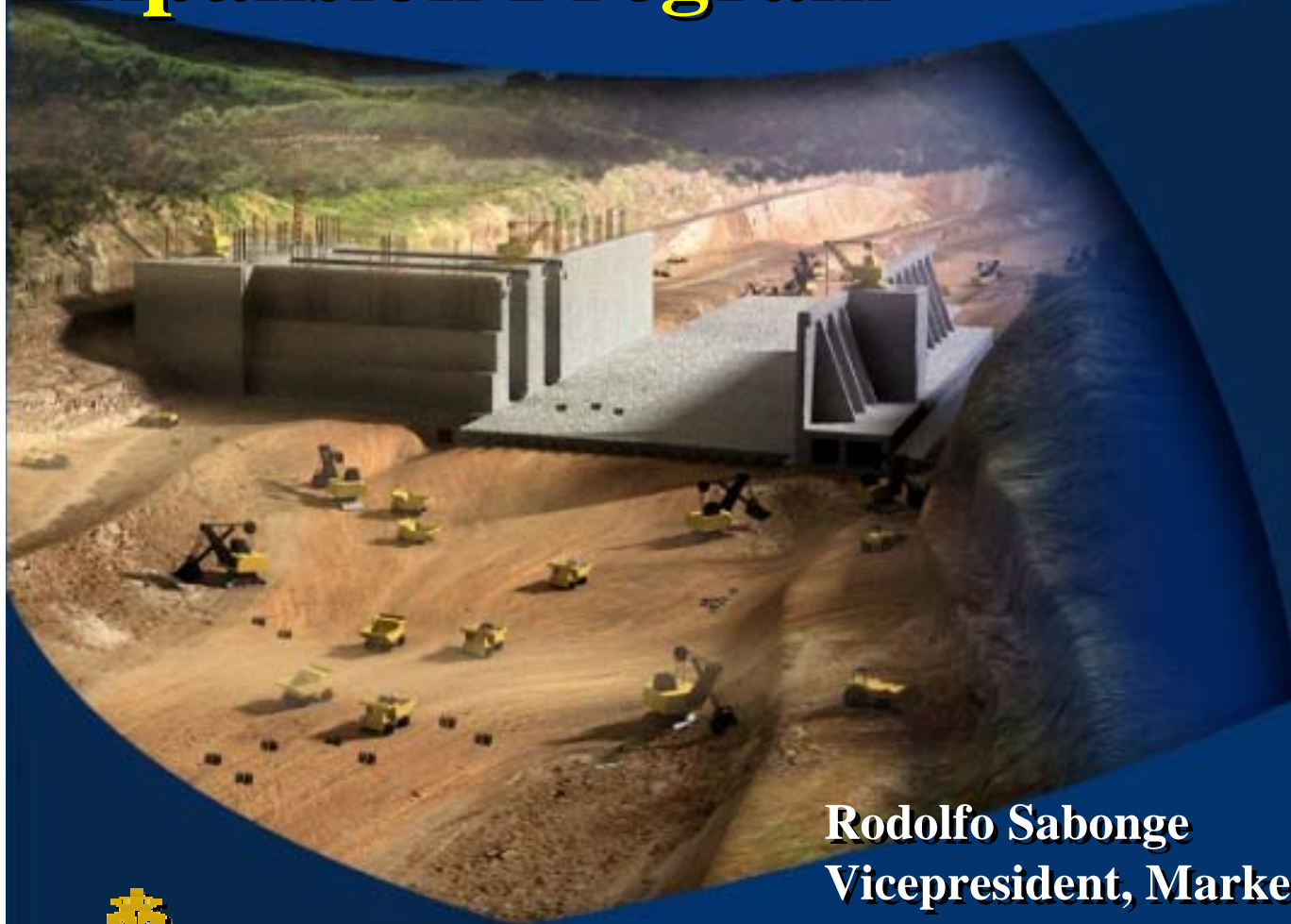


Update on the Panama Canal Expansion Program



Rodolfo Sabonge
Vicepresident, Market Research and Analysis
rsabonge@pancanal.com

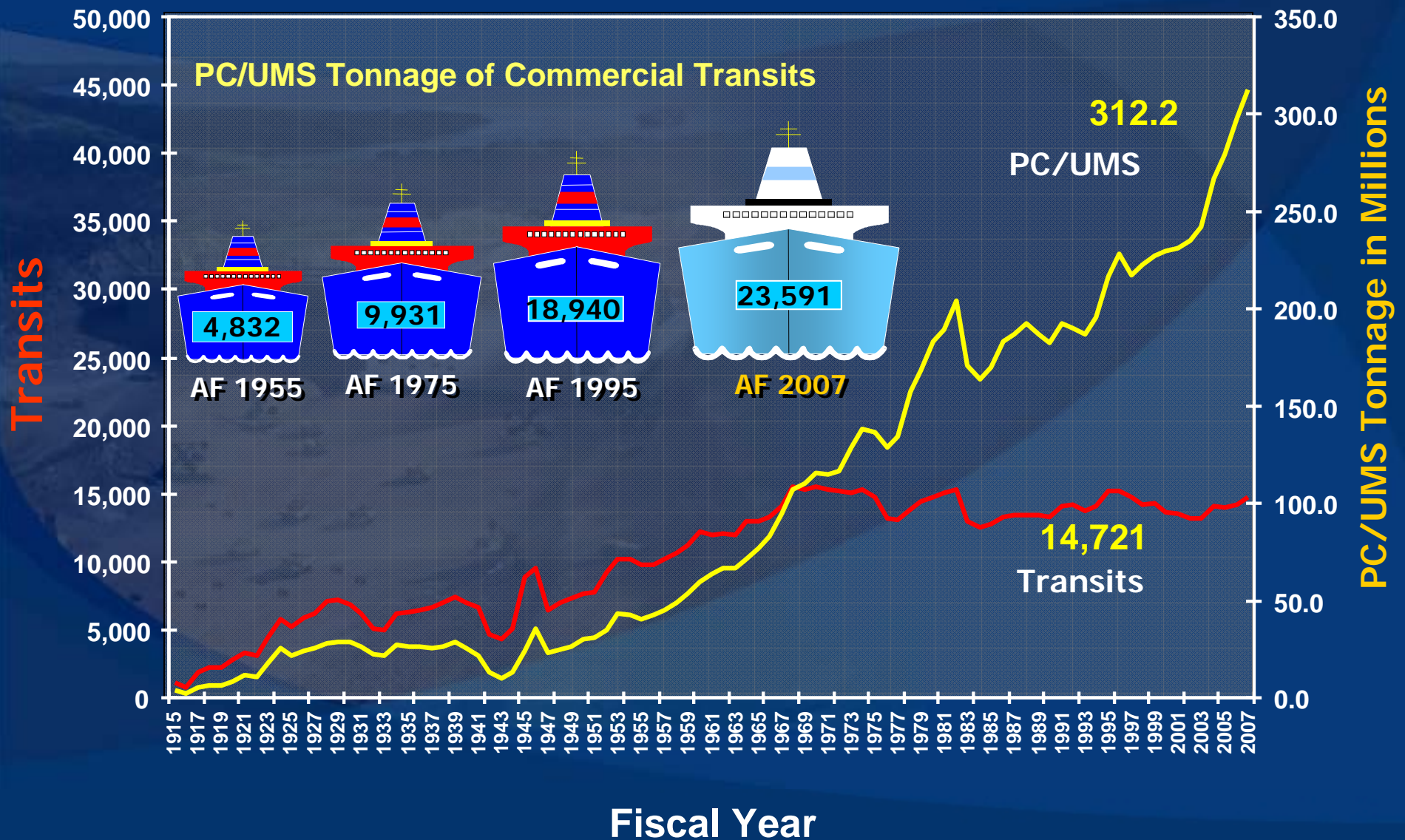


Agenda

- **Traffic AF2007**
- **Alternative Routes**
- **Expansion Program Components, Scope & Time Line**
- **Locks Contracting Plan**

Transits vs. PC/UMS Tonnage

FY1915 – FY2007

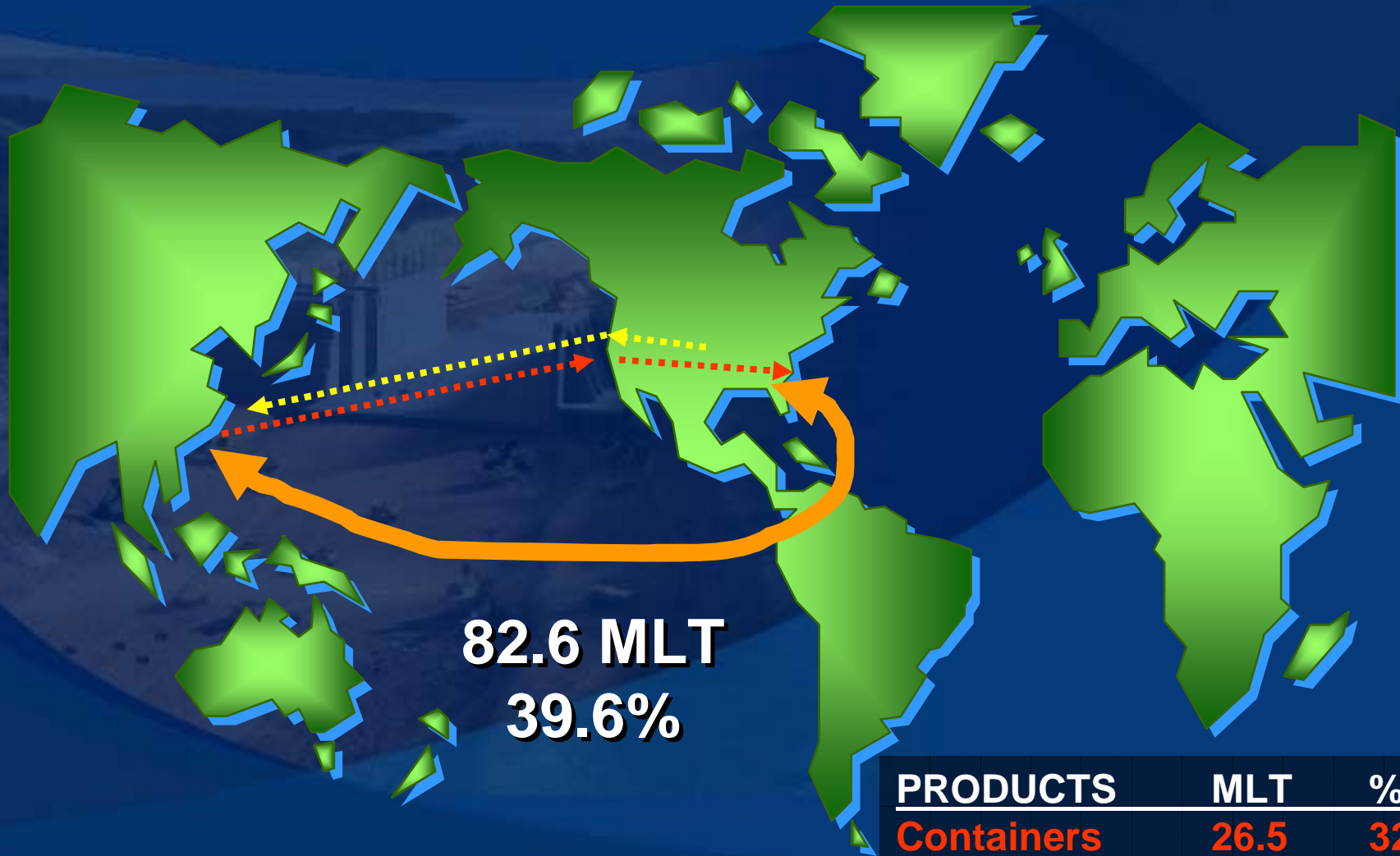


Principal Routes - FY 2007

East Coast US



Asia



PRODUCTS	MLT	%
Containers	26.5	32.2
Grains	23.0	27.9

Principal Routes - FY 2007

West Coast South America ↔ East Coast US

20.5 MLT
9.8%

PRODUCTS	MLT	%
Petroleum and prod	6.1	29.9
Dry Bulks	3.8	18.6

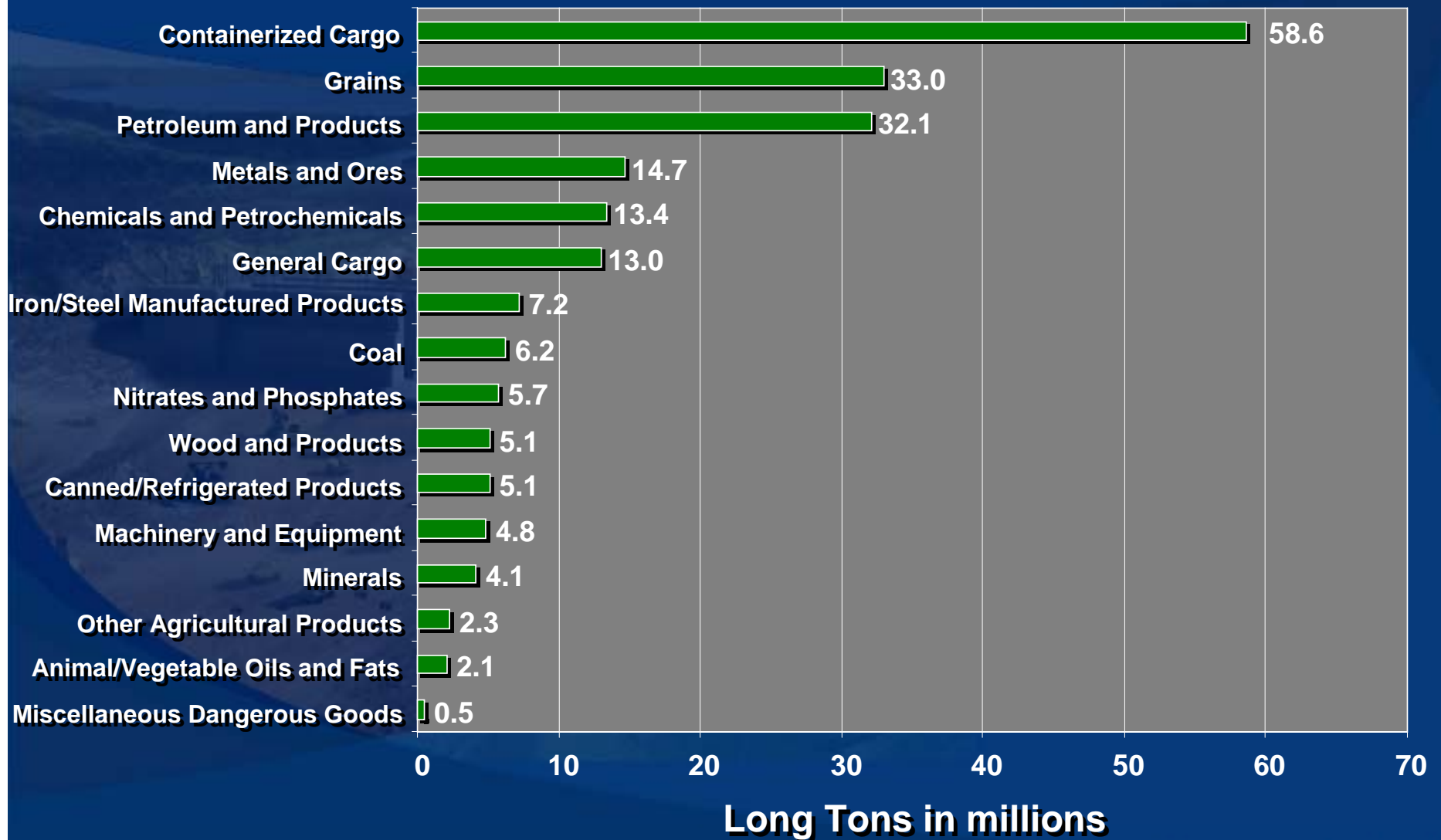
Principal Routes - FY 2007

West Coast South America ↔ Europe

15.2 MLT
7.3%

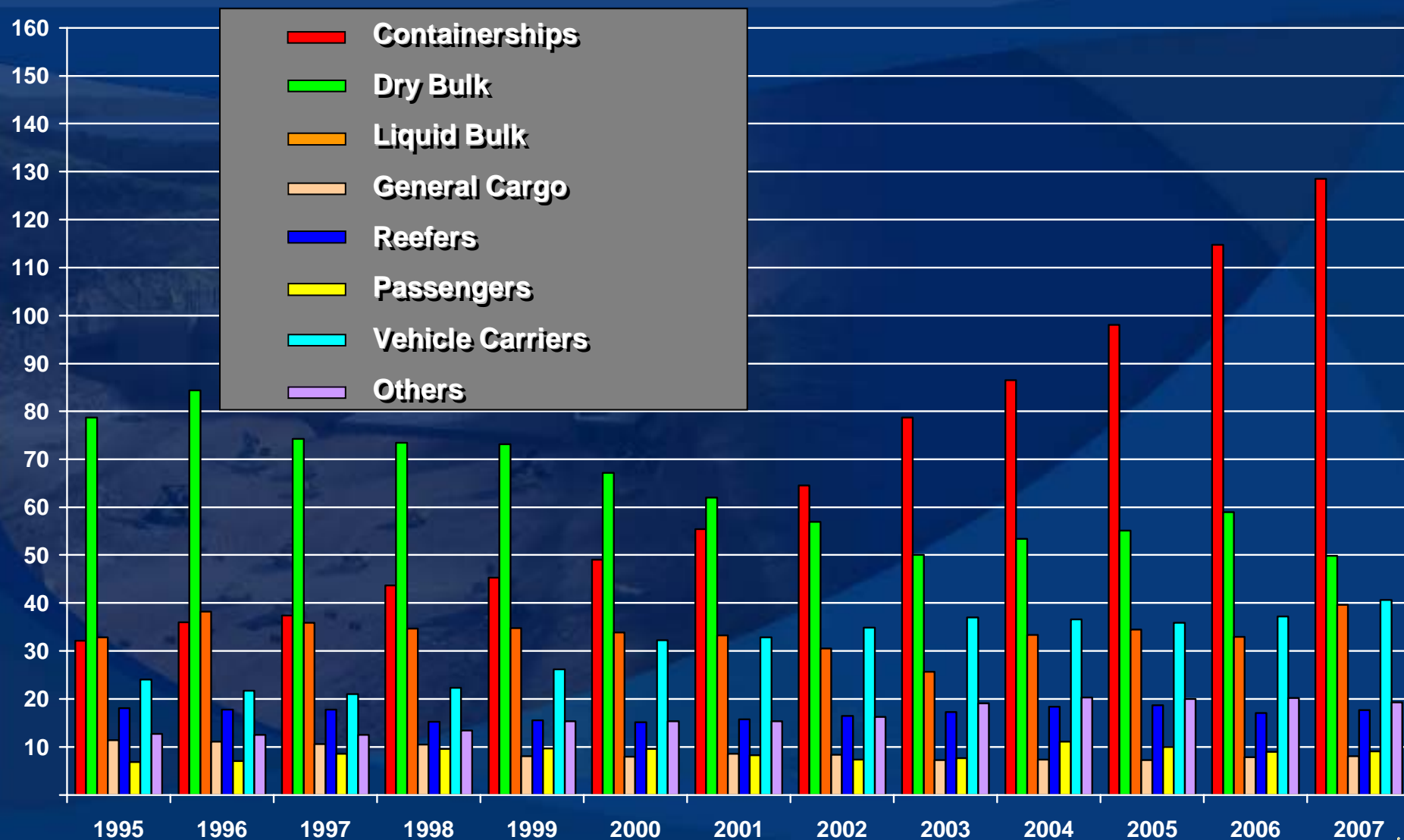
PRODUCTS	MLT	%
Containers	5.0	32.6
Refrigerated fruit	3.4	22.3

