SAN PEDRO BAY CARGO FORECAST

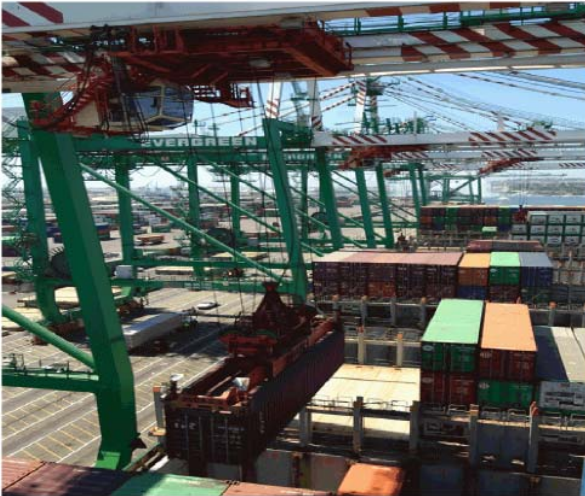## EXECUTIVE SUMMARY

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The Ports of Los Angeles & Long Beach

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Overview

This report presents the long-term, demand-based cargo forecast for the San Pedro Bay ports through the year 2030. The forecast is based on the most recent actual trade and economic data available and is inherently neutral, neither intentionally conservative nor optimistic. There are two major elements to this forecast: an econometric cargo forecast, and a competitive assessment.

Econometric Cargo Forecast. The first element is an econometric forecast of expected cargo growth for the U.S., the West Coast, and San Pedro Bay. This is a demand-based forecast, effectively assuming that transportation capacity will be available here and abroad to meet the demand, and that port cargo shares remain unchanged. The forecast was produced using linked economic forecasting models, including individual country macroeconomic forecasting models, world industry and industry-specific forecasting models, and 77 individual commodity trade models (as shown at right). The cargo forecast includes high and low growth scenarios as well as a base case.
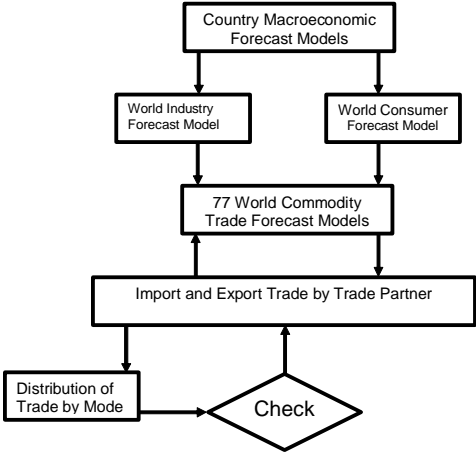
The forecast represents the most likely path of growth over the long-term, assuming no significant geopolitical or other shocks to the world economy. This cargo forecast pattern uses a "trend-long" baseline economic forecast that smoothes out the influence of business cycles on long-term economic and trade growth. The "trend-long" approach is consistent with the long-term trend towards more moderate business cycles peaks and valleys globally, and avoids the inherent uncertainty of business cycle timing.

Competitive Assessment. The competitive assessment addresses future shifts in market shares and the resulting cargo diversions due to changes in competitive positions and carrier/customer practices. This step includes high share and low share scenarios, as well as a base case. The competitive assessment relies heavily on the informed judgment of the project team regarding likely developments at competing ports and the Panama and Suez Canals, emerging trends in bulk and container shipping, and the likely responses of carriers, shippers, and consignees. The competitive assessment led to adjustments in the containerized trade forecast to account for likely diversions to other ports or routes.

U.S. and West Coast Trade Forecasts

U.S. Tonnage and TEU Forecasts. The long-term baseline cargo forecasts (Exhibit 1) were based on the long-term trend projection from Global Insight's macroeconomic and industry

econometric forecasting models. This projection corresponds to the mean of all possible long-term paths that the economy could follow in the absence of major disruptions. The economic growth in U.S. trade partner economies is critical to both demand for U.S. exports and as sources of supply for imported goods. The forecast includes a long-term world economic growth pattern similar to the U.S., with slightly slower real economic growth than in the recent past. This slowdown reflects demographic forces similar to those of the U.S., as well as the maturation of many developing economies.

Overall, U.S. trade tonnage is expected to grow at an average of 1.5% annually for the forecast period, with imports growing slightly faster than exports. Container trade is expected to grow significantly faster than trade as a whole, 4.9% on average. The faster growth of imports (5.5%) versus exports (3.1%) will widen the container imbalance over the forecast period.

