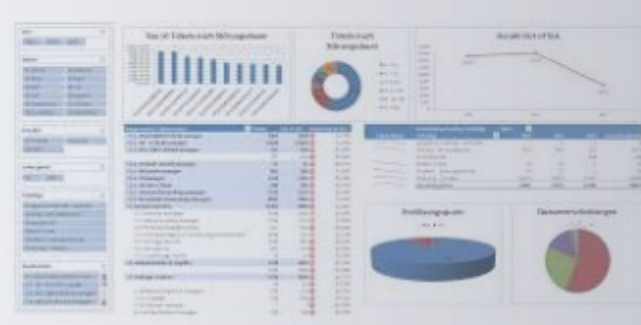
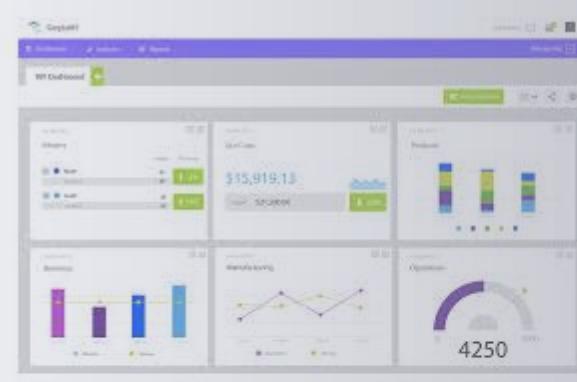
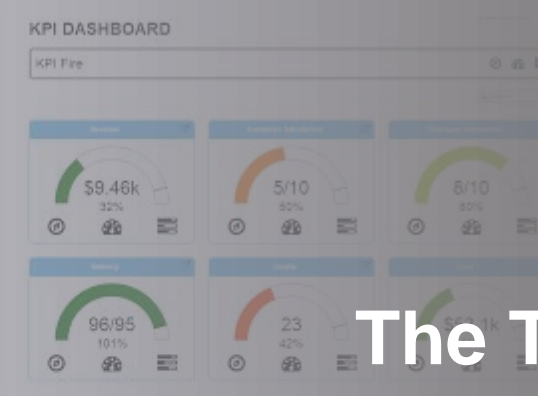


Dashboards and KPIs for the Real World

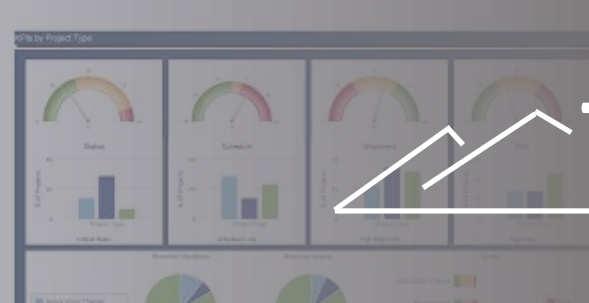
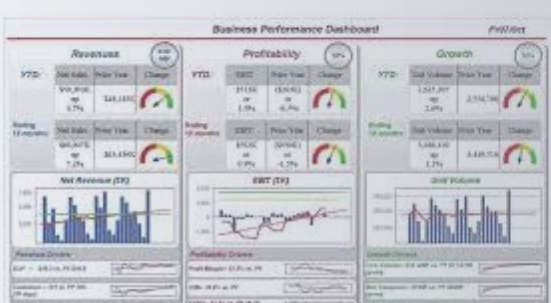


	Product 1	Product 2	Product 3	Product 4
2017				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

AAPA Smart Ports
Oakland
March 2018



Dan Smith
The Tioga Group



Tioga

Dashboard?



What **THEY**
see...

... vs. what
YOU see

Our responsibilities no longer end at the terminal fence

- Our customers, their customers, and their customers' customers want information
 - They expect KPIs and data
 - Truckers and BCOs need to make plans and operating choices
- Our constituencies and regulators want information
 - Electeds and the public want to know how the port is doing
 - Planners need to understand trends
 - Communities want to know what is going on at the port

Who is looking over your shoulder?