Principal Commodities that Transit the Panama Canal Fiscal Year 2007

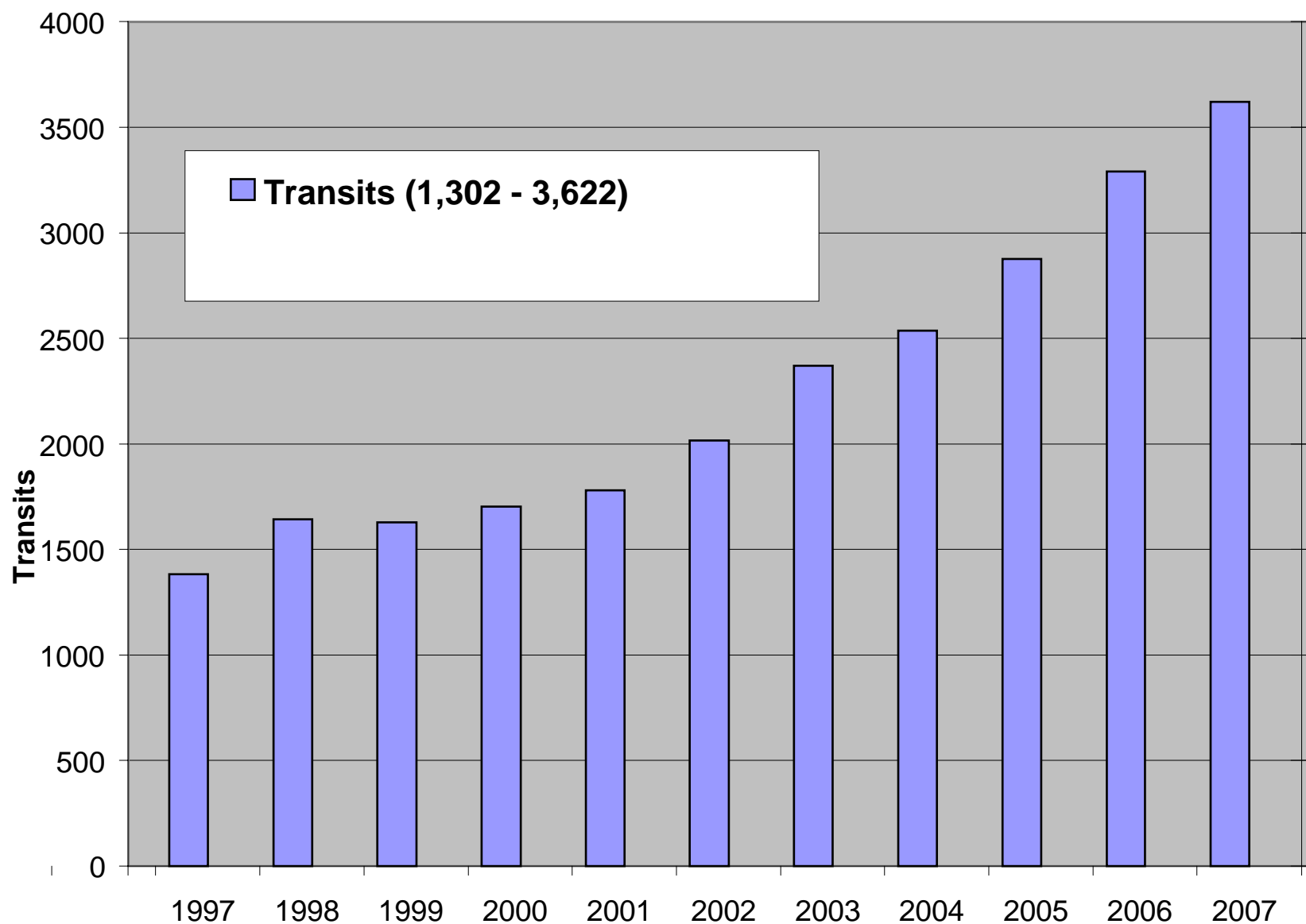


PC/UMS by Market Segment

(in millions - FY 1995-2007)

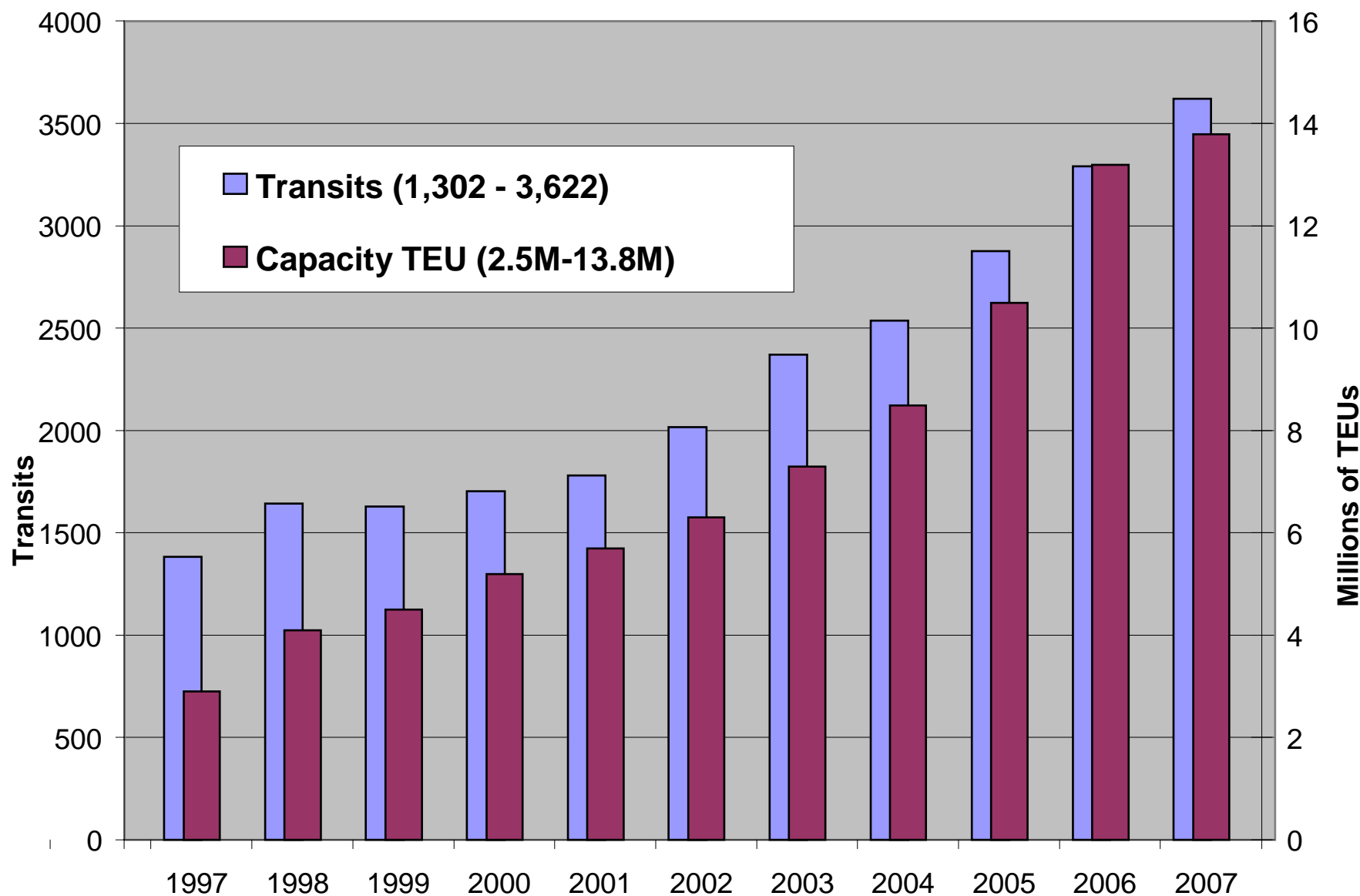


Growth of container traffic through the Panama Canal (1997 - 2007)



Based on the capacity of transiting vessels – Source: CompairData

Growth of container traffic through the Panama Canal (1997 - 2007)

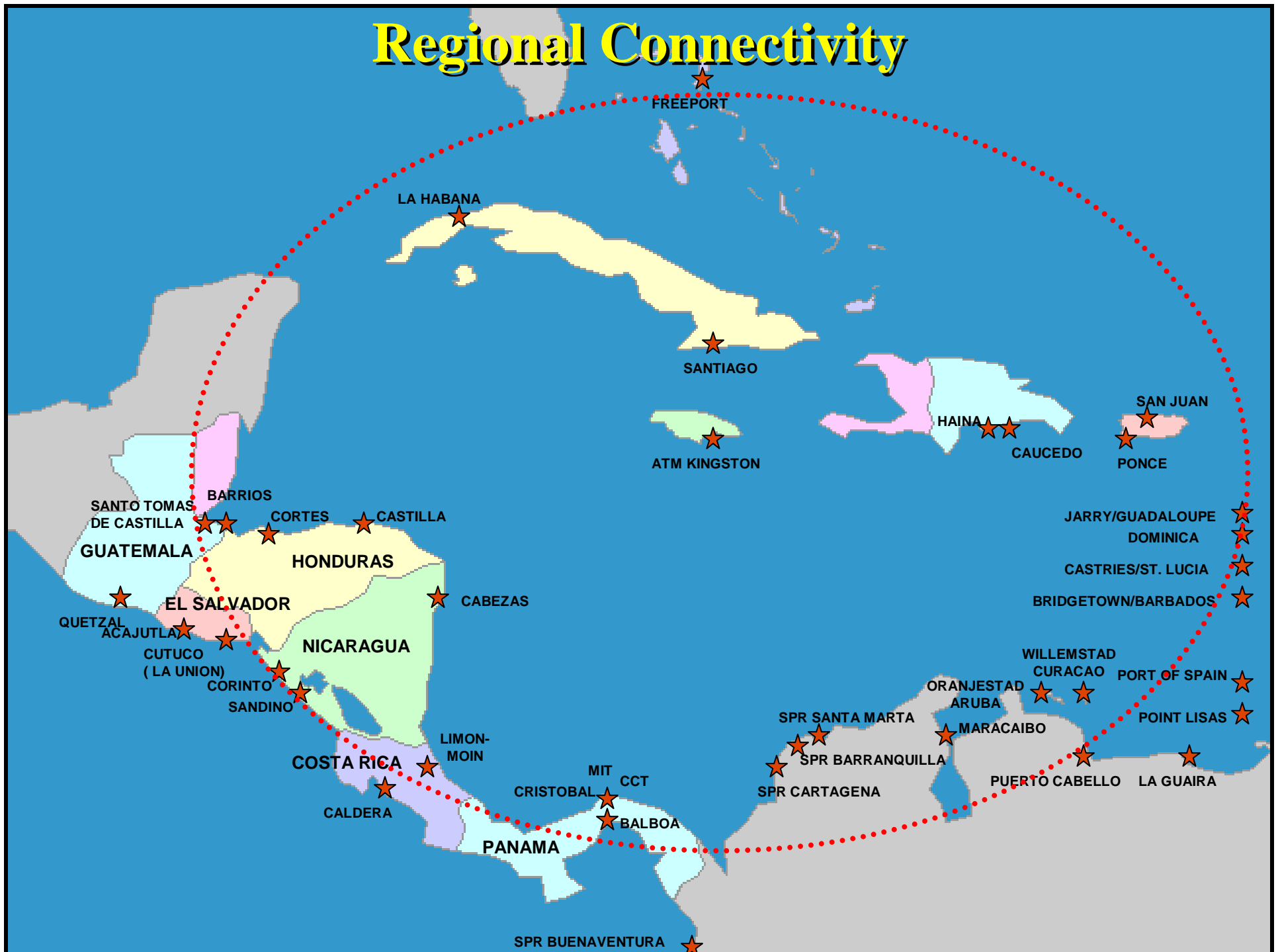


Based on the capacity of transiting vessels – Source: CompairData

International Ports Connected through the Panama Canal



Regional Connectivity



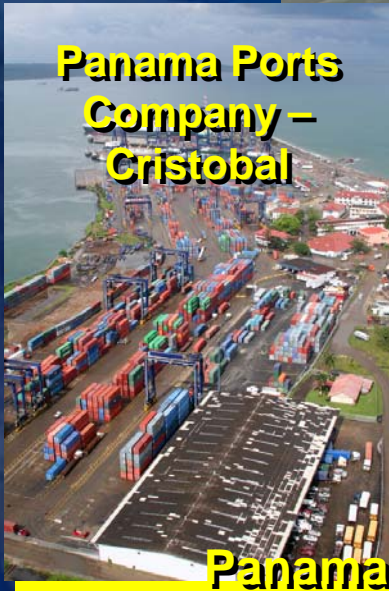
**Manzanillo International
Terminal (MIT)**



Colon Container Terminal



**Panama Ports
Company –
Cristobal**

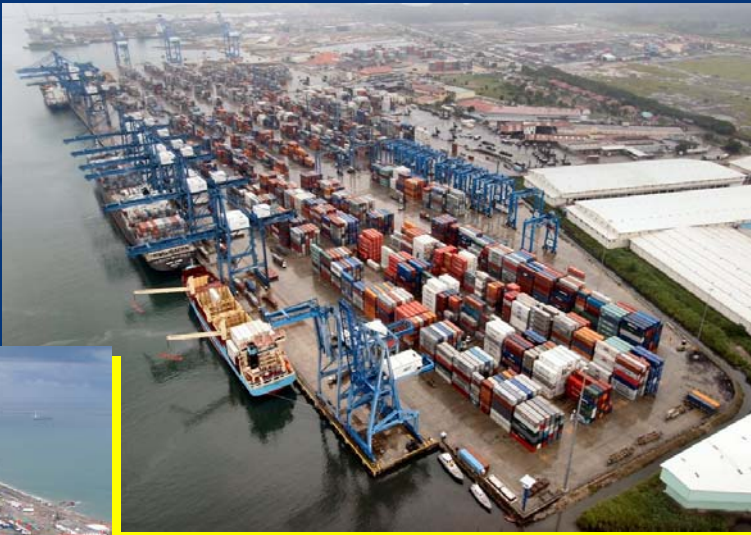


Panama Ports Company - Balboa

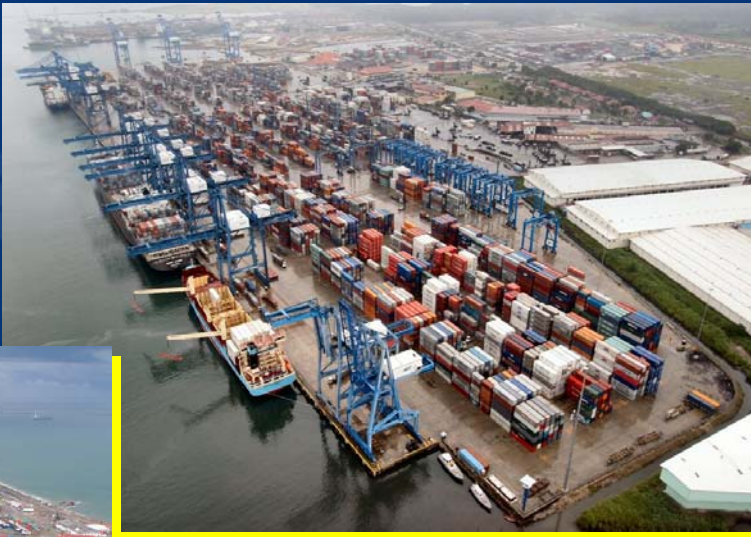


**Port Development
in Panama**





1996: 235 KTEUs
2007: +3.2 MTEUs



	Panamax Cranes	PPX	Total
PPC-BCZ	7	8	15
PPC-CRI	3	3	6
CCT	4	6	10
MIT	2	14	16
	16	31	47





TWO OCEANS IN A SAME DAY

Cruise tourism evolution in Panama

Colón 2000 Port

- **Inaugurated in October 2000**
- **Main cruise lines: Holland America, Carnival and Celebrity**
- **Tour operation Aventuras 2000: tours offered via train and buses to Portobelo & San Lorenzo Fort**
- **Will be homeport for Royal Caribbean beginning December 2008**



