PMSA

West Coast Trade Report

September 2023

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August 2023 – Partial Container Tallies

As a reminder to our readers, we have a stringent policy of citing only the container statistics released by the U.S. and Canadian ports we survey. Unfortunately, not all ports make their numbers available to us prior to our publication deadlines. So here's what we have for August. Please note that, unless otherwise indicated, the container numbers appearing below represent TEUs.

The **Port of Long Beach** reported a "modest start" (their own words) to the traditional peak shipping season. The Southern California gateway counted 325,436 inbound loads in August, a 15.4% fall-off from a year earlier but a modest 0.8% (+2,656) increase over the pre-pandemic August of 2019. Outbound loads were another thing, however. The 93,402 outbound loads in August were the fewest the port had shipped in any previous August since 2004. Year-to-date, total container traffic of all loads and empties amounted to 4,993,237. That represented a 24.4% decline from the same period last year, but a 2.6% (+126,295) boost over the total volume the port handled in the first eight months of 2019.

Across the street, the **Port of Los Angeles** was rather busier. Inbound loads in August (433,224) were up by 7.3% from a year earlier but were still down by 1.0% from August 2019. Outbound loads (124,988) were up 22.2% year-over-year but nonetheless down 14.6% from August 2019. Total container traffic through the port so far this year amounted to 5,649,686. That was down 21.0% from the same period a year before and 10.5% lower than the total number of TEUs the port handled in the first eight months of 2019.

Together, two San Pedro Bay ports have handled 535,893 fewer TEUs so far this year than they had in the same period in 2019. Inbound loads in August were down 0.2% from August 2019, while outbound loads were off by 19.5%. These numbers contrast unfavorably with those from rival East and Gulf Coast ports.

The **Port of Oakland** handled 72,481 inbound loads in August, down 17.5% from a year earlier and 17.9% below the volume handled in August 2019. For a port that once routinely exported more containers than it imported, the ratios have definitely changed at the Northern California port. Outbound loads in August (62,773) were the fewest shipped from the port in any previous August since 1998. Total container traffic YTD (1,372,870) was down 14.3% from the same period last year and down 19.1% from the first eight months of 2019.

Further up the Pacific Coast, the **Northwest Seaport Alliance** Ports of Tacoma and Seattle continued to struggle to regain pre-pandemic volumes of container business. Import loads (82,767) in August were down 19.0% year-over-year but also down 26.3% from August 2019. Export

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August Tallies Continued

loads (43,399) were off by 10.6% from a year earlier but 42.0% lower than in August 2019. Total container traffic YTD (1,874,148) was down 20.2% from last year and down 25.2% from the same point in 2019.

Across the border in British Columbia, the **Port of Vancouver** also posted negative numbers. Inbound loads (135,492) were off by 23.9% year-over-year and down 7.1% from August 2019. Outbound loads (56,085) were lower by 5.2% from the preceding year but off by 30.1% from August 2019. Total container traffic this year through August (2,006,393) was down 17.8% from last year and by 12.5% from the same period in 2019.

Further north, the **Port of Prince Rupert** continued to produce numbers that must disappoint the port's backers. Inbound loads (26,329) in August were down 54.5% from a year earlier and by 63.2% from the same month in 2019. Outbound loads (7,928) were off by 34.3% from the previous August and by 63.2% from August 2019. Total container traffic YTD (478,175) was down 31.8% from last year and by 38.9% from the first eight months of 2019.

Back along the Atlantic Seaboard, the **Port of Virginia** handled 136,788 inbound loads in August, down 14.9% from the previous August but up 12.5% from August 2019. Outbound loads (89,959) were off by 6.0% from a year earlier but represented an 11.5% gain over the same month in 2019. Total container traffic through the port YTD amounted to 2,165,882, a 13.8% fall-off from last year at this point but a 9.5% increase over the first eight months of 2019.

At the **Port of Charleston**, inbound loads in August (102,207) were down by 10.2% from a year earlier but also down by 1.0% from the 103,221 inbound loads the port handled in August 2019. Meanwhile, outbound loads (56,459) were up by 8.8% from the preceding August but were 23.6% below the 73,927 outbound loads recorded in August 2019. YTD, total traffic through the South Carolina port (1,637,059) was down 12.7% from a year earlier and also off by 0.8% from the first eight months of 2019.

Along the Gulf Coast, **Port Houston** experienced a relatively slow month, with inbound loads in August (149,660) down 16.9% year-over-year but still up 35.7% over August 2019. Outbound loads (110,008) were off by 5.8% from a year earlier but up 0.8% from August 2019. Total traffic YTD through the Gulf Coast gateway (2,510,162) was down 3.8% year-over-year but 26.7% ahead of the same month in 2019.

For the Record: Complete July 2023 TEU Numbers

Exhibits 1-3 provide the details on inbound and outbound loads as well as total container traffic (loads plus empties) through the North American ports this newsletter surveys.

July saw inbound loads at the mainland U.S. ports we monitor amount to 1,952,348, down 2.3% from the 1,997,811 inbound loads those same ports handled in July 2019. Of particular interest is that USWC ports saw their volume of inbound loads shrink by 19.3% from July 2019, while U.S. East Coast ports saw their volume increase by 11.1%.