- Marine terminal operators
- Ocean carriers
- Truckers
- BCOs
- Commissioners, board members, elected officials
- Regulators and environmental agencies
- The public

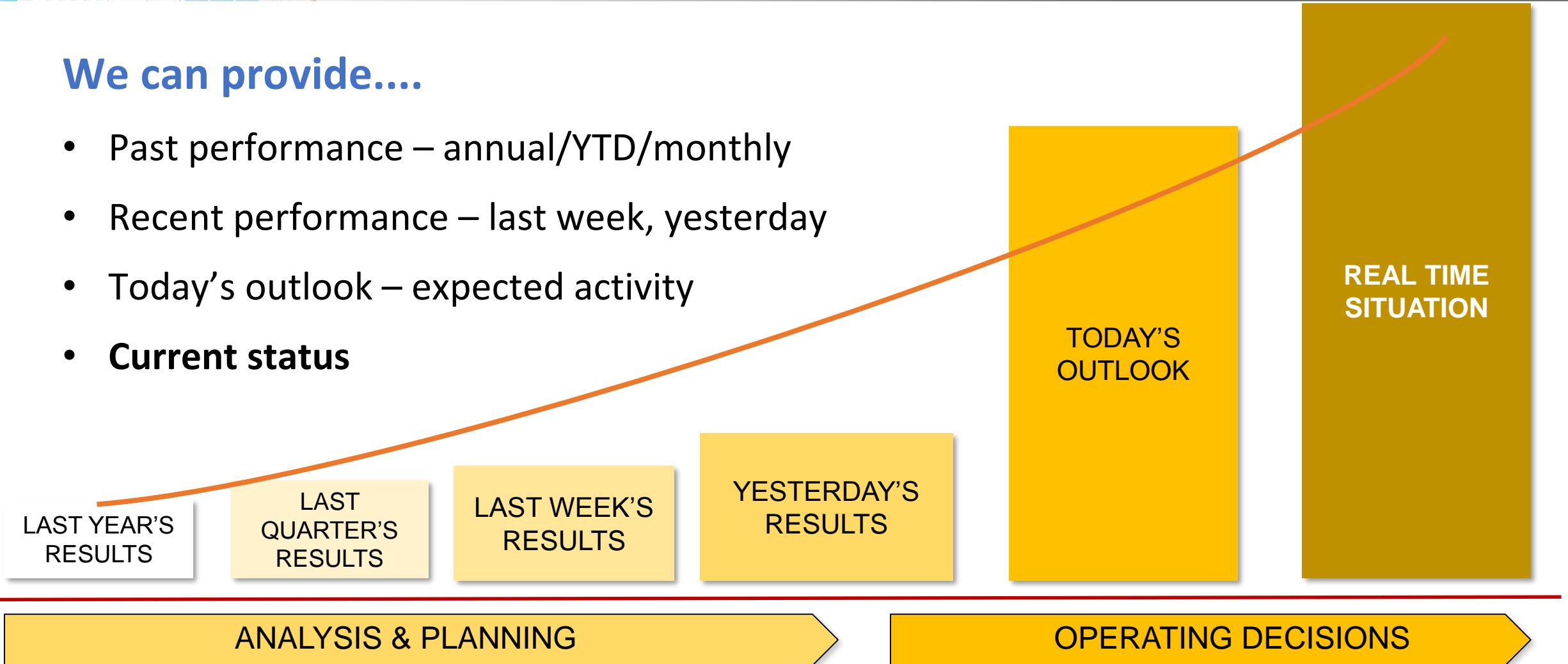
Please rate each of the following measures of container terminal efficiency/productivity. (Please assume you can get reliable information on each measure.)

Answer Options	Very Important		Somewhat Important		Not Important	Rating Average	Response Count
Overall cost per container	16	4	0	0	0	1.20	20
Overall transit time	17	2	1	0	0	1.20	20
Reliability (% on schedule)	15	5	0	0	0	1.25	20
Drayage (truck) turn time	14	5	1	0	0	1.35	20
Average container dwell time	13	5	2	0	0	1.45	20
Container moves/crane Hour	6	8	2	3	1	2.25	20
Average vessel time in port (hours)	5	6	6	3	0	2.35	20
Average man-hours per container	5	3	5	5	2	2.80	20
TEU/acre	0	4	5	6	4	3.53	19

What's relevant and valuable?

We can provide....

- Past performance – annual/YTD/monthly
- Recent performance – last week, yesterday
- Today's outlook – expected activity
- **Current status**



What belongs on a dashboard?