Sun Princess at Colón 2000

Toll Revenue by Market segments

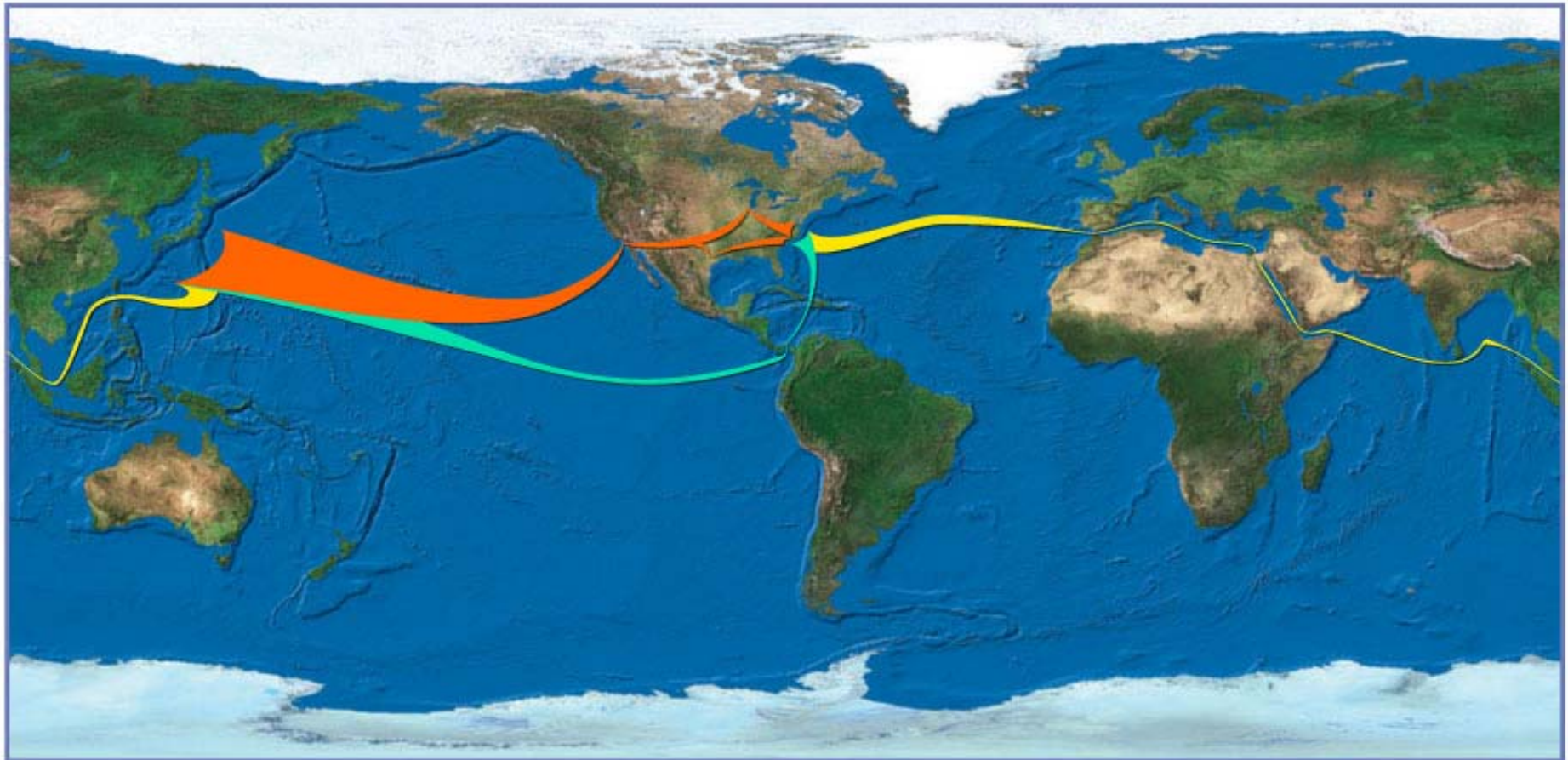
Segments		2006		2007	
<i>Containers</i>		\$503M	49%	\$682M	56%
<i>Dry bulk</i>		\$170M	17%	\$163M	13%
<i>Car Carriers</i>		\$100M	10%	\$106M	9%
<i>Liquid bulk</i>		\$91M	9%	\$107M	9%
<i>Others</i>		\$59M	6%	\$61M	5%
<i>Refrigerated</i>		\$53M	5%	\$57M	5%
<i>Passenger ships</i>		\$26M	3%	\$26M	2%
<i>General Cargo</i>		\$25M	2%	\$25	2%

Agenda

- **Traffic AF2007**
- **Alternative Routes**

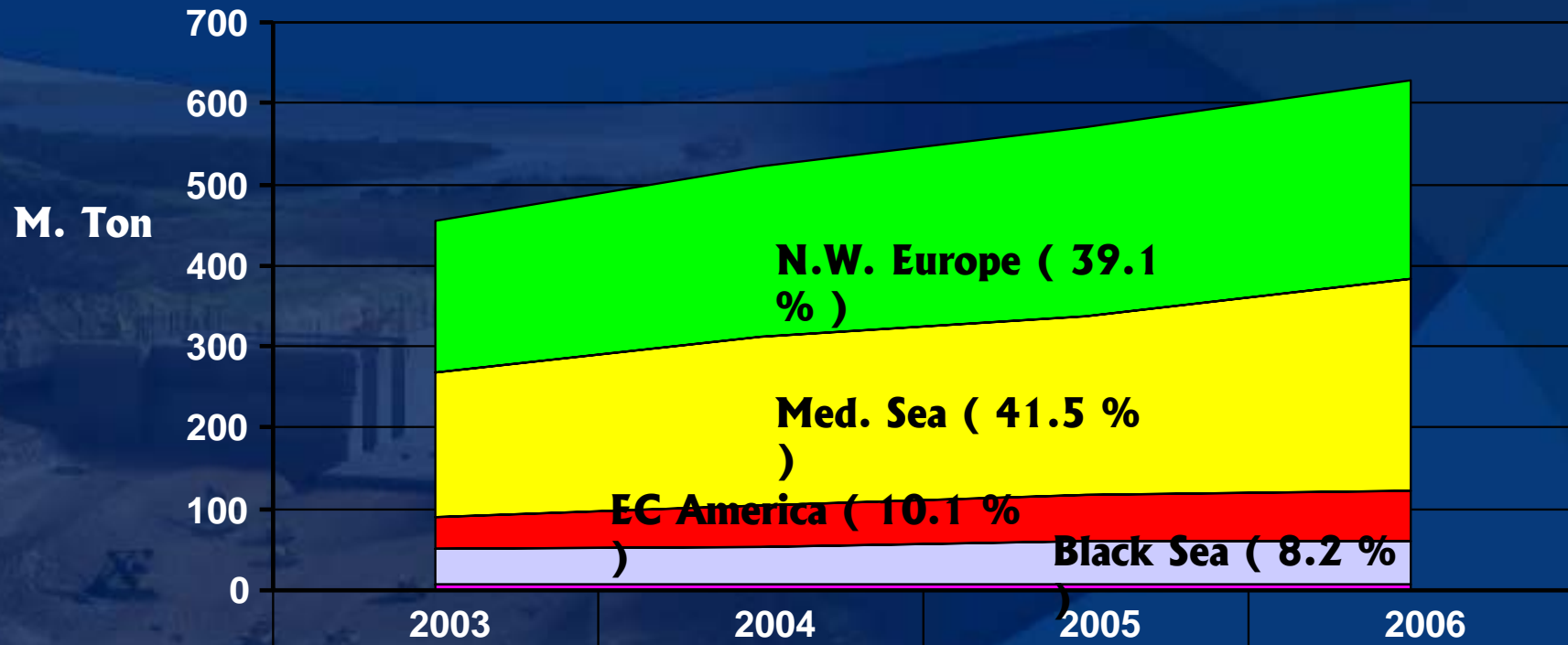
THE SUEZ ALTERNATIVE

Main Competitors of the Panama Canal Route

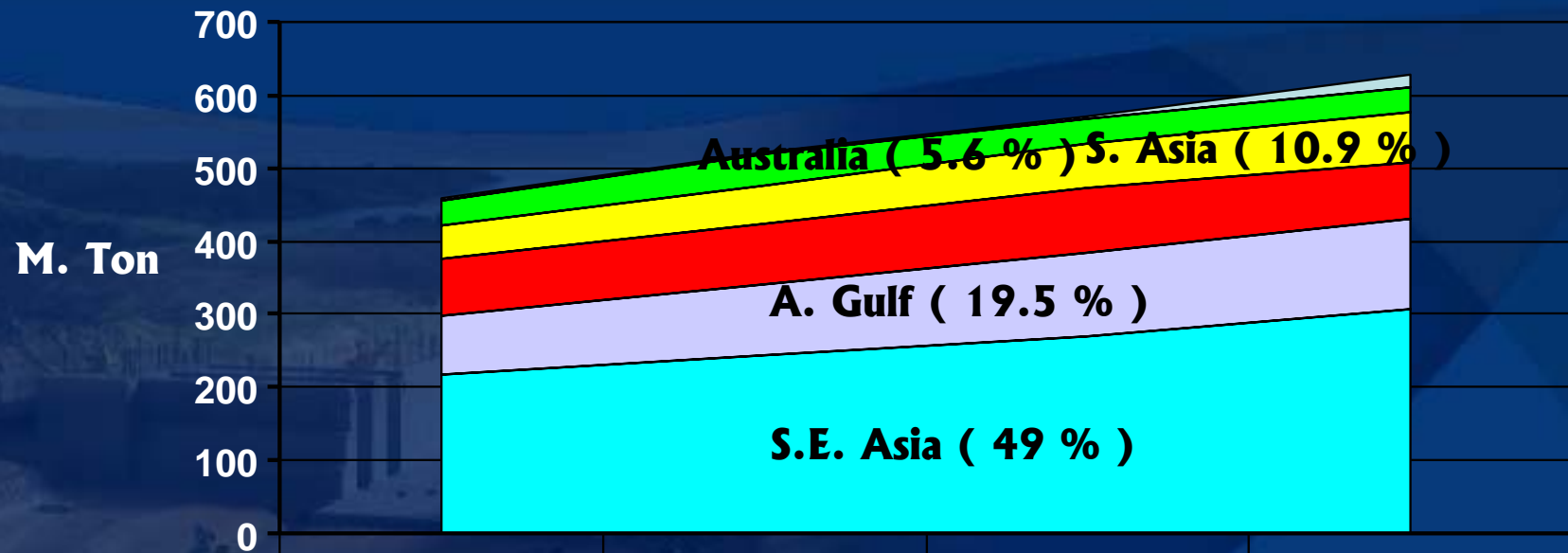


- U.S. Intermodal System Route
- Panama Canal Route
- Suez Canal Route

Cargo Ton through Suez (Destination)



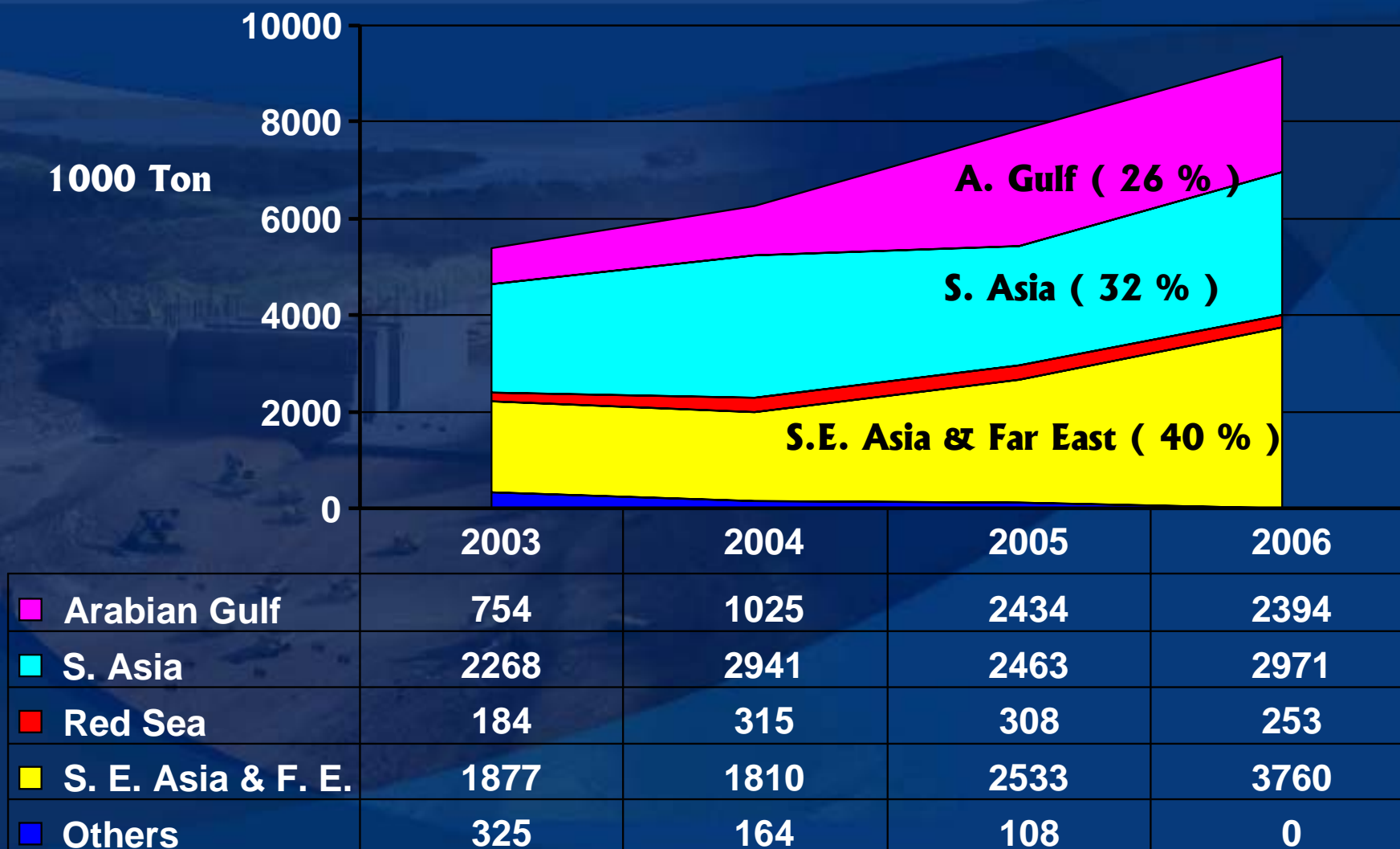
Cargo Ton through Suez (Origin)



	2003	2004	2005	2006
Others	1.4	2.3	2.1	18.2
Australia	35.1	42.5	34.1	34.9
South Asia	47	51	62.9	68.5
Red Sea	75.7	84.3	88.8	76.6
Arabian Gulf	81.3	97.5	112.6	122.6
S.E. Asia	217.5	243.9	270.7	307.8



SC Container Traffic to EC America (by Origin)



SC Container Movement by Route (2003 -2007)

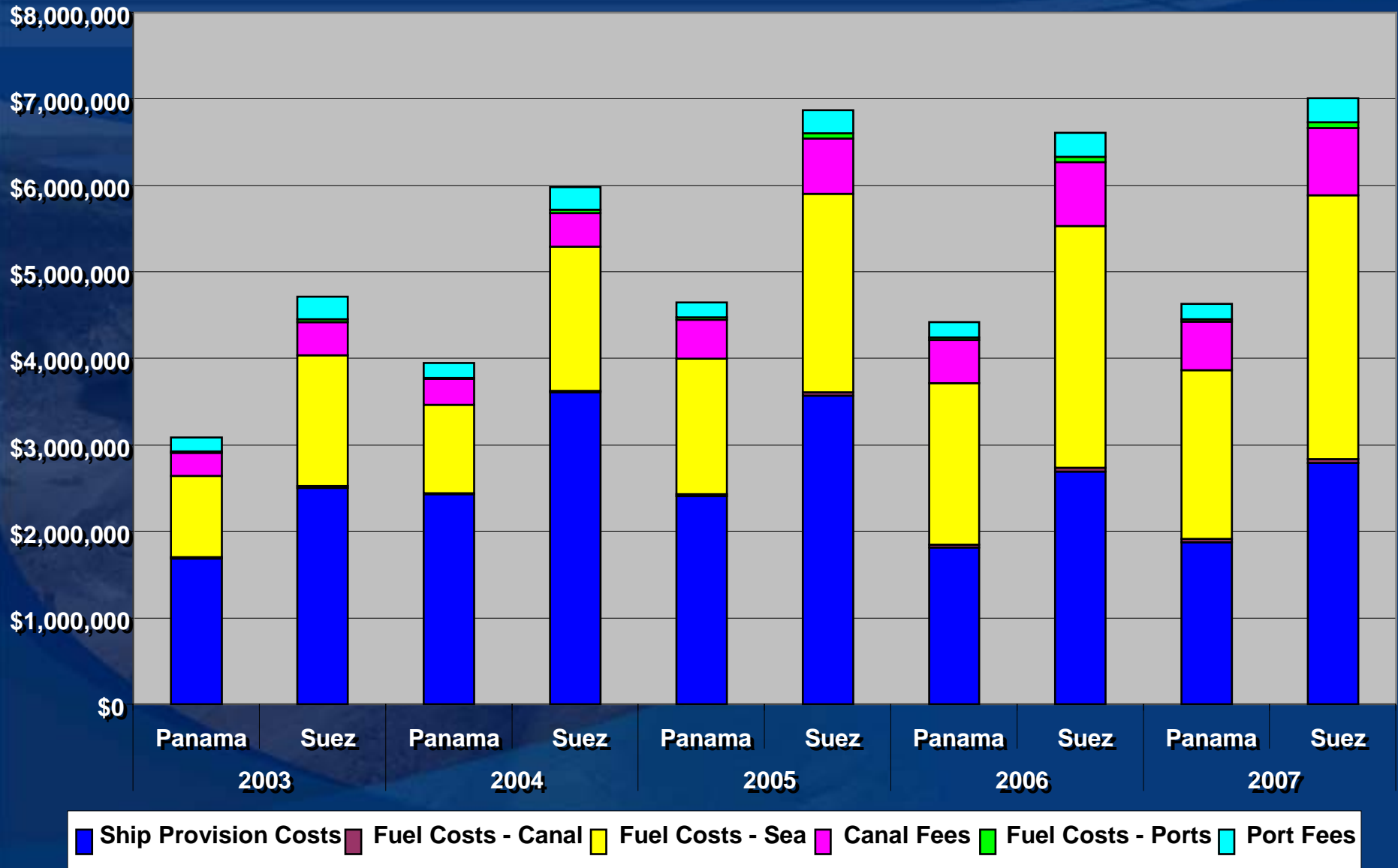
(1000 Loaded TEU)

Route	2003	2004	2005	2006	2007
NWE - Far East	12 793	15 537	17 483	19 343	21 502
NWE - South Asia	1 263	1 061	957	1 445	1 550
ECNA - South Asia	470	686	762	807	936
ECNA - South East Asia	547	315	339	536	850
NWE – Australasia	371	420	394	371	390
NWE - Middle East	137	350	381	200	210
NWE - East Africa	246	143	134	102	96
ECSA - Middle East	24	23	56	74	76
Total	15 851	18 535	20 506	22 878	25 610



