9	561.6	1,164.2	172.6	0.0	0.0	0.0	991.6	0.0	1,012.5	520.8	--	--
2050	42	1,575.5	166.4	1,742.0	564.3	1,177.6	174.2	0.0	0.0	0.0	1,003.4	0.0	1,024.3	520.8	--	--
2051	43	1,590.5	167.7	1,758.2	567.0	1,191.2	175.8	0.0	0.0	0.0	1,015.4	0.0	1,036.2	520.8	--	--
2052	44	1,605.7	169.0	1,774.6	569.7	1,204.9	177.5	0.0	0.0	0.0	1,027.4	0.0	1,048.3	520.8	--	--
2053	45	1,620.9	170.2	1,791.2	572.4	1,218.7	179.1	0.0	0.0	0.0	1,039.6	0.0	1,060.5	520.8	--	--
2054	46	1,636.3	171.5	1,807.9	575.1	1,232.8	180.8	0.0	0.0	0.0	1,052.0	0.0	1,072.8	520.8	--	--
2055	47	1,651.9	172.8	1,824.7	577.8	1,246.9	182.5	0.0	0.0	0.0	1,064.5	0.0	1,085.3	520.8	--	--
2056	48	1,667.6	174.1	1,841.8	580.5	1,261.3	184.2	0.0	0.0	0.0	1,077.1	0.0	1,097.9	520.8	--	--
2057	49	1,683.5	175.5	1,859.0	583.2	1,275.7	185.9	0.0	0.0	0.0	1,089.9	0.0	1,110.7	520.8	--	--
2058	50	1,699.5	176.8	1,876.3	585.9	1,290.4	187.6	0.0	0.0	0.0	1,102.8	0.0	1,123.6	520.8	--	--
2059	51	1,715.7	178.1	1,893.8	588.6	1,305.2	189.4	0.0	0.0	0.0	1,115.8	0.0	1,136.7	520.8	--	--
2060	52	1,732.0	179.5	1,911.5	591.3	1,320.2	191.2	0.0	0.0	0.0	1,129.1	0.0	1,149.9	520.8	--	--
Total		71,707.1	8,611.7	80,318.8	29,230.0	51,088.9	8,031.9	4,453.8	6,366.6	10,820.4	32,236.6	1,281.9	33,230.0			

a/ Toll revenues from Table 6-5

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions

i/ Net income from operations less payments to Panama divided by total debt service requirements

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements

Table J-73. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
	2008						67 0	67 0
1	2009	352 3	190 1	162 2	95 7	66 5	62 4	128 9
2	2010	377 6	194 6	183 0	97 8	85 2	196 2	281 4
3	2011	404 0	199 2	204 7	297 7	-93 0	667 7	574 7
4	2012	431 4	203 9	227 5	924 3	-696 8	886 6	189 8
5	2013	460 0	208 6	251 4	1,295 7	-1,044 3	747 0	-297 2
6	2014	489 7	213 4	276 4	1,283 9	-1,007 5	669 9	-337 7
7	2015	520 7	218 2	302 5	1,295 9	-993 4	551 4	-442 0
8	2016	552 9	223 1	329 8	1,285 2	-955 4	196 9	-758 5
9	2017	586 5	228 1	358 4	990 7	-632 3	-34 2	-666 5
10	2018	621 4	233 1	388 3	795 9	-407 6	-600 4	-1,008 0
11	2019	657 8	238 2	419 6	182 9	236 7	-778 7	-542 0
12	2020	835 2	243 4	591 8	0 0	591 8	-804 0	-212 2
13	2021	844 8	245 7	599 1	0 0	599 1	-821 5	-222 4
14	2022	854 5	248 0	606 5	0 0	606 5	-789 1	-182 5
15	2023	864 3	250 3	614 0	0 0	614 0	-736 2	-122 2
16	2024	874 3	252 6	621 7	0 0	621 7	-668 7	-47 1
17	2025	884 3	255 0	629 4	0 0	629 4	-585 3	44 1
18	2026	894 5	257 3	637 2	0 0	637 2	-510 8	126 4
19	2027	904 8	259 7	645 1	0 0	645 1	-438 5	206 5
20	2028	915 2	262 1	653 1	0 0	653 1	-366 7	286 3
21	2029	925 8	264 6	661 2	0 0	661 2	-312 2	349 0
22	2030	936 4	267 0	669 4	0 0	669 4	-262 0	407 4
23	2031	947 2	269 5	677 7	0 0	677 7	-223 6	454 1
24	2032	958 1	272 0	686 1	0 0	686 1	-182 7	503 4
25	2033	969 2	274 5	694 6	0 0	694 6	-142 5	552 1
26	2034	980 3	277 1	703 3	0 0	703 3	-103 7	599 6
27	2035	991 6	279 6	712 0	0 0	712 0	-71 1	640 9
28	2036	1003 1	282 2	720 9	0 0	720 9	-41 7	679 2
29	2037	1014 6	284 8	729 8	0 0	729 8	-19 9	709 9
30	2038	1026 3	287 5	738 9	0 0	738 9	-5 4	733 4
31	2039	1038 2	290 1	748 1	0 0	748 1	0 0	748 1
32	2040	1050 2	292 8	757 4	0 0	757 4	0 0	757 4
33	2041	1062 3	295 5	766 8	0 0	766 8	0 0	766 8
34	2042	1074 5	298 2	776 3	0 0	776 3	0 0	776 3
35	2043	1086 9	301 0	785 9	0 0	785 9	0 0	785 9
36	2044	1099 4	303 7	795 7	0 0	795 7	0 0	795 7
37	2045	1112 1	306 5	805 6	0 0	805 6	0 0	805 6
38	2046	1124 9	309 3	815 6	0 0	815 6	0 0	815 6
39	2047	1137 9	312 2	825 7	0 0	825 7	0 0	825 7
40	2048	1151 0	315 0	835 9	0 0	835 9	0 0	835 9