Exhibit 1: U.S. International Trade Forecast

| | Forecast | | | | | | CAGR (%) | | | 25 Yr % |
	2005	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Exports										
Metric Tons (000)	379,379	412,630	444,201	470,889	500,043	535,207	1.7	1.3	1.3	1.4
TEU (000)	8,501	10,675	12,373	14,001	15,877	18,200	4.7	2.7	2.7	3.1
Imports										
Metric Tons (000)	1,000,285	1,104,655	1,203,238	1,289,511	1,370,894	1,485,101	2.0	1.6	1.4	1.6
TEU (000)	18,629	25,477	33,163	42,468	54,432	71,327	6.5	5.2	5.3	5.5
Total										
Metric Tons (000)	1,379,665	1,517,284	1,647,438	1,760,400	1,870,937	2,020,309	1.9	1.5	1.4	1.5
TEU (000)	27,130	36,152	45,536	56,469	70,309	89,527	5.9	4.6	4.7	4.9

Increasing Asian imports have shifted geographic container traffic patterns over the last several years. A resurgence in "all water" container services from Asia to the U.S. East Coast has diverted some Asian trade away from West Coast ports (Exhibit 2). In the long-term, however, continued diversification in use of U.S. ports and capacity constraints on the Panama Canal are expected to moderate this trend and stabilize the West Coast share.

Exhibit 2: East/West Loaded TEU Shares
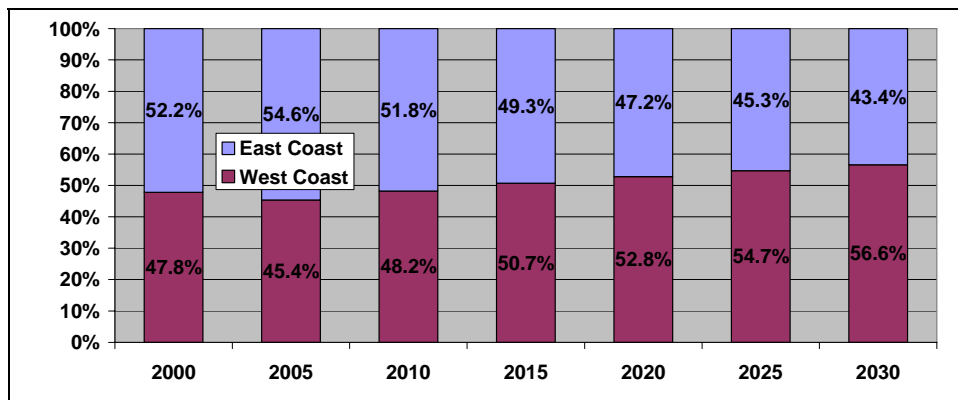
West Coast Tonnage and TEU Forecast. U.S. West Coast tonnage trade over the forecast period is projected to increase at a compound average annual rate of growth of 3.1% (Exhibit 3), with the pace of growth uneven over the long term. Export tonnage demand through the West Coast ports is expected to increase at 2.0%. The import tonnage forecast reflects a slowdown

from recent years (when tonnage grew at 5.4% between 2000 and 2005) to a 3.6% average out to 2030.

Exhibit 3: West Coast International Trade Forecast

| | Forecast | | | | | | CAGR (%) | | | 25 Yr % |
	2005	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Exports										
Metric Tons (000)	95,169	117,545	129,506	137,885	146,714	157,338	4.3	1.6	1.3	2.0
TEU (000)	3,331	4,178	4,908	5,523	6,190	7,012	4.6	2.8	2.4	3.0
Imports										
Metric Tons (000)	154,220	188,222	223,783	263,471	310,841	377,876	4.1	3.4	3.7	3.6
TEU (000)	8,976	13,262	18,181	24,305	32,258	43,657	8.1	6.2	6.0	6.5
Total										
Metric Tons (000)	249,389	305,766	353,289	401,357	457,555	535,214	4.2	2.8	2.9	3.1
TEU (000)	12,307	17,440	23,089	29,828	38,447	50,669	7.2	5.5	5.4	5.8

West Coast containerized cargo demand continues to increase throughout the forecast period, with total TEU projected to grow at 5.8%. Demand for import container cargo drives this growth, with an average of 6.5% over the period to 2030. while export TEU are projected to grow at 3.0%. Demand for export container traffic through the West Coast ports is projected to average 4.6% over the 2005 to 2010 period as U.S. exports to Asia accelerate, then slow to an overall average of 3.0% to 2030.

San Pedro Bay Trade Forecast

San Pedro Bay International Tonnage Forecast

Global Insight's baseline trade forecast for international imports and exports through the San Pedro Bay ports projects continued tonnage and TEU growth through the forecast horizon but with declining *rates* of growth (Exhibit 4).

Exhibit 4: San Pedro Bay Baseline International Tonnage Forecast

| EXPORTS | 000 METRIC TONS | | | | | | | CAGR - % | | | 25 Yr % |
	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Container	18,779	22,088	29,050	36,378	42,418	48,403	55,685	9.1	3.9	2.8	4.4
Dry Bulk	9,536	10,837	11,733	12,064	12,276	12,566	12,939	4.2	0.5	0.5	1.2
Liquid Bulk	2,804	2,695	3,000	3,274	3,478	3,668	3,894	1.4	1.5	1.1	1.3
General Cargo	1,193	1,377	1,595	1,758	1,891	2,048	2,235	6.0	1.7	1.7	2.5
TOTAL EXPORTS	**32,311**	**36,997**	**45,378**	**53,474**	**60,063**	**66,685**	**74,754**	**7.0**	**2.8**	**2.2**	**3.4**