Suez Canal Authority

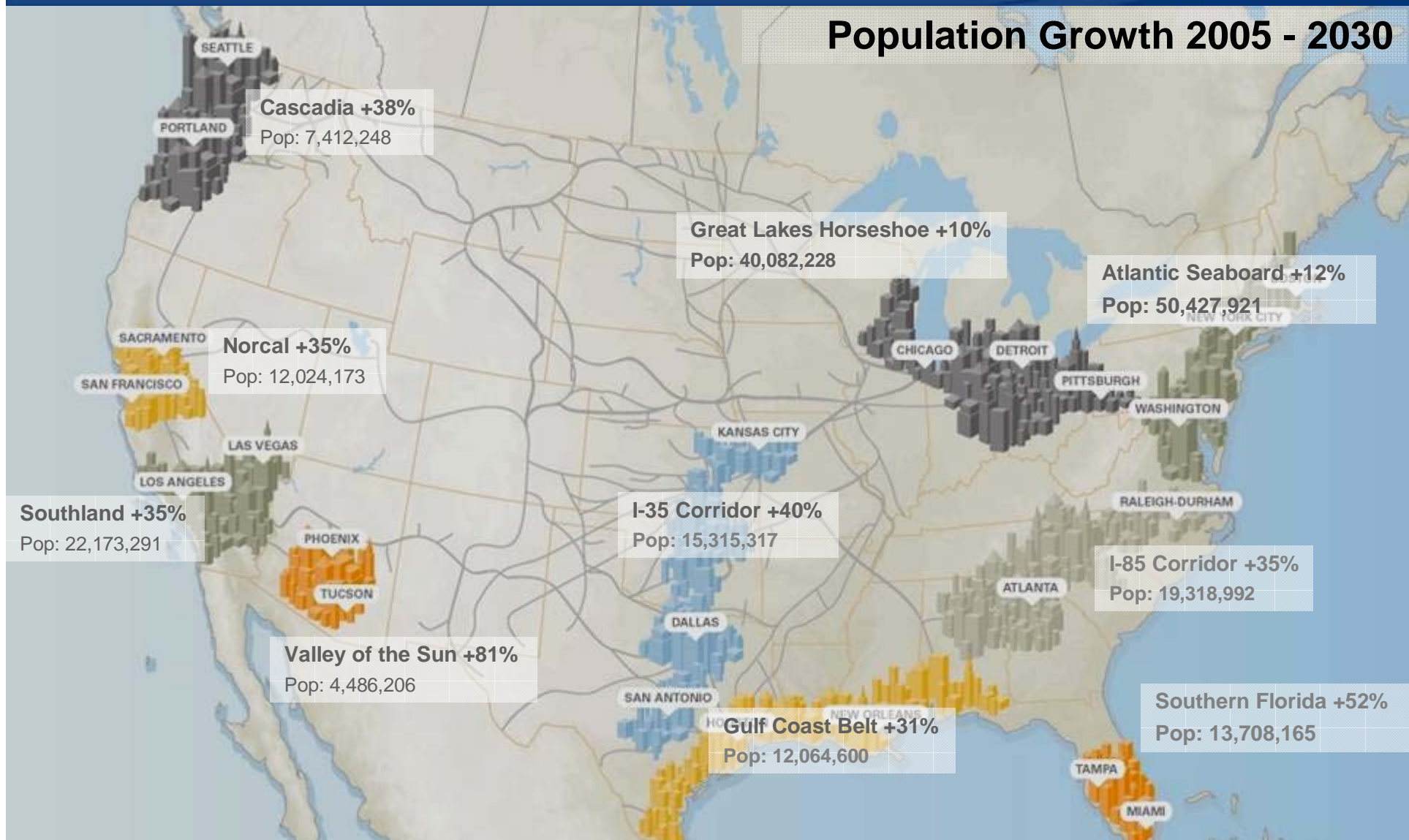
Panama- Suez Route Cost Comparison



Source: Estimates based on ACP analysis of different sources

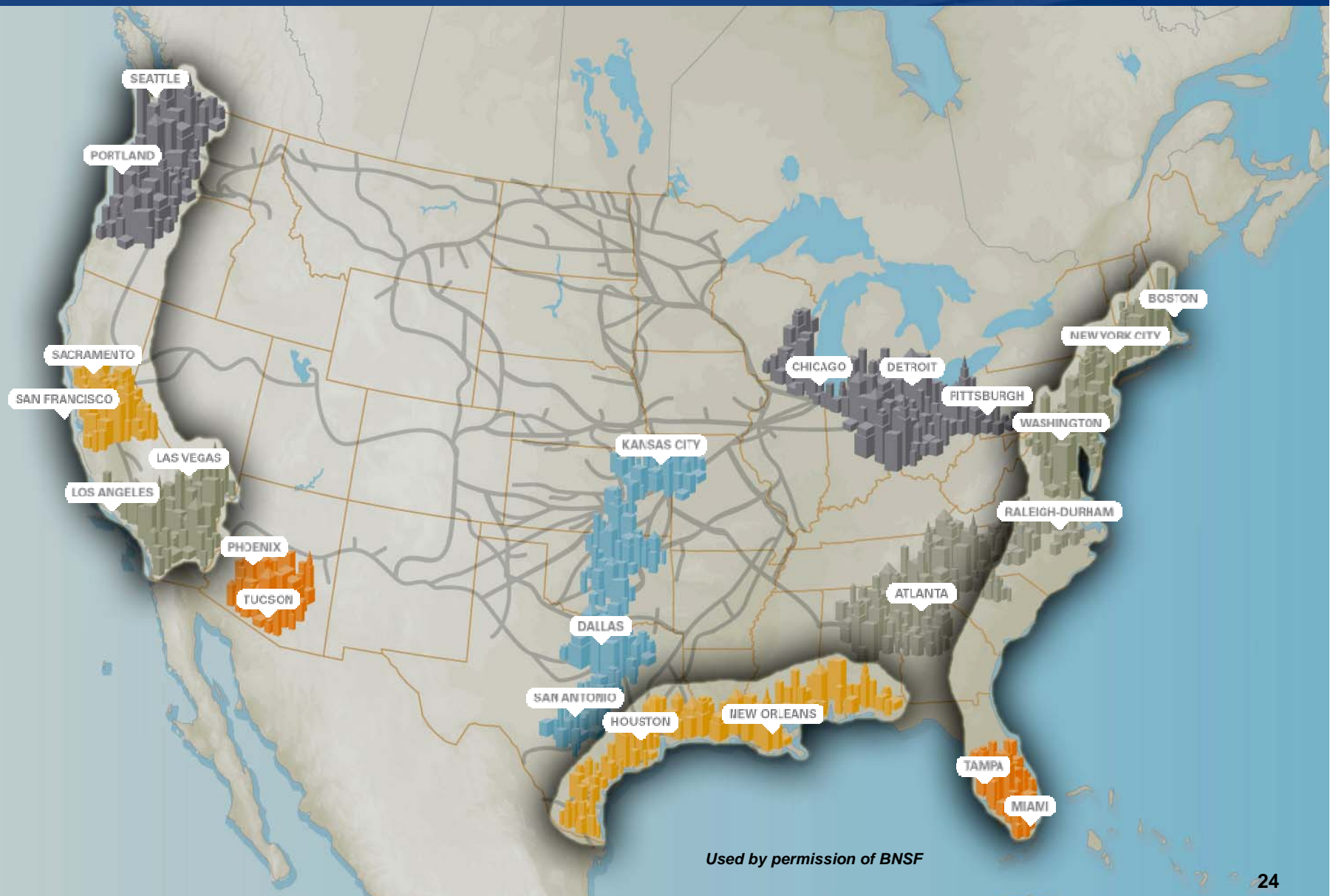
Strategic Demand Centers

Population Growth 2005 - 2030

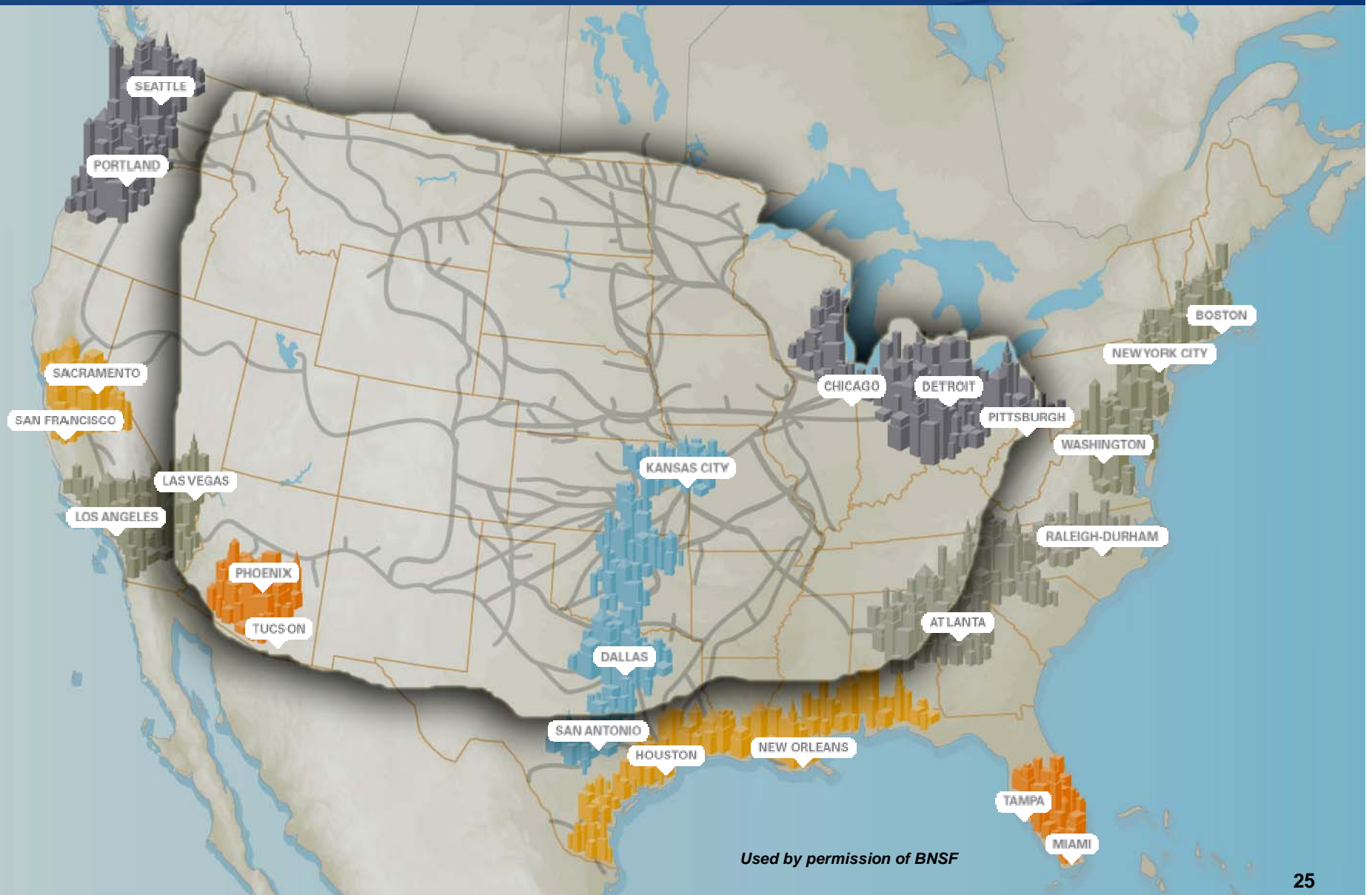


Sources: Population, employment, and real estate growth forecasts by Robert Lang and Arthur Nelson of the Metropolitan Institute at Virginia Tech and Phil Hopkins of Global Insight; Business 2.0, November 2005 – Used by permission of BNSF

Local Port Markets

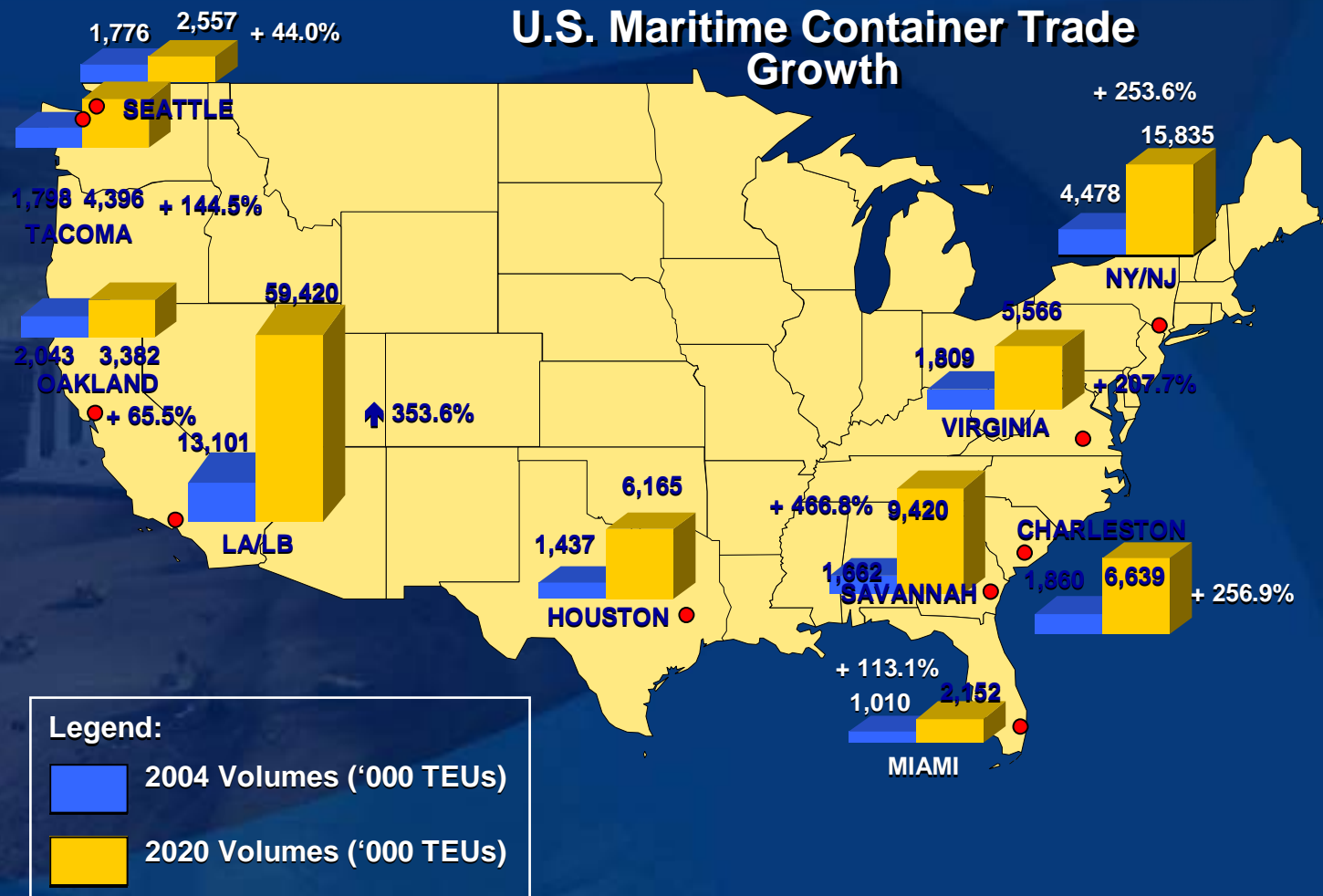


Inland Intermodal Markets



U.S. Infrastructure Issues: Current and Future

- Container imports are expected to double by 2020
- Rail freight tonnage is expected to increase by 50% by 2020
- Air cargo volume is expected to increase by 5% every year through 2016
- Half of the nation's 257 locks on inland waterways are functionally obsolete
- Most ports have not been dredged to handle the 10,000-TEU containerships being built



Source: American Society of Civil Engineers (ASCE) – 2005
Report Card for America's Infrastructure, U.S. DoT