Available Port Data	Source	Available Terminal Data	Source
Always		Always	
Berth Depth	Port, Directories	Berth Depth	Port, Directories, Terminal
Berth Length	Port, Directories	Berth Length	Port, Directories, Terminal
Berths	Port, Directories	Berths	Port, Directories, Terminal
Channel Depth	Port, Directories	Channel Depth	Port, Directories, Terminal
Cranes & Types	Port, Directories	Cranes & Types	Port, Directories, Terminal
Gross Acres	Port, Directories	Gross Acres	Port, Directories, Terminal
Port TEU	Port, Directories, AAPA	Sometimes	
Vessel Calls	BTS	Avg. Crane Moves/hr	Terminal
Vessel DWT	BTS	CY Acres	Port, Terminal
Sometimes		Rail Acres	Port, Terminal
Avg. Crane Moves/hr	Port	TEU Slots	Port, Terminal
CY Acres	Port, Directories	Truck Turn Times	Terminal
Rail Acres	Port, Directories	Trouble Ticket %	Terminal
TEU Slots	Port, Terminals	Estimated	
Estimated		Net BGY Acres	Aerial Photos, Terminal Plans
Net BGY Acres	Aerial Photos, Terminal Plans	Vessel TEU	DWT/TEU Relationship
Vessel TEU	DWT/TEU Relationship	Vessel Length	DWT/Length Relationship
Vessel Length	DWT/Length Relationship	Avg. Dwell Time	Benchmarks, Assumptions
Avg. Dwell Time	Benchmarks, Assumptions	Berth Capacity	Benchmarks, Assumptions
Berth Capacity	Benchmarks, Assumptions	Crane Capacity	Benchmarks, Assumptions
Crane Capacity	Benchmarks, Assumptions	CY Capacity	Benchmarks, Assumptions
CY Capacity	Benchmarks, Assumptions	Confidential	
Confidential		Costs	Modeling?
Costs	Modeling?	Man-hours	Modeling?
Man-hours	Modeling?	Vessel Turn Time	Modeling?
Vessel Turn Time	Modeling?	Rates	Modeling?
Rates	Modeling?	Working Crane Hours	Modeling?
Working Crane Hours	Modeling?	Terminal TEU	Modeling?

Search for
"MARAD Port Productivity"

We start with a mixture of port and terminal data

- Public viewers are probably more interested in port-wide data and averages
- The industry tends to focus on terminal data as well as port averages
- The data we would like to provide are not always available or current
- Third-party and automatic or probe data add to the possibilities, but also the costs

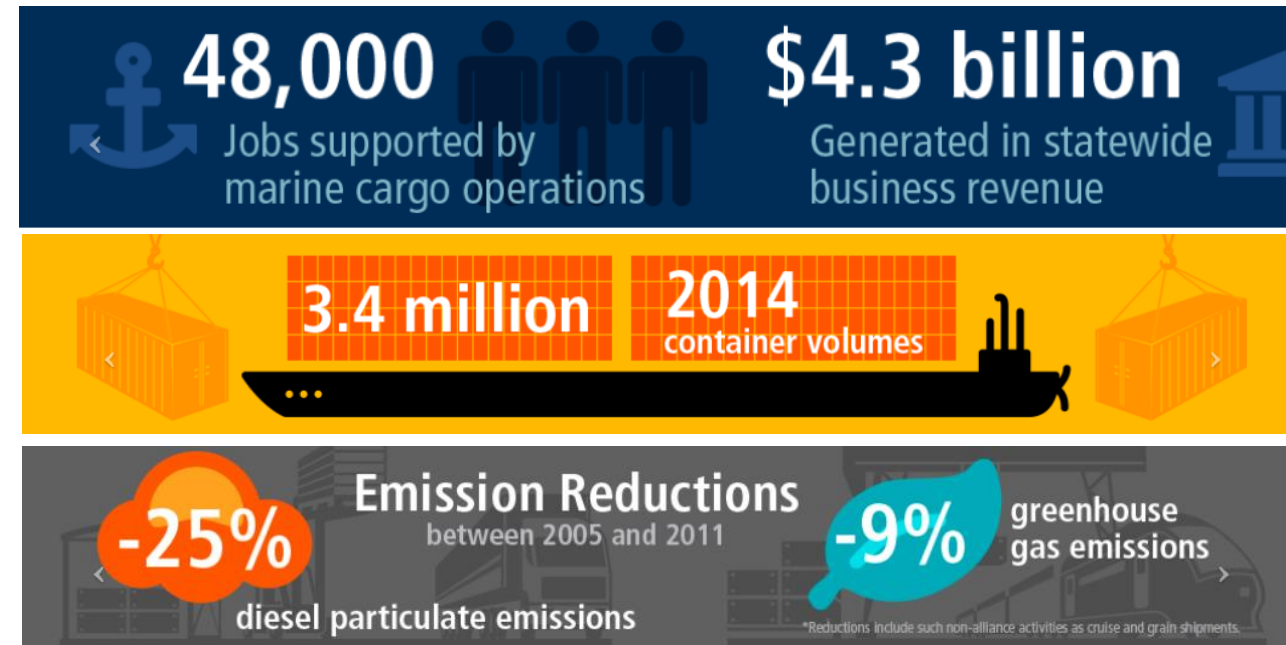
When is a Performance Indicator “Key”?