Table J-73. Single Lane High-Rise Lock Canal 200,000 DWT: Financial Analysis, 2008-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
41	2049	1164.2	317.9	846.3	0.0	846.3	0.0	846.3
42	2050	1177.6	320.8	856.8	0.0	856.8	0.0	856.8
43	2051	1191.2	323.8	867.4	0.0	867.4	0.0	867.4
44	2052	1204.9	326.7	878.1	0.0	878.1	0.0	878.1
45	2053	1218.7	329.7	889.0	0.0	889.0	0.0	889.0
46	2054	1232.8	332.7	900.0	0.0	900.0	0.0	900.0
47	2055	1246.9	335.8	911.2	0.0	911.2	0.0	911.2
48	2056	1261.3	338.8	922.4	0.0	922.4	0.0	922.4
49	2057	1275.7	341.9	933.8	0.0	933.8	0.0	933.8
50	2058	1290.4	345.0	945.4	0.0	945.4	0.0	945.4
51	2059	1305.2	348.1	957.1	0.0	957.1	0.0	957.1
52	2060	1320.2	351.3	968.9	0.0	968.9	0.0	968.9
Total		48,905.4	14,420.6	34,484.8	8,545.7	25,939.1		21,485.3
				Financial Internal Rate of Return		8.4%		9.6%
				Net Present Value at 8 percent discount rate		193.1		356.8

a/ From Table J-72.
b/ From Table 6-6
c/ From Appendix H (base case only).
d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-74. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060
Assuming a Special Purpose Corporation and an Optimal Toll System
(1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2000		417.6	97.1	514.7	349.7	164.9	51.5	0.0	0.0	0.0	113.5	0.0	0.0	113.5	--	--
2001		434.7	98.6	533.4	350.8	182.6	53.3	0.0	0.0	0.0	129.2	0.0	0.0	247.2	--	--
2002		452.6	100.2	552.8	351.9	200.9	55.3	0.0	0.0	0.0	145.6	0.0	0.0	402.7	--	--
2003		471.2	101.7	572.9	353.0	220.0	57.3	0.0	0.0	0.0	162.7	0.0	0.0	581.5	--	--
2004		490.5	103.3	593.9	354.0	239.9	59.4	0.0	0.0	0.0	180.5	0.0	0.0	785.3	--	--
2005	1	510.7	105.0	615.7	355.1	260.6	61.6	4.5	0.9	5.3	193.7	12.7	0.0	997.7	37.2	223.7
2006	2	531.7	106.6	638.3	356.2	282.1	63.8	9.0	1.8	10.8	207.5	13.1	0.0	1,232.0	20.2	134.3
2007	3	553.5	108.3	661.8	357.2	304.6	66.2	13.2	2.7	15.9	222.5	12.5	0.0	1,491.3	15.0	108.6
2008	4	576.3	110.0	686.3	358.3	327.9	68.6	30.4	6.0	36.4	222.9	49.4	0.0	1,724.5	7.1	54.5
2009	5	599.9	111.7	711.7	359.4	352.3	71.2	152.9	68.9	221.8	59.3	330.8	0.0	1,521.9	1.3	8.1
2010	6	624.6	113.5	738.1	360.5	377.6	73.8	217.9	100.2	318.1	-14.3	191.7	0.0	1,376.9	1.0	5.3
2011	7	650.3	115.3	765.5	361.5	404.0	76.6	265.6	119.9	385.6	-58.1	152.8	0.0	1,221.0	0.8	4.0
2012	8	677.0	117.1	794.0	362.6	431.4	79.4	320.6	237.3	557.9	-205.9	181.2	0.0	882.8	0.6	2.2
2013	9	704.8	118.9	823.7	363.7	460.0	82.4	349.6	297.8	647.4	-269.7	130.4	0.0	518.0	0.6	1.4
2014	10	733.7	120.8	854.5	364.8	489.7	85.5	385.5	332.7	718.2	-313.9	159.0	0.0	65.8	0.6	0.7
2015	11	763.9	122.7	886.5	365.8	520.7	88.7	413.0	387.7	800.7	-368.7	144.6	0.0	-444.8	0.5	0.0
2016	12	795.3	124.6	919.9	366.9	552.9	92.0	441.1	445.3	886.5	-425.5	156.9	0.0	-1,045.1	0.5	-0.7
2017	13	827.9	126.5	954.5	368.0	586.5	95.4	476.1	525.4	1,001.5	-510.4	186.2	0.0	-1,783.4	0.5	-1.3
2018	14	862.0	128.5	990.5	369.1	621.4	99.0	495.4	587.0	1,082.4	-560.0	160.6	0.0	-2,575.4	0.5	-1.9
2019	15	897.4	130.5	1,027.9	370.1	657.8	102.8	506.0	592.6	1,098.6	-543.6	146.2	0.0	-3,368.2	0.5	-2.6
2020	16	1,221.0	132.6	1,353.6	525.8	827.8	135.4	462.3	627.3	1,089.6	-397.2	0.0	0.0	-3,900.1	0.6	-2.9
2021	17	1,232.1	133.6	1,365.7	528.3	837.4	136.6	417.0	597.6	1,014.7	-313.8	0.0	0.0	-4,369.9	0.7	-3.6
2022	18	1,243.3	134.6	1,377.9	530.8	847.2	137.8	373.0	596.8	969.9	-260.5	0.0	0.0	-4,805.2	0.7	-4.2
2023	19	1,254.6	135.6	1,390.3	533.2	857.0	139.0	328.8	601.3	930.1	-212.1	0.0	0.0	-5,209.5	0.8	-4.8
2024	20	1,266.0	136.7	1,402.7	535.7	867.0	140.3	284.4	584.9	869.3	-142.6	0.0	0.0	-5,560.5	0.8	-5.6
2025	21	1,277.6	137.7	1,415.3	538.2	877.1	141.5	241.5	548.7	790.1	-54.6	0.0	0.0	-5,837.5	0.9	-6.5
2026	22	1,289.2	138.8	1,427.9	540.7	887.3	142.8	201.4	503.6	705.0	39.5	0.0	0.0	-6,031.5	1.1	-7.5
2027	23	1,300.9	139.8	1,440.7	543.2	897.6	144.1	164.7	448.7	613.4	140.0	0.0	0.0	-6,132.7	1.2	-8.8
2028	24	1,312.7	140.9	1,453.6	545.6	908.0	145.4	132.1	395.2	527.2	235.4	0.0	0.0	-6,142.7	1.4	-10.2
2029	25	1,324.7	141.9	1,466.6	548.1	918.5	146.7	103.7	317.0	420.8	351.1	0.0	0.0	-6,037.3	1.8	-12.5
2030	26	1,336.7	143.0	1,479.8	550.6	929.2	148.0	80.6	269.6	350.2	431.0	0.0	0.0	-5,847.8	2.2	-14.5
2031	27	1,348.9	144.1	1,493.0	553.1	939.9	149.3	61.1	220.7	281.8	508.9	0.0	0.0	-5,572.8	2.8	-17.0
2032	28	1,361.2	145.2	1,506.4	555.6	950.8	150.6	45.1	180.1	225.2	575.0	0.0	0.0	-5,220.7	3.6	-19.6
2033	29	1,373.5	146.3	1,519.9	558.0	961.8	152.0	32.1	144.5	176.7	633.2	0.0	0.0	-4,796.4	4.6	-22.6
2034	30	1,386.0	147.4	1,533.5	560.5	972.9	153.3	22.0	108.5	130.5	689.1	0.0	0.0	-4,299.1	--	--
2035	31	1,398.7	148.5	1,547.2	563.0	984.2	154.7	14.3	86.6	100.8	728.6	0.0	0.0	-3,742.4	--	--
2036	32	1,411.4	149.7	1,561.1	565.5	995.6	156.1	8.2	64.2	72.4	767.1	0.0	0.0	-3,125.1	--	--
2037	33	1,424.2	150.8	1,575.0	568.0	1,007.1	157.5	3.9	42.6	46.4	803.1	0.0	0.0	-2,446.9	--	--
2038	34	1,437.2	152.0	1,589.1	570.4	1,018.7	158.9	1.1	19.9	21.0	838.8	0.0	0.0	-1,706.0	--	--
2039	35	1,450.2	153.1	1,603.4	572.9	1,030.4	160.3	0.0	0.0	0.0	870.1	0.0	0.0	-904.2	--	--
2040	36	1,463.4	154.3	1,617.7	575.4	1,042.3	161.8	0.0	0.0	0.0	880.5	0.0	0.0	-59.8	--	--
2041	37	1,476.7	155.5	1,632.2	577.9	1,054.3	163.2	0.0	0.0	0.0	891.1	0.0	0.0	828.9	--	--
2042	38	1,490.2	156.6	1,646.8	580.4	1,066.5	164.7	0.0	0.0	0.0	901.8	0.0	1,230.7	533.2	--	--