Forecast
2007: +3.2 MTEUs
2010: 4.6 MTEUs
2015: 7.4 MTEUs

The 1 million + teu transshipment ports, 2006



Ports with minimum 1 million teu of
transshipment handling in 2006



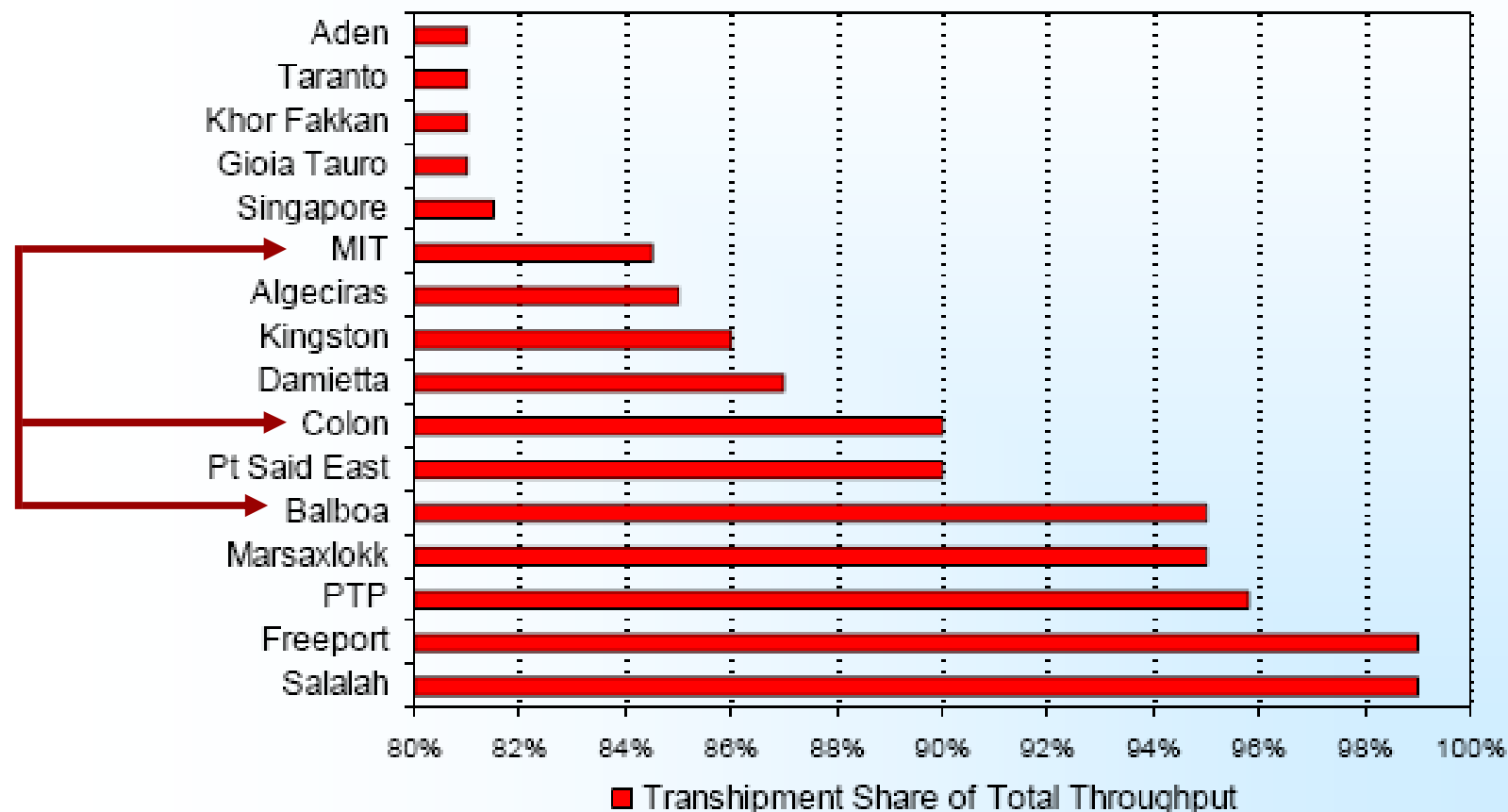
The “pure” transshipment hubs, 2006



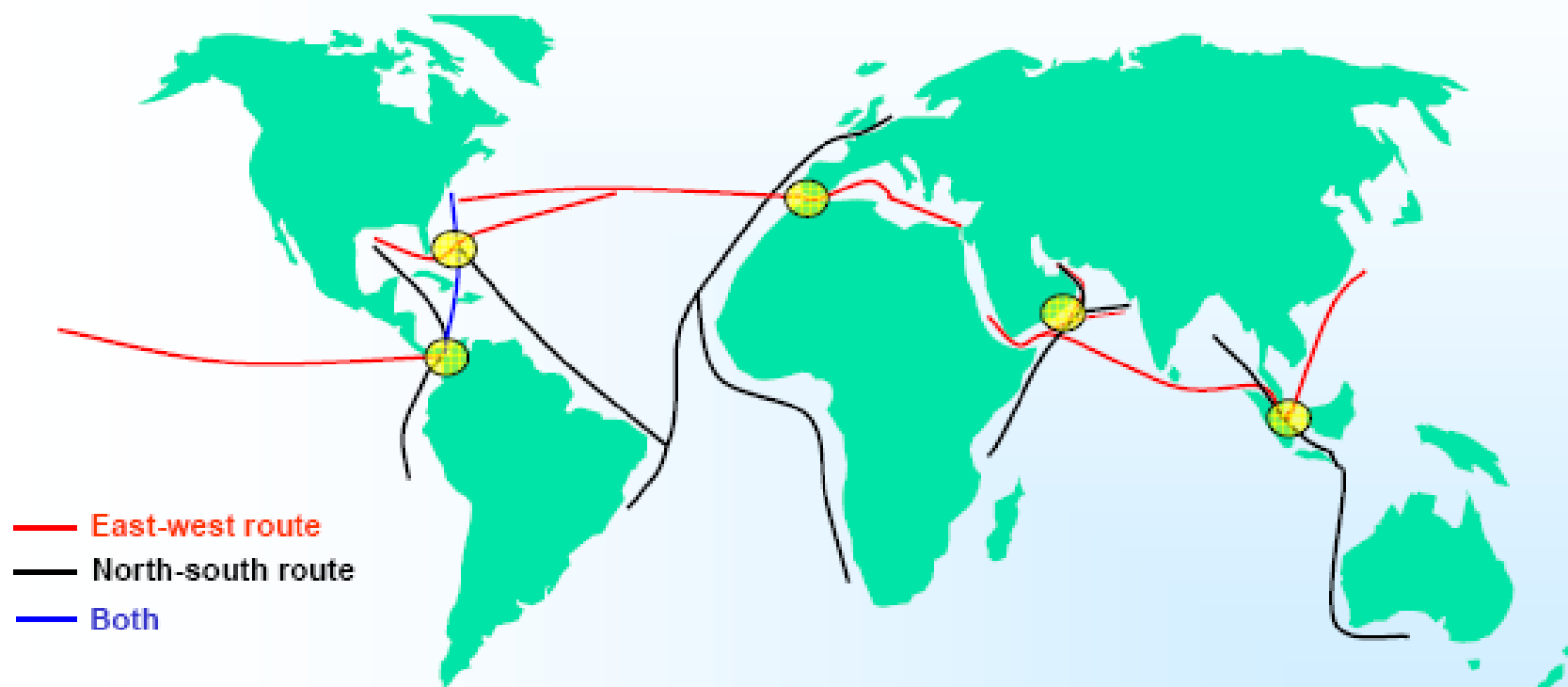
“Pure” hubs = Ports with 80%+ transshipment incidence



The transshipment incidence league table, 2006



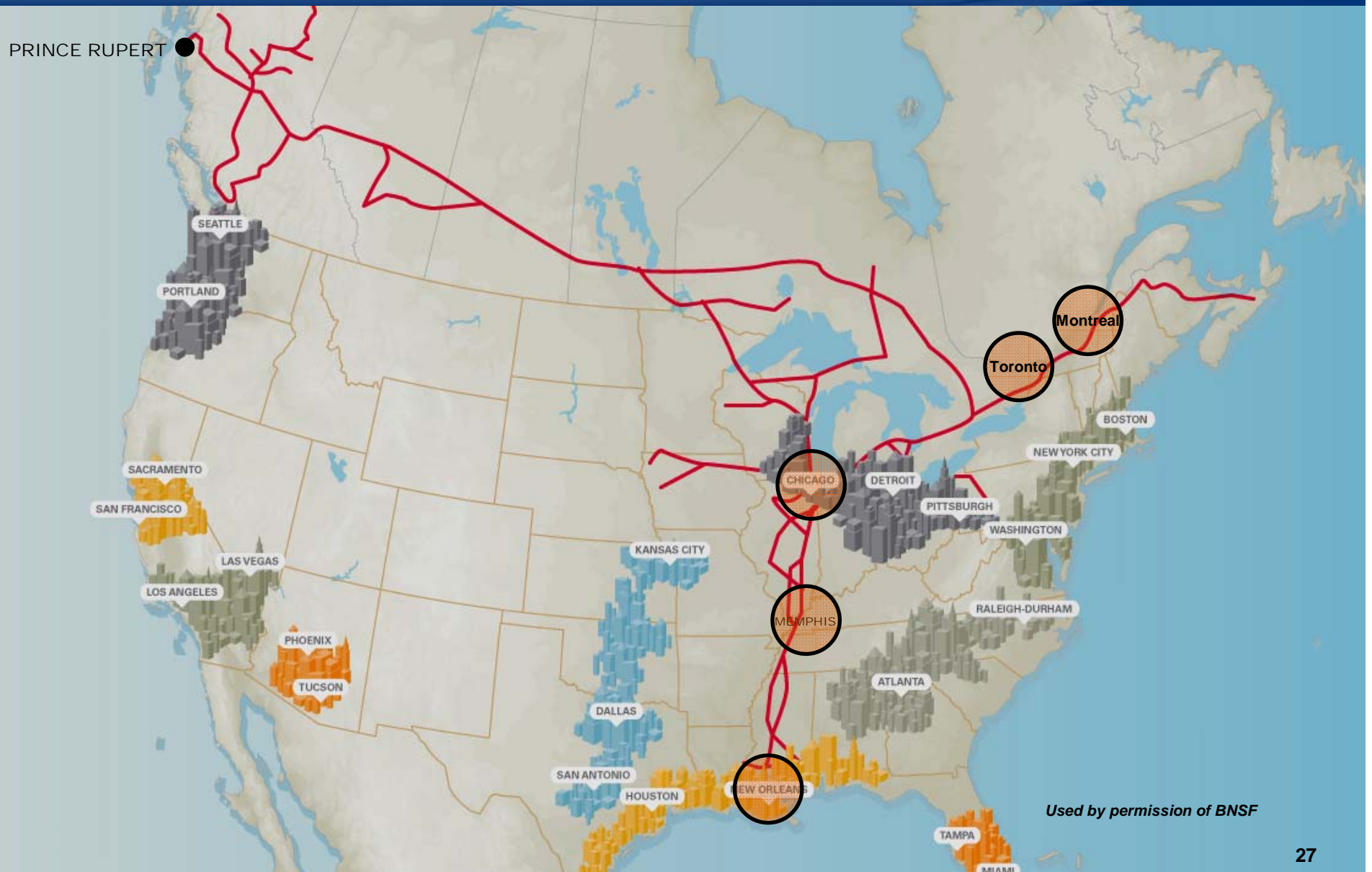
Trade route cross-roads



A major advantage for developing relay traffic, as it provides the possibility of linkages between multiple services on both east-west and north-south routes.



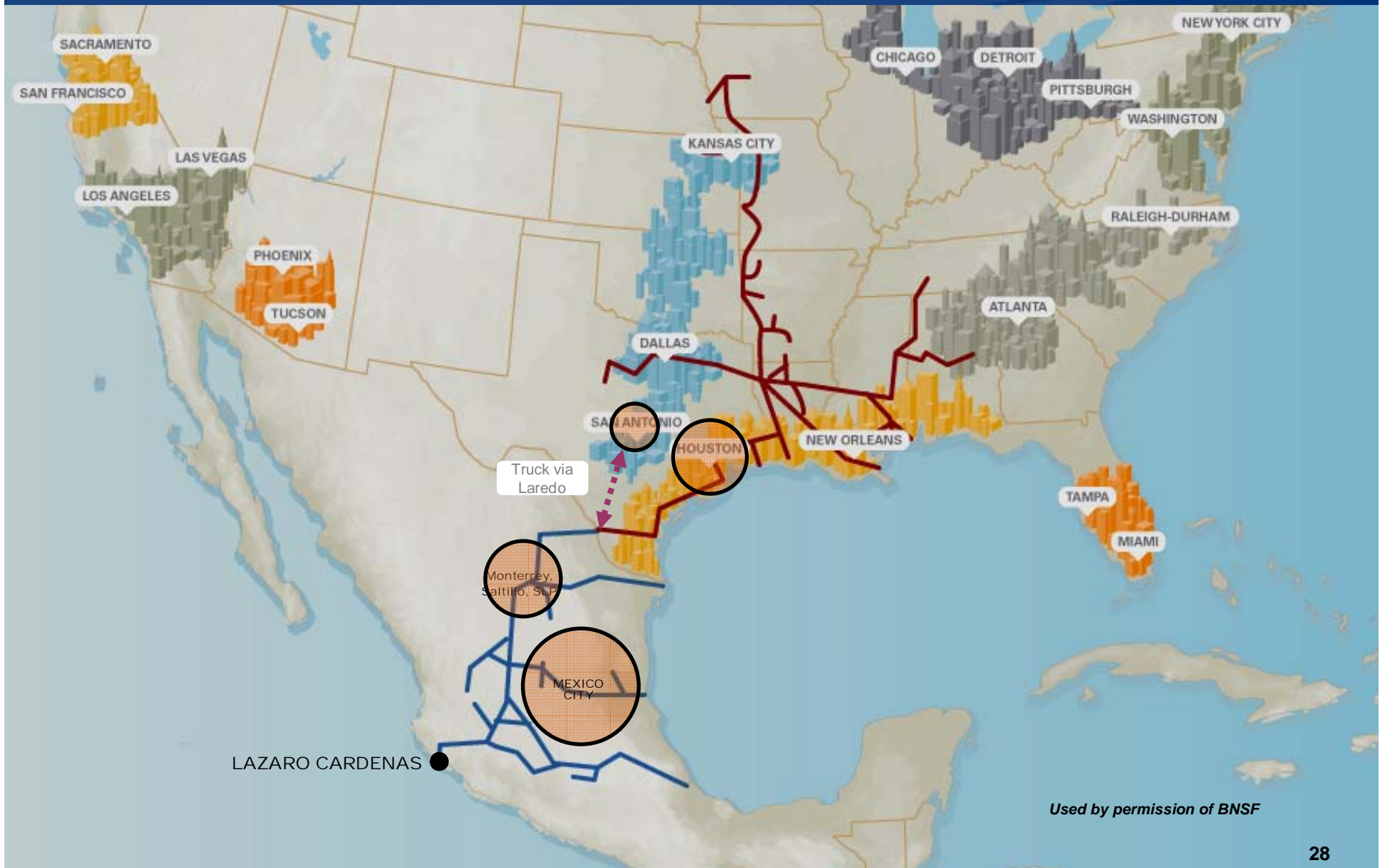
Prince Rupert Hinterland



Prince Rupert Project

- Prince Rupert Port Authority in partnership with Maher Terminals (RREEF Infrastructure) and CN Rail opened a modern \$160 Million terminal
- Shortest sea link between Asia and North America with connections to Chicago, Toronto and Memphis
- New facility capable of handling 500,000 TEU initially, with possibilities to expand to **2 million TEU** per year
- Capable of handling up to 12,000 TEU vessels with 16 m. draft
- Second Phase already started to be completed by 2010.

Lazaro Cardenas



Punta Colonet



- 27,000 Acre multibillion dollar Deep Sea Port
- Located 150 miles South of Tijuana
- Mostly an agricultural and fishing town
- Looked as the best place for a Mexican Megaport for 2025

- Port Cost: **US\$400 - 600 million**
- Rail Cost: **US\$2-6 billion**
- Idea is to handle **1 million TEU initially and expanding to 5 million TEU**



Agenda

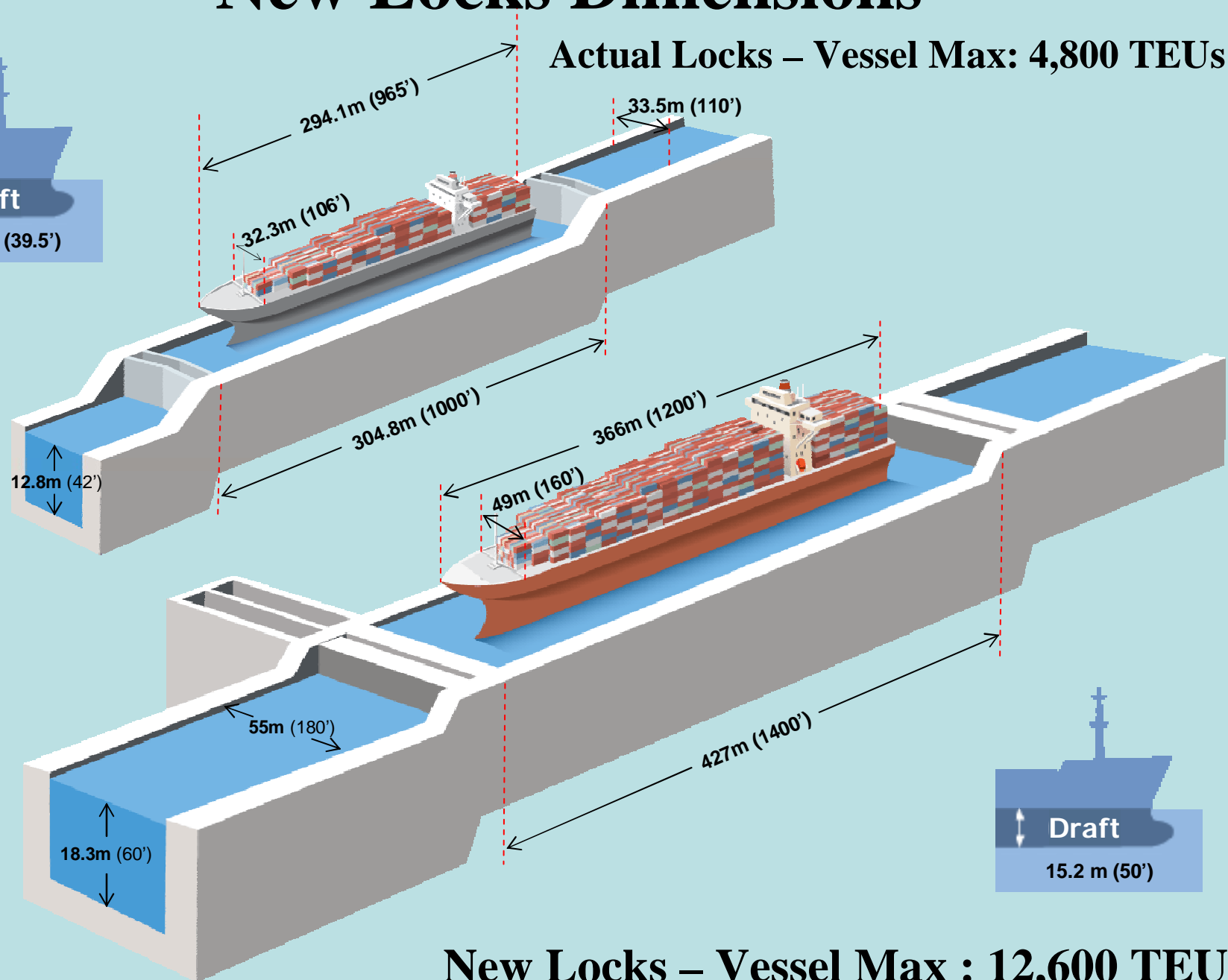
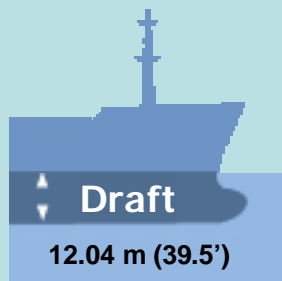
- **Traffic AF2007**
- **Alternative Routes**
- **Expansion Program Components, Scope & Time Line**