Outbound loads from U.S. ports, meanwhile, totaled 886,274 in July, down 16.3% (-172,956) from July 2019. Of the major ports, only Virginia and Houston recorded gains in export loads over July 2019.

Traffic in both loaded and empty containers so far this year through U.S. ports totaled 27,719,261, a 2.2% fall-off (-626,907) from the same period in 2019.

In the Top Port competition, **Exhibit 3** attests to the Port of Los Angeles' status as the nation's busiest container port through July of this year, with 4,821,670 loads and empties, easily topping the Port of New York/New Jersey (4,465,823) with the Port of Long Beach (4,310,925) placing third.

Exhibit 1 July 2023 - Inbound Loaded TEUs at Selected Ports

	Jul 2023	Jul 2022	Jul 2021	Jul 2020	Jul 2019	2023/2019 % Change
Los Angeles	364,208	485,452	469,361	456,029	476,438	-23.6%
Long Beach	271,086	376,175	382,940	376,807	313,350	-13.5%
San Pedro Bay Totals	**635,294**	**861,627**	**852,301**	**832,836**	**789,788**	**-19.6%**
Oakland	78,122	69,463	94,746	96,420	90,598	-13.8%
NWSA	88,684	88,502	127,166	103,389	122,946	-27.9%
Hueneme	8,636	11,629	8,828	5,482	4,378	**97.3%**
San Diego	7,126	7,898	6,386	5,656	5,195	**37.2%**
USWC Totals	**817,862**	**1,039,119**	**1,089,427**	**1,043,783**	**1,012,905**	**-19.3%**
Boston	11,277	9,042	6,758	12,242	12,714	-11.3%
NYNJ	372,139	402,969	393,945	326,079	336,972	**10.4%**
Virginia	141,575	149,829	142,963	105,692	125,260	**13.0%**
S. Carolina	107,777	104,846	119,445	81,530	92,707	**16.3%**
Georgia	230,225	251,761	227,876	185,548	197,341	**16.7%**
Jaxport	24,221	26,552	21,813	28,867	32,505	-25.5%
P. Everglades	25,713	29,664	30,831	22,108	25,801	-0.3%
Miami	44,206	39,838	44,345	33,029	38,229	**15.6%**
USEC Totals	**957,133**	**1,014,501**	**987,976**	**795,095**	**861,529**	**11.1%**
New Orleans	11,202	13,166	9,702	11,210	12,315	-9.0%
Houston	166,151	159,881	137,197	102,339	111,062	**49.6%**
USGC Totals	**177,353**	**173,047**	**146,899**	**113,549**	**123,377**	**43.7%**
Vancouver	115,701	155,914	138,538	160,875	162,908	-29.0%
Prince Rupert	27,628	32,825	57,743	64,640	66,277	-58.3%
British Columbia Totals	**143,329**	**188,739**	**196,281**	**225,515**	**229,185**	**-37.5%**

Source Individual Ports

July 2023 TEU Numbers Continued

Exhibit 2 **July 2023 - Outbound Loaded TEUs at Selected Ports**

	Jul 2023	Jul 2022	Jul 2021	Jul 2020	Jul 2019	2023/2019 % Change
Los Angeles	110,372	103,899	91,440	126,354	161,340	-31.6%
Long Beach	90,134	109,411	109,951	138,602	111,654	-19.3%
San Pedro Bay Totals	**200,506**	**213,310**	**201,391**	**264,956**	**272,994**	**-26.6%**
Oakland	58,059	47,166	68,149	71,525	76,414	-24.0%
NWSA	37,598	40,697	48,893	56,547	73,828	-49.1%
Hueneme	1,784	2,186	1,784	1,370	1,094	63.1%
San Diego	712	993	370	202	308	131.2%
USWC Totals	**298,659**	**304,352**	**320,587**	**394,600**	**424,638**	**-29.7%**
Boston	4,827	3,462	5,420	8,692	6,418	-24.8%
NYNJ	100,195	95,823	111,159	102,740	118,015	-15.1%
Virginia	88,942	85,170	81,068	68,594	80,955	9.9%
S. Carolina	53,827	49,309	65,655	57,628	72,126	-25.4%
Georgia	105,640	122,928	119,072	112,464	117,790	-10.3%
Jaxport	40,140	47,317	51,598	48,254	41,165	-2.5%
Port Everglades	31,513	33,851	32,390	25,867	34,328	-8.2%
Miami	23,474	25,032	28,003	28,930	34,304	-31.6%
USEC Totals	**448,558**	**462,892**	**494,365**	**453,169**	**505,101**	**-11.2%**
New Orleans	21,405	23,404	18,148	21,458	25,021	-14.5%
Houston	117,652	102,644	75,457	98,509	104,470	12.6%
USGC Totals	**139,057**	**126,048**	**93,605**	**119,967**	**129,491**	**7.4%**
Vancouver	36,407	55,573	60,272	87,432	91,521	-60.2%
Prince Rupert	7,690	9,539	12,142	15,740	15,397	-50.1%
British Columbia Totals	**44,097**	**65,112**	**72,414**	**103,172**	**106,918**	**-58.8%**