- **When it signals a need to act**
- When it affects port management
- When it affects an operational decision
- When it affects cargo routing
- When it affects investment decisions
- When it reflects community and environmental concerns
- **When it shifts dialog from anecdotes to numbers**



What will help them understand and work with the port?

- Employment, environment, and community – What have we done, how are we doing?
- News & alerts – Construction, events, changes



Port Alerts

3/6/2018 7:54:11 AM

Terminals & depots will open at normal start times tomorrow. We will monitor the storm & advise of any schedule changes. Plan accordingly & stay safe.

3/5/2018 12:55:45 AM

No idling over 3 minutes on port property, fines can exceed \$250/infracton. Queuing is prohibited until 15 minutes before terminals open.

Port Performance Freight Statistics Program

Annual Report to Congress

2017

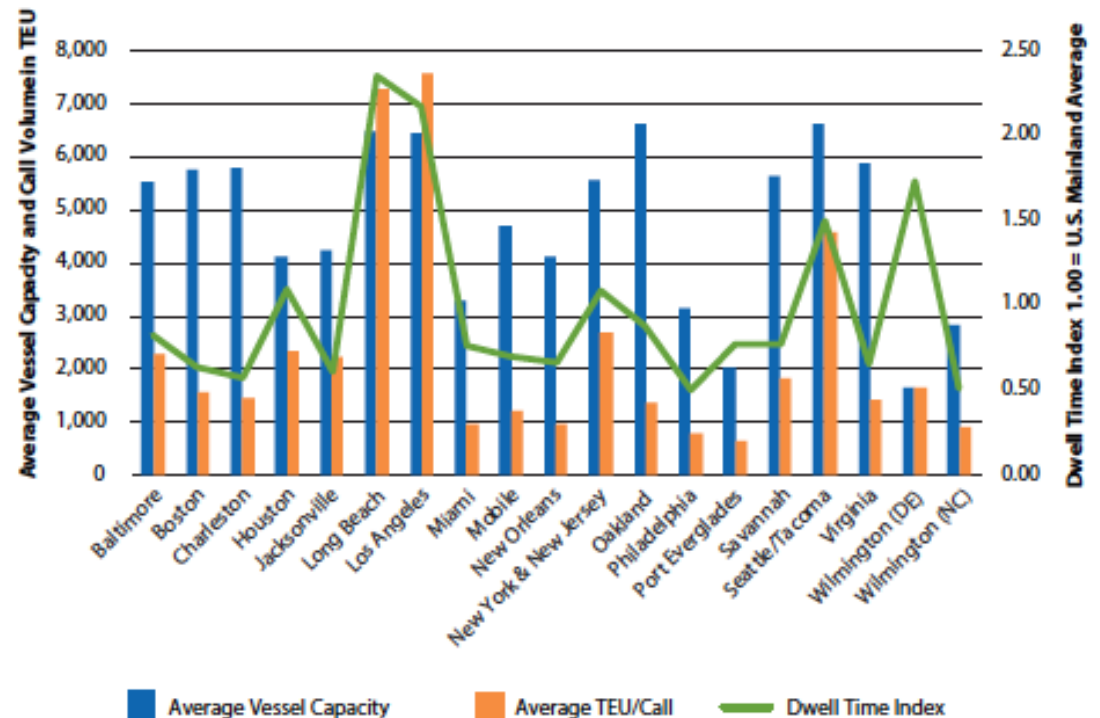


U.S. Department of Transportation

Search for :
"BTS Port Performance 2017"

Port Performance Freight Statistics Program

Figure 3-10 Average Vessel Capacity, TEU per Call, and Dwell Time Indices for Mainland U.S. Ports, 2016



KEY: TEU = Twenty Foot Equivalent Unit

PORT OF OAKLAND

California
Pacific Coast



Port overview

The Port of Oakland is located in Northern California on San Francisco Bay, about 9 miles from the Pacific Ocean. The port is governed by a seven-member Board of Commissioners.

The port has six container terminals, four of which presently handle cargo: the TraPac terminal, Oakland International Container Terminal (OICT), the Ben E. Nutter Terminal, and the Matson Terminal. A privately operated scrap terminal is located within the Oakland harbor. Commodities moving through the port include manufactured products, wastepaper, fruits and nuts, wine, animal feed, and iron and steel scrap.