Conceptual Design



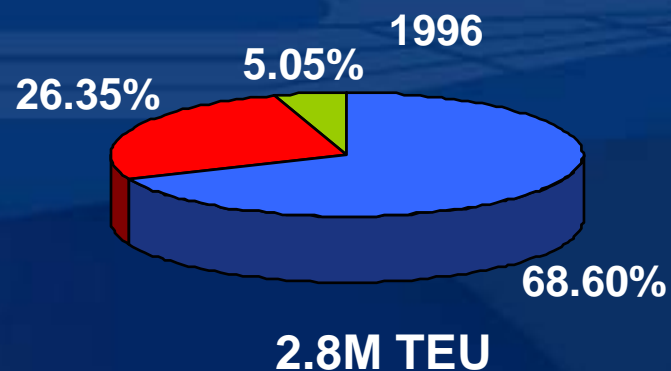
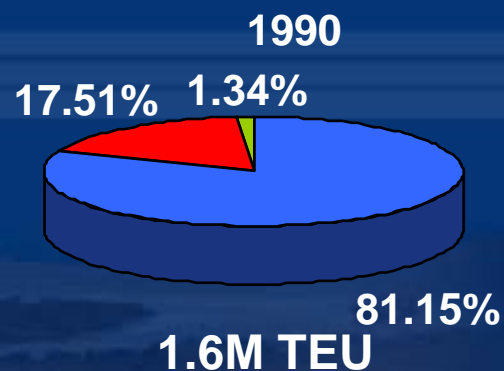
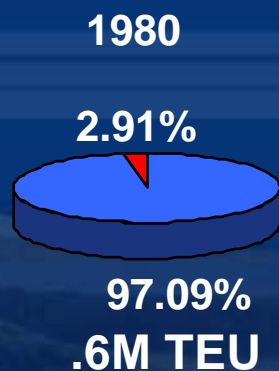
New Locks Dimensions

Actual Locks – Vessel Max: 4,800 TEUs

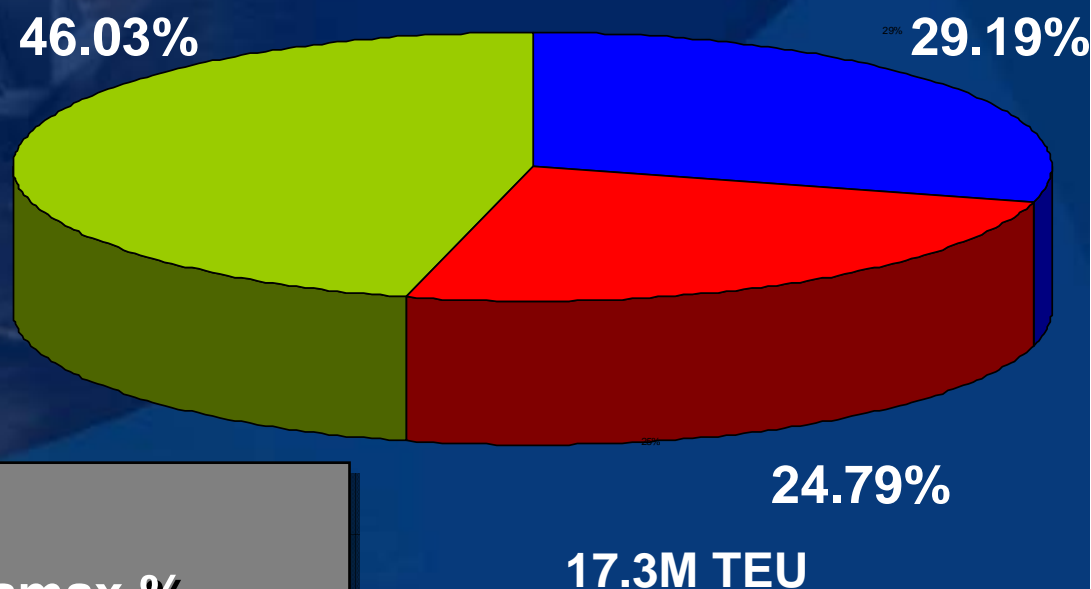
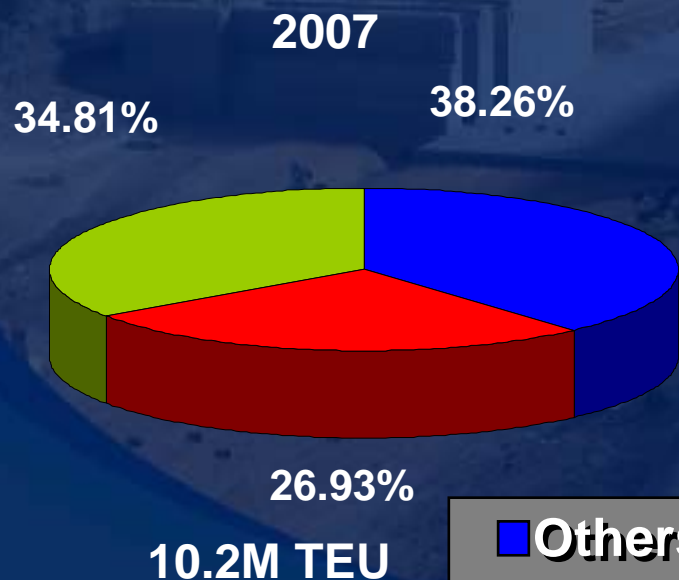


New Locks – Vessel Max : 12,600 TEUs

Container capacity evolution in TEU – Dec'07



2012 (including new orders)



■ Others %
■ TEU Panamax %
■ TEU Post- panamax %

Evolution of the Full Container Ship Fleet

Vessel Size		Full Container Ship Fleet - December 10, 2007		Orderbook 2007-2012		Projected Fleet 2012	
		Number of Vessels	TEU Capacity	Number of Vessels	TEU Capacity	Number of Vessels	TEU Capacity
Feeders	100-499	438	136,079	11	2,607	449	138,686
Feedermax	500-999	785	574,847	155	130,864	940	705,711
Handy	1,000-1,999	1144	1,613,546	321	459,448	1465	2,072,994
Sub-Panamax	2,000-2,999	673	1,697,300	167	426,865	840	2,124,165
Panamax	3,000-4,000+	727	2,905,510	328	1,376,161	1055	4,281,671
Post-Panamax	3,700 - 13,300	557	3,734,910	474	4,215,918	1031	7,950,828
Total		4,324	10,662,192	1,456	6,611,863	5,780	17,274,055
% Post-Panamax		12.9%	35.0%	32.6%	63.8%	17.8%	46.0%
Average Vessel Size							
% Panamax						18.3%	24.8%

Source: ACP, Shipping Intelligence Network, Clarkson Research, December 2007.

Orderbook of Post Panamax (5,000+)

Full Container Ship - Dec. 2007

Range Size	Number of Vessels	Capacity	Average Vessel Size
13,000 - 13,300	37	486,672	13,153
12,000 - 12,999	43	542,840	12,624
11,000 - 11,999	10	113,800	11,380
10,000 - 10,999	28	280,536	10,019
9,000 - 9,999	34	327,470	9,631
8,000 - 8,999	124	1,044,242	8,421
7,000 - 7,999	12	89,598	7,467
6,000 - 6,999	94	612,132	6,512
5,000 - 5,999	52	278,932	5,364
Total order (5,000+)	434	3,776,222	8,701

Source: Clarksons - on-line Service, Dec. 2007

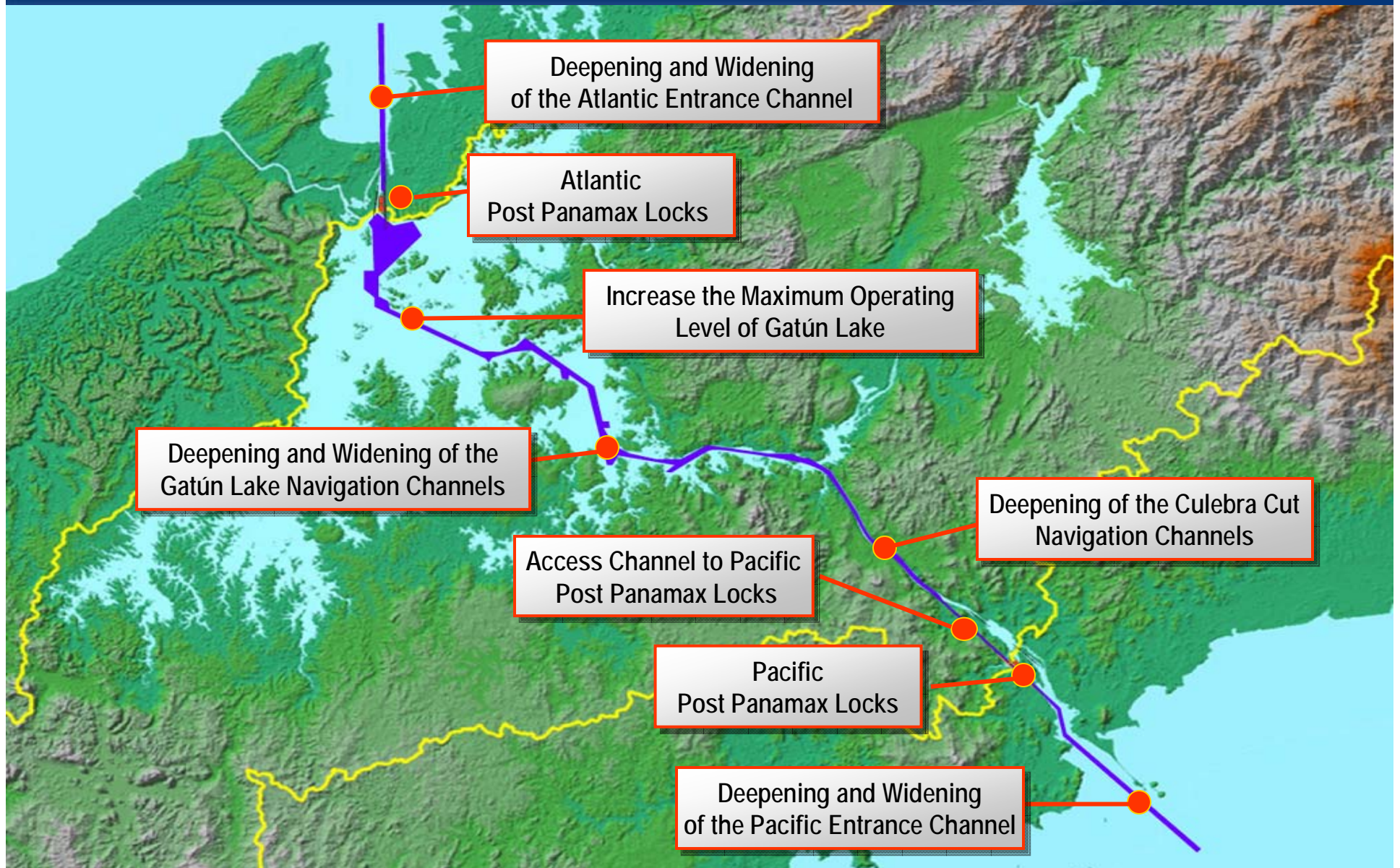
Additional Cargo Capacity Possibilities for Dry Bulker in the Expanded Panama Canal

Concept	Existing Canal	Expanded Canal			
	Typical vessel- Panamax maximun size	Size Range for Dry Bulkers carrying Coal in the new Canal			
Vessel data:					
Deadweight tons (DWT)	81,876	100,000 - 119,000	120,000 -150,000	151,000 - 169,000	170,000-200,000
Utilization rate through the Panama Canal	78%	98%	78%	76%	74%
Cargo (metric tons)	62,430	102,900	105,300	121,600	136,900
Length (metes)	272.5	260.5	273.0	289.0	292.0
Beam (metrers)	32.3	43.9	43.0	43.1	48.0
Salt Water Draft (meters)	14.1	13.8	17.5	17.4	18.0
Panama Canal restrictions:					
Length (metes)	294.1	365.8	365.8	365.8	365.8
Beam (metrers)	32.3	48.8	48.8	48.8	48.8
Tropical Fresh Water Draft (meters)	12.0	15.3	15.3	15.3	15.3
Utilization rate through the Panama Canal without restrictions	98%	98%	98%	98%	98%
Cargo without restrictions(Metric Ton)	80,238	95,000	117,000	125,000	130,000
Additional Cargo under Expanded Canal conditions (Metric Tons)					

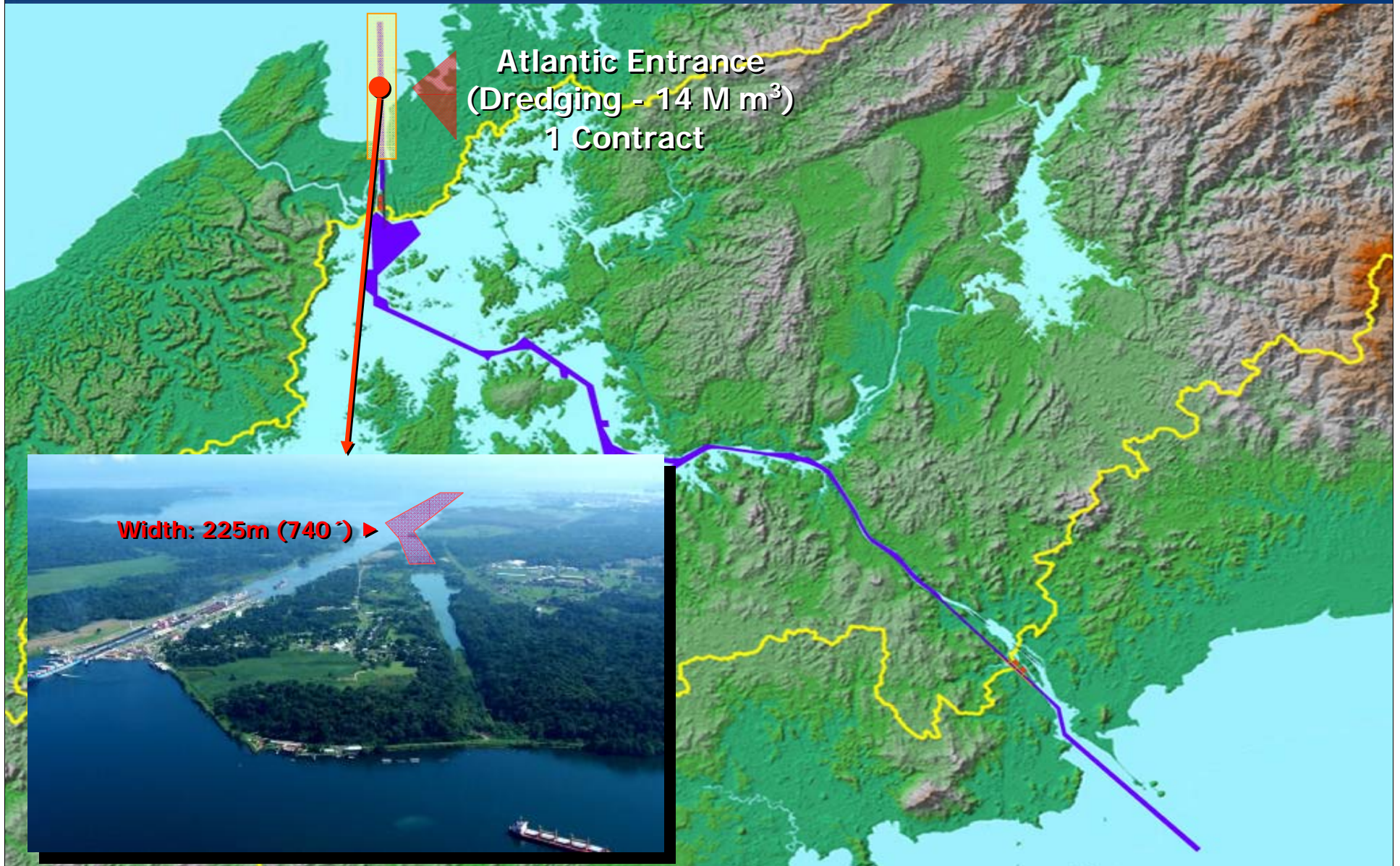
Additional Cargo Capacity for Tankers through the Expanded Panama Canal

	Existing Canal	Expanded Canal		
	Tanker Vessel with Maximum Dimensions	Size Range for Tanker Vessels in Expanded Canal		
Vessel Data		Aframax	Suezmax	VLCC
Deadweight Tonnage (DWT)	91,844	100 - 119,999	120 - 199,999	> 200,000
Utilization percentage of vessel through the Canal	70.0%	94.7%	89.6%	73.9%
Cargo in metric tons	64,257	107,520	146,316	226,205
LOA (m)	272.5	269	267	326
Beam (m)	32.2	39.3	46.3	49
Fresh water draft (m)	15.5	16.0	17.02	20.64
Dimensions allowed by the Panama Canal				
LOA (m)	294.2	366	366	366
Beam (m)	32.2	49	49	49
Fresh water draft (m)	12	15.2	15.2	15.2
Unrestricted vessel utilization percentage	96%	96%	96%	96%
Cargo carrying capacity with maximum draft of 15.2 m	83,045	101,818	131,107	167,064
Additional cargo allowed with expanded Canal (in MT)	18,788			