Table J-74. Sea-Level Canal Case A: Estimated Net Income After Debt Service, 2000-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper & Maint c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2043	39	1,503 7	157 8	1,661 6	582 8	1,078 7	166 2	0 0	0 0	0 0	912 6	0 0	945 7	521 3	- -	- -
2044	40	1,517 4	159 0	1,676 4	585 3	1,091 1	167 6	0 0	0 0	0 0	923 5	0 0	944 8	520 9	- -	- -
2045	41	1,531 2	160 2	1,691 5	587 8	1,103 7	169 1	0 0	0 0	0 0	934 5	0 0	955 4	520 8	- -	- -
2046	42	1,545 2	161 4	1,706 6	590 3	1,116 3	170 7	0 0	0 0	0 0	945 7	0 0	966 5	520 8	- -	- -
2047	43	1,559 2	162 7	1,721 9	592 8	1,129 1	172 2	0 0	0 0	0 0	956 9	0 0	977 8	520 8	- -	- -
2048	44	1,573 4	163 9	1,737 3	595 2	1,142 1	173 7	0 0	0 0	0 0	968 3	0 0	989 2	520 8	- -	- -
2049	45	1,587 7	165 2	1,752 9	597 7	1,155 1	175 3	0 0	0 0	0 0	979 9	0 0	1,000 7	520 8	- -	- -
2050	46	1,602 1	166 4	1,768 6	600 2	1,168 4	176 9	0 0	0 0	0 0	991 5	0 0	1,012 3	520 8	- -	- -
2051	47	1,616 7	167 7	1,784 4	602 7	1,181 7	178 4	0 0	0 0	0 0	1,003 3	0 0	1,024 1	520 8	- -	- -
2052	48	1,631 4	169 0	1,800 4	605 2	1,195 2	180 0	0 0	0 0	0 0	1,015 2	0 0	1,036 0	520 8	- -	- -
2053	49	1,646 3	170 2	1,816 5	607 6	1,208 9	181 7	0 0	0 0	0 0	1,027 2	0 0	1,048 1	520 8	- -	- -
2054	50	1,661 2	171 5	1,832 8	610 1	1,222 7	183 3	0 0	0 0	0 0	1,039 4	0 0	1,060 2	520 8	- -	- -
2055	51	1,676 4	172 8	1,849 2	612 6	1,236 6	184 9	0 0	0 0	0 0	1,051 7	0 0	1,072 5	520 8	- -	- -
2056	52	1,691 6	174 1	1,865 8	615 1	1,250 7	186 6	0 0	0 0	0 0	1,064 1	0 0	1,084 9	520 8	- -	- -
2057	53	1,707 0	175 5	1,882 5	617 6	1,264 9	188 2	0 0	0 0	0 0	1,076 7	0 0	1,097 5	520 8	- -	- -
2058	54	1,722 5	176 8	1,899 3	620 0	1,279 3	189 9	0 0	0 0	0 0	1,089 4	0 0	1,110 2	520 8	- -	- -
2059	55	1,738 2	178 1	1,916 3	622 5	1,293 8	191 6	0 0	0 0	0 0	1,102 2	0 0	1,123 0	520 8	- -	- -
2060	56	1,754 0	179 5	1,933 5	625 0	1,308 5	193 4	0 0	0 0	0 0	1,115 2	0 0	1,136 0	520 8	- -	- -
	Total	72,921 4	8,611 7	81,533 1	30,790 0	50,743 1	8,153 3	7,058 2	10,063 9	17,122 1	25,467 8	2,027 9	19,815 6			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84 4 million in 1991. Revenues are increased by 1 57 percent annually through 2020 and 0 76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only)

