

Sustaining the San Pedro Bay Community Ports of Los Angeles & Long Beach

By Dr. Michael Nacht, Mr. Larry Henry and Dr. John Martin

Sustainable Communities: Social Sustainability, Environmental Sustainability and Financial Sustainability

Executive Summary

For decades, the Ports of Los Angeles and Long Beach have been at the forefront of global shipping, with the lion's share of containerized imports from Asia driving exponential growth that has benefited workers and port communities alike. More recently, however, competition from East Coast and Gulf Coast ports – driven by global shipping patterns, infrastructure investments and a desire for flexibility among customers, plus the widening of the Panama Canal and the greater use of “all water routes” through the Suez Canal – have eroded this “first-mover” advantage. As a result, California, the region and local communities are in jeopardy of losing many of the benefits that have resulted from the decades-long boom in containerized shipping. It is only through the thoughtful implementation of best practices that maritime operators will be able to continue significant economic and job growth in Southern California moving forward.

This paper summarizes the important **social and environmental** benefits of modernization of the ports and traces the roots of an emerging trend that threatens both future progress and the gains that have already been realized. In the end, this paper demonstrates that terminal automation is an essential tool to ensure that the Los Angeles and Long Beach ports continue to be engines of prosperity for the state, region and local communities, including the International Longshore and Warehouse Union workers and other workers, while enabling the maritime industry to reduce its environmental footprint for the benefit of all.

Key findings from this analysis include:

- Since the Pacific Maritime Association (PMA) /International Longshore and Warehouse Union (ILWU) agreement of 2002, the registered longshore workforce has grown 74% in the Ports of Los Angeles and Long Beach.
- Automation is consistent with the Port of Los Angeles Master Plan and is cited in the Ports of Los Angeles and Long Beach 2017 Clean Air Action Plan (CAAP) that requires the implementation of environmental mitigation measures at the ports to reduce air toxics, criteria pollutants and greenhouse gas emissions.
- By 2024 a majority of containerized cargo will be shipped to the U.S. from Asia for population centers East of the Mississippi River, bypassing the Ports of Los Angeles and Long Beach on “all water routes” of the widened Panama Canal and the Suez Canal to the East Coast and Gulf Coast.

- Pricing disparities for comparative terminal process charges per container show a 90-165% differential with major port competition on the East Coast compared to those on the West Coast, before additional costs are included for required environmental mitigation measures at the Ports of Los Angeles and Long Beach.
- The Port of Los Angeles and Long Beach share of U.S. Asian imports are projected to erode to 42% of market share by 2030 (from 56% in 2003).
- In 2008 the PMA reached agreement with the ILWU that specifically recognized the contractual right of terminal operators to automate and paved the way for the TraPac and Long Beach Container Terminal (LBCT) automation projects in Southern California.
- Consistent with the CAAP and the Port of Los Angeles Master Plan, APM Terminals is proposing an automation plan at Pier 400 to change out diesel cargo handling equipment to automated electric/hybrid cargo handling equipment and changes to internal port drayage truck circulation, which would result in significant reductions in air toxics, criteria pollutants and greenhouse gas emissions including the reduction of emissions from port drayage trucks by 65%.
- Any projected reduction in terminal workforce from automation will have a negligible effect on the local economy; however, continued erosion in market share will have a significant negative impact on the local, regional and state economies.



Big Box Big Impact - Ports of Los Angeles and Long Beach

The Ports of Los Angeles and Long Beach (LA/LB Ports or PSW [Pacific Southwest port complex]) have a significant economic impact on the Southern California economy. The economic value of these port complexes for the Los Angeles Metropolitan Statistical Area (MSA)¹ represent 31.4% of the \$1.0 trillion dollars of Gross Metropolitan Product (GMP) projected for 2019 and a total of 179,108 direct, indirect and induced jobs (excluding jobs generated by importers and exporters).²

¹Los Angeles-Long Beach-Anaheim MSA is the standard geographic area for the region for which economic data are produced by cooperative programs of the Bureau of Labor Statistics.

² Martin Associates March 29, 2019 – Direct: workers in longshore, trucking, rail, warehouse, other maritime services, etc. Induced: jobs resulting from money spent by direct workers in their communities with businesses. Indirect: additional jobs created to support businesses transacting business within the maritime trade. This does not include the economic value generated by the California importers and exporters moving containers through the port complexes.

Sustainability Planning – The Triple Bottom Line – Social, Environmental and Financial Sustainability

With fierce national and trans-national port competitors, California and the communities adjacent to the LA/LB Ports are at risk of a continuing and accelerating erosion of market share for port activity, which can have a significant impact on employment and the economy. This is especially important for policy makers to consider when, according to the Clean Air Action Plan, “on average 1,000 TEUs of Port throughput supports between 18 to 27 jobs in the region.” The Clean Air Action Plan correctly points out that “Direct jobs such as longshoreman, truckers, and warehouse and logistics operators would likely be directly impacted by cargo loss. Indirectly, companies supporting the goods movement industry (fuel suppliers, maintenance, and financial firms among others) would be impacted.”

Protecting discretionary cargo (cargo that is shipped by trucking and rail to destinations throughout the United States) is an important objective of the LA/LB Port, the City and the State. Moreover, a continuing erosion in market share would go far beyond an economic hit to the state, regional and local economies; losing market share can have a major negative impact on the environmental and public health goals sought for the ports and their adjacent communities.

The question is how best to protect market share while improving the environment in a socially and financially sustainable manner?

In analyzing the overall policy of how the LA/LB Ports fit in to our economy, it is not simply a question of profit and loss, but rather a broader look at the three issues of Sustainability Planning.

The first issue in Sustainability Planning is the “people account” – or social sustainability – a measure of how socially responsible labor and terminal operators are in working together to achieve common goals.

The second issue is the bottom line of the “planet account” – or environmental sustainability – a measure of how environmentally responsible is this complex of ports, shippers, truckers and terminal operators.

The third issue is the traditional measure of economics – the “profit and loss bottom line” – or financial sustainability- the ability of the ports, shippers, truckers and terminal operators to be financially viable and to address competitive market forces. This “economic account” or financial sustainability enables the whole but cannot successfully exist without social and environmental sustainability.

Social Sustainability: Technology, Productivity and ILWU Benefits Grow Together

The Pacific Maritime Association (PMA) and the International Longshore and Warehouse Union (ILWU) have a long history, starting in 1960, of partnering to extend the benefits of technology-driven productivity on the West Coast waterfront to ILWU members in the form of growing wages, job protections and benefits.