Canal Expansion Program Components



Atlantic Entrance Deepening and Widening

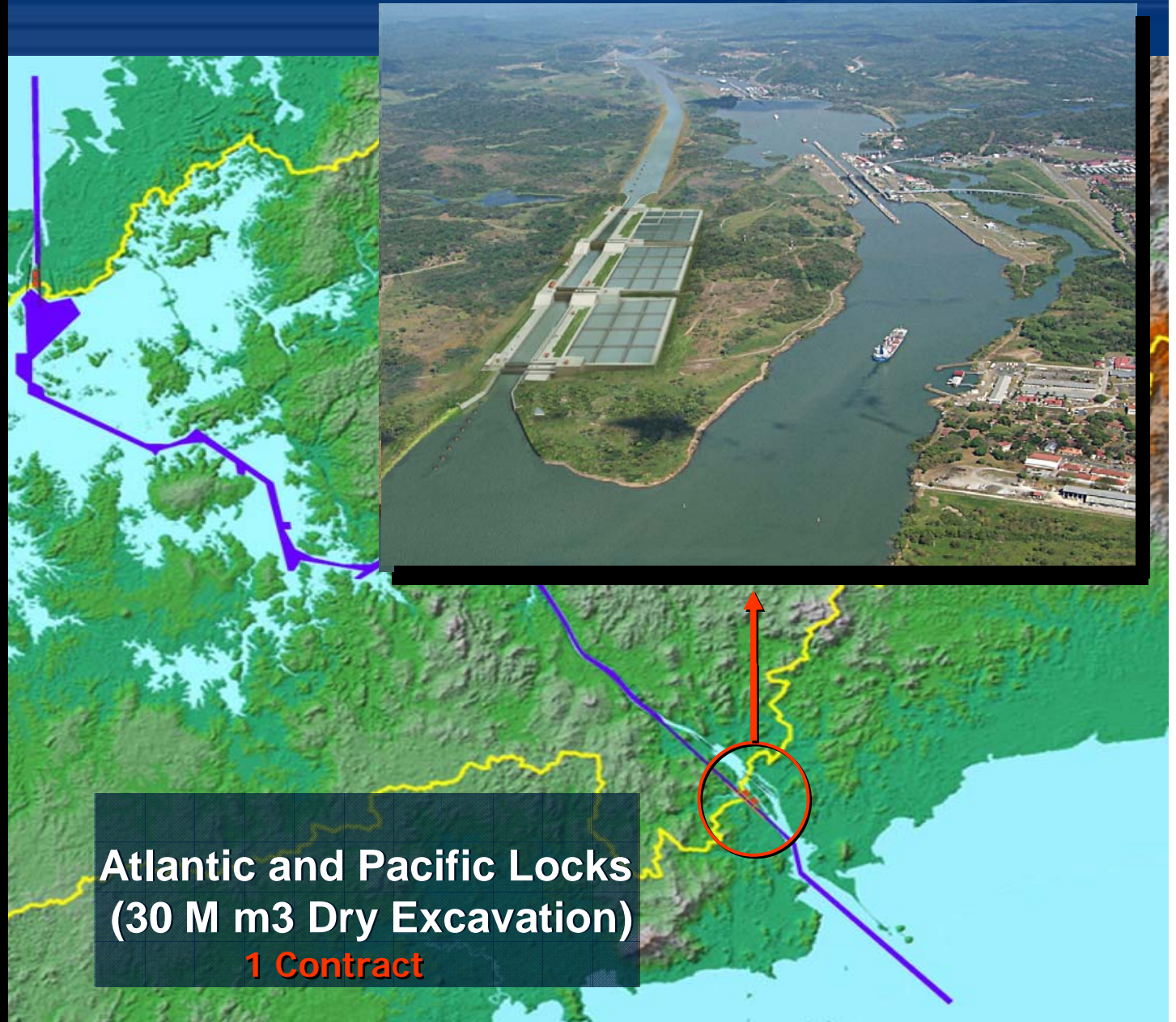


Post Panamax Locks

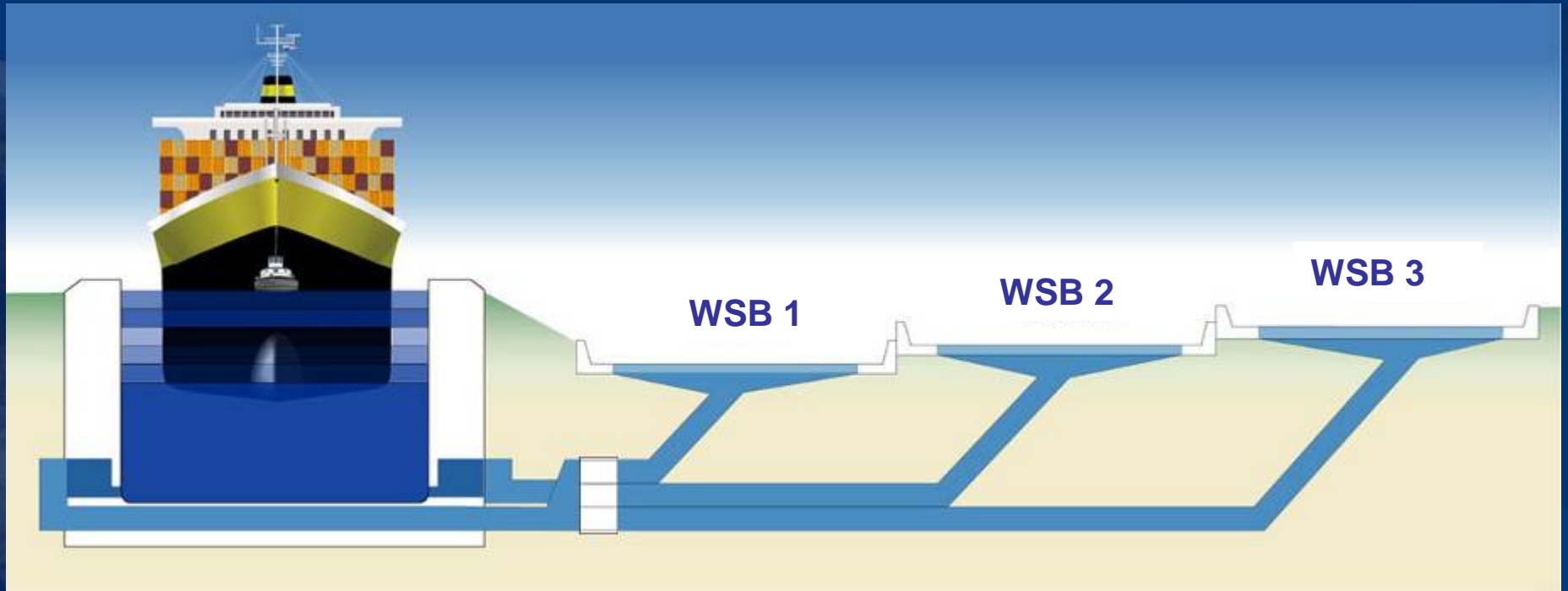
Atlantic and Pacific Locks
(30 M m3 Dry Excavation)
1 Contract



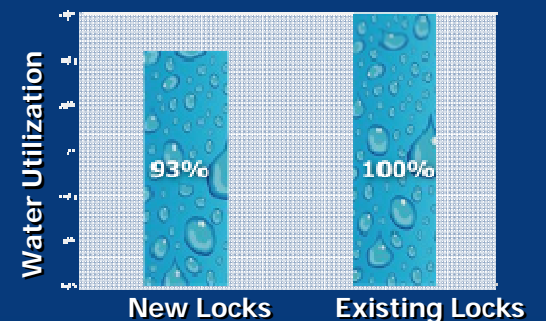
Post Panamax Locks



Operation of Water Saving Basins

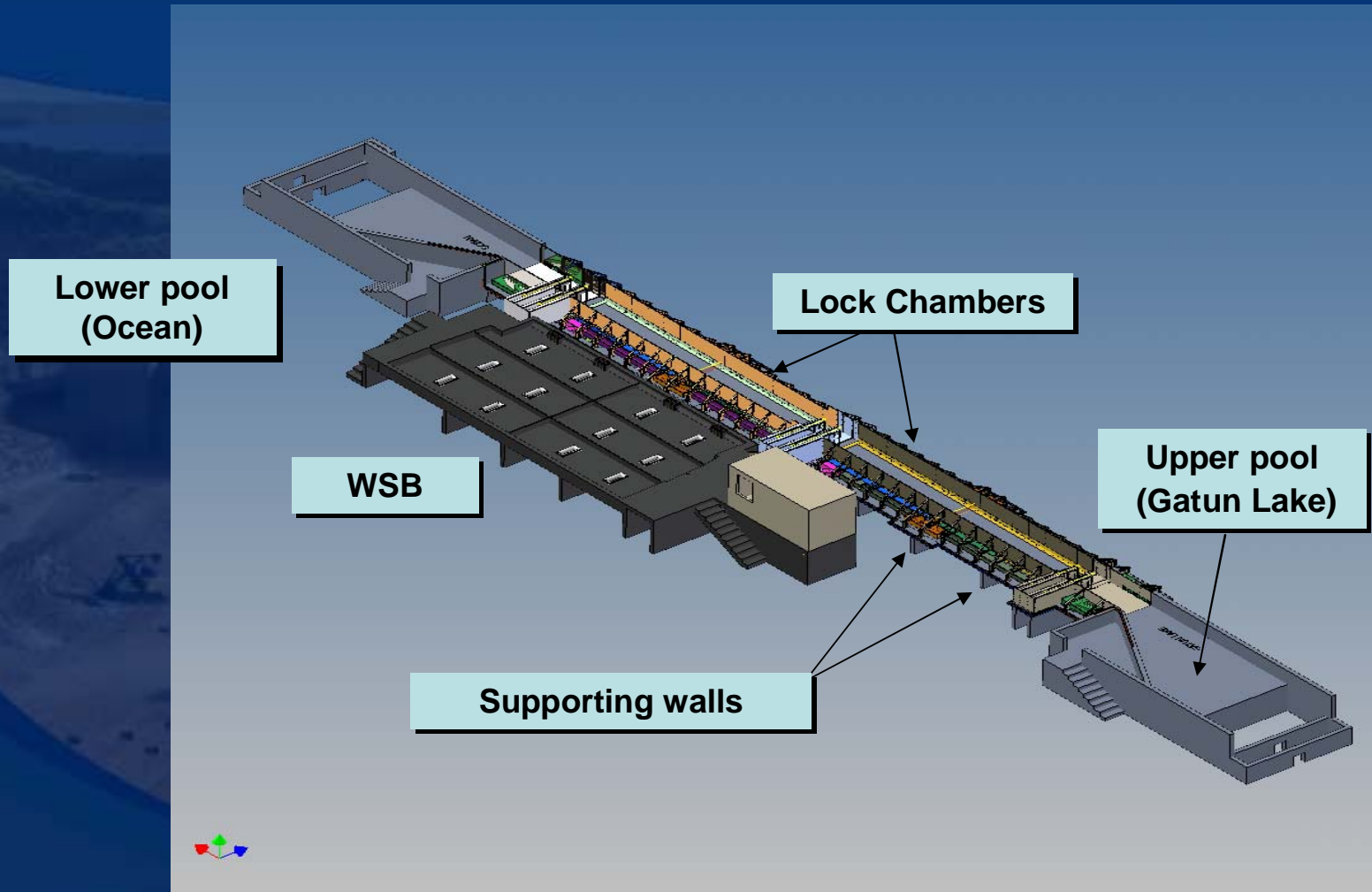


With the water saving basins the new locks will use **7% less** water than the existing locks



Locks Physical Hydraulic Model

1:30 Scale



3D Concept drawing of the physical model

Locks Physical Hydraulic Model



View of the upper chamber & pool

Locks Physical Hydraulic Model



Tank Test - Navigation Model

1:80 Scale



Gatun Lake and Culebra Cut Deepening and Widening

Deepening and Widening
of the Gatún Lake and
Culebra Cut Navigation Channels
(Dredging - 27 M m³)



Gaillard Cut Widening by Panama Canal Dredgers



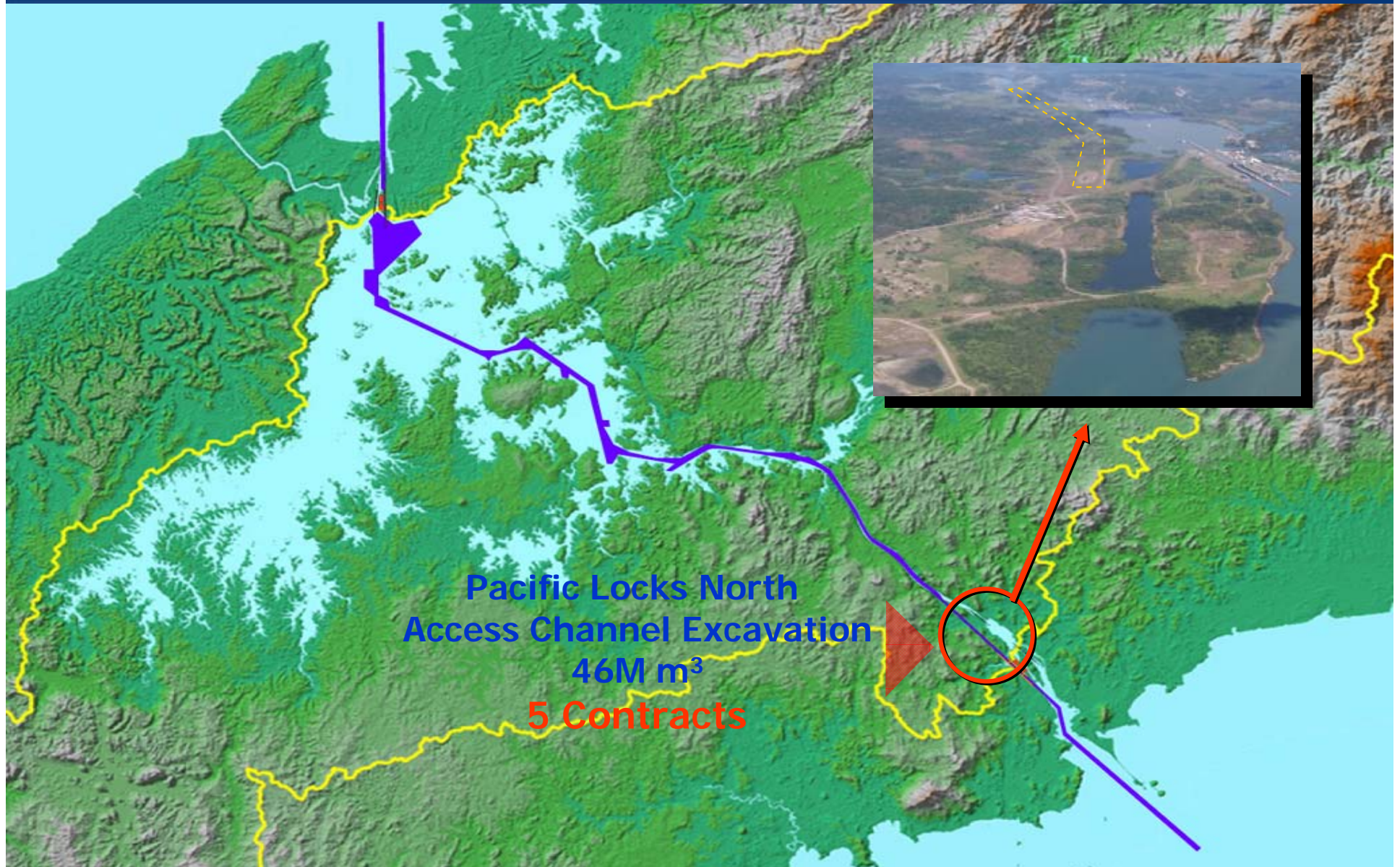
1957 – 1971
Widening of Gaillard Cut from
91.5 m (300') to 152.4 m (500')



1992 – 2002
Widening of Gaillard Cut from
152.4 m (500') to 192 m (630')

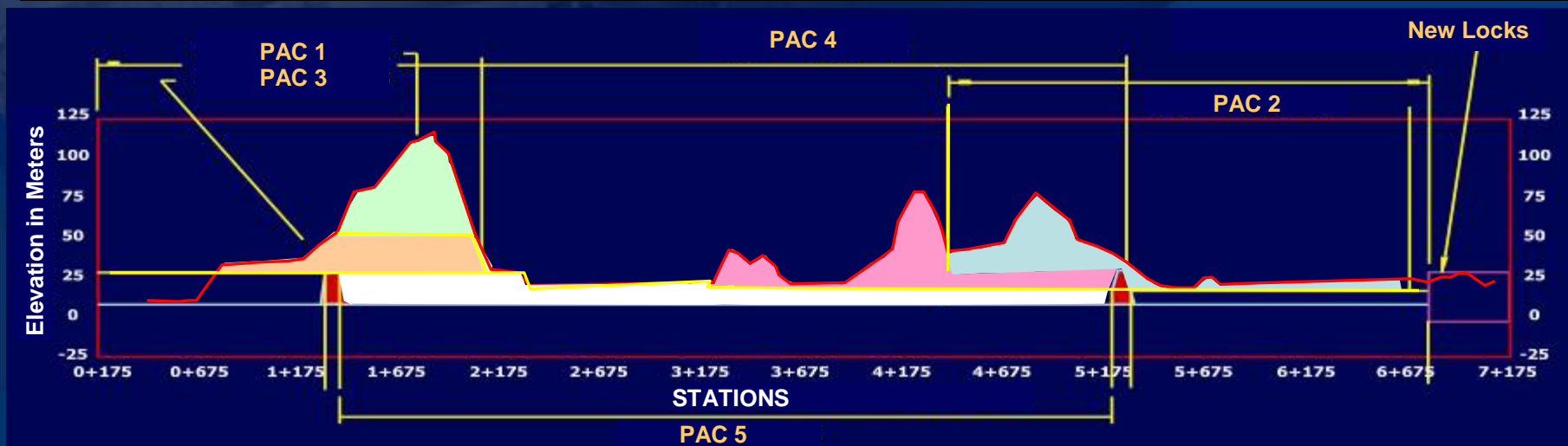
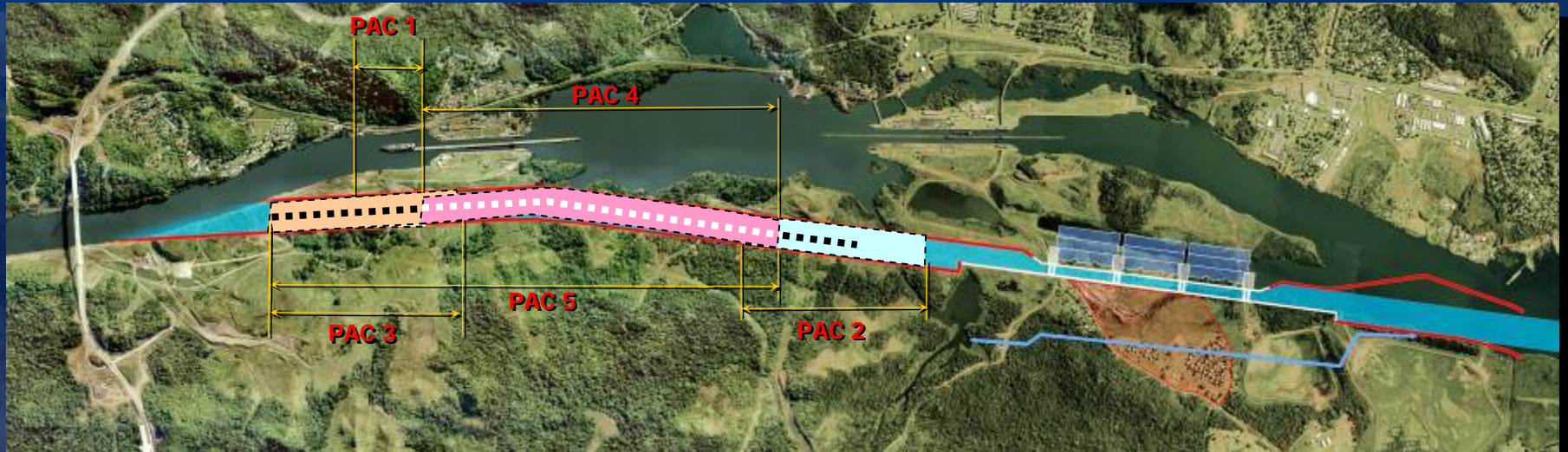