All container terminals have access to near-dock rail intermodal terminals.

Port Updates:

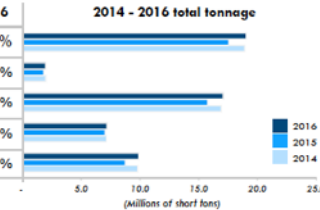
The Port of Oakland is developing two major projects: Cool Port (a refrigerated import/export facility), and the Seaport Logistics Complex (a large distribution and transload facility on the former Oakland Army Base). The TraPac terminal is being expanded into the former Ports America terminal area. The port is also raising and upgrading container cranes at OICT.

Key program takeaway – It is difficult and unreliable to compare ports

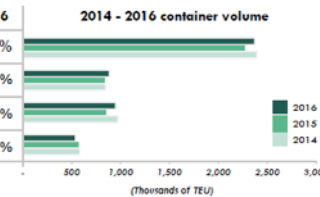
THROUGHPUT

Cargo

Total tonnage (Millions of short tons)	2016	2015 - 2016
Total (domestic & foreign)	19.1	▲ 8.5%
• Domestic	2.0	▲ 9.1%
• Foreign	17.1	▲ 8.4%
- Imports	7.2	▲ 2.6%
- Exports	9.9	▲ 13.0%



Container volume (Thousands of TEU)	2016	2015 - 2016
Total TEU	2,370	▲ 4.0%
• Inbound loaded TEU	884	▲ 4.7%
• Outbound loaded TEU	949	▲ 10.5%
• Empties (in- & outbound)	537	▼ -6.6%



CAPACITY

Container terminals

Terminal Name	Acres	Berth length (ft)	Air draft (ft)	Limiting bridge name	Min. project depth	Cranes			On-dock rail
						Panamax	PPX	Super PPX	
TraPac Terminal	123	4,263	220	Bay Bridge	50	-	5	2	N
Ben E. Nutter Terminal	74	2,157	220	Bay Bridge	50	-	1	3	N
Oakland International Container Terminal	270	6,000	220	Bay Bridge	50	-	-	10	N
Matson Terminal	80	2,743	220	Bay Bridge	50	-	4	-	N

inals

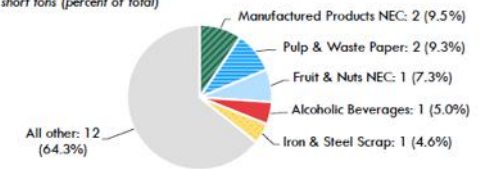
ainer terminals listed above, the Port of Oakland complex includes a scrap metal export terminal.

depth (ft) **50.0** Maximum depth of approach channel (ft) **45.0**

THROUGHPUT

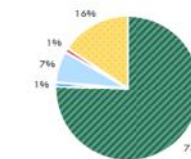
Commodities

Tonnage Millions of short tons (percent of total)



Vessel calls

% of total vessel calls

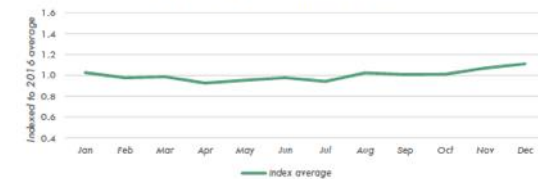


By vessel type

	2016	2015 - 2016
Total vessel calls	2,176	▲ 21.0%
• Container vessel	1,640	▲ 20.4%
Average TEU per container vessel	1,445	▼ -13.6%
• Dry bulk vessel	20	▼ -7.0%
Average dry bulk tonnage (short tons) per dry bulk vessel	N/A	
• Dry bulk barge	154	▲ 22.8%
Average dry bulk tonnage (short tons) per non-dry bulk vessel	N/A	
• Other freight vessel	22	▲ 12.8%
• Other freight barge	340	▲ 25.9%

Vessel dwell time

2016 container vessel dwell time index



Port of Los Angeles KPIs



Key Performance Indicators



By all measurements, the Port of Los Angeles is at the forefront of the international maritime industry. The Port's intense focus on developing state-of-the-art, 21st century facilities to accommodate future cargo growth is complemented by Southern California's second-to-none distribution network and deep pool of shipping and logistics resources. The Port's broad economic impact helps to ensure a strong regional economy that fosters a stable workforce of nearly one million in Southern California, with jobs extending from the docks to nearly every industry sector.