Source Individual Ports

July 2023 TEU Numbers Continued

Exhibit 3 July 2023 - YTD Total TEUs

	Jul 2023	Jul 2022	Jul 2021	Jul 2020	Jul 2019	2023/2019 % Change
Los Angeles	4,821,670	6,349,325	6,318,674	4,618,277	5,450,793	-11.5%
NYNJ	4,465,823	5,679,626	5,153,882	3,973,088	4,315,835	3.5%
Long Beach	4,310,925	5,793,621	5,538,674	4,186,116	4,202,950	2.6%
Georgia	2,822,996	3,421,893	3,190,460	2,452,098	2,639,252	7.0%
Houston	2,202,538	2,225,563	1,905,414	1,662,546	1,721,402	28.0%
Virginia	1,878,649	2,171,715	1,974,825	1,495,143	1,720,012	9.2%
Vancouver	1,752,415	2,109,079	2,209,685	1,868,038	1,996,551	-12.2%
NWSA	1,631,448	2,067,304	2,191,059	1,834,653	2,241,765	-27.2%
South Carolina	1,433,890	1,652,794	1,579,967	1,273,190	1,417,959	1.1%
Oakland	1,193,709	1,391,635	1,513,176	1,387,895	1,473,176	-19.0%
Montreal	884,180	1,020,045	1,001,873	949,482	1,010,537	-12.5%
JaxPort	738,472	762,476	827,735	707,121	785,789	-6.0%
Miami	639,709	709,008	738,474	580,122	659,380	-3.0%
Port Everglades	592,852	654,382	617,261	533,415	603,061	-1.7%
Prince Rupert	430,904	587,225	599,654	585,527	659,398	-34.7%
Philadelphia	422,176	443,613	417,716	357,300	355,375	18.8%
New Orleans	282,298	256,641	307,886	341,944	370,890	-23.9%
Hueneme	144,996	156,950	123,867	104,372	74,226	95.3%
Boston	131,225	77,713	125,646	155,507	172,523	-23.9%
San Diego	86,059	95,281	91,669	88,101	82,958	3.7%
Portland, Oregon	74,017	86,024	42,382	28,882	20	∞
Everett (WA)	7,757	14,349	7,149	1,706	2,465	214.7%

July 2023 TEU Numbers Continued

Container Contents Weights and Values

The figures in **Exhibits 4 and 5** represent the U.S. West Coast (USWC) shares of the nation's box trade passing through mainland U.S. ports. We have revised the exhibits to provide a broader historical context by showing how USWC port shares this July compared with the same month last year as well as in pre-pandemic July 2019 and a decade earlier in July 2013.

The most evident revelation in these exhibits is that USWC port shares of the nation's containerized maritime trade had been in decline for years preceding the Great Disruption brought on by COVID.

More disturbing are the data showing that, despite hopes for a return to some semblance of normality, the USWC shares in July were among the lowest ever recorded. For example, the USWC ports' 32.6% share of all U.S. containerized import tonnage in July was not merely down from 34.7% a year earlier; it contrasted poorly with the 34.8% share in the previous month and a 34.6% share in May. As for the critical inbound transpacific trade, July's 48.6% tonnage share represented a sharp fall-off from the 54.0% share USWC ports had held just a month earlier.

Exhibit 4 Major USWC Ports Shares of U.S. Mainland Ports Worldwide Container Trade, July 2023

	Jul 2023	Jul 2022	Jul 2019	Jul 2013
Shares of U.S. Mainland Ports Containerized Import Tonnage				
USWC	**32.6%**	**34.7%**	**39.2%**	**44.1%**
LA/LB	23.6%	25.4%	28.0%	31.9%
Oakland	3.5%	3.3%	4.1%	4.4%
NWSA	3.9%	3.5%	5.2%	5.9%
Shares of U.S. Mainland Ports Containerized Import Value				
USWC	**38.5%**	**41.5%**	**47.0%**	**52.9%**
LA/LB	29.4%	33.1%	35.8%	41.0%
Oakland	3.1%	2.5%	3.7%	3.8%
NWSA	4.8%	4.1%	6.9%	7.2%
Shares of U.S. Mainland Containerized Export Tonnage				
USWC	**29.8%**	**34.0%**	**35.8%**	**40.7%**
LA/LB	18.8%	19.6%	20.7%	23.8%
Oakland	5.1%	5.4%	5.9%	6.7%
NWSA	5.0%	5.9%	7.7%	9.1%
Shares of U.S. Mainland Conatainerized Export Value				
USWC	**26.4%**	**27.3%**	**31.7%**	**35.3%**
LA/LB	17.7%	17.1%	20.5%	23.6%
Oakland	5.3%	5.3%	6.2%	5.9%
NWSA	2.9%	3.0%	4.4%	5.0%

Source: U.S. Commerce Department.