PMA and ILWU have entered into several landmark labor agreements, including the Mechanization and Modernization Agreement of 1960 that paved the way for containerized cargo to reshape the industry. The metal cargo container is now the standard means of transport for many of the goods that fuel the U.S. and world economies. While the move to containerization reduced the size of the longshore workforce in the 1960s, when thousands of longshore workers moved break bulk cargo from ships, the transformation to modern systems laid the foundation for West Coast ports becoming dominant players in the United States. As the West Coast ports transitioned to containerization, the ranks of ILWU members experienced significant increases in wages and benefits. As terminals have continued to modernize, ILWU wages and benefits have grown significantly as well. Concurrently, the state and regional economy has surged.

More recently, in 2002, the ILWU and the PMA entered into an historic collective bargaining agreement providing for the widespread introduction of technology into terminals. Building on this framework, the parties agreed in 2008 to enable automation at port terminals. In the 2008 collective bargaining agreement, the ILWU expressly recognized the rights of terminal operators to automate and acknowledged that such automation may result in loss of jobs within some classifications.

With increased automation since the 2002 technology agreement, the LA/LB Ports have seen increased ILWU employment, increased wages and benefits, and increased tonnage.

- **Increased Jobs³:** In Southern California since the 2002 technology agreement, the registered longshore workforce has grown from 4,489 to 7,829 or 74%.
- **Increased Wages:** ILWU members enjoy world-class wages, with the average full-time registered worker earning more than \$183,000 per year. For longshore registrants the average annual earnings are \$171,110; for clerks the average is \$193,511; and for foremen the average is \$281,555.
- **World Class Health Care Benefits:** The ILWU-PMA health care plan is among the most generous in the nation, with fully paid medical care with no employee premiums and only very limited deductibles. For example, prescription drugs are provided for \$1. The cost of the health care plan, borne by the employers, is approximately \$53,000 annually per active registrant.

³ Registered ILWU workers perform the majority of longshore work. There are two classes of registered ILWU workers – Class “A” and Class “B” registrants. Class “A” registrants have priority in daily dispatching. “Casuals” are recognized workers dispatched to jobs who are not registered longshore employees. Casuals are dispatched only after all available classes of longshore workers (Class “A” and Class “B” registrants) have been dispatched. Clerks are generally assigned each day to the same terminal as steady men but not always. Foremen too are generally assigned as steady men.

- **Pension Increases:** The PMA and ILWU agreed to significant pension increases in 2008, which are currently nearly \$89,000 annually for fully vested workers with maximum years of service, rising to more than \$95,000 annually in 2021.
- **Pay Guarantees:** The PMA and ILWU agreed to increase the guaranteed number of hours an eligible registered longshore worker is paid if that worker is unable to obtain full-time work for any reason including automation. If an eligible registered longshore worker is unable to obtain a 40-hour workweek, the pay guarantee plan (PGP) provides guaranteed weekly income to industry registrants until they retire.
- **Increased Registration of Casual Workers:** Partnering with the ILWU, the PMA has increased significantly its registered longshore workforce from the “casual” workers. In 2018, 1,013 Class B Registrants were added from the ranks of casual workers, and 716 new casuals were added to augment the workforce in Port of LA/LB.
- **Increased Jurisdiction:** In 2008 the ILWU and PMA agreed to further extend their agreements for automation by providing for expanded job opportunities for Longshore workers who are displaced as a result of automation. The ILWU and PMA jointly agreed to expand the ILWU’s jurisdiction to include Maintenance and Repair (M&R) jobs on automated terminal equipment and vehicles at the terminals.

Environmental Sustainability: Clean Air Action Plan Leads the Way

The cargo movement industry in California is subject to increasingly strict environmental regulations imposed by the State and local jurisdictions. Over the past decade, the State, region and the cities of Los Angeles and Long Beach, working with terminal operators, local communities and environmental partners have sought to significantly improve the environmental footprint of the ports, including the operating terminals.

Of particular focus to the LA/LB Ports has been the adoption of the Clean Air Action Plan (CAAP), which directed emissions reductions beyond State regulations. A centerpiece of the CAAP is the replacement of diesel cargo handling equipment with electric and hybrid cargo handling equipment.

The cost of compliance with these environmental regulations is significant and raises the cost of moving goods through the LA/LB Ports. These increased costs have significant implications on the financial sustainability of the LA/LB Ports and terminal operators, particularly in light of competitive pressures for market share from other national port competitors in the East Coast and Gulf Coast that are not subject to these environmental regulations and their related costs. With competition from other ports, the LA/LB terminal operators may not be able to absorb the costs or pass the costs on to shippers (e.g. retailers). If these increased costs cannot be absorbed by terminal operators or passed on to customers, market share will continue to erode on discretionary cargo and ultimately total volumes through the LA/LB Ports may decline.

The emissions reductions resulting from the environmental sustainability also have economic benefits for the communities and the State. The State has estimated that the freight-related emissions reductions could reduce the costs of the associated health effects by half (about \$10 billion).⁴ The environmentally disadvantaged communities surrounding the LA/LB Ports will experience the greatest per-capita health benefit from emissions reductions strategies.

- **The Clean Air Action Plan:** CAAP is a comprehensive strategy for accelerating progress toward a zero-emission future while protecting and strengthening the LA/LB Ports competitive position in the global economy.
 - The CAAP targets significant reductions in diesel particulate matter, nitrogen oxides, and sulfur oxides, among other contaminants, through conversion of cargo handling equipment.
 - Targets for reducing greenhouse gases (GHGs) from port-related sources introduced as part of the 2017 CAAP require reductions of GHGs to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050
- **The CAAP & Role of Automation:** The role of automation in emissions reductions is recognized in the CAAP.
 - Specifically, automated guided vehicles and intermodal yard cranes are cited as examples of zero-emissions cargo-handling equipment that promote the Plan's sustainability objectives.
- **The 2017 Clean Air Action Plan:** requires terminals to operate zero-emission equipment by 2030.
 - This mandate will require replacement of existing container-handling equipment at a total cost of up to \$14 billion.⁵
 - Financing this capital requirement, given that the Pacific Southwest (PSW) port complex is a competitive market of 13 terminals, will be extremely difficult to recover through rate increases. Competitors have already acted on past cost increases to bypass PSW, by increasing their 'all water routes' to the East Coast (EC) and Gulf Coast (GC) ports resulting in an increasing market share for East Coast and Gulf Coast ports.
- **Pier 400's proposed plans:** The infrastructure improvements proposed at Pier 400 would directly reduce air toxics, criteria pollutants and GHGs.