| IMPORTS | 000 METRIC TONS | | | | | | | CAGR - % | | | 25 Yr % |
	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Container	43,331	49,513	66,066	89,339	117,697	154,002	205,767	8.8	5.9	5.7	6.4
Dry Bulk	7,833	11,095	12,672	14,889	16,736	18,328	20,283	10.1	2.8	1.9	3.9
Liquid Bulk	20,790	24,648	26,257	28,665	30,653	32,185	33,646	4.8	1.6	0.9	1.9
General Cargo	4,277	5,144	5,939	7,106	8,315	9,670	11,378	6.8	3.4	3.2	4.0
TOTAL IMPORTS	**76,231**	**90,400**	**110,933**	**139,999**	**173,401**	**214,186**	**271,074**	**7.8**	**4.6**	**4.6**	**5.2**

| TOTAL TRADE | 000 METRIC TONS | | | | | | | CAGR - % | | | 25 Yr % |
	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Container	62,110	71,600	95,116	125,718	160,115	202,405	261,452	8.9	5.3	5.0	5.9
Dry Bulk	17,369	21,932	24,405	26,953	29,011	30,894	33,222	7.0	1.7	1.4	2.6
Liquid Bulk	23,594	27,343	29,257	31,939	34,131	35,853	37,541	4.4	1.6	1.0	1.9
General Cargo	5,469	6,522	7,534	8,863	10,206	11,718	13,613	6.6	3.1	2.9	3.7
TOTAL TRADE	**108,543**	**127,397**	**156,311**	**193,473**	**233,464**	**280,870**	**345,828**	**7.6**	**4.1**	**4.0**	**4.7**

Total San Pedro Bay tonnage is forecast to increase at an average annual rate of 4.7% through 2030, with exports growing more slowly (averaging 3.4%) than imports (averaging 5.2%). The pace of tonnage growth slows significantly over the long term in both directions and for all cargo types, though slower growth is most notable for exports and bulk commodities. Nevertheless, sustained demand will push general cargo tonnage to more than double by 2030 while total bulk tonnage demand will increase 75% over the same period. Trade with China is projected to remain the largest and grow the fastest. Growth in imports from China will slow from double digit rates to average 7.4 % per year through 2030, while export demand to China is projected to average 5.7%.

The short-term forecast for the next three to five years incorporates influences of the current business cycle on economic and trade growth, as the ability of the forecasting models to reflect current and near-term economic policy influences is much better. For this short-run period in the forecast, the business cycle is still influencing the outlook for trade at a commodity and trade partner country level.

The imbalance of U.S. goods trade persists. Because the U.S. continues to lose overall competitiveness for some of the goods commonly exported through the San Pedro Bay ports, the growth in exports reflects a long-term loss in U.S. export share.

Containerized Tonnage. As Exhibit 5 clearly shows, container trade accounts for most of the tonnage growth.

Exhibit 5: San Pedro Bay Tonnage Growth
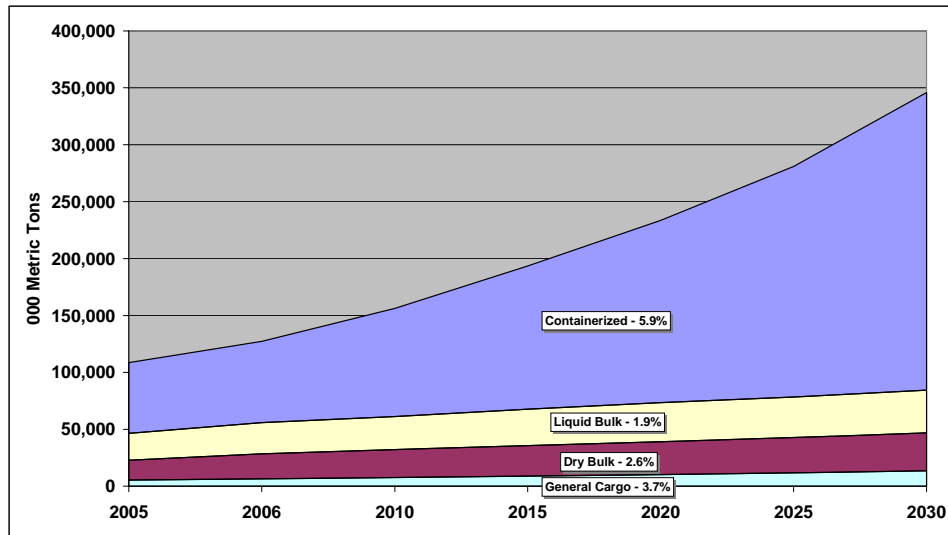
Export container tonnage demand is projected to increase at an average of 4.4% over the forecast period as China continues to grow in importance as a customer for U.S. containerized exports. While container tonnage demand more than doubles over the forecast period, the rate of export tonnage growth slows over time as the U.S. loses market share to other exporting countries and as the U.S. economy shifts increasingly towards services. Import container tonnage demand is projected to remain higher, averaging 6.4% over the forecast period. However, the container

tonnage growth rate falls below 6% between 2010 and 2020 as U.S. capacity growth for Asian imports slows.