f/ From Appendix H (base case only)

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-75. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2004							59 2	59 2
2005	1	260 6	172 6	88 0	84 5	3 5	55 6	59 1
2006	2	282 1	176 9	105 2	87 1	18 1	47 3	65 4
2007	3	304 6	181 2	123 3	83 0	40 3	214 4	254 8
2008	4	327 9	185 6	142 3	329 1	-186 8	1,711 6	1,524 8
2009	5	352 3	190.1	162 2	2,205 4	-2,043 2	745 4	-1,297 8
2010	6	377 6	194 6	183 0	1,277 9	-1,094 9	422 5	-672 4
2011	7	404 0	199 2	204 7	1,018 5	-813 8	494 3	-319 4
2012	8	431.4	203 9	227 5	1,207 9	-980 4	64 3	-916 1
2013	9	460 0	208 6	251 4	869 1	-617 7	125 9	-491 7
2014	10	489 7	213 4	276 4	1,060 1	-783 7	-15 8	-799 5
2015	11	520 7	218 2	302 5	964 1	-661 6	-30 7	-692 3
2016	12	552 9	223.1	329 8	1,046 2	-716 4	53 4	-663 0
2017	13	586 5	228 1	358 4	1,241 2	-882 8	-212 1	-1,094 9
2018	14	621.4	233.1	388 3	1,070 6	-682 3	-360 0	-1,042 3
2019	15	657 8	238 2	419 6	974.7	-555 1	-1,098 6	-1,653 7
2020	16	827 8	243 4	584 4	0 0	584 4	-1,089 6	-505 2
2021	17	837 4	245 7	591 8	0 0	591 8	-1,014 7	-422 9
2022	18	847.2	248 0	599 2	0 0	599 2	-969 9	-370 7
2023	19	857 0	250.3	606 8	0 0	606 8	-930 1	-323 3
2024	20	867 0	252 6	614 4	0 0	614 4	-869 3	-254 9
2025	21	877 1	255 0	622 1	0 0	622 1	-790 1	-168 0
2026	22	887 3	257.3	629 9	0 0	629 9	-705 0	-75 0
2027	23	897 6	259.7	637 8	0 0	637 8	-613 4	24 4
2028	24	908 0	262 1	645 8	0 0	645 8	-527 2	118 6
2029	25	918 5	264 6	653 9	0 0	653 9	-420 8	233 2
2030	26	929 2	267 0	662 1	0 0	662 1	-350 2	311 9
2031	27	939 9	269 5	670 4	0 0	670 4	-281 8	388 7
2032	28	950 8	272 0	678 8	0 0	678 8	-225 2	453 6
2033	29	961 8	274 5	687 3	0 0	687 3	-176 7	510 6
2034	30	972 9	277 1	695 9	0 0	695 9	-130 5	565 4
2035	31	984 2	279 6	704 6	0 0	704 6	-100 8	603 7
2036	32	995 6	282 2	713 3	0 0	713 3	-72 4	640 9
2037	33	1,007 1	284 8	722 2	0 0	722 2	-46 4	675 8
2038	34	1,018.7	287 5	731 2	0 0	731 2	-21 0	710 2
2039	35	1,030 4	290 1	740 3	0 0	740 3	0 0	740 3
2040	36	1,042 3	292 8	749 5	0 0	749 5	0 0	749 5
2041	37	1,054 3	295 5	758 8	0 0	758 8	0 0	758 8
2042	38	1,066 5	298 2	768 2	0 0	768 2	0 0	768 2
2043	39	1,078 7	301 0	777 8	0 0	777 8	0 0	777 8
2044	40	1,091 1	303 7	787 4	0 0	787 4	0 0	787 4
2045	41	1,103 7	306 5	797 1	0 0	797 1	0 0	797 1
2046	42	1,116 3	309 3	807 0	0 0	807 0	0 0	807 0