⁴ CAAP Nov 2017 Economic and Workforce Consideration

⁵ Journal of Commerce, March 12, 2019

Financial Sustainability: Growing the Southern California ports for the benefit of all

The LA/LB Ports handle cargo destined for Southern California (known as “non-discretionary cargo”) and cargo that is sent by truck or rail to other destinations in the US (known as “discretionary cargo”). The increasing viability of other ports for routing discretionary cargo and increased cargo handling costs at the LA/LB Ports affects the financial sustainability of the LA/LB Ports and terminal operators. As discussed below, while tonnage through the LA/LB Ports has increased, there has been significant erosion of market share from LA/LB Ports to the East Coast and Gulf Coast ports. As this market share loss continues (or accelerates), total tonnage through the LA/LB Ports could remain static or decline.

In 2018, discretionary cargo movement through the LA/LB Ports supported nearly 68,253 direct, induced and indirect jobs in the Southern California economy (see Table 3).⁶ This does not include related jobs in the import and export economy. Stemming the loss of discretionary cargo market share to other port competitors is key to ensuring that these direct, induced and indirect jobs are maintained and that the past advances made in the social and environmental sustainability areas are not diminished.

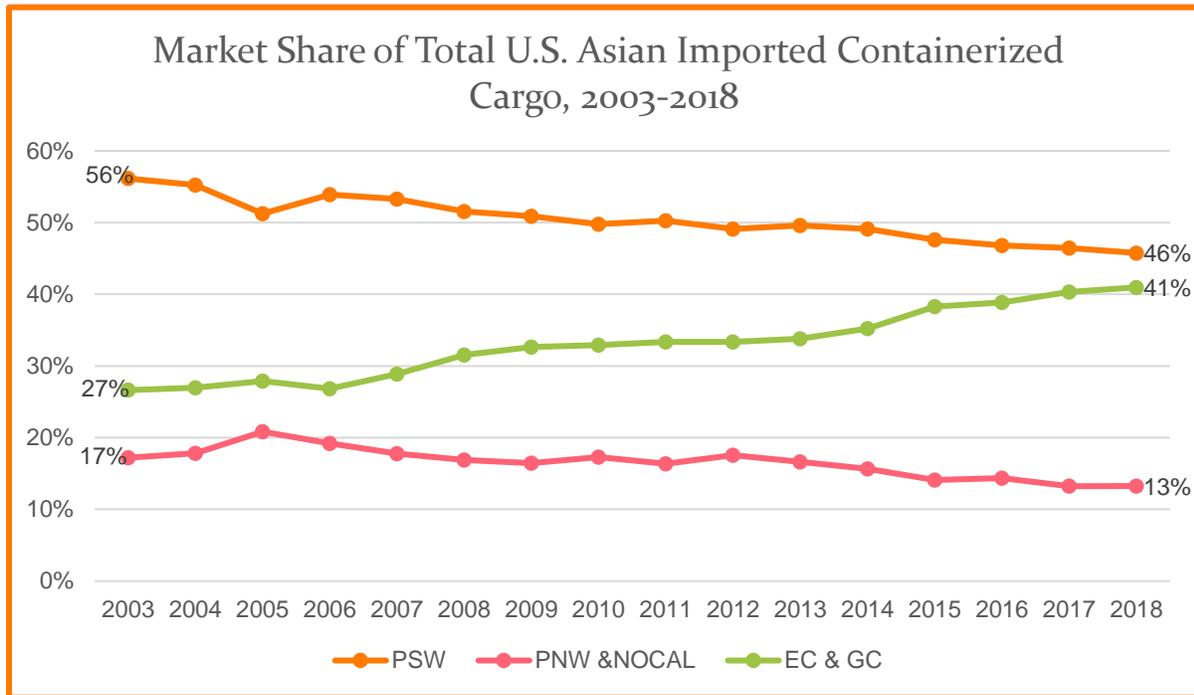
Market Share Shifts. The LA/LB Ports held unique and historic “first movers” advantage in the rise of containerized cargo since the 1960s. Large retailers like Walmart and Target built regional centers for redistribution for local consumption and national redistribution through intermodal rail to Chicago’s complex of railheads. With 65% of the US population East of the Mississippi River, the LA/LB Ports with their nearness to Asia, deep-water ports, fast and reliable rail, and organized and regularized workforce, dominated goods moving from Asia to the East, Midwest and Texas.

This first mover advantage of the LA/LB Ports has been eroding relentlessly in the 21st century. Chart 1, US Market Share of Asian Imports, below highlights the decline of LA/LB Ports’ (PSW) dominance of Asia imports moving east.

In 2003, PSW moved more than half (56%) of all Asian imports, a figure that had fallen to 46% by 2018. Conversely, the East Coast and Gulf Coast ports together accounted for less than one-third (27%) in 2003, and now about 41%. The balance, 13%, is handled by the PNW and No Cal.

⁶ Martin Associates March 29, 2019

Chart #1



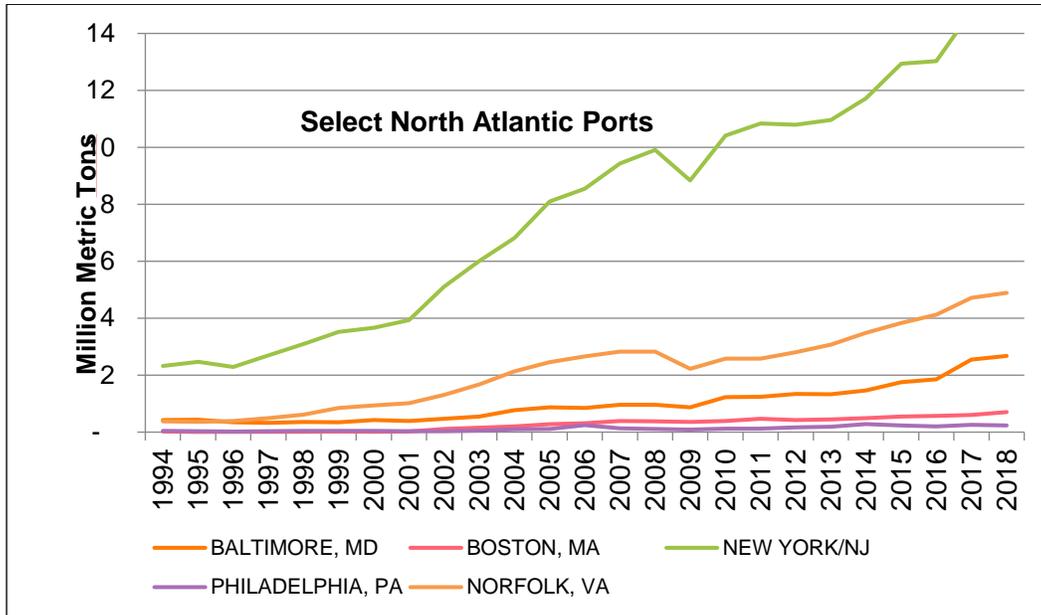
Martin Associates Source: US Census, US Trade Online

The data in Chart #1 above shows long decline in market share from 56% in 2003 to 46% in 2018 for PSW ports. These US Asian imported cargo shipments are destined to the population centers east of the Mississippi River and have 'bypassed' the Ports of Los Angeles & Long Beach (PSW). This cargo arrived from 'all water routes', of the newly widened Panama Canal and Suez Canal, to East Coast ports (EC) and Gulf Coast ports (GC).