Dry Bulk Tonnage. Dry bulk export tonnage demand is projected to increase at an average annual rate of 1.2% over the forecast period to 2030. The dry bulk commodity exports through the San Pedro Bay ports are led by petroleum coke. Dry bulk tonnage imports are expected to increase at an average annual rate of 3.9% over the forecast period, with the annual rate of growth declining over time. Among the dry bulk commodity groups with the greatest share of imports are non-metallic products, iron and steel and stone, clay and glass materials. Overall, dry bulk tonnage demand growth slows, falling to less than 2% for the 2020 to 2030 period.

Liquid Bulk Tonnage. Slow forecast growth in liquid bulk tonnage reflects the outlook for slow growth in crude oil demand, because refinery capacity in Southern California is not expected to be expanded significantly by 2030. The level of liquid bulk imports increases as domestic crude oil supplies from Alaska and California decline.

General Cargo Tonnage. The demand for general cargo exports is projected to grow at an average annual rate of 2.5% over the forecast period, with more rapid growth in the near term. The relatively slow demand growth for general cargo commodities still results in almost a doubling of tonnage demand between 2005 and 2030, as waste paper, chemical products and refrigerated meat, dairy and fish categories see above average annual growth. Import general cargo tonnage demand is projected to increase at an average annual rate of 4.0% over the forecast period, with China now and in 2030 the largest source of imports. Automobile imports are the top general cargo category today and they are projected to grow at 3% annually through 2030, as "transplant" production slows in favor of less expensive imported finished autos, including autos from China.

San Pedro Bay Container Trade Forecast

Base Share/Base Case Container Forecast. The base case container TEU forecast and the high growth and low growth alternatives were each matched with base, high, and low market share scenarios. The base share/base case scenario is meant to represent the most likely container cargo growth path for San Pedro Bay ports.

The base share/base case container forecast for trade demand through the San Pedro Bay ports reflects both the econometric forecast of trade demand and the implications of the competitive assessment for the San Pedro Bay cargo share. The forecast calls for continued growth in inbound loaded containers from a larger base, resulting in an increasing container imbalance versus export loads. Exhibit 6 gives a high-level summary of the base share/base case forecast.

Exhibit 6: Base Share/Base Case TEU Forecast Summary

| Summary	000 TEU							CAGR - %			25 Yr %
	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Inbound Loads	7,227	8,128	10,568	14,412	19,242	25,410	34,219	7.9	6.2	5.9	6.4
Outbound Loads	2,393	2,714	3,267	3,961	4,567	5,206	5,997	6.4	3.4	2.8	3.7
Outbound Empties	4,574	4,918	6,425	9,197	12,914	17,780	24,836	7.0	7.2	6.8	7.0
Total TEU	14,194	15,760	20,260	27,570	36,723	48,396	65,052	7.4	6.1	5.9	6.3

- Inbound loads (imports) show strong near-term growth at 7.9% between 2005 and 2010, consistent with what the ports saw in 2005-2006, despite a flat year in 2007. Import growth is expected to return to more typical and sustainable levels of 6.2% in 2010-2020 and 5.9% in 2020-2030. The overall 2005-2030 growth of 6.4% is somewhat slower than the 7.9% experienced in 2000-2005.

- Outbound loads (exports) are expected to grow more slowly as has been typical of both past forecasts and past observed traffic levels, again despite an uptick in 2007. Rapid growth in 2005-2010 and moderate to slow growth in 2010-2030 mirrors the import pattern at a lower level.

- Outbound empties are expected to grow rapidly as a result of the divergence between inbound and outbound loaded growth rates.

As the tonnage forecast discussed, containerized exports are expected to grow at a declining rate. Southeast and Northeast Asian nations will remain the major customers for U.S. containerized exports through San Pedro Bay. China will be the mainstay of containerized export growth, propping up what would otherwise be even slower growth rates. Imports will also be dominated by China. China currently accounts for 66% of import TEU at San Pedro Bay and that share is expected to reach 82% by 2030. Outbound *domestic* containerized cargo will exhibit very modest growth, averaging only 1.5% over the forecast period.

Empty Container Forecast. Empty container movements are driven by the difference between inbound and outbound loads. The divergence between rapid import TEU growth and slower export TEU growth will increase both the percentage and absolute number of outbound empties (Exhibit 7). Inbound and outbound loads are forecast directly; outbound empties are estimated at 88% of the inbound/outbound imbalance. (The volume of inbound empties is very small.)