Exhibit 5 Major USWC Ports Shares of U.S. Mainland Ports Containerized Trade with East Asia, July 2023

	Jul 2023	Jul 2022	Jul 2019	Jul 2013
Shares of U.S. Mainland Ports Containerized Import Tonnage				
USWC	**48.6%**	**55.2%**	**57.8%**	**66.6%**
LA/LB	37.7%	43.6%	44.9%	50.6%
Oakland	3.8%	3.7%	4.5%	4.7%
NWSA	6.0%	6.1%	7.6%	9.4%
Shares of U.S. Mainland Ports Containerized Import Value				
USWC	**56.9%**	**61.2%**	**67.1%**	**74.1%**
LA/LB	44.9%	49.8%	52.6%	58.6%
Oakland	3.5%	3.0%	4.1%	4.2%
NWSA	7.1%	6.8%	9.9%	10.3%
Shares of U.S. Mainland Containerized Export Tonnage				
USWC	**49.3%**	**58.6%**	**58.5%**	**66.9%**
LA/LB	31.4%	36.2%	36.1%	41.1%
Oakland	7.6%	8.5%	9.2%	9.9%
NWSA	8.9%	10.9%	13.1%	15.0%
Shares of U.S. Mainland Containerized Export Value				
USWC	**54.3%**	**56.0%**	**62.4%**	**70.6%**
LA/LB	36.8%	37.4%	41.6%	48.9%
Oakland	9.9%	9.0%	11.1%	9.7%
NWSA	6.8%	8.7%	9.1%	10.4%

Source: U.S. Commerce Department.

July 2023 TEU Numbers Continued

Evaluating U.S. Ports: An Economist's Perspective

We periodically become aware of hyperventilating reports, most commonly in the East Coast media, whenever the Port of New York/New Jersey occasionally out-boxes the Port of Los Angeles for the title of America's busiest container port. Admittedly, that does happen from time to time, but we should note that comparing container volumes at PNYNJ and the Port of LA can often be highly misleading. For one thing, as the *Journal of Commerce* recently noted, "carrier alliances regularly shift their services among terminals in San Pedro Bay so the terminal operators can meet their financial commitments to the port authorities". Since terminals are financially committed to moving a specified number of containers through their facilities each year, emerging shortfalls may prompt shipping to be temporarily redirected to a terminal at the neighboring port. That's one major reason for regarding the Ports of Long Beach and Los Angeles as a single maritime gateway.

It's also worth emphasizing that counting steel boxes is not the only or even the most salient metric for evaluating the nation's seaports. Indeed, from an economist's point of view, the value of what's in the boxes moving through ports is significantly more important than the number of boxes being moved.

So we offer this bit of data in hopes of correcting the narrative. According to the U.S. Census Bureau's Foreign Trade Division, the federal government's official scorekeeper on the nation's foreign trade, the declared value of containerized shipments through the Port of Los Angeles last year totaled $281.356 billion. By comparison, the Port of New York/New Jersey handled containerized merchandise valued at $227.265 billion.

And, if we're really measuring maritime gateways rather than individual ports, we need to include the economic contribution of the Port of Long Beach to the value of trade moving through San Pedro Bay. So, for the record, **Exhibit 6** displays the shares of the total value of the nation's containerized trade passing through the nation's leading maritime gateways by month since January 2019.

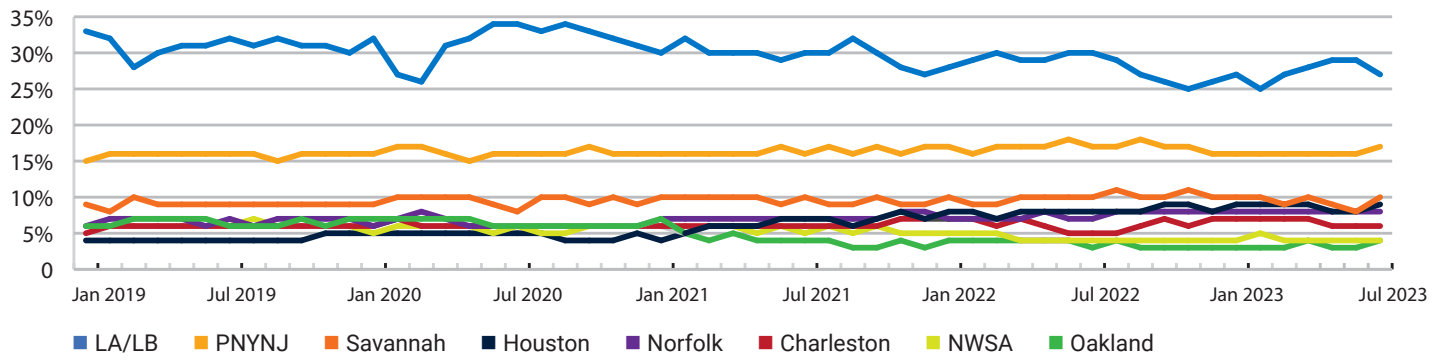
A billion here, a billion there…

As sales of electric vehicles in California surge, the state's already stressed electricity distribution grids will need to be upgraded to support the additional demand for power from commercial as well as residential EV charging stations. As if that in itself does not present a sufficiently formidable challenge, state regulators are assiduously identifying new ways of over-burdening California's fragile grids. For example, debate has been raging over proposals geared to phase out the use of gas in heating and cooking in favor of electricity.

This newsletter has periodically voiced concerns about whether, given such a highly litigious society as California

Exhibit 6 **Inbound Loads at Ports of LA, Long Beach, and PNYNJ**

Source: Individual Ports



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in which even the sound of neighbors conversing on the front porch can be cited in a CEQA complaint, any substantive enhancement to the grid's more visible elements can be accomplished within the state's accelerated timetable for reaching its ambitious emission-reducing goals.

Then there's that small matter of cost.

The past month has brought news that the Public Advocates Office at the California Public Utilities Commission (CPUC) has released a new study of the costs of upgrading the distribution grids of the state's three largest investor-owned electric utilities to meet California's transportation electrification goals. The study's price tag for upgrading these distribution grids by 2035 is estimated at about $26 billion.