Table J-75. Sea-Level Canal Case A: Financial Analysis, 2004-2060 Assuming a Special Purpose Corporation and an Optimal Toll System (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	43	1,129.1	312.2	816.9	0.0	816.9	0.0	816.9
2048	44	1,142.1	315.0	827.0	0.0	827.0	0.0	827.0
2049	45	1,155.1	317.9	837.2	0.0	837.2	0.0	837.2
2050	46	1,168.4	320.8	847.5	0.0	847.5	0.0	847.5
2051	47	1,181.7	323.8	857.9	0.0	857.9	0.0	857.9
2052	48	1,195.2	326.7	868.5	0.0	868.5	0.0	868.5
2053	49	1,208.9	329.7	879.1	0.0	879.1	0.0	879.1
2054	50	1,222.7	332.7	889.9	0.0	889.9	0.0	889.9
2055	51	1,236.6	335.8	900.8	0.0	900.8	0.0	900.8
2056	52	1,250.7	338.8	911.9	0.0	911.9	0.0	911.9
2057	53	1,264.9	341.9	923.0	0.0	923.0	0.0	923.0
2058	54	1,279.3	345.0	934.3	0.0	934.3	0.0	934.3
2059	55	1,293.8	348.1	945.7	0.0	945.7	0.0	945.7
2060	56	1,308.5	351.3	957.2	0.0	957.2	0.0	957.2
	Total	49,734.9	15,136.9	34,597.9	13,519.4	21,078.5		14,020.4
				Financial Internal Rate of Return:		4.5%		3.2%
				Net Present Value at 8 percent discount rate:		-2,607.5		-2,174.4

a/ From Table J-74.
b/ From Table 6-6.
c/ From Appendix H (base case only).
d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only).

Table J-76. Single Lane High-Rise Lock Canal 150,000 DWT: Project Costs and Sources of Financing Assuming a Panama Canal Authority and Yachiyo Engineering Unadjusted Cash Flow

Cost component	Total Project Cost	Percent of Project Cost	Source of Financing: Export-Import Banks U.S.	Export-Import Banks Japan	Commercial Banks	Equip Suppliers	Develop. Banks	Foreign Bonds U.S.	Foreign Bonds Japan	ODA Loans	Japan-EXIM Overseas Inv	Trust Fund	Outside Equity	Gov't Grants	Total
			Share of Financing by Source (Percent)												
Construction equipment	0.0	0.0	40.0	40.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	100.0
Other equipment	1,303.0	17.7	40.0	40.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	100.0
Other construction costs	4,975.2	67.5	0.0	0.0	5.0	0.0	22.0	18.5	18.5	4.0	0.0	32.0	0.0	0.0	100.0
Indirect costs	1,095.9	14.9	0.0	0.0	5.0	0.0	22.0	18.5	18.5	4.0	0.0	32.0	0.0	0.0	100.0
Total	7,374.1	100.0													
			Share of Financing by Source (1990 US$ millions)												
Construction equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other equipment	1,303.0	17.7	521.2	521.2	0.0	65.2	0.0	0.0	0.0	0.0	0.0	195.5	0.0	0.0	1,303.0
Other construction costs	4,975.2	67.5	0.0	0.0	248.8	0.0	1,094.5	920.4	920.4	199.0	0.0	1,592.1	0.0	0.0	4,975.2
Indirect costs	1,095.9	14.9	0.0	0.0	54.8	0.0	241.1	202.7	202.7	43.8	0.0	350.7	0.0	0.0	1,095.9
Total	7,374.1	100.0	521.2	521.2	303.6	65.2	1,335.6	1,123.2	1,123.2	242.8	0.0	2,138.2	0.0	0.0	7,374.1
Financing source as a percent of total cost			7.1	7.1	4.1	0.9	18.1	15.2	15.2	3.3	0.0	29.0	0.0	0.0	100.0

Source: Project costs from Table 4-1 and financing sources from Table 6-1.

Table J-77. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority , an Optimal Toll System, and Yachiyo Engineering Unadjusted Cost Flow (1990 US$ millions)