Exhibit 7: Base Case Outbound TEU Mix
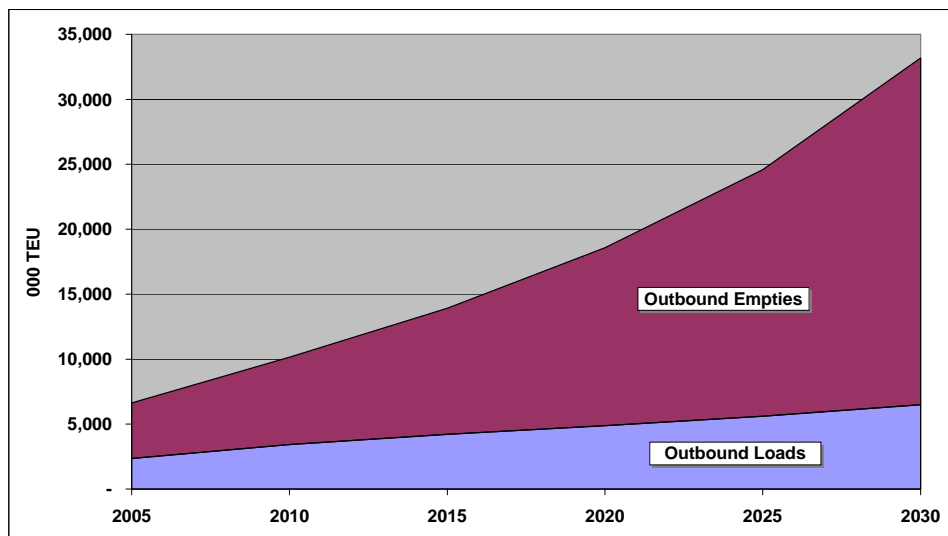
Competitive Assessment

The competitive position of the San Pedro Bay ports for containerized cargo is based on a few major factors.

- The enormous Southern California local market.

- Southern California's role as a U.S. distribution hub.

- First-call vessel services that attract service sensitive intermodal imports.

- A supply of domestic trailers and containers for transloading.

The study team examined a number of competitive factors to estimate potential diversions under base, high, and low share scenarios. Despite a flurry of activity at other ports and widely publicized proposals for others, few of the trends or events on the horizon would alter any of these basic advantages. The only developments likely to alter competitive advantages are the new port at Prince Rupert and the improved U.S. rail access from Lazaro Cardenas. Capacity additions at other ports will accommodate growth there but will not change their underlying competitive positions vis-à-vis San Pedro Bay.

Congestion. Congestion of marine and inland facilities is perhaps the major issue facing the San Pedro Bay ports and the major impetus for potential cargo diversions. Congestion-related diversions resulting in loss of San Pedro Bay market share can include peak period diversions to cope with peak season congestion or disruptions.

Cost. Although costs for terminal handling, drayage, and on-dock transfer differ between ports, they also differ between terminals and carriers at the same port. Previous forecast efforts and other studies (including the recent elasticity studies for SCAG) have found that net cost differences are small, and are not major factors in port choice.

Sailing Distances. Sailing distance is a major factor in the time and cost of alternative trade routes. To the south, Ensenada (and the proposed location of Punta Colonet) are close enough to San Pedro Bay to make little practical difference. Farther south, service to Lazaro Cardenas or Manzanillo is typically 2-3 days longer than service to San Pedro Bay. North of San Pedro Bay, Oakland and the PNW ports are one-half to two days closer to major Asian ports. The advantages for ports north of San Pedro Bay are reflected in intermodal diversions in the market share scenarios.

Rail Service. With the intense port competition for discretionary cargo, comparisons between inland rail service options gain significance. The study team analyzed the rail distance differences to the four key mid-continent gateways – Chicago, Houston, Kansas City, and Memphis. The results suggest that sizable rail intermodal diversions are most likely for Oakland and PNW service to Chicago and the Midwest, and Lazaro Cardenas service to Houston and points east.

Panama Canal. Trade routes through the Panama Canal bring Gulf and East Coast ports into competition with San Pedro Bay. Over the last few years a significant volume of Asia-U.S. trade

has shifted from West Coast intermodal routes to all-water service at East Coast ports. Recent data suggest that these trends have plateaued, and in fact San Pedro Bay regained market share in 2006. The Panama Canal is becoming congested, more expensive, and less reliable, and will have limited reserve capacity even when new locks are built. Projections indicate that the West Coast share will recover slightly and stabilize in 2010-2030. Some diversions to the Panama Canal are incorporated in the Base Share and Low Share scenarios.

Suez Canal. The impact of the Suez Canal depends on trade growth with the Indian Subcontinent. India is generally regarded as the breakpoint at which liner service to North America through the Suez Canal becomes competitive with transpacific liner service. As exports from Southeast Asia and India grow in importance the Suez services to U.S. East Coast ports are expected to grow apace. Yet the anticipated growth of Indian maritime exports has been constrained by several factors, and Suez Canal routing will have minimal impact in the forecast period.

Port Capacity. Capacity itself does not fundamentally change competitive position. Where other ports become advantageous for specific cargo flows their capacities define the envelope within which cargo can shift. As Exhibit 8 illustrates, currently projected capacity will eventually be outpaced by cargo growth forecasted in every region. As this demand-driven forecast is not itself constrained by San Pedro Bay capacity, the port capacity figures were used as inputs to near-term diversion potential rather than as long-term limits.