That's intriguing for any number of reasons, not the least of which is because it's about half of the estimated cost cited in the latest study (Electrification Impacts Study Part 1) commissioned by the CPUC itself. Normally, one might be safe in concluding that the true cost would likely be somewhere between the two competing estimates. But that's not apt to be an especially useful rule-of-thumb in this case. That's because neither study seems to fully comprehend the First Law of California Infrastructure: that final costs (if anyone is still around at a project's completion to calculate such an amount) will invariably be some multiple of the original estimate.

Western States Farm Exports

Farm products factor mightily in the volume of exports shipped from West Coast ports. So it's useful to revisit the latest statistics as reported by agricultural officials in the three coastal states.

In 2022, Washington-grown or processed food and agriculture exports totaled $8 billion. Products that are especially reliant on global trade include wheat (up to 90% of the crop is exported each year), potatoes (up to 70% are exported in the form of French fries), and tree fruit (approximately 30% of apples and 25% of cherries are exported each year). In addition, a significant volume of food and agriculture products from other states including soybeans, wheat and corn are exported through Washington State ports each year. The value of these exports exceeded $15 billion in 2022. Once these pass-through exports are combined with Washington-grown/processed exports, the total value reached over $23 billion.

Washington exports up to 70% of its potatoes in the form of French fries

In Oregon, agriculture makes up 13% of the state's gross domestic product and results in $5.01 billion in agricultural production, and $2.57 billion in agricultural exports, according to a 2021 report from the Oregon state Board of Agriculture.

According to the latest (if less than timely) numbers from the California Department of Food and Agriculture (CDFA), the state's agricultural exports totaled $22.5 billion in value in 2021, representing an increase of 7.0 percent compared to the previous year. The state's top valued agricultural export commodity continues to be almonds, with more than $4.6 billion in foreign sales in 2021. Dairy and dairy products ranked second in export value for the year at $2.5 billion. Pistachios and wine came in third and fourth, respectively, with pistachio exports valued at $2.1 billion and wine exports valued at $1.3 billion.

California's top 10 export destinations for 2021, in order of value, were: Canada, the European Union, China and Hong Kong, Japan, Mexico, South Korea, India, the United Arab Emirates, Taiwan, and the Philippines. Together these destinations accounted for 69.3% of the total 2021 export value.

The preceding numbers are all retrospective. The big question for USWC ports is what will farm exports look like going forward. Weather (i.e., rainfall levels and

July 2023 TEU Numbers Continued

temperature levels) will have a huge role in answering that query. According to climate scientist Daniel Swain at UCLA, conditions are shaping up to yield lower than average precipitation this winter in the Pacific Northwest, but another wetter than normal winter in California. That would be great news for growers in the San Joaquin Valley, where years of groundwater depletion and poor water management threaten to pull as much as 20% of the 4.5 million acres of irrigated farmland out of production. A September report from the Public Policy Institute of California ("Managing Water and Farmland Transitions in the San Joaquin Valley") estimates that between 500,000 and 900,000 acres will have to be fallowed due to inadequate water supplies. More rain this winter should help nudge the toll of lost acreage toward the lower end of that estimate.

Beat the Canal!

Older members of the California trade community may recall a monumentally insipid 2011 video that featured several politicians and maritime industry luminaries staring into the camera and somberly intoning the vacuous phrase "Beat the Canal!". Among those appearing in the production were former Governor Gray Davis, ex-Assembly Speaker Willie Brown, Jr., and then Los Angeles Mayor Antonio Villaraigosa.

The video was narrated by Brown, who had reveled in his reputation as the "Ayatollah of the Assembly" but who nonetheless insisted in the video that the "interests of the people must come before politics". Referring to the work then underway on an expanded Panama Canal, Brown solemnly warned that hundreds of thousands of California jobs were at risk. "If we lose to the canal, we lose job opportunities and business opportunities for a whole generation."

It was never made clear what beating the canal might entail. Short of sabotaging the new locks or invoking a voodoo curse on the canal's future water supply, beating the canal presumably might have involved a concerted effort by state and local governments to ensure that the Ports of Los Angeles, Long Beach, and Oakland remained highly efficient conduits for containerized trade.

It took no special gift of prescience to appreciate that the new, more capacious path between Pacific and Atlantic would threaten the dominance of West Coast ports in servicing the nation's transpacific maritime trade. Regrettably, it also took no special gift of prescience to appreciate that the political leaders assembled for the video would stand down once they had performed their cameos before the camera. The dedicated international freight highways through the state – much touted at the time – never materialized. Instead, public agencies like the California Air Resources Board and the South Coast Air Quality Management District began their assault on the ports.

As for beating the canal, voodoo curses seem to be working.

Jock O'Connell's Commentary:

The Port That Helped Build Silicon Valley

My first job on moving to California as a freshly minted college graduate in the summer of 1970 was in a peach orchard in Sunnyvale. But the work had nothing to do with farming. I had been hired by a company called Memorex, then largely known as a manufacturer of high-end audio tapes. Older readers may recall a television commercial from that era that featured jazz singer Ella Fitzgerald hitting a high note that shattered a wine glass. The ad then showed a recording of Ella's voice on a Memorex tape achieving the same result. "Is it live or is it Memorex?" became the company's slogan for the next couple of decades.

