Long Beach: Premier Seaport

- $180 Billion in Trade
- $5B in USCBP Revenue
- $15B in Trade-Related Wages
- 30K jobs (1 in 8) in Long Beach
- 300K jobs (1 in 22) in Southern California
- 1.4M jobs throughout the US
Top 30 Port Volumes (2015 TEU's)

Source: Alphaliner Monthly Monitor, August 2016
Revenue Source (2016)

- Wharfage: 88%
- Dockage: 9%
- Other: 3%
Revenue Mix (2016)

Changes in 2010:

- Measure D redirected $45M in Oil revenue to the City
- Tidelands Transfer was amended to 5% of gross from 10% of net
Capital Plan (2017)

$3B 10-year CAPEX
$1.2B in Bonds (next 4-6 yrs)
Projected Cargo Growth

Source: San Pedro Bay Long-term Unconstrained Cargo Forecast
### Vessel Size (TEU's)

<table>
<thead>
<tr>
<th>Vessel Size</th>
<th>Current Fleet</th>
<th>Order Book</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,000 - 8,000</td>
<td>31%</td>
<td>3%</td>
</tr>
<tr>
<td>8,000 - 10,000</td>
<td>20%</td>
<td>3%</td>
</tr>
<tr>
<td>10,000 - 13,000</td>
<td>12%</td>
<td>3%</td>
</tr>
<tr>
<td>13,000 - 18,000</td>
<td>9%</td>
<td>36%</td>
</tr>
<tr>
<td>18,000 - 21,000</td>
<td>4%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Source: Alphaliner Monthly Monitor, July 2016
2005 vs. 2015

Overall Container Volumes up 7%
Containers (TEUs) per ship up 54%
Container ship calls down 31%
All ship arrivals down 26%
Annual Throughput
(Based on USWC vessel call patterns)

8,000 TEU vessel = 720 K TEUs/year
14,000 TEU vessel = 1.25 M TEUs/year
18,000 TEU vessel = 1.6 M TEUs/year
2.9 M Lifts/year
15 K Moves/week
Competitive Import Service Times

Source: ProLogis
VALUE PROPOSITION
LONG BEACH IS THE FASTEST, MOST DIRECT ROUTE FROM THE U.S. TO ASIA MARKETS

TIME is MONEY
Panama Canal

56 vessels in the first month

- 30 containerships
- 22 LPG Tankers
- 2 LNG Carriers
- 2 Auto carriers

- Panama’s share of Asia ==> USEC up from 48% in 2016 to 57% in July
- 10K nm’s from SHG to NYC via Panama...12K through Suez
- Maximum draft recently increased by 1 foot to 44ft
- Record $830K toll for MOL Benefactor (10,000 TEU) enroute to NY/NJ
- 115 ships (Oct thru Feb) bypassed Suez on back-haul to round Cape Good Hope (+1week)
- 10 hour transit through Panama Canal versus 2 weeks to round Cape Horn

**CANAL SIZE**

<table>
<thead>
<tr>
<th></th>
<th>Panama</th>
<th>Suez</th>
</tr>
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<tbody>
<tr>
<td>beam</td>
<td>161</td>
<td>254</td>
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<tr>
<td>draft</td>
<td>50</td>
<td>66</td>
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<tr>
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</table>

**SHIP SIZE**

<table>
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<tr>
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<th>4.4K TEU</th>
<th>13K TEU</th>
<th>18K TEU</th>
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<tbody>
<tr>
<td>beam</td>
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<td>157</td>
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<tr>
<td>length</td>
<td>965</td>
<td>1200</td>
<td>1310</td>
</tr>
</tbody>
</table>
Capital Plan (2018)

$2B 10 year CAPEX
$225M in Bonds

Major Capital Projects

- Gerald Desmond Bridge: 53%
- Middle Harbor: 23%
- Civic Center, etc.: 24%
BRIDGE REPLACEMENT

$1.3 billion

205’ clearance (vs. 155’)

Port of LONG BEACH
Middle Harbor
The Port of the Future — Now

Phase 1     First Vessel Call:  April 7, 2016
Phase 2     October 2017
Phase 3     2020
3.3 million TEUs

Greater Capacity

By itself, the nation’s 4th busiest
Terminal Sizing

- Current annual throughput – Approx 700,000 TEU
- Future annual throughput capacity – 3.3 M/TEU

- Current storage capacity – 17,000 TEU
- Future storage capacity – 73,000 TEU

- Current intermodal – 7,800 track feet
- Future intermodal – 48,000 track feet
Berth design

- 4280’ of berth length
- 14 ship to shore cranes at full build out (room for 18!)