North Access Channel to New Pacific Locks



North Access Channel to New Pacific Locks

46M m³ of Dry Excavation - 5 Contracts





North Access Channel to New Pacific Locks
Phase 1 – First Contract 7.4 Mm3
Bid was awarded July 17, 2007 and work is well underway



North Access Channel to New Pacific Locks

Phase 2 – Second Contract 7.5 Mm3

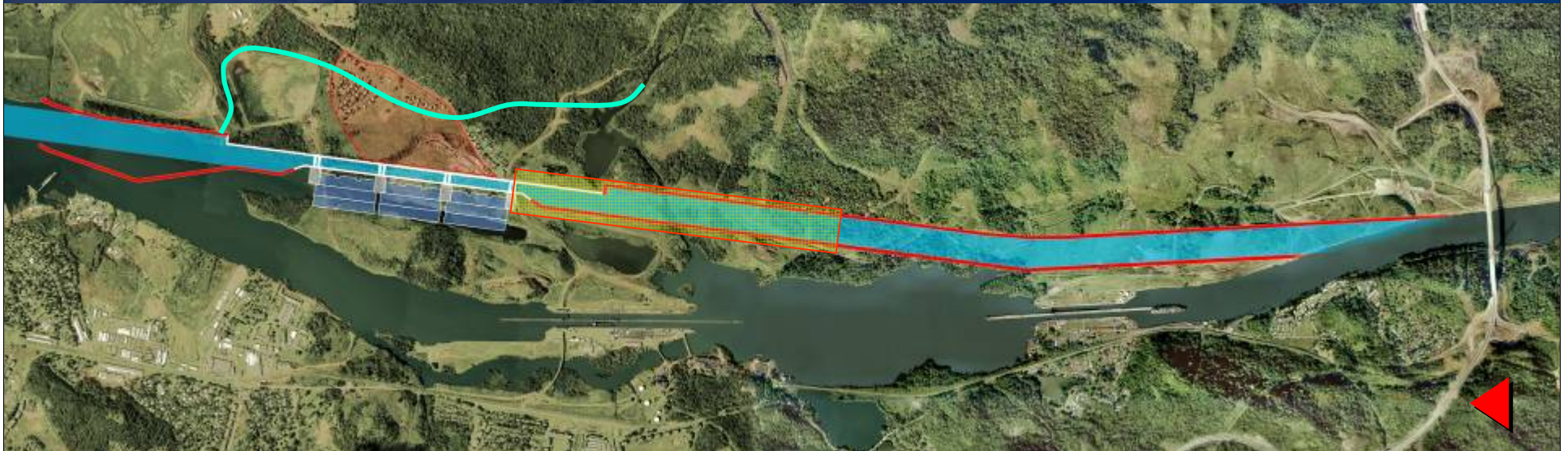


RFP issued: September 18, 2007

Pre-Bid Conference and site visit: October 2, 2007

Bid Opening: November 14, 2007

Award: November 27, 2007.

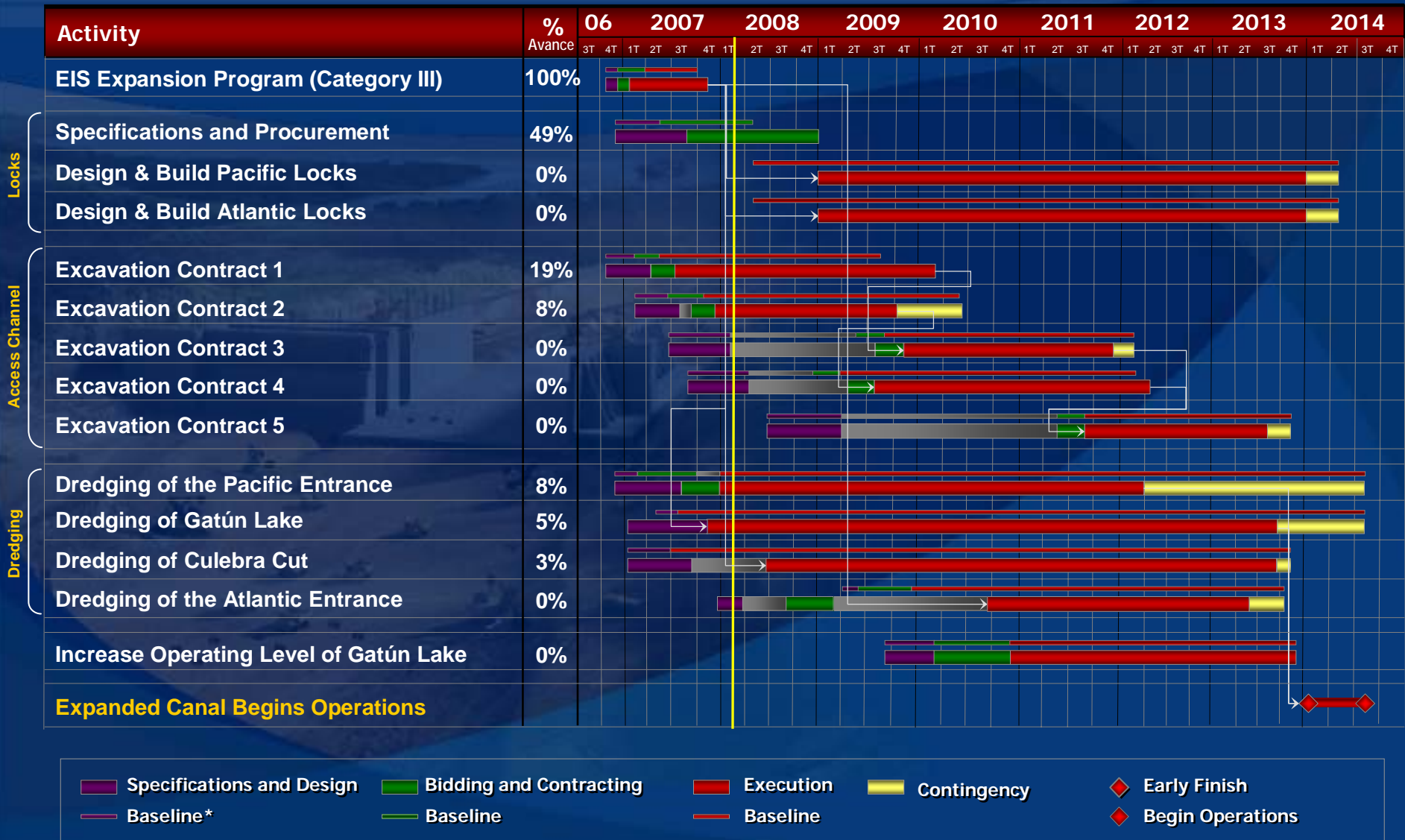


Pacific Entrance Deepening and Widening

RFP Published August 30, 2007



Schedule of Main Components of the Project



Uninterrupted Transit Operations during Dredging Works



Uninterrupted Transit Operations during Dredging Works



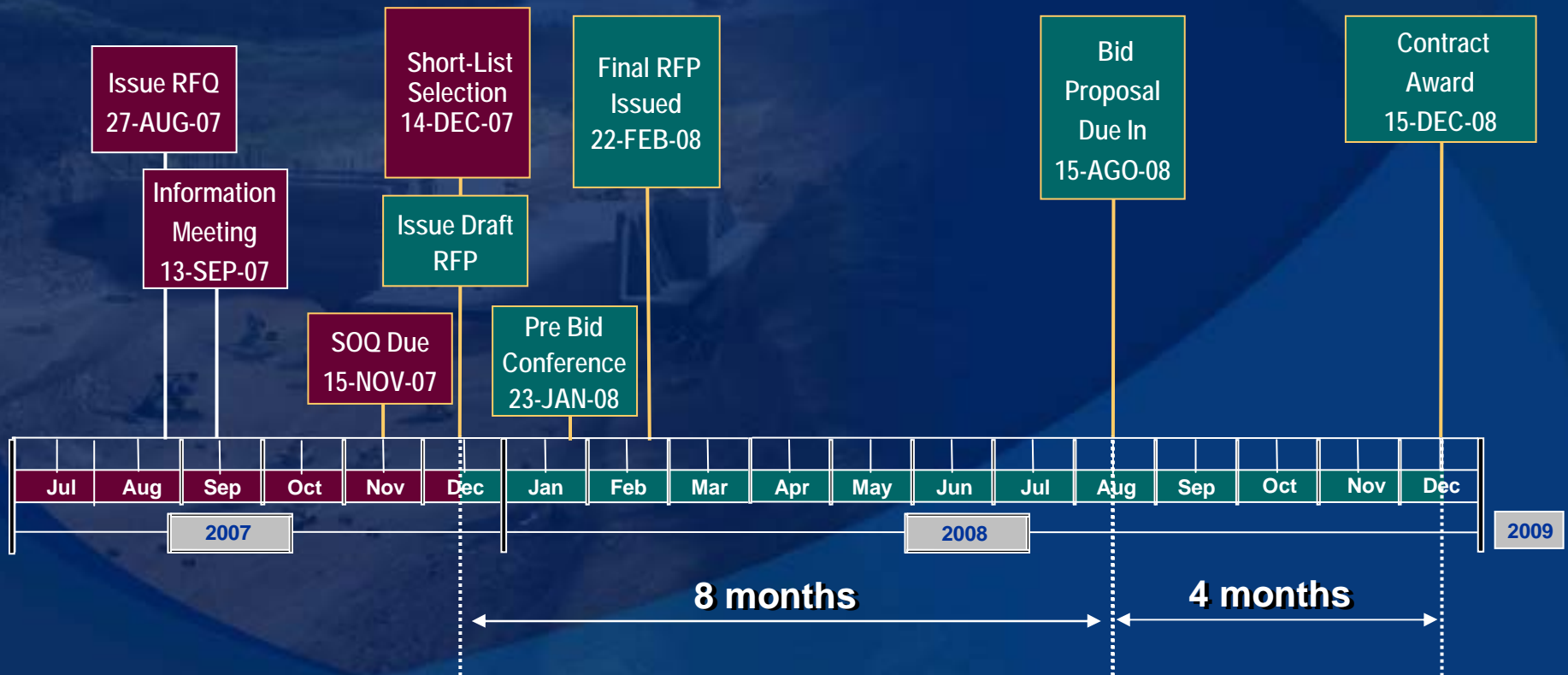
Uninterrupted Transit Operations during Locks & Dry Excavation Works



Agenda

- **Traffic AF2007**
- **Alternative Routes**
- **Expansion Program Components, Scope & Time Line**
- **Locks Contracting Plan**

Locks Design-Build Project Contracting Schedule



C.A.N.A.L. Consortium

Members:

- **ACS Servicios, Comunicaciones y Energía, S.L. – Leader, (Spain)**
- **Acciona Infraestructuras, S.A. – (Spain)**
- **Fomento de Construcciones y Contratas, S.A. – (Spain)**
- **Hochtief Construction AG – (Germany)**
- **Constructoras ICA S.A. de C.V. – (Mexico)**

Designers (subcontractors):

- **Sener Ingeniería y Sistemas, S.A. – (Spain)**
- **Haskoning Nederland BV – (Netherlands)**
- **Hochtief Consult – (Germany)**
- **Mott Macdonald Limited – (United kingdom)**

Manufacturer of Gates:

- **ACS Servicios, Comunicaciones y Energía, S.L. - (Spain)**

Panama Atlantic-Pacific Consortium

Members:

- **Bouygues Travaux Publics – Leader (France)**
- **Bilfinger Berger – (Germany)**
- **VINCI Construction Grands Projets – (France)**
- **Construcoes e Comercio Camargo Correa S.A. – (Brasil)**
- **Construtora Andrade Gutierrez S.A. – (Brasil)**
- **Construtora Queiroz Galvao S.A. – (Brasil)**
- **ALSTOM Hydro Energia Brasil – (France)**
- **BARDELLA Industrias Mecánicas – (Brasil)**

Designer (subcontractor):

- **AECOM – Leader (United States)**

Manufacturer of Gates:

- **ALSTOM Hydro Energia Brasil – (France)**

Bechtel, Taisei, Mitsubishi Corporation

Members:

- **Bechtel Internacional, Inc. – Leader (United States)**
- **Taisei Corporation – (Japan)**
- **Mitsubishi Corporation – (Japan)**

Designer:

- **Bechtel Internacional, Inc. – Leader (United States)**

Manufacturer of Gates (subcontractor):

- **Wuchang Shipyard – (China)**

United for the Canal

Members:

- **Sacyr Vallehermoso S.A. – Leader (Spain)**
- **Impregilo S.p.A. – (Italy)**
- **Jan de Nul n.v. – (Belgium)**
- **Constructora Urbana, S.A. – (Panama)**

Designers (subcontractors):

- **Montgomery Watson Harza (MWH) – Leader (United States)**
- **IV-Groep – (Netherlands)**
- **Tetra Tech – (United States)**

Manufacturer of Gates (subcontractor):

- **Heerema Fabrication Group – (Netherlands)**

Global Ranking of Companies involved in the Prequalification

ENR
Engineering News-Record

The Top
225
Global
Contractors

RANK 2007	RANK 2006	FIRM	2006 REVENUE (\$ MIL.)		NEW CONTRACTS IN 2006 (\$ MIL.)
			TOTAL	INTERNATIONAL	
1	1	VINCI, Rueil-Malmaison, France	32,699.0	11,065.0	29,197.0
2	2	BOUYGUES, Paris, France	24,960.0	9,576.0	30,053.0
3	4	CHINA RAILWAY ENGINEERING CORP., Beijing, China	21,295.9	658.3	27,694.6
4	3	HOCHTIEF AG, Essen, Germany	19,795.0	17,598.9	25,973.5
5	8	GRUPO ACS, Madrid, Spain	18,526.6	3,004.0	NA
6	7	CHINA RAILWAY CONSTRUCTION CORP., Beijing, China	17,326.8	414.8	22,353.0
7	12	CHINA STATE CONSTRUCTION ENG'G CORP., Beijing, China	16,146.9	2,956.1	24,608.8
8	5	SKANSKA AB, Solna, Sweden	15,722.2	12,347.1	18,219.6
9	6	BECHTEL, San Francisco, Calif., U.S.A.	15,367.0	8,931.0	13,904.0
10	20	CHINA COMMUNICATIONS CONSTRUCTION GROUP, Beijing, China	14,734.4	3,380.7	20,513.5
11	10	TAISEI CORP., Tokyo, Japan	14,176.0	2,069.0	14,343.0
12	9	KAJIMA CORP., Tokyo, Japan	13,981.4	2,150.6	14,582.2
13	18	EIFFAGE, Asnieres-sur-Seine, France	13,970.0	2,010.0	12,645.0
14	15	STRABAG SE, Vienna, Austria	13,502.0	10,799.0	11,050.0
15	14	SHIMIZU CORP., Tokyo, Japan	12,672.6	1,343.2	13,271.6
16	13	OBAYASHI CORP., Tokyo, Japan	12,462.0	1,779.0	10,120.0
17	24	FCC, FOMENTO DE CONSTR. Y CONTRATAS, Madrid, Spain	11,894.2	2,155.3	NA
18	26	CHINA METALLURGICAL GROUP CORP., Beijing, China	11,628.0	307.0	23,158.0
19	18	TAKENAKA CORP., Osaka, Japan	11,293.0	1,649.0	10,751.0
20	17	FLUOR CORP., Irving, Texas, U.S.A.	11,273.7	6,338.5	19,276.2
21	21	ROYAL BAM GROUP NV, Bunnik, The Netherlands	10,844.0	5,892.0	NA
22	25	BILFINGER BERGER AG, Mannheim, Germany	9,967.0	6,553.0	12,563.0
23	22	BALFOUR BEATTY PLC, London, U.K.	9,073.0	2,380.0	9,962.0
24	28	BOVIS LEND LEASE, Harrow, Middlesex, U.K.	8,353.0	5,680.0	10,829.0
25	27	TECHNIP, Paris La Defense, France	8,245.0	8,084.0	7,714.0
26	23	KBR, Houston, Texas, U.S.A.	8,150.2	7,426.4	3,697.7
27	29	LEIGHTON HOLDINGS LTD., St. Leonards, NSW, Australia	7,608.0	1,263.0	7,792.0
28	33	SACYR VALLEHERMOSO, Madrid, Spain	6,912.0	1,361.0	7,864.0
29	16	FERROVIAL AGROMAN SA, Madrid, Spain	6,523.0	2,027.0	7,031.0
30	35	SHANGHAI CONSTR. (GROUP) GENERAL CO., Shanghai, China	6,276.3	580.0	6,282.5

4 of the Top 5
Global
Contractors

9 of the Top 30
Global Contractors

All 4 Consortia
have at least 1
member in the
Top 30 list

Global Ranking of Companies involved in the Prequalification

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The Top
225
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Contractors

RANK 2007	RANK 2006	FIRM	2006 REVENUE (\$ MIL.)		NEW CONTRACTS IN 2006 (\$ MIL.)
			TOTAL	INTERNATIONAL	
52	47	WHITING-TURNER CONTRACTING CO., Baltimore, Md., U.S.A.	3,339.0	0.0	4,500.0
53	51	IMPREGILO SPA, Milan, Italy	3,333.0	1,714.0	5,851.0
54	63	SK ENGINEERING & CONSTRUCTION, Seoul, S. Korea	3,264.4	649.9	4,610.9
102	125	TURNER INDUSTRIES GROUP LLC, Baton Rouge, La., U.S.A.	1,486.6	86.5	413.0
103	**	JAN DE NUL GROUP, Hofstade/Aalst, Belgium	1,461.8	1,252.8	2,334.4
104	105	THE WEITZ CO. LLC, Des Moines, Iowa, U.S.A.	1,444.9	3.2	1,578.9
125	113	BE&K INC., Birmingham, Ala., U.S.A.	1,158.1	85.0	1,850.0
126	138	CONSTRUTORA ANDRADE GUTIERREZ SA, Sao Paulo, Brazil	1,092.6	240.8	1,655.8
127	135	QINGDAO CONSTRUCTION GROUP CORP, Qingdao City, China	1,088.0	175.0	1,006.0
128	134	CONSTRUCOES E COMERCIO CAMARGO CORREA, Sao Paulo, Brazil	1,069.4	63.3	1,665.3
129	147	E. PIHL & SON AS, Kgs. Lyngby, Denmark	1,020.6	540.9	1,283.3

Update on the Panama Canal Expansion Program



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