	Project	Revenues			Oper &	Net Income from	Payment to	Debt Service Requirements e/			Net Income After Debt Service and Payment	Toll Reserve Trust Fund			Current Debt Service	Overall Debt Service
Year	Year	Tolls a/	Other b/	Total	Maint c/	Operations	Panama d/	Int	Princ	Total	to Panama	Contribution to Capital Costs f/	Dividend Distributions g/	Trust Fund Balance h/	Coverage Ratio i/	Coverage Ratio j/
2000		417 6	97 1	514.7	349 7	164.9	51 5	0 0	0 0	0 0	113 5	0 0	0 0	113 5	- -	- -
2001		434 7	98 6	533 4	350 8	182 6	53 3	0.0	0 0	0 0	129 2	0 0	0 0	247 2	- -	- -
2002		452 6	100 2	552 8	351 9	200 9	55 3	0 0	0 0	0 0	145 6	0 0	0 0	402 7	- -	- -
2003		471 2	101 7	572 9	353 0	220.0	57 3	0 0	0 0	0 0	162 7	0 0	0 0	581 5	- -	- -
2004		490 5	103 3	593 9	354.0	239 9	59 4	0 0	0 0	0 0	180 5	0 0	0 0	785 3	- -	- -
2005		510 7	105 0	615 7	355.1	260.6	61 6	0 0	0 0	0 0	199 0	0 0	0 0	1,015 7	- -	- -
2006		531 7	106 6	638 3	356 2	282.1	63 8	0 0	0 0	0 0	218 3	0 0	0 0	1,274 6	- -	- -
2007		553 5	108 3	661 8	357 2	304.6	66 2	0 0	0 0	0 0	238 4	0.0	0 0	1,564 0	- -	- -
2008		576 3	110 0	686 3	358 3	327.9	68.6	0 0	0 0	0 0	259 3	0 0	0 0	1,885.9	- -	- -
2009		599 9	111 7	711 7	359 4	352.3	71 2	0.0	0 0	0 0	281 1	0 0	0 0	2,242 4	- -	- -
2010	1	624 6	113.5	738.1	360.5	377.6	73 8	4 1	0 8	4.9	298 9	26 2	0 0	2,604 8	62 2	595 7
2011	2	650 3	115.3	765 5	361 5	404.0	76.6	8 2	1.5	9.7	317.7	26.2	0 0	3,000 5	33 7	342 8
2012	3	677 0	117 1	794 0	362.6	431.4	79 4	22.4	4.1	26 6	325.4	91.1	0 0	3,354 8	13 2	139 5
2013	4	704 8	118.9	823 7	363 7	460 0	82.4	82 4	15 2	97 6	280 0	382 8	0 0	3,386 3	3 9	38 6
2014	5	733 7	120 8	854.5	364 8	489 7	85 5	128 0	23 8	151 8	252.5	297 0	0 0	3,477 3	2 7	25 6
2015	6	763 9	122.7	886 5	365 8	520 7	88 7	183 5	44 4	227 9	204 2	316 3	0 0	3,504 3	1 9	17 3
2016	7	795 3	124 6	919 9	366 9	552.9	92 0	234 2	62 7	296 9	164 1	307 6	0 0	3,500 9	1 6	13 3
2017	8	827 9	126.5	954 5	368 0	586.5	95 4	299 1	99 0	398 1	92 9	362 9	0 0	3,371 0	1 2	9 7
2018	9	862 0	128.5	990 5	369 1	621 4	99 0	336 8	182 6	519 4	3 0	234.7	0 0	3,274 0	1 0	7 3
2019	10	897 4	130 5	1,027 9	370 1	657 8	102 8	346 6	247 6	594 2	-39 2	93 4	0 0	3,272 5	0 9	6 4
2020	11	1,175 0	132 6	1,307 6	475 1	832.5	130 8	327 5	308 8	636 3	65 4	0 0	2,837 9	630 9	1 1	2 1
2021	12	1,184 8	133 6	1,318 4	477 8	840.6	131 8	304 0	363 5	667 5	41 2	0.0	172 1	525 2	1 1	1 8
2022	13	1,194 7	134 6	1,329 3	480.5	848 8	132 9	276 6	414 8	691 4	24 5	0.0	49 7	521 0	1 0	1 8
2023	14	1,204 6	135 6	1,340 3	483 2	857.1	134 0	246 1	425 1	671 2	51 9	0 0	72 9	520 8	1 1	1 9
2024	15	1,214 7	136 7	1,351 4	485 9	865 5	135 1	215 1	418 8	633 9	96 4	0 0	117 3	520 8	1 2	2 0
2025	16	1,224 8	137 7	1,362 5	488 6	873 9	136 3	184 7	401 5	586 1	151 6	0.0	172 4	520 8	1 3	2 1
2026	17	1,235 0	138.8	1,373 8	491 3	882.5	137 4	155 5	385 0	540 5	204 6	0.0	225 5	520 8	1 4	2 3
2027	18	1,245 3	139 8	1,385 2	494 0	891 2	138 5	127 8	345.4	473 2	279 4	0 0	300 3	520 8	1 6	2 7
2028	19	1,255 7	140 9	1,396 6	496 7	899 9	139 7	103 1	299 2	402 3	358 0	0 0	378 8	520 8	1 9	3 2
2029	20	1,266 2	141 9	1,408 1	499 4	908 8	140 8	81 9	252 8	334 7	433 3	0 0	454 1	520 8	2 3	3 9
2030	21	1,276 8	143 0	1,419 8	502 1	917 7	142 0	63 8	222 3	286 1	489 6	0 0	510 5	520 8	2 7	4 5
2031	22	1,287 4	144 1	1,431 5	504 8	926 7	143 2	48 0	191 5	239 5	544 1	0 0	565 0	520 8	3 3	5 4
2032	23	1,298 1	145 2	1,443 4	507 5	935 9	144 3	34 5	166 0	200 6	591 0	0 0	611 8	520 8	3 9	6 5
2033	24	1,309 0	146 3	1,455 3	510 2	945 1	145 5	23 4	122 5	145 9	653 7	0 0	674 6	520 8	5 5	9 1
2034	25	1,319 9	147 4	1,467 3	512 9	954.4	146 7	15 2	94 4	109 6	698 1	0 0	719 0	520 8	7 4	12 1
2035	26	1,330 9	148 5	1,479 4	515 6	963 9	147 9	8 9	70 6	79 4	736 5	0 0	757 3	520 8	10 3	16 8
2036	27	1,342 0	149 7	1,491 7	518 3	973 4	149 2	4 3	46 7	51 0	773 3	0 0	794 1	520 8	16 2	26 4
2037	28	1,353 2	150 8	1,504 0	521 0	983 0	150 4	1 4	20 8	22 2	810 4	0 0	831 3	520 8	37 5	61 0

Table J-77. Single Lane High-Rise Lock Canal 150,000 DWT: Estimated Net Income After Debt Service, 2000-2060 Assuming a Panama Canal Authority, an Optimal Toll System, and Yachiyo Engineering Unadjusted Cost Flow (1990 US$ millions)