Exhibit 8: West Coast Diversion Capacities at 80% Utilization
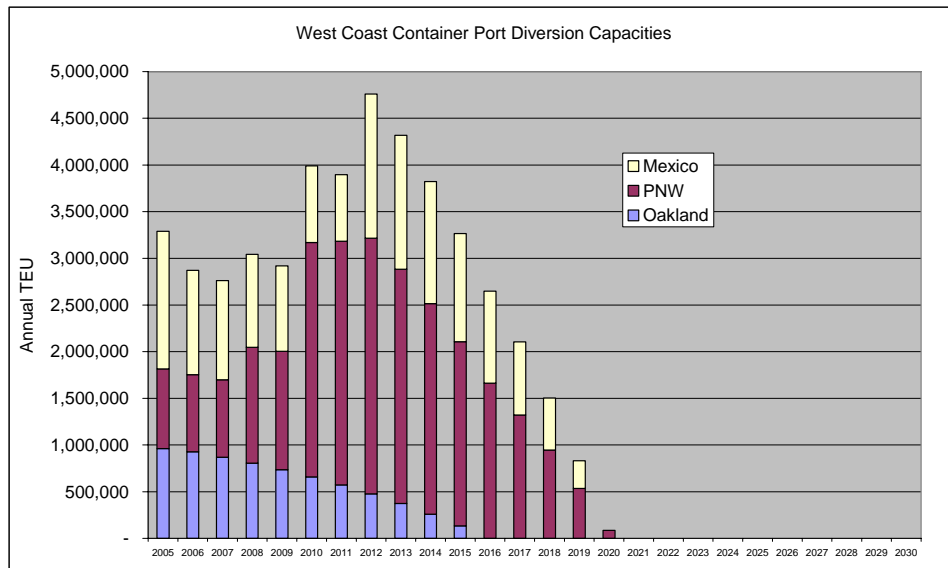
Cargo Share Implications. Based on the competitive assessment the base share/base case scenario anticipates four categories of potential diversions.

- All-water diversions of Asian cargo to and from the Atlantic Seaboard, South Central, and Southeast regions beginning with completion of Panama Canal expansion in 2015.

- Intermodal cargo diversions to Oakland or the PNW ports. Most likely, the diverted cargo would be spread over multiple ports and terminals.

- Diversions from the Southeast and South Central due to Mexican port development, particularly at Lazaro Cardenas.

- Peak season diversions of 1.3%, corresponding to the peak volumes encountered in the congestion-prone months of August through October.

The scenario results in diversions rising from 4.5% in 2010 to 7.1% by 2030 (Exhibit 9), and reduces the 2030 demand forecast total from 70,018,000 annual unadjusted TEU to 65,052,000 adjusted TEU. These adjustments are incorporated in the base share/base case forecast shown above in Exhibit 6. Different adjustments were made in the high share and low share scenarios.

Exhibit 9: Base Share/Base Case Share Adjustments

Base Share/Base Case	2005	2006	2010	2015	2020	2025	2030
San Pedro Bay Unadjusted	14,194	15,760	21,208	29,161	39,014	51,757	70,018
To Oakland/PNW	-	-	161	213	280	365	477
To Mexico	-	-	322	381	458	593	771
To Panama Canal	-	-	-	252	477	814	1,349
Peak Season Diversion	-	-	175	233	301	388	509
Total Diversions	-	-	948	1,590	2,291	3,361	4,966
San Pedro Bay Adjusted	14,194	15,760	20,260	27,570	36,723	48,396	65,052
% Diversion	-	-	4.5%	5.5%	5.9%	6.5%	7.1%

San Pedro Bay Intermodal Forecast. To forecast intermodal movements the study team drew on the findings of the International Trade Impact Study prepared for the Alameda Corridor Transportation Authority (ACTA) in 2007 to establish the pattern of inland distribution for San Pedro Bay import containers. The International Trade Flow Study prepared by TTX in 2006 was then used to estimate the split between "intact" marine container movements by rail and cargo transloaded to domestic units and later moved by rail. These share estimates were used to allocate the cargo growth/market share scenarios between local and intermodal segments, as shown for the base/base scenario in Exhibit 10. Total intermodal flows are expected to grow slightly slower than overall container TEU, since local and regional import demand is expected to grow faster than inland demand.

Exhibit 10: San Pedro Bay Intermodal Forecast

Base Share - Base Case Container Flow	000 TEU							CAGR - %			25 Yr %
	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
Inbound Loads	7,227	8,128	10,568	14,412	19,242	25,410	34,219	7.9	6.2	5.9	6.4
Local & Regional	2,355	2,648	3,605	4,967	6,660	8,854	12,001	8.9	6.3	6.1	6.7
Inbound Intermodal	4,872	5,479	6,964	9,446	12,582	16,556	22,219	7.4	6.1	5.9	6.3
Outbound Loads	2,393	2,714	3,267	3,961	4,567	5,206	5,997	6.4	3.4	2.8	3.7
Local & Regional	792	898	1,136	1,393	1,617	1,855	2,149	7.5	3.6	2.9	4.1
Outbound Intermodal	1,601	1,816	2,131	2,567	2,950	3,351	3,848	5.9	3.3	2.7	3.6
Outbound Empties	4,574	4,918	6,425	9,197	12,914	17,780	24,836	7.0	7.2	6.8	7.0
Local & Regional	1,375	1,540	2,173	3,144	4,438	6,160	8,669	9.6	7.4	6.9	7.6
Outbound Intermodal Empties	1,607	1,793	2,393	3,516	5,090	7,148	10,144	8.3	7.8	7.1	7.6
Total TEU	14,194	15,760	20,260	27,570	36,723	48,396	65,052	7.4	6.1	5.9	6.3
Local & Regional	5,794	6,517	8,773	12,041	16,102	21,341	28,842	8.6	6.3	6.0	6.6
Total Intermodal	8,080	9,089	11,488	15,529	20,621	27,056	36,210	7.3	6.0	5.8	6.2