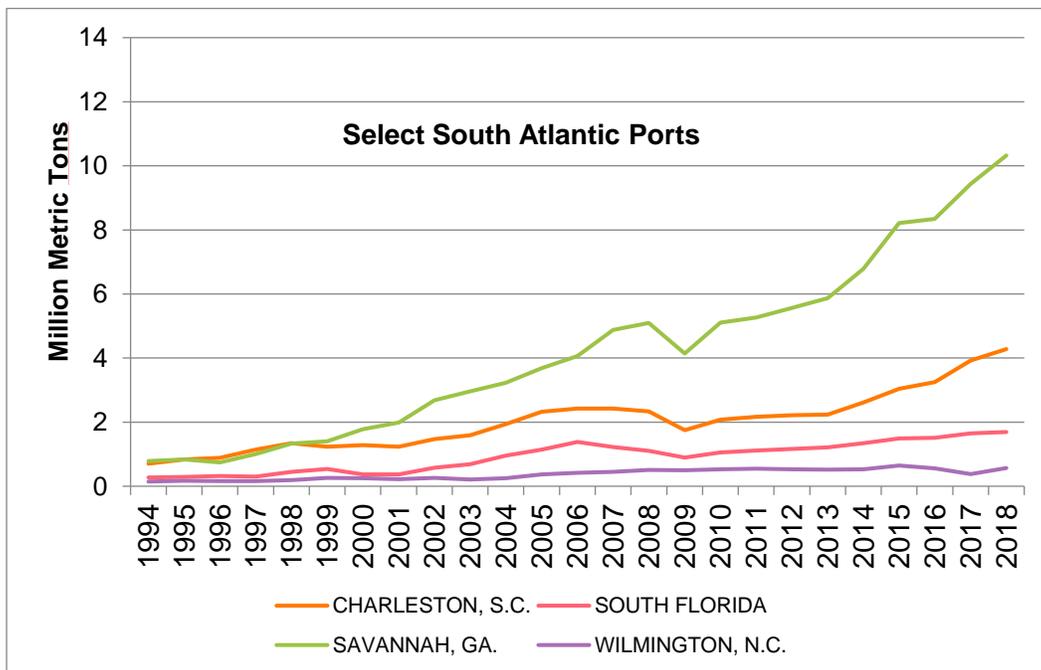
The port authorities of NY/NJ, Baltimore, Norfolk, VA, Charleston, SC, Savannah, Miami, Mobile, and Houston have made billions of dollars of infrastructure investments to compete with West Coast ports, and LA/LB Ports most importantly, for cargo destined to the Heartland economy. The investments were made to:

- 1) widen and deepen port facilities to accept ever larger ocean container ships,
- 2) dual tracking of rail facilities out of port areas to enable a better management flow of increased volumes of trains trips, and
- 3) on-dock rail to lower doubling handling of containers to makeup full train loads and to mitigate congestion of street trucks in and outside port areas, with the ensuing environmental degradation; all these to compete for 'discretionary' cargo volumes of the West Coast.

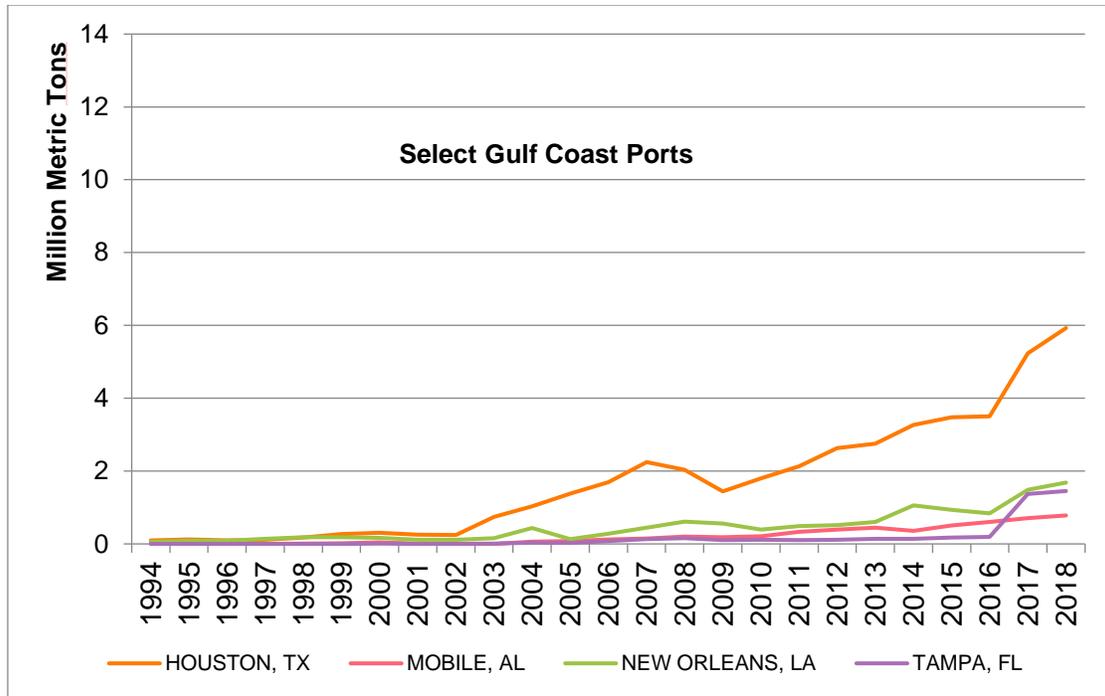
Growth in All-Water Services Accelerated After 2002 - Asian Imports Via Atlantic and Gulf Coast Ports



Martin Associates Source: US Census, US Trade Online



Martin Associates Source: US Census, US Trade Online



Martin Associates Source: US Census, US Trade Online

Cargo importers, seeking certainty in the arrival timing of their imported goods and cheaper container routing alternatives, now have many choices that accept the bigger container ships throughout the East & Gulf coasts. Virtually all EC and GC ports areas are growing cargo tonnage significantly, after the widening of the Panama Canal in the second half of 2016.