Memorex was one of the swelling number of electronics firms springing up at the south end of the San Francisco Peninsula that would ensure that that Sunnyvale peach orchard – along with nearly every other farming operation within miles – would soon be history. Over the next few years, Santa Clara County, which once boasted of being the world's canning and dried-fruit packing capital, shrugged off its rich agricultural heritage. Along with neighboring San Mateo County, it embraced a new moniker: Silicon Valley.

Histories of the rise of Silicon Valley tend overwhelmingly to focus on the personalities of the engineers, entrepreneurs, and investors who built "the most efficient capital-accumulation machine in history", as internet pundit Benjamin Tarnoff wrote recently in *The New York Review of Books*. So we know a lot about William Hewlett, David Packard, William Shockley, Gordon Moore, Robert Noyce, Steve Jobs, Mark Zuckerberg, and Larry Ellison.

By contrast, almost nothing is written about the people and organizations who actually built the buildings that house Silicon Valley. With its gray precast concrete walls, the structure in which I worked in that Sunnyvale peach orchard was typical of the era. But someone built it with construction materials sourced from somewhere.

That's where the Port of Redwood City comes in. It is a vital terminal for imported sand and gravel used to make concrete.

The port lies about midway down the San Francisco Peninsula. It is located south of the San Mateo-Hayward Bridge, the first iteration of which was constructed across the South Bay in 1929 and thus predates both the Golden Gate and San Francisco-Oakland spans. At the time of its construction, it was the longest bridge in the country at seven miles. (It's still California's longest bridge.) As rebuilt in 1967, the bridge features a hump (technically, an orthotropic span) with a vertical clearance of 135 feet (41 meters) over the waterline. Still, the port's 30-foot channel depth prevents fully-loaded vessels from reaching the port's wharves. That's why ships carrying sand and gravel normally call first at the Port of Richmond to offload cargo before proceeding south to Redwood City.

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Unloaded dry bulker, Trillium Class, at the Port of Redwood City

We seldom give any thought to concrete. It is ubiquitous but anonymous. It's been around for over two millennia since the Romans gave a name (*opus caementicium*) to the cement that binds it all together. Combine lime or calcium silicate-based cement with aggregates like sand and gravel, and you have an exceedingly versatile material for constructing buildings, bridges, and roads. But the ingredients are not cheaply or easily transported. Aggregates are heavy and of such low value that trucking them from a quarry to a construction site quickly becomes prohibitively expensive.

According to the California Department of Transportation (Caltrans), shipping costs for aggregates can outweigh

Commentary Continued

Exhibit A

Import Tonnage at Port of Redwood City: 2003-2022

Sources: U.S. Commerce Department

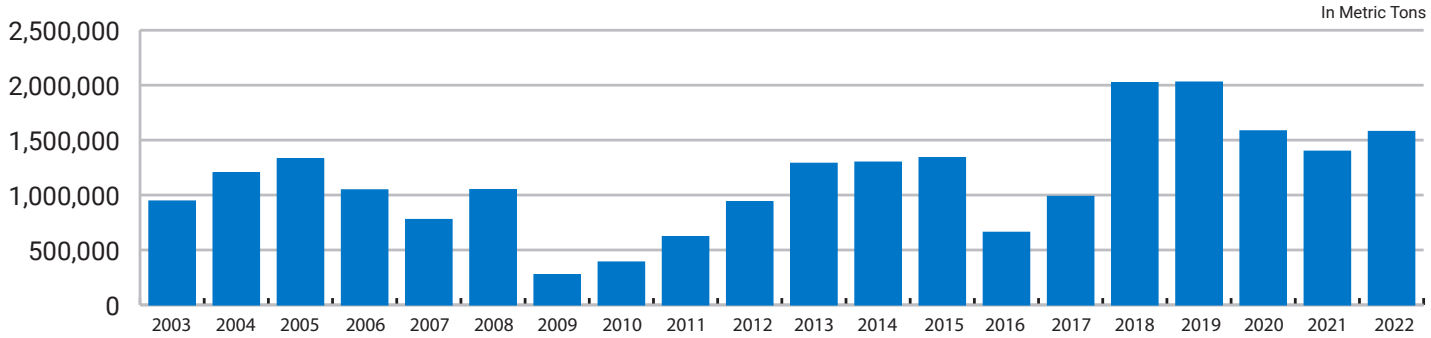
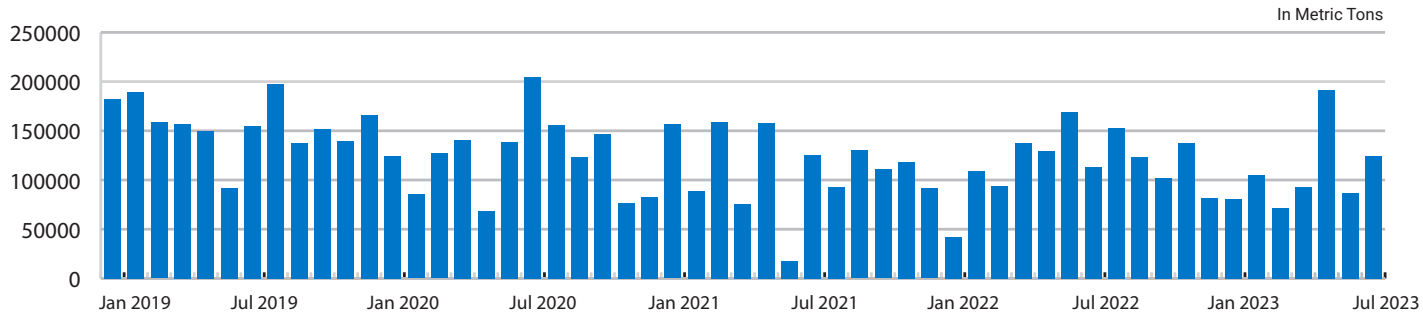