3 x 13,000 TEU vessels
or
2 x 18,000’s & 1 x 8,000
• 24 Row Outreach
• 120’ Gauge
• Dual Trolley System
• Tandem Spreader

Working Giants
World’s biggest, most advanced
Dual Lift Tandem Hoist Spreaders
Driverless Vehicles

Electric powered

Environmentally friendly, zero emissions
Middle Harbor Automated Rail Yard
Shore Power
Supply Chain Optimization

- Import Container Behavior
- Off-Peak Gates
- Appointment Systems
- Chassis
- Free-Flow Piles
- Reverse Free Flow
The Empty Problem

- Availability Restrictions
- Empty Return Restrictions
- Gate Queues
- Terminal Area/ Equip Utilization
Current Alliances

**ALPHALINER**

- **2M**
  - Maersk Line
  - MSC

- **Ocean 3**
  - CMA CGM
  - CSCL
  - UASC

**CKYHE**

- Evergreen
- Yang Ming
- Hanjin
- Coscon
- K Line

**G6**

- Mitsui OSK
- APL
- OOCL
- NYK Line
- Hyundai M.M.
New Alliances

2M Alliance (+HMM)
- Maersk Line
- *ML takeover 2018
- Hamburg Sud
- MSC
- Hyundai M.M.

OCEAN Alliance
- CMA CGM
- APL
- COSCO Shipping
- Evergreen
- OOCL

THE Alliance
- Mitsui OSK
- NYK Line
- Hapag-Lloyd
- UASC
- K Line
- Yang Ming

ALPHALINER
# Ocean Carrier Alliances

## Ocean Carrier Alliances 2016Q2 (20 Carriers)

<table>
<thead>
<tr>
<th>2M</th>
<th>CKYHE</th>
<th>G6</th>
<th>Ocean 3</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maersk</td>
<td>COSCO</td>
<td>APL</td>
<td>China Shipping</td>
<td>Hamburg Sud</td>
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<tr>
<td>MSC</td>
<td>Evergreen</td>
<td>Hapag-Lloyd</td>
<td>CMA CGM</td>
<td>PIL</td>
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<tr>
<td></td>
<td>Hanjin</td>
<td>HMM</td>
<td>UASC</td>
<td>Wan Hai</td>
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<td></td>
<td>K Line</td>
<td>MOL</td>
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<td>ZIM</td>
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<td>Yang Ming</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>OOCL</td>
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</tbody>
</table>

## Ocean Carrier Alliances 2017Q2 (14 Consolidated Carriers)

<table>
<thead>
<tr>
<th>2M+H</th>
<th>OCEAN</th>
<th>THE</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>HMM</td>
<td>CMA CGM</td>
<td>K Line/MOL/</td>
<td>PIL</td>
</tr>
<tr>
<td>Maersk/H. Sud</td>
<td>COSCO</td>
<td>NYK</td>
<td>SM Lines</td>
</tr>
<tr>
<td>MSC</td>
<td>Evergreen</td>
<td>Hapag-Lloyd/UASC</td>
<td>Wan Hai</td>
</tr>
<tr>
<td></td>
<td>OOCL</td>
<td>Yang Ming</td>
<td>ZIM</td>
</tr>
</tbody>
</table>


OCEAN ALLIANCE SET TO DOMINATE ASIA-EUROPE AND TRANS-PACIFIC

Ocean Alliance would have most capacity on largest east-west trade lanes when it begins in April 2017 pending regulatory approval.

THE Alliance 27%  Ocean Alliance 35%  2M + HMM 34%

ASIA-EUROPE

THE Alliance 34%  Ocean Alliance 40%  2M + HMM 20%

TRANS-PACIFIC

The share by alliance is estimated based on capacity operated by individual member carriers as of June 1, 2016.

Source: Alphaliner

www.joc.com
Questions?