The Key Performance Indicators at the Port of Los Angeles reflect the reliability and stability of Southern California's goods movement operations and the diversity of cargoes and services facilitated by the Port of Los Angeles.

Annual Gross Revenue

Year	2006	2007	2008	2009	2010
Total	412.12*	422.66*	426.43*	402.22*	406.82*
% Change		2.6%	0.9%	-5.7%	1.1%

*Millions of US Dollars

Annual TEUs* Total



Value of Trade by Region

Region	Cargo Value* (CY 2010)	% of Total Trade
Asia	218,209	92.3%
Europe	7,336	3.1%
Latin	6,492	2.7%
Africa	780	0.3%
Other Areas	3,622	1.5%
Total	236,438	100.0%

Source: World Trade Atlas

*Millions of US Dollars

First 6 Months 2011

Vessel Type	Volume	% Change from 2010
Containers	3,767,226 TEUs	+3%
Break Bulk	1,278,922 Tons	+54%
Cruise Passenger	360,267 Passengers	-14%
Vehicles	72,808 Units	+11%
Liquid Bulk	27,570,088 Barrels	+5%

Value of Imports by Country-Part of Los Angeles

Rank	Region	Cargo Value* (CY 2010)	% of Total Trade
1	China	110,518	55%
2	Japan	29,346	14%
3	Taiwan	8,281	4%
4	S. Korea	7,630	4%
5	Vietnam	6,413	3%
6	Thailand	6,016	3%
7	Indonesia	5,472	3%
8	Malaysia	3,944	2%
9	Germany	2,253	1%
10	Philippines	2,007	1%
11	Others	20,856	10%
	Grand Total (11 countries)	202,684	100%

Source: World Trade Atlas

Value of Exports by Country-Part of Los Angeles

Rank	Region	Cargo Value* (CY 2010)	% of Total Trade
1	China	10,155	30%
2	Japan	5,982	18%
3	S. Korea	2,465	7%
4	Taiwan	2,431	7%
5	Singapore	2,037	6%
6	Hong Kong	1,461	4%
7	Australia	1,366	4%
8	Thailand	1,230	4%
9	Indonesia	945	3%
10	Vietnam	795	2%
11	Others	4,897	14%
	Grand Total (11 countries)	33,754	100%

*Millions of US Dollars

Economic Impact of the San Pedro Bay Ports*

Employment (Direct):

- 43,000 positions at the Port of Los Angeles (CY 2010)

Employment (Related):

- 1.1 million jobs in California (CY 2010)
- 3.3 million jobs in the U.S. (CY 2010)

Value of Trade:

- \$47.8 billion in California (CY 2009)
- \$195.7 billion in the U.S. (CY 2009)

State and Local Tax Revenue:

- \$5.1 billion in California (CY 2008)
- \$21.5 billion in the U.S. (CY 2008)

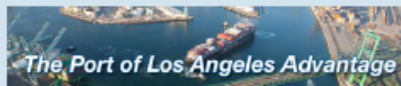
West Coast Market Share (Incl. Canadian ports):

- 33.7% Port of Los Angeles (CY 2010)
- 60.8% Port of Los Angeles/Long Beach (CY 2010)

National Market Share (Incl. Canadian ports):

- 18.5% of all waterborne Imports and exports Port of Los Angeles (CY 2010)

*San Pedro Bay Ports are the Port of Los Angeles and the Port of Long Beach
Source: Planning & Economic Development



- Spending \$1 million a day in capital improvement programs.
- Current projects: Channel deepening, terminal expansion at Trapac, China Shipping and APL, Transportation projects for efficient access to port terminals and security projects.
- 10,000+ drayage trucks that are model year 2007 or newer for superior reliability and air quality.
- Workforce of 18,000 regular and casual longshore personnel.
- Access to multiple service providers in all parts of the logistics chain.
- Easy access to special handling equipment companies.
- 1,684 acres/674 hectares of container terminal backland.
- 113 miles/182 kilometers of rail on Port property.
- Handling more than 40 trains daily.
- 1 Billion sq. ft./93 million of square meter warehousing and DC facilities within Southern California.
- 53' deep draft waterways to accommodate the world's largest container ships.
- 50+ berths and 75 gantry cranes.