Exhibit B

Imports of Construction Materials at Port of Redwood City

Source: U.S. Commerce Department



production costs if the material is trucked more than 20 miles. Moreover, in a region like the San Francisco Bay Area that likes to flaunt its environmental consciousness, sourcing aggregates from local quarries poses a political quandary. The California Geological Survey found in 2018 that no more than six percent of the identified aggregate sources in the state had been permitted for mining activities by local regulatory agencies. In some areas of the state, Caltrans estimates that available aggregate supply could be depleted within a decade.

One preferred alternative to fighting the battles to open new sources of sand and gravel is to import them by ship. In the case of Silicon Valley, that involves the Port of Redwood City.

Ironically, it's a port that began life around 1850 shipping timber from the Peninsula to San Franciso to house the burgeoning Gold Rush population. So successful were loggers in depleting Peninsula's forests that a century later those materials had to be imported to accommodate the Peninsula's wartime needs.

1,729,931 short tons of cargo passed through the port in 2021, according to the U.S. Army Corps of Engineers. Of that, only about 2.5% involved domestic shipments.

Commentary Continued

Almost all of the import tonnage arriving at the port are commodities used in the construction industry. Last year, Sand (44.0%), Gravel (26.8%), and Gypsum (17.4%) were the chief imports by weight. The sources are not terribly exotic. All of the sand and gravel imported through the port came from Canada, while virtually all of the gypsum was sourced in Mexico.

In this century, import tonnage at the Port of Redwood City has generally tracked the ups and downs of the region's high-tech economy, as **Exhibit A** indicates. The electronics industry was recovering from the Dot.Com bust in the early years of the century but then ran up against the foreclosure crisis. Variations in interest rates together with higher tariffs imposed on high-tech exports have since shaped demand for the construction materials imported through the port.

The aggregates entering the Port of Redwood City are sourced from the Polaris Mine in British Columbia. Polaris is a wholly-owned subsidiary of Vulcan Materials Company of Birmingham, Alabama. The company holds an 88% interest in the Orca Quarry, a sand and gravel deposit that covers an area of approximately 350 hectares in British Columbia. Through long-term shipping agreement with CSL Americas (a subsidiary of Canadian Shipping Lines), Polaris ships construction grade sand, gravel, and crushed stone to the West Coast of the U.S. and to Hawaii.

Typical of the trade was the arrival on September 16 of the Honourable Henry Jackman, a 42-year-old, self-discharging bulk carrier that is part of the CSL Americas fleet. The ship is 245 meters long with a beam of 32 meters. It departed Port McNeill in British Columbia on September 12 and steamed under the Golden Gate Bridge three days later. It called at the Port of Richmond for just over twenty hours on September 16 before sailing down to the Port of Redwood City to discharge its remaining cargo to help Silicon Valley continue to expand and flourish.

Disclaimer: The views expressed in Jock's commentaries are his own and may not reflect the positions of the Pacific Merchant Shipping Association.

NUMBER OF THE MONTH

-125,979

the fall-off in outbound loads from USWC ports from July 2019 to this July

San Pedro Bay Ports Emission Reductions: A Success Story

By Jacqueline M. Moore

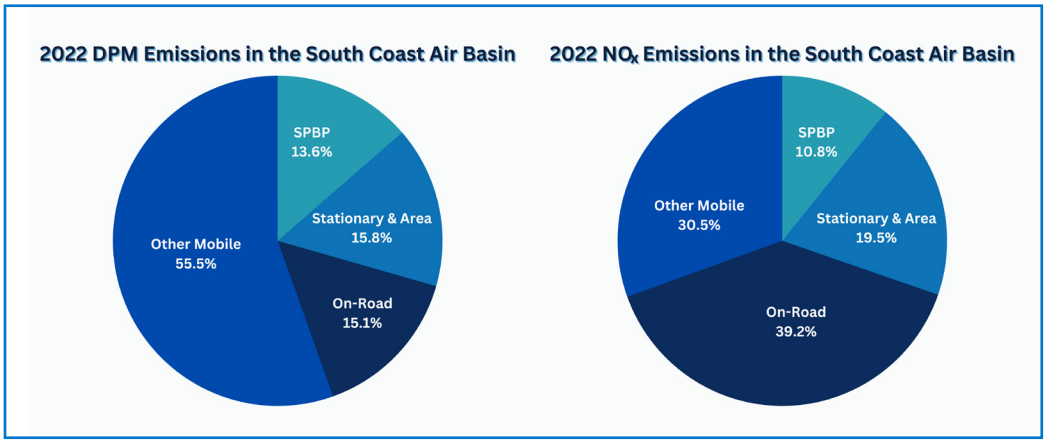
This September saw the Ports of Long Beach and Los Angeles release their annual Emissions Inventory reports and they were impressive reductions indeed. The San Pedro Bay Ports (SPBP) smashed the Clean Air Action Plan (CAAP) 2023 emission targets ahead of schedule and secured swift reductions beyond any COVID-19 pandemic induced emission impacts. The combined reductions reveal diesel particulate matter (DPM) is down by 90%, 97% for sulfur oxides (SOx), and 63% for nitrogen oxides (NOx), compared to the 2005 baseline year. The ports aren't just "back to normal;" the SPBP ports are cleaner than ever and the model U.S. seaport.