Table #1 Comparative Terminal Charges per Container⁷

North Atlantic	South Atlantic	Gulf	Eastern Canada	LA/LB
\$310	\$285	\$300	\$204	\$540

Increased Cargo Handling Costs. As Table 1 above shows, the LA/LB Ports’ per container charges are 90% to 165% higher than those of competing East Coast and Gulf Coast ports. This cost differential will increase with compliance with the CAAP requirements. With the East Coast and Gulf Coast ports’ competitive cost advantages, the LA/LB Ports’ speed, regularity and reliability advantages for discretionary cargo are being impacted. Shippers are making adjustments due to these cost differentials that disadvantage the LA/LB Ports, and the pace of these adjustments will likely increase as cost differentials increase. **It is estimated that environmental sustainability costs will add significant additional terminal container charges to the LA/LB Ports.**⁸ Obviously, such cost impacts, without any way to offset such cost, will have a major impact on the amount of discretionary cargo through the LA/LB Ports.

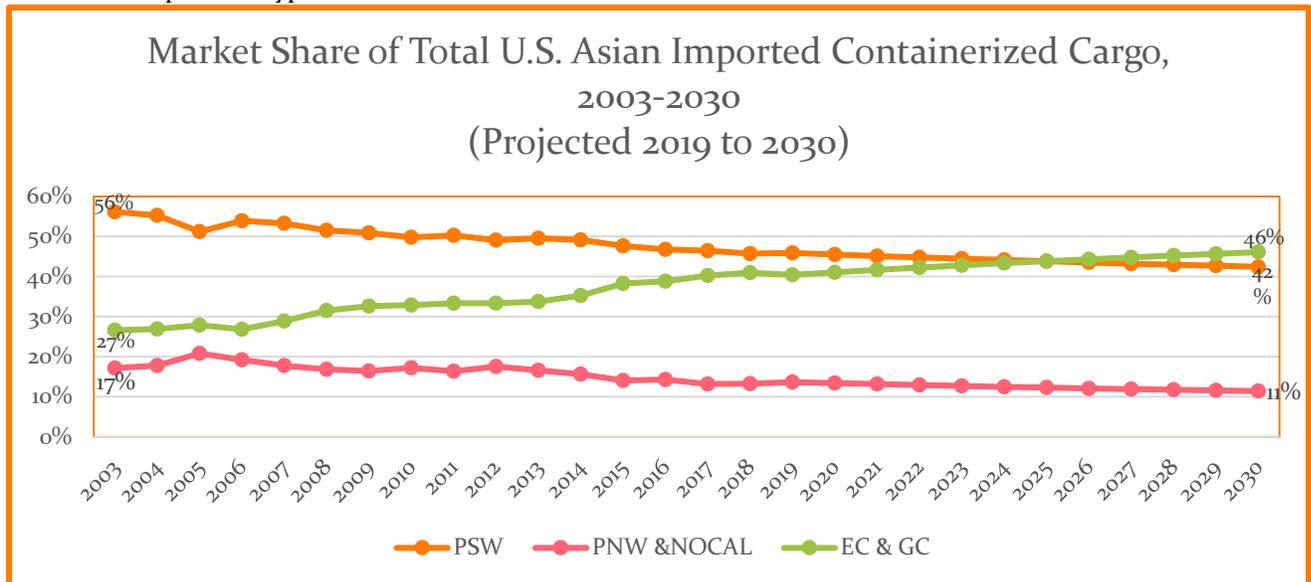
⁷ Martin Associates March 29, 2019

⁸ Martin Associates March 29, 2019

Will the Past be Prologue to the Future?

The Competitive Bypass Trends Chart #2 below assumes no change in either PSW (LA/LB) systems and processes and the same for the EC & GC ports systems and processes. Chart #2 demonstrates the effect of this liner trend if nothing changes. That of course is a false assumption, as all PSW competitors are investing in a variety of tactics to gain market share from PSW. And environmental compliance costs as mandated by the CAAP and other environmental regulations in California will increase LA/LB Ports container charges and the disparity between comparative container charges will grow. However, the linear trend is informative; PSW share of discretionary cargo will have fallen from 56% in 2003 to 42% by 2030. Without a competitive response by PSW ports and terminal operators, after 2025 the EC and GC ports will exceed PSW for total discretionary cargo. By 2030, the EC and GC will achieve 46% market share of discretionary cargo and maybe even greater market share, given their continuing port and rail investments and the increased container charges at the PSW ports.

Chart #2 Competitive Bypass Trends



Source: Martin Associates

If the 'discretionary' PSW share of the US Asian imports continues to erode, as Chart #2 above projects, the past advances made in social and environmental sustainability will be at risk. The PSW ports will decline to 42% market share of Asian imported containerized cargo in 2030, without taking into account further cargo losses from increasing terminal container charge differentials.

Even with rising volumes, market share is receding, and this marginal share is key to the future as investment returns are made on the margins and it is those returns that enable the wage and benefits package received by ILWU workers, as well as the continued ability of terminal operators to invest in environmental measures under the CAAP Plan and otherwise (providing for the social and environmental sustainability).

Even with rising volumes, market share is receding, and lost ILWU, rail and truck jobs are accumulating as seen in Table #2 below. Table 2 shows the opportunity cost in terms of lost ILWU, trucking and rail jobs under the decline in market share that occurred between 2003 and 2018. If the West Coast had maintained the 2003 market share of 56% of all Asian imports into the United States throughout the 2003-2018 period, ports of Los Angeles and Long Beach would have been able to maintain the Asia import tonnage that was diverted annually to the East and Gulf Coast ports. This Asian tonnage lost to the other ports is shown as the LA/LB import discretionary cargo lost to the East and Gulf Coasts in Table 2. This tonnage was used as inputs into the Martin Associates economic impact model for containerized cargo handled at the LA/LB Ports to estimate the direct jobs that would have been supported in Southern California, the majority of which would have been held by residents of Long Beach, Los Angeles, San Pedro and Wilmington, should the ports have maintained market share over the period. Table 2 shows the ILWU, rail and trucker jobs that would have been supported should the market share erosion of discretionary cargo not have occurred. These are considered the opportunity cost of the lost market share.