Year	Project Year	Revenues: Tolls a/	Revenues: Other b/	Revenues: Total	Oper. & Maint. c/	Net Income from Operations	Payment to Panama d/	Debt Service Requirements e/: Int	Debt Service Requirements e/: Princ	Debt Service Requirements e/: Total	Net Income After Debt Service and Payment to Panama	Toll Reserve Trust Fund: Contribution to Capital Costs f/	Toll Reserve Trust Fund: Dividend Distributions g/	Toll Reserve Trust Fund: Trust Fund Balance h/	Current Debt Service Coverage Ratio i/	Overall Debt Service Coverage Ratio j/
2038	29	1,364.5	152.0	1,516.4	523.7	992.8	151.6	0.2	4.4	4.6	836.5	0.0	857.4	520.8	182.6	295.7
2039	30	1,375.8	153.1	1,529.0	526.4	1,002.6	152.9	0.0	0.0	0.0	849.7	0.0	870.5	520.8	- -	- -
2040	31	1,387.3	154.3	1,541.6	529.1	1,012.6	154.2	0.0	0.0	0.0	858.4	0.0	879.2	520.8	- -	- -
2041	32	1,398.9	155.5	1,554.3	531.7	1,022.6	155.4	0.0	0.0	0.0	867.2	0.0	888.0	520.8	- -	- -
2042	33	1,410.6	156.6	1,567.2	534.4	1,032.7	156.7	0.0	0.0	0.0	876.0	0.0	896.9	520.8	- -	- -
2043	34	1,422.3	157.8	1,580.1	537.1	1,043.0	158.0	0.0	0.0	0.0	885.0	0.0	905.8	520.8	- -	- -
2044	35	1,434.2	159.0	1,593.2	539.8	1,053.4	159.3	0.0	0.0	0.0	894.0	0.0	914.9	520.8	- -	- -
2045	36	1,446.1	160.2	1,606.4	542.5	1,063.8	160.6	0.0	0.0	0.0	903.2	0.0	924.0	520.8	- -	- -
2046	37	1,458.2	161.4	1,619.7	545.2	1,074.4	162.0	0.0	0.0	0.0	912.5	0.0	933.3	520.8	- -	- -
2047	38	1,470.4	162.7	1,633.0	547.9	1,085.1	163.3	0.0	0.0	0.0	921.8	0.0	942.6	520.8	- -	- -
2048	39	1,482.6	163.9	1,646.5	550.6	1,095.9	164.7	0.0	0.0	0.0	931.3	0.0	952.1	520.8	- -	- -
2049	40	1,495.0	165.2	1,660.2	553.3	1,106.8	166.0	0.0	0.0	0.0	940.8	0.0	961.6	520.8	- -	- -
2050	41	1,507.5	166.4	1,673.9	556.0	1,117.9	167.4	0.0	0.0	0.0	950.5	0.0	971.3	520.8	- -	- -
2051	42	1,520.0	167.7	1,687.7	558.7	1,129.0	168.8	0.0	0.0	0.0	960.2	0.0	981.1	520.8	- -	- -
2052	43	1,532.7	169.0	1,701.7	561.4	1,140.2	170.2	0.0	0.0	0.0	970.1	0.0	990.9	520.8	- -	- -
2053	44	1,545.5	170.2	1,715.7	564.1	1,151.6	171.6	0.0	0.0	0.0	980.0	0.0	1,000.9	520.8	- -	- -
2054	45	1,558.4	171.5	1,729.9	566.8	1,163.1	173.0	0.0	0.0	0.0	990.1	0.0	1,010.9	520.8	- -	- -
2055	46	1,571.4	172.8	1,744.2	569.5	1,174.7	174.4	0.0	0.0	0.0	1,000.3	0.0	1,021.1	520.8	- -	- -
2056	47	1,584.5	174.1	1,758.6	572.2	1,186.4	175.9	0.0	0.0	0.0	1,010.6	0.0	1,031.4	520.8	- -	- -
2057	48	1,597.7	175.5	1,773.2	574.9	1,198.3	177.3	0.0	0.0	0.0	1,021.0	0.0	1,041.8	520.8	- -	- -
2058	49	1,611.0	176.8	1,787.8	577.6	1,210.2	178.8	0.0	0.0	0.0	1,031.4	0.0	1,052.3	520.8	- -	- -
2059	50	1,624.5	178.1	1,802.6	580.3	1,222.3	180.3	0.0	0.0	0.0	1,042.0	0.0	1,062.9	520.8	- -	- -
2060	51	1,638.0	179.5	1,817.5	583.0	1,234.5	181.8	0.0	0.0	0.0	1,052.8	0.0	1,073.6	520.8	- -	- -
	Total	69,730.8	8,611.7	78,342.5	28,889.7	49,452.9	7,834.3	3,867.0	5,235.9	9,102.9	32,515.8	2,138.2	32,409.0			

a/ Toll revenues from Table 6-5.

b/ Estimated from revenues for transit operations and Canal advance reservation service, which total $84.4 million in 1991. Revenues are increased by 1.57 percent annually through 2020 and 0.76 percent annually from 2020 to 2060 in accordance with the growth of total transits.

c/ Operation and maintenance costs from Tables 4-13 and 4-14.

d/ Assumed to be 10 percent of total revenues.

e/ From Appendix I (base case only).

f/ From Appendix H (base case only).

g/ Current year's net income (if positive) and prior year's cumulative net income in excess of $500 million.

h/ Includes earnings on the prior year's cumulative net income of 4 percent less contributions to capital costs and dividend distributions.

i/ Net income from operations less payments to Panama divided by total debt service requirements.

j/ Net income from operations less payments to Panama plus trust fund balance divided by total debt service requirements.