425 South Palos Verdes Street, P.O. Box 151 • San Pedro, California 90733-0151
Tel/TDD: 310-SEA-PORT • www.portoflosangeles.org

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

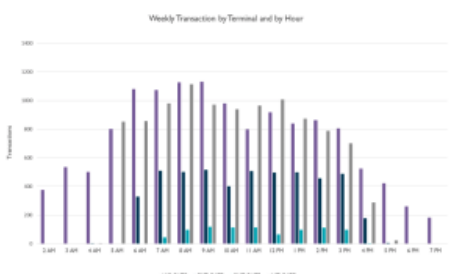
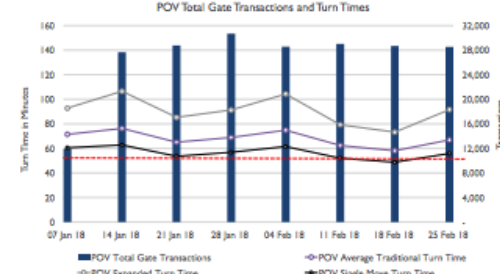
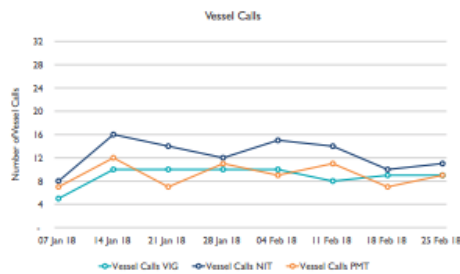
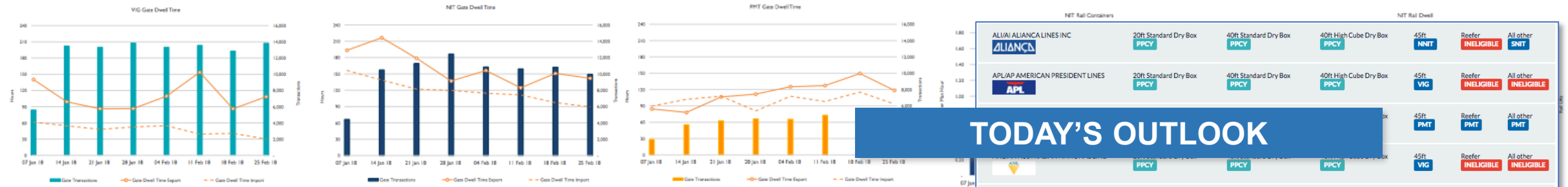
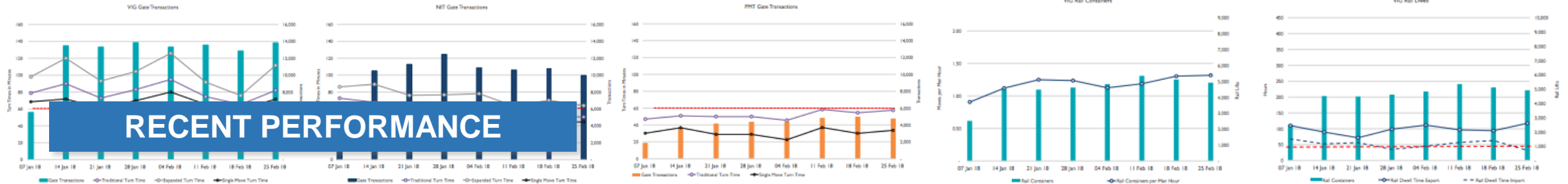
Printed on recycled paper

2011-0829 Revised Aug 2011

How are we doing?

- Conventional port statistics
- Regional and community impact
 - Employment
 - Tax revenue
 - Value of trade
- Talking points