Table #2 Local 13 (LA/LB) ILWU Registration Changes, Lost 'Discretionary' Cargo, 2008 - 2018 and Bypass of LA & LB Ports - Impacts on Jobs

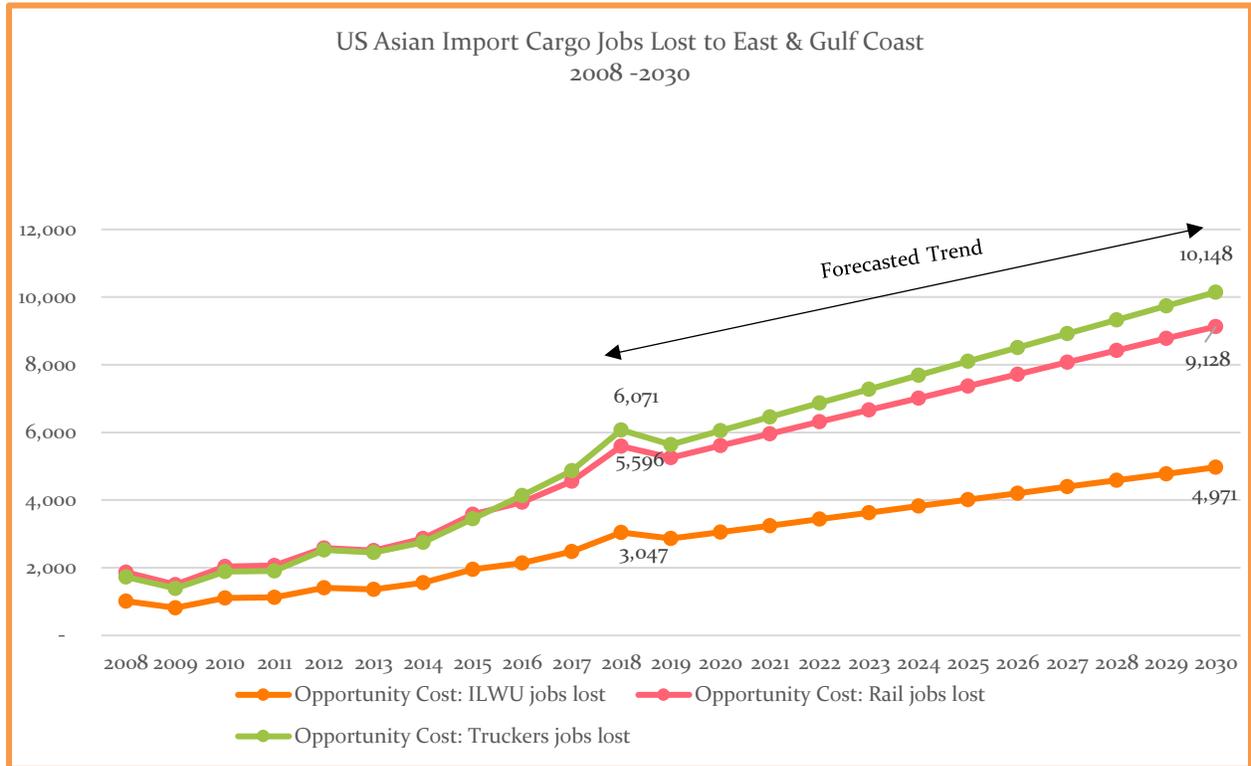
Year	New Registrants	Year End Count Registrants (Net)	LA/LB (PSW)Asian Import Cargo 'Discretionary' Tonnage Lost to EC & GC Ports	Opportunity Cost: ILWU Lost Jobs (FTEs)	Opportunity Cost: Rail Lost Jobs (FTEs)	Opportunity Cost: Truckers Lost Jobs (FTEs)
2003	919	5,219	0			
2004	1,982	6,979	8,246,000			
2005	429	7,049	3,883,257			
2006	327	7,150	2,903,662			
2007	571	7,483	3,957,136			
2008	19	7,372	4,920,222	1,018	1,870	1,732
2009	-	7,199	3,901,228	819	1,504	1,393
2010	-	7,099	5,357,737	1,108	2,035	1,885
2011	9	6,929	5,429,646	1,124	1,504	1,393
2012	162	6,947	6,788,132	1,405	2,581	2,527
2013	15	6,776	6,600,200	1,366	2,064	1,912
2014	105	6,782	7,540,986	1,561	2,867	2,757
2015	645	7,216	9,426,010	1,951	3,583	3,445
2016	264	7,297	10,363,750	2,145	3,938	4,134
<i>Panama Canal Opens</i>						
2017	39	7,130	12,002,438	2,484	4,562	4,868
2018	1,013	7,829	14,720,003	3,047	5,596	6,071

Source: Martin Associates

In 2008, PMA reached an agreement with the ILWU that specifically recognized the contractual right to automate. Since 2008 only two terminals, TraPac and Long Beach Container Terminal (LBCT), out of 12 terminals have automated. APM Terminals would be the third. Not all terminal operators follow the same path or are on the same time frame. Table #2 highlights the dramatic impact on jobs that disappeared, as competition from East and Gulf Coast Ports picked up after

2015 and especially with the opening of the Panama Canal in late 2016. And Chart 3 shows what may be the result of this trend line of lost market share as it relates to continuing job loss, should the market share loss continue through 2030 at the same rate as recorded between 2003 and 2018.

Chart #3: Lost Jobs to EC & GC Coasts Ports



Source: Martin Associates

What is to be done

Embracing innovation and modernization have been hallmarks of the West Coast waterfront for decades, dating back to the advent of containerization – a revolutionary advance included in the landmark Mechanization and Modernization (M&M) Agreement of 1960. Traditionally, employers and workers alike have recognized that harnessing technology enables ports to grow larger and more productive – benefitting all sides. More recently, contract agreements between PMA and the ILWU have allowed for technology and automation at West Coast port terminals tracing back to the 2002 contract that first allowed for the introduction of modern technology.

And, as shown in Table #2 above, net registrant employment rose from 5,219 to 7,829. The result has been increased employment for workers and rising compensation and benefits.