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High Growth and Low Growth Scenarios

The high and low growth tonnage growth scenarios in Exhibit 11 reflect potential divergence from the baseline assumptions about U.S. and trading partner economies. The impact on future trade volumes through San Pedro Bay are significant as shown by the 100 million metric ton difference between the high and low growth scenarios by 2030.

Exhibit 11: San Pedro Bay Tonnage Forecast Scenarios

EXPORTS	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
			000 METRIC TONS					**CAGR - %**			**25 Yr %**
High Growth	32,213	36,878	45,617	55,651	65,129	75,435	87,522	7.2	3.6	3.0	4.1
Base Case	**32,213**	**36,878**	**45,253**	**53,348**	**59,939**	**66,560**	**74,630**	**7.0**	**2.9**	**2.2**	**3.4**
Low Growth	32,213	36,878	45,408	50,939	51,820	50,115	49,400	7.1	1.3	-0.5	1.7

IMPORTS	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
			000 METRIC TONS					**CAGR - %**			**25 Yr %**
High Growth	76,231	90,400	117,674	151,500	193,724	248,106	321,393	9.1	5.1	5.2	5.9
Base Case	**76,231**	**90,400**	**110,933**	**139,999**	**173,401**	**214,186**	**271,074**	**7.8**	**4.6**	**4.6**	**5.2**
Low Growth	76,231	90,400	101,991	121,704	143,229	167,262	203,513	6.0	3.5	3.6	4.0

TOTAL TRADE	2005	2006	2010	2015	2020	2025	2030	05-10	10-20	20-30	05-30
			000 METRIC TONS					**CAGR - %**			**25 Yr %**
High Growth	108,444	127,278	163,291	207,152	258,853	323,541	408,915	8.5	4.7	4.7	5.5
Base Case	**108,444**	**127,278**	**156,186**	**193,347**	**233,340**	**280,746**	**345,704**	**7.6**	**4.1**	**4.0**	**4.7**
Low Growth	108,444	127,278	147,399	172,644	195,049	217,377	252,913	6.3	2.8	2.6	3.4

The range of TEU forecast scenarios in Exhibit 12 incorporates both high and low demand forecasts and high and low share forecasts, resulting in nine different scenarios.

### *Exhibit 12: San Pedro Bay TEU Forecast Scenarios*

Scenario	2005	2006	2010	2015	2020	2025	2030
				000 TEU			
Unadjusted Base Case Forecast							
	14,194	15,760	21,208	29,161	39,014	51,757	70,018
High Growth Adjusted Forecast							
High Share	14,194	15,760	22,152	30,945	42,766	58,859	81,553
Base Share	14,194	15,760	21,813	30,386	41,877	57,492	79,455
Low Share	14,194	15,760	21,041	29,474	40,643	55,833	77,216
Base Case Adjusted Forecast							
High Share	14,194	15,760	20,747	28,305	37,854	50,204	67,937
Base Share	**14,194**	**15,760**	**20,260**	**27,570**	**36,723**	**48,396**	**65,052**
Low Share	14,194	15,760	19,141	26,180	34,764	45,780	61,544
Low Growth Adjusted Forecast							
High Share	14,194	15,760	19,071	24,569	31,190	39,050	50,776
Base Share	14,194	15,760	18,605	23,816	29,979	37,170	47,829
Low Share	14,194	15,760	17,500	22,594	28,416	35,186	45,294

From the low growth/low share case to the high growth/high share case is a very wide range, from 45 million to 82 million TEU in 2030. An examination of shipping industry trends and behavior, however, suggests that the forecast extremes are unlikely to be realized. Lower San Pedro Bay port shares tend to correspond to periods of rapid growth when other ports have

needed capacity, while higher port shares result from periods of slower growth when flows are concentrated at Southern California ports.

These considerations effectively define a forecast envelope around the most likely case, the base growth/base share forecast. The envelope (Exhibit 13) is contained by the high growth/low share forecast (77.2 million TEU in 2030) and the low growth/high share forecast (50.8 million TEU in 2030), with the variations on the base case at the center.