To demonstrate this, one must need just consider the efficiency metric, whereby emissions are estimated in total tons per twenty-foot equivalent unit (TEU). It is no secret that since 2005, cargo throughput has generally climbed (less than previously forecasted, but that is a different story for a different day) as emissions have plummeted at the SPBP. This has produced remarkable emissions efficiency metrics with certain key pollutants in the 90 percent range: SOx at 98%, DPM at 92% and NOx at 73%, all the while, TEU's grew 34%, on average, since 2005.

However, this metric shouldn't be confused with erroneously assigning emissions per TEU, as one regional Air Quality Management District is potentially mulling over. Boxes do not produce emissions. Boxes come in all colors and sizes and hold about anything you can imagine of varying weights, but in the end, a TEU is simply the standardized container to hold stuff. The history of the box is actually a good read, see The Box That Changed the World.

Even with this CAAP success story, the ports are continuously touted as the largest single source of pollution in the South Coast Air Basin (SCAB). Ports are not single, area or point sources, much less a fixed facility. No other industry or facility is aggregated to include all collective emissions in this manner. As such, related emissions merit to be placed into context as a contribution to the total emissions in the SCAB. The SPBP 'piece of the SCAB pie' (yumm?) is small indeed, comprising just over 10%of the total NOx emissions, and approximately 14% of DPM emissions, with the ports being the smallest so called 'source' of both pollutants. If one analyzes the SPBP categories at a micro-level, many are hardly even visible, with heavy duty trucks comprising 1.4%, and cargo handling equipment at 0.6% of the SCAB totals. Yes, we now are measuring emissions in fractions of a percentage.

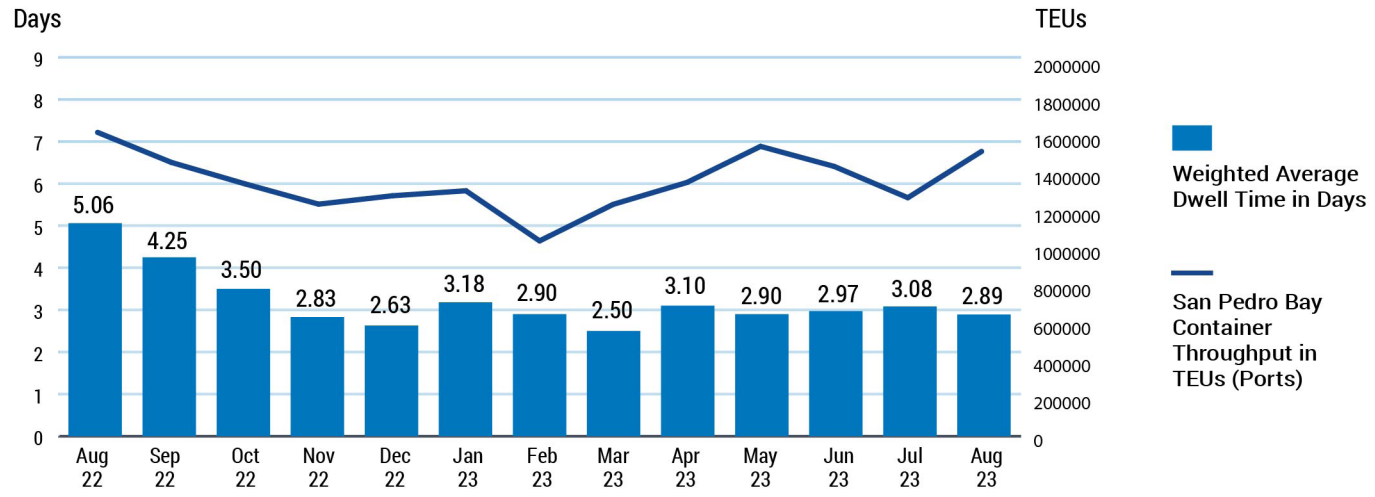
These impressive emission reductions prove that the voluntary CAAP is working. We've already surpassed the 2023 emission targets, but the supply chain isn't going to stop there; we have, and will continue to make, transformational progress to strive towards the 2030 and 2035 zero emission goals. The industry is testing new and alternative fuels, technologies, as well as operational modifications, which will continue to reduce emissions across our region and state.



*Values were calculated utilizing the ports of Long Beach and Los Angeles' individual 2022 Emission Inventory Reports (Starcrest Consulting Group) and the 2022 Air Quality Management Plan (SCAQMD). Discrepancies may occur due to rounding.

Container Dwell Time Remains Steady in August

San Pedro Bay Weighted Average Inbound Laden Container Dwell Time in Days



Rail Dwell Time in Days