Impacts of Market Share Loss on Social Sustainability

In 2018, discretionary containerized cargo, or cargo that moves to and from the LA/LB Ports by rail to points such as Chicago, Memphis, Nashville, Columbus, Indianapolis, Dallas, Houston, St. Louis, New York, Miami, etc., supports 68,253 total jobs in the local Southern California economy. Of these, 28,078 are direct jobs that provide \$7.1 billion in wages and \$12.9 billion in economic

value to the Southern California region and \$851 million in State and Local Taxes. In 2018, discretionary containerized cargo accounted for approximately one-third of total containerized tonnage in the LA/LB Ports. It is these current jobs generated by the discretionary cargo in Southern California that are at risk to the continual loss of market share. Every ton of cargo lost to bypass of the PSW ports is a loss of jobs, salaries and taxes, not only for direct terminal employees and members of the ILWU, but for rail workers, truckers, employees of the warehouses and distribution centers, and those providing maritime services to the cargo and container vessels carrying the discretionary cargo. In addition, as these direct jobs would be eliminated due to the loss of the discretionary cargo, the 31,769 induced jobs that support the direct jobholders' local purchases of groceries, food at restaurants, clothing, housing, transportation services and medical services, are also at risk. Furthermore, also at risk are the 8,405 indirect jobs held by those workers providing services to the businesses that would be directly impacted with a loss of this discretionary cargo, such as employees of local office supply companies, local providers of terminal equipment, local professional services providing financial services and insurance to the maritime industry, to name a few. Market share loss does not happen overnight, but it does overtime.

Tables #3 2018 Discretionary Cargo Impacts to Southern California – Current Situation Full Time Workers (FTE)⁹

Discretionary Cargo: Impact Categories	Impact on Southern CA
Jobs	
Direct	28,078
Induced	31,769
Indirect	8,405
Total	68,253
Wage and Salary Income (Millions \$)	
Direct	\$1,994
Re-spending/Local Consumption	\$4,690
Indirect	\$461
Total (Millions \$)	\$7,145
Direct Revenue (Millions \$)	\$12,998
Local Business Purchases (Millions \$)	\$1,259
State/Local Taxes (Millions \$)	\$851
Economic Value to Social California (Millions \$)	17,668

SURFACE TRANSPORTATION	Jobs
RAIL	6,330
TRUCK	6,867
MARITIME SERVICE	Jobs
TERMINAL EMPLOYEES	443
ILWU	3,447
TOWING	61
PILOTS	11
AGENTS	127
MARITIME SERVICES (SURVEYORS/MARINE CONSTRUCTION/CHANDLERS)	525
FORWARDERS	1,718
WAREHOUSE/CONTAINER REPAIR/TRANSLOAD	8,150
GOVERNMENT	400
Total	28,078

Source: Martin Associates

Automation of Pier 400 longshore positions will not automatically mean a reduction of work, as the ILWU dispatch hall will enable them to be reassigned to non-automated terminals and not all will automate their terminals.¹⁰ Additionally, the impact of automation on the social sustainability of San Pedro Bay community will not be a material economic impact. In fact, the failure to automate will result in a major economic impact to the San Pedro Bay community and to the broader region and the state. Automation provides for a vibrant container port which will

⁹ FTE = 2,080 hours of employment a year

¹⁰ Journal of Commerce, April 3, 2019, Sal Ferrigno, vice president of SSA Marine in Southern California “SSA is not prepared to invest in automation, with 20 years required for a return on investment.”

ensure their continued employment, and which will be critical in maintaining LA and Long Beach container market share.

Impacts of Automation on the Local Community

The following discussion evaluates the potential effects on the communities adjacent to the LA Port of automation of certain cargo handling equipment at the Pier 400 Terminal. This discussion focuses on the local communities that are within approximately a two-mile radius of the terminal, including San Pedro, Wilmington, and Long Beach, and the potential effects on the economy in those communities.

The Local Community. The total population in the local communities was estimated to be approximately 219,729 in 2017. In comparison, the total population for the County and City of Los Angeles were estimated to be approximately 10,105,722 and 3,949,776, respectively, in 2017.

The employment rate in the local community was comparable to the employment rate in the City and County of Los Angeles. The greatest percentage of employment in the local communities is in the education, health and social services sectors (13.8% - 20.9%). The transportation, warehousing and utilities sector, which would include ILWU workers, account for 13.9% of employment in San Pedro and 9.8% in Wilmington.

The LA Port includes 26 terminals, including 12 container terminals, automobile terminals, dry bulk, liquid bulk and break-bulk facilities and Omni terminals. Intermodal facilities and slips for pleasure craft, sport fishing and charter vessels also are located at the LA Port. The LA Port also is one of the leading cruise homeports on the West Coast. In addition to the jobs generated by activities at the marine terminals, cruise ships also contribute to the local and regional economies by providing employment income, tax revenues and revenues to businesses.

ILWU Work Patterns. Most longshore workers are dispatched through a 'dispatch hall' maintained and operated jointly by the ILWU and the PMA. The ILWU dispatch hall affords the terminal operators a highly skilled, flexible and constant source of workers.

While there are some 'steady' workers who report to the same terminal operation each day, the majority of the longshore work is performed by registered ILWU workers that are dispatched through the ILWU dispatch hall on a daily basis. "Casuals" are recognized workers dispatched to jobs who are not registered longshore employees. Casuals are dispatched only after all available classes of longshore workers (Class "A" and Class "B" registrants) have been dispatched. Casuals generally work one to two shifts a week and essentially provide the "flex" work force to meet peak work demands. For many casuals, their longshore income is a supplement to other income.

It is this dispatch hall process of assignment that provides the terminal operators great flexibility in managing its work force requirements to variability in their business needs. These order and structure attributes come with high wages, benefits and retirement plans for workers allowing for continued thriving and sustainable communities. The historic agreements from the past enabled the present.

The continued loss of cargo due to the market shifts discussed above would impact direct jobs at the LA Port, including longshore workers, truckers and warehouse and logistic operators. Additionally, the consumption pattern of employees at the Port and throughout the transportation system also support induced jobs and business activity in the local economy that would be affected by the dislocation of Port jobs.

The modernization of Pier 400 would assist in stemming the ongoing decline in market share by partially balancing the increased costs of environmental compliance and increasing efficiencies within the terminal.

Conversely, automation of some cargo handling equipment may result in shifts in Port employment. In the near term, implementation of automation would result in increased employment at the terminal (testing and early operations). In addition, infrastructure improvements, estimated by the Ports to be approximately \$2 billion, would generate temporary construction jobs. In terms of permanent jobs, the new technologies and equipment will require a shift in skill sets with an increase in jobs related to the maintenance and repair of the new equipment. These new job categories are reserved to the ILWU as part of the collective bargaining agreement allowing for the implementation of automation.

Moreover, in the long-term, it is not certain to what extent automation would result in a net loss of permanent longshore workers to the LA/LB port complex as a whole. As shown in Table 2 above, historically longshore jobs have increased with technological advances. Further, implementation of automation is likely to extend through to 2030 and will vary depending on each terminal operator's business strategies and overall market economics.

In addition, overall national and global market forces most directly affect the overall volume of cargo movement through the LA/LB Port. These market forces historically have been the greatest determinant of the level of longshore employment. If overall cargo movement continues to increase and if market share loss is curtailed, the total employment at the Port should not be expected to decrease.