Exhibit 13: San Pedro Bay TEU Forecast Envelope
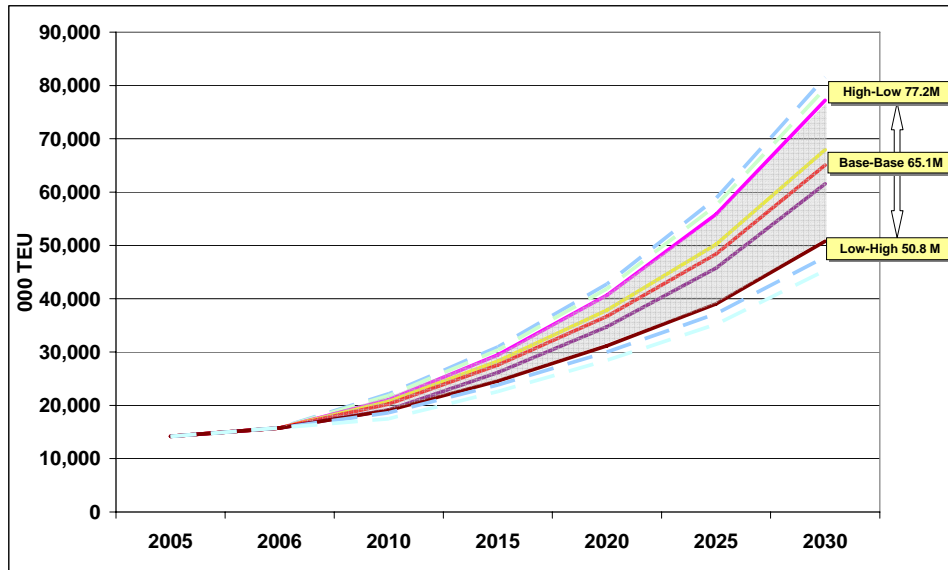
It is apparent in Exhibit 13 that trade growth scenarios create far more forecast variability than the market share scenarios. This finding is consistent with port experience, where economic conditions or disruptions (e.g. the 2001 economic slump) result in far greater changes than diversions to other ports (e.g. the 2004 congestion episode).

The intermodal forecast scenarios in Exhibit 14 have a narrower range than total TEU but the high/high scenario is still almost double the low/low scenario by 2030.

Exhibit 14: San Pedro Bay Intermodal Forecast Scenarios

Intermodal Forecast	2005	2006	2010	2015	2020	2025	2030
High Growth Adjusted Forecast							
High Share	8,080	9,089	12,664	17,561	24,245	33,341	46,170
Base Share	8,080	9,089	12,208	16,787	22,984	31,357	43,063
Low Share	8,080	9,089	11,182	15,553	21,270	28,998	39,808
Base Case Adjusted Forecast							
High Share	8,080	9,089	11,930	16,197	21,648	28,697	38,829
Base Share	**8,080**	**9,089**	**11,488**	**15,529**	**20,621**	**27,056**	**36,210**
Low Share	8,080	9,089	10,471	14,267	18,843	24,681	33,027
Low Growth Adjusted Forecast							
High Share	8,080	9,089	10,956	14,036	17,805	22,274	28,961
Base Share	8,080	9,089	10,533	13,352	16,706	20,567	26,286
Low Share	8,080	9,089	9,529	12,242	15,286	18,766	23,986

San Pedro Bay TEU Forecast Comparisons

The last complete long-term cargo forecast for the ports of Los Angeles and Long Beach was completed in October 1998. The 1998 Mercer/DRI forecast included multiple container growth scenarios. The "Asian Crisis" low-growth scenario was chosen by the ports as the basis for planning. Not surprisingly, actuals exceeded the low-growth forecast and in fact were above the high-growth scenario. Port and consultant team analysis determined that the main reason for the wide disparity was a dramatic and unanticipated change in empty container flows. Accordingly, port staffs developed a working version of the High Growth forecast for the Transportation Master Plan (The "TMP High Growth" forecast) with a higher empty return factor. Exhibit 15 compares the 1998 Asian Crisis and High Growth forecasts with the port staff working forecast and the current Adjusted Base Case forecast. (The 2007 forecast shows 2005 actuals.)

Exhibit 15: TEU Forecast Comparisons

Total TEU	2005	2010	2015	2020	2025	2030	05-20 CAGR
1998 Asian Crisis	9,099	12,459	17,427	24,277			6.8%
1998 High Growth	10,772	15,506	22,773	33,277			7.8%
TMP High Growth	10,772	16,720	24,585	36,151			8.4%
2007 Base Case - Base Share	14,194	20,260	27,570	36,723	48,396	65,052	6.5%

Inbound Imports	2005	2010	2015	2020	2025	2030	05-20 CAGR
1998 Asian Crisis	4,930	6,870	9,768	13,765			7.1%
1998 High Growth	5,877	8,611	12,856	19,004			8.1%
TMP High Growth	5,877	8,611	12,856	19,004			8.1%
2007 Base Case - Base Share	7,227	10,568	14,412	19,242	25,410	34,219	6.7%

Outbound Exports and Empties	2005	2010	2015	2020	2025	2030	05-20 CAGR
1998 Asian Crisis	4,169	5,589	7,659	10,512			6.4%
1998 High Growth	4,895	6,895	9,917	14,273			7.4%
TMP High Growth	4,895	8,109	11,730	17,147			8.7%
2007 Base Case - Base Share	6,967	9,692	13,158	17,481	22,986	30,833	6.3%

The new forecast entails a significant upward revision to the port staff working forecast for 2010 and 2015, but a very modest revision for 2020. The forecasts are depicted graphically in Exhibit 16.

Exhibit 16: TEU Forecast Comparison