Port of Virginia Dashboard



TODAY'S OUTLOOK

ALIA/ALIANCA LINES INC ALIANCA	20ft Standard Dry Box PPCY	40ft Standard Dry Box PPCY	40ft High Cube Dry Box PPCY	45ft NNIT	Reefer INELIGIBLE	All other SNIT
APL/AMERICAN PRESIDENT LINES APL	20ft Standard Dry Box PPCY	40ft Standard Dry Box PPCY	40ft High Cube Dry Box PPCY	45ft VIG	Reefer INELIGIBLE	All other INELIGIBLE
AML	PPCY	PPCY	PPCY	45ft VIG	Reefer INELIGIBLE	All other INELIGIBLE
COS/CHINA OCEAN SHIPPING	20ft Standard Dry Box PPCY VIG	40ft Standard Dry Box PPCY VIG	40ft High Cube Dry Box PPCY VIG	45ft VIG	Reefer INELIGIBLE	All other VIG
CHS/CHINA SHIPPING CONTAINER	20ft Standard Dry Box PPCY VIG	40ft Standard Dry Box PPCY VIG	40ft High Cube Dry Box PPCY VIG	45ft VIG	Reefer INELIGIBLE	All other VIG
CMA/CA CMA (AMERICA) INC CMA CGM	20ft Standard Dry Box PPCY	40ft Standard Dry Box PPCY	40ft High Cube Dry Box PPCY	45ft VIG	Reefer INELIGIBLE	All other INELIGIBLE
CSA/CSA V AGENCY LLC CSAV	20ft Standard Dry Box INELIGIBLE	40ft Standard Dry Box INELIGIBLE	40ft High Cube Dry Box INELIGIBLE	45ft INELIGIBLE	Reefer INELIGIBLE	All other INELIGIBLE
EIM/EMSIP USA INC EIMSIP	20ft Standard Dry Box INELIGIBLE	40ft Standard Dry Box INELIGIBLE	40ft High Cube Dry Box INELIGIBLE	45ft INELIGIBLE	Reefer INELIGIBLE	All other INELIGIBLE
EVG/EVERGREEN SHIPPING AGENCY EVERGREEN	20ft Standard Dry Box PPCY VIG	40ft Standard Dry Box PPCY	40ft High Cube Dry Box PPCY	45ft VIG	Reefer INELIGIBLE	All other VIG
HSD/HAMBURG SUD HAMBURG SUD	20ft Standard Dry Box PPCY	40ft Standard Dry Box PPCY	40ft High Cube Dry Box PPCY	45ft NNIT	Reefer INELIGIBLE	All other SNIT

Vancouver Dashboard


Port Dashboard

Port Dashboard provides real-time monitoring tools for port users and stakeholders, plus supply chain performance metrics, maps and weather data.

Real-time monitors


Several real-time monitoring programs are in place throughout the Port of Vancouver to help keep users informed and enable better planning.

eHub app




Real-time supply chain status through the Port of Vancouver eHub app.

GPS dashboard




Container truck GPS data providing wait times at port terminals.

Webcams



Feeds from the port.




Noise data and information about monitoring programs.

Supply chain performance


RECENT PERFORMANCE

Rail metrics



Includes container terminal rail performance.

Trucking metrics



Includes container truck performance update and container truck GPS data.

Vessel metrics



Includes container vessel on-time performance data.

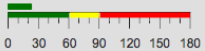
Current Hourly

Estimated truck waiting and flow times at Port of Vancouver terminals

Current date/time: Feb 26, 2018 04:17 PM. Refresh in 27 seconds.

Centerm

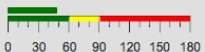
Today's total average wait time: 33m
 Current total average wait time: 23 minutes
 Terminal Pregate: 7 minutes
 Terminal: 16 minutes



Operating Status: Operating Normally

Deltaport

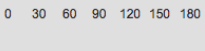
Today's total average wait time: 38m
 Current total average wait time: 48 minutes
 Terminal Pregate: 17 minutes
 Terminal: 31 minutes



Operating Status: Operating Normally

Fraser Surrey Docks

Today's total average wait time: 32m
 Current total average wait time: 12 minutes
 Terminal Pregate: 0 minutes
 Terminal: 12 minutes



Operating Status: Operating Normally

REAL TIME SITUATION

Port's rail crossings status:

Status	Start	Status	Start
Columbia Commissioner Street	● OPEN	Vanterm West Stewart Street	● OPEN
Viterra Stewart Street	● OPEN	AGT Centennial Road	● 16:10
Vanterm East Stewart Street	● OPEN	Rogers St Rogers Street	● 16:10

REAL TIME SITUATION

Webcams are useful...and easy



PORT OF OAKLAND

PORT

COMMUNITY

BUSINESS

FULL MENU 

Oakland Trucker WebCams

*NOTICE: We are currently updating our cameras and software
diligently to improve your live and image feed.*

Welcome to Oakland Trucker WebCams, an interactive tool for dispatchers which requires STEP DTR Application. For more information on the launch of the application.***

Dispatcher Video Streams

Please use your email address registered with the system.

Trucker Gate Images

Feel free to bookmark the Trucker Gate Image page.





Where do we go from here?

- Start with what you have, and the story you want to tell
- If you do not provide the numbers, somebody else will (and you won't like it)
- Port-wide statistics and webcams are easy, and satisfy most public sector needs
- Meaningful operational data and actionable KPIs are harder to define and provide
- Current data and outlook are much harder, but more valuable
- Involving stakeholders is also harder, but more valuable
- Keep it current and interesting

Challenge is moving from past performance to current situation, and from anecdotes to numbers