Table J-78. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority , an Optimal Toll System, and Yachiyo Engineering Unadjusted Cost Flow (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2009							55.7	55.7
2010	1	377.6	194.6	183.0	81.9	101.1	50.8	151.9
2011	2	404.0	199.2	204.7	81.9	122.8	183.9	306.7
2012	3	431.4	203.9	227.5	284.7	-57.2	786.8	729.7
2013	4	460.0	208.6	251.4	1,196.2	-944.8	533.5	-411.3
2014	5	489.7	213.4	276.4	928.1	-651.7	638.3	-13.4
2015	6	520.7	218.2	302.5	1,106.4	-803.9	513.1	-290.8
2016	7	552.9	223.1	329.8	1,048.6	-718.8	671.7	-47.1
2017	8	586.5	228.1	358.4	1,331.5	-973.1	243.1	-730.0
2018	9	621.4	233.1	388.3	875.9	-487.6	-173.9	-661.5
2019	10	657.8	238.2	419.6	438.9	-19.3	-594.2	-613.5
2020	11	832.5	243.4	589.1	0.0	589.1	-636.3	-47.2
2021	12	840.6	245.7	594.9	0.0	594.9	-667.5	-72.6
2022	13	848.8	248.0	600.8	0.0	600.8	-691.4	-90.5
2023	14	857.1	250.3	606.8	0.0	606.8	-671.2	-64.4
2024	15	865.5	252.6	612.9	0.0	612.9	-633.9	-21.0
2025	16	873.9	255.0	619.0	0.0	619.0	-586.1	32.9
2026	17	882.5	257.3	625.2	0.0	625.2	-540.5	84.7
2027	18	891.2	259.7	631.4	0.0	631.4	-473.2	158.2
2028	19	899.9	262.1	637.8	0.0	637.8	-402.3	235.5
2029	20	908.8	264.6	644.2	0.0	644.2	-334.7	309.5
2030	21	917.7	267.0	650.7	0.0	650.7	-286.1	364.6
2031	22	926.7	269.5	657.2	0.0	657.2	-239.5	417.8
2032	23	935.9	272.0	663.9	0.0	663.9	-200.6	463.3
2033	24	945.1	274.5	670.6	0.0	670.6	-145.9	524.7
2034	25	954.4	277.1	677.4	0.0	677.4	-109.6	567.8
2035	26	963.9	279.6	684.2	0.0	684.2	-79.4	604.8
2036	27	973.4	282.2	691.2	0.0	691.2	-51.0	640.2
2037	28	983.0	284.8	698.2	0.0	698.2	-22.2	676.0
2038	29	992.8	287.5	705.3	0.0	705.3	-4.6	700.7
2039	30	1,002.6	290.1	712.5	0.0	712.5	0.0	712.5
2040	31	1,012.6	292.8	719.7	0.0	719.7	0.0	719.7
2041	32	1,022.6	295.5	727.1	0.0	727.1	0.0	727.1
2042	33	1,032.7	298.2	734.5	0.0	734.5	0.0	734.5
2043	34	1,043.0	301.0	742.0	0.0	742.0	0.0	742.0
2044	35	1,053.4	303.7	749.6	0.0	749.6	0.0	749.6
2045	36	1,063.8	306.5	757.3	0.0	757.3	0.0	757.3
2046	37	1,074.4	309.3	765.1	0.0	765.1	0.0	765.1

Table J-78. Single Lane High-Rise Lock Canal 150,000 DWT: Financial Analysis, 2009-2060 Assuming a Panama Canal Authority , an Optimal Toll System, and Yachiyo Engineering Unadjusted Cost Flow (1990 US$ millions)

Year	Project Year	Net Income from Operations: With Project a/	Net Income from Operations: Without Project b/	Net Income from Operations: Incremental Income	Project Capital Costs c/	Incremental Cash Flow Before Financing	Financing Stream d/	Incremental Cash Flow After Financing
2047	38	1,085.1	312.2	772.9	0.0	772.9	0.0	772.9
2048	39	1,095.9	315.0	780.9	0.0	780.9	0.0	780.9
2049	40	1,106.8	317.9	788.9	0.0	788.9	0.0	788.9
2050	41	1,117.9	320.8	797.0	0.0	797.0	0.0	797.0
2051	42	1,129.0	323.8	805.2	0.0	805.2	0.0	805.2
2052	43	1,140.2	326.7	813.5	0.0	813.5	0.0	813.5
2053	44	1,151.6	329.7	821.9	0.0	821.9	0.0	821.9
2054	45	1,163.1	332.7	830.4	0.0	830.4	0.0	830.4
2055	46	1,174.7	335.8	838.9	0.0	838.9	0.0	838.9
2056	47	1,186.4	338.8	847.6	0.0	847.6	0.0	847.6
2057	48	1,198.3	341.9	856.4	0.0	856.4	0.0	856.4
2058	49	1,210.2	345.0	865.2	0.0	865.2	0.0	865.2
2059	50	1,222.3	348.1	874.2	0.0	874.2	0.0	874.2
2060	51	1,234.5	351.3	883.2	0.0	883.2	0.0	883.2
	Total	46,917.1	14,230.5	32,686.6	7,374.1	25,312.5		21,389.9
				Financial Internal Rate of Return:		10.2%		17.8%
				Net Present Value at 8 percent discount rate:		961.8		1,057.8

a/ From Table J-77

b/ From Table 6-6.

c/ From Appendix H (base case only)

d/ Financing stream includes loan proceeds and debt service requirements. Loan proceeds from Appendix H (base case only) and debt service requirements from Appendix I (base case only)