However, even assuming a decrease in employment, maintaining market share is the most important driver of the overall economic health locally, regionally and statewide. The greatest risk to overall employment is the loss of discretionary cargo that has a significant multiplier effect throughout. The loss of discretionary cargo would ripple through multiple segments of the economy including trucking and rail, warehousing and distribution, and the impact to importers and exporters.

It is also important to highlight the changes to the ports' core business on the West Coast. While some longshore work on container terminals will change as semi-automated processes are employed, new work will be created as well. On semi-automated terminals, M&R work for ILWU members is expected to grow. Also, ILWU members are already benefitting from a growing cruise industry in Los Angeles. The Port of Seattle is a good example. The port welcomed more than 1 million passengers in 2017 and 2018, with growth projected for the future. The Port of San Francisco, all but dormant for decades, is seeing a rebirth in hiring ILWU members due to its expanding cruise business. The auto business is also projected to grow.

The point is: The Port of Los Angeles, along with West Coast ports, need to stay competitive in the container side of the business to keep attracting the cargo, while at the same time growing other trade sectors – such as cruise and autos – which also directly benefit ILWU members.

As stated, the business of the ports has a significant ripple effect in the regional economy. The combined transportation, warehousing and utilities sector accounts for 9.8 – 13.9% of employment in the local communities of Wilmington and San Pedro, respectively. Of the longshore workers that are part of that employment sector, the vast majority of the employment income is to the full-time registered longshore workers, as opposed to casuals. When considering the Pay Guarantee Plan, longshore registrants will continue to be active participants in the local economy; their base compensation is guaranteed.

However, we expect that registered ILWU members will continue to have significant work opportunities as long as the share of cargo is protected or grows. As described above, work at the port is dispatched first to the registered longshore workers. Therefore, initial reductions in demand for longshore workers would initially impact the “casuals” – part-time workers who are not covered by the PMA-ILWU contract – not the members of the ILWU. Further, the registered longshore workers have the benefit of the Pay Guarantee Plan. Therefore, the effect of any reduction in registered workers hours due to technology and automation on the business activity in the local economy would be minimized.

The majority of casual workers are hired on a periodic basis and many have other sources of employment. As shown in Chart #4, 90% of casual workers at APM Terminals earn less than \$10,000 per year from work at APM Terminals, which strongly suggests casual workers are not a major factor for business activity in the local community where the median income is \$57,000 a year.

Chart #4



The eroding market share discussed above has a greater potential for negative impact on local employment and related business activity than automation, and automation would assist with curtailing further erosion of that market share.

Alternative futures to changing cargo demand

LA/LB Port terminal operators have a variety of management process flow expertise, physical land attributes, financial capabilities from which they make competitive decisions on how to maintain

and respond to changing cargo demand. Not all operators will have the financial capital to invest \$700M that TraPac did or LBCT's \$1.4B for automation. Not all will follow the automation path, as it too has its competitive pitfalls. When shipping alliances change, for example, importer volumes are switchable to alternative terminals, stranding temporarily or permanently the capital investment in an automated facility.

Nor will all terminals have the large physical acreage to only stack terminal cargo containers three high density like Pier 400 has proposed; others will maintain 4-5 high density of container stacks, as is the current practice by most, enabling them to respond differentially, because it affords immediate flexibility of accessing a highly skilled longshore workforce that can quickly respond to the often volatile and changing nature of terminal container volumes.

Each terminal operator will determine a path forward, within the order and stability provided by the ILWU dispatch hall process and contracts, on to how to respond to the changing cargo dynamics, given their management process flow capability, terminal foot print size, access to financial capital, their book of business and openness to a variety of approaches to managing them in near-term and longer-term time horizons – one solution rarely fits all given the existing high business variability in these port terminal operations.

The destabilizing effects of market competition, from competitors and their stakeholders outside California, is real. Lost market share affects the number and hours of registered workers over time and casual worker hours. Other losses are incurred and have a cumulative effect on narrowing the base of revenues that fund social and environmental sustainability. Lastly, this market share loss drives up the costs of remaining individual cargo transactions, with negative effects on direct, induced and indirect employment and revenues.

This can be managed through the processes, systems and structures that have been developed over time in concert with the ILWU. Responses will require all to understand these market dynamics and their effects on all stakeholders. It will require effective use of hard-bargained tools, such as the dispatch hall and pay guarantees, as ways to manage this change that are sustainable for the local communities, the City of Los Angeles, Los Angeles County region and the State.

History can be an important guide. In the 1960s, some longshore members decried the onset of containerization. Fifty years later, we know that containerization created the economic juggernaut the West Coast ports have become. All the while, the 7,829 longshore members in Los Angeles would not have the work conditions and economic benefits they enjoy with the move to containerization. The same can be said about the transition to modern, technical terminals. But importantly, because modern ports were able to attract cargo, the longshore workers have benefitted with increases in the size of the workforce and their overall compensation package. All the while, the broader economy – far beyond the 7,829 longshore division members – have come to depend on healthy ports in Southern California. As the Southern California ports look to the future, continued improvements to terminals are expected to play a pivotal role in retaining cargo market share while improving the social and environmental sustainability of the communities where the ports operate. This concept was clearly recognized by the bargaining parties when they mutually agreed to terminal automation more than a decade ago.

About the Authors

- **Dr. Michael Nacht** holds the Thomas and Alison Schneider Chair in Public Policy at University of California, Berkeley. Prior, for a decade, he was the Aaron Wildavsky Dean of the Goldman School of Public Policy at UC Berkeley. He received a B.S. in Aeronautics and Astronautics and an M.S. in Operations Research from New York University and a Ph.D. in Political Science from Columbia University.
- **Mr. Larry Henry** was the founder of ContainerTrac, Inc. Along with Nacht, Henry co-authored the 2014 white paper “Competitive Uncertainty and the Widening of the Panama Canal.” Mr. Henry holds an MA from San Francisco State University in History and a Ph.D-ABD in Labor and Economic History from Rutgers University.
- **Dr. John Martin** is president and founder of Martin Associates. Over the past 40 years, Dr. Martin has conducted more than 1,000 port economic, planning and marketing studies for seaports, terminal operators and ocean carriers in the United States, Asia, Europe, the Caribbean and South America. He has been involved in assessing the economic costs of terminal congestion at container terminals, the impact of restrictive trade policies on the marine transportation system, and the integration of ports into the logistics strategies of major importers and exporters. Dr. Martin graduated from Millersville University with a BS in Economics and received his Ph.D. in Economics from the George Washington University.