Context for this document

This report presents the findings from an analysis of the San Pedro Bay Ports Clean Truck Program (CTP) conducted by the Boston Consulting Group (BCG) on behalf of the Executive Director of the Harbor Department.

This report addresses the following deliverables per the Executive Agreement between BCG and the Harbor Department:

- Defined operating model options for the CTP
- Economic evaluation of these CTP options in the context of the port drayage market
- Evaluation of the CTP options against the goals for the CTP
- Assessment of interdependencies and/or other undesired outcomes consequent to any operating model(s)
- Evaluation of the risks associated with each option and steps that could be taken to mitigate these risks
Agenda

Executive summary

CTP objectives

Operating model components and levers
  • Range of options available within framework

BCG’s analytical approach

BCG’s evaluation of the operating model options
  • Short term and long term impacts
  • Key risks

Comparison of options and conclusions
Agenda

Executive summary
Executive summary (I)
Context and objectives

The Clean Trucks Program (CTP) is a core component of the San Pedro Bay Ports (‘the Ports’) Clean Air Action Plan (CAAP). Our evaluation of the CTP has as its goal determining what would best serve the Ports as a functioning enterprise to deliver on the following three sets of objectives which are critical to assuring the continued functioning, growth and vitality of these Ports as major transportation enterprises into the long-term future:

- **Environmental**: near term (removal and replacement of older “dirty” trucks) and longer term (a sustainable trucking market with participants who have the income to properly maintain and update trucks to use new greener technologies)
- **Operational**: ensure continuity of port operations and deliver a sufficient supply of both trucks and drivers while in the longer term assuring addition of drivers needed for projected cargo growth in a manner that enables “green growth” and allows the SPB to retain its important role in the national and regional economy
- **Safety and security**: includes both vehicle safety (in terms of vehicle maintenance, repair and replacement from both environmental and operating condition) and driver safety (in terms of concession/ LMC responsibility for driver safety training and compliance as well as maximizing port security.

The drayage market in the Ports of Los Angeles and Long Beach today has the following characteristics:

- A large number (aprx 16,000) of independent owner operators (IOOs) who contract with a large number (800-1,200) of Licensed Motor Carriers (LMCs) to provide drayage services on a regular basis (more than ~3.5 trips per week)
- IOOs, paid by the dray and also providing trucking services in other markets outside the port, provide a reservoir of trucking to accommodate the wide swings (+/-30%) in demand for drayage on a week-by-week basis
- Market is highly competitive with rates per dray bid down to low levels.
- Many costs are externalized and borne by others. These include: underutilized capacity and inefficiency which are borne by the IOOs; the costs of environmental impacts which are borne by the local communities in the burden of air pollution and serious and expensive impacts on human health and premature death rates; the costs imposed by drayage on the local community in terms of congestion, and neighborhood ingress/egress and parking of trucks; and the costs and complexity of ensuring safety and security in a highly fragmented market of IOOS and LMCs.
- As a consequence of this market structure truckers in the drayage market earn incomes below those of truckers in other comparable Southern Californian markets

THE BOSTON CONSULTING GROUP
CTP objectives

The Port’s objectives for the CTP span three dimensions: environmental, port operations, and safety/security

Environmental

- Reduce emissions from drayage (port trucking) to comply with CAAP guidelines
  - By 2011, CAAP requires an aggregate reduction in pollutants from all Port sources including trucks
    - 47% DPM
    - 45% NOx
    - 52% SOx
  - Enable continued migration towards newer and cleaner technologies over time

Port operations

- Improve stability of the port trucking market
  - establish stable drayage service business
  - avoid service disruptions during implementation
- Ensure long term sustainability
  - truck fleet and market participants
  - incomes that attract and retain drivers
- Enable green growth
  - improvements in trucking operational efficiency and reliability

Safety and security

- Ensure compliance with safety standards
  - vehicle safety
  - driver
- Ensure that port security objectives are met

Source: CTP / CAAP presentations, 2006 CAAP Overview
We analyzed the impact of the CTP on the supply and demand for trucking and labor (truckers) in the SPB drayage market and the extent to which alternative CTP models would meet the CTP objectives. Our approach addresses:

- The different elements of the CTP: the environmental cargo fee; the truck ban; safety and security; the concession program; and the truck financing program;
- How these elements which work together as an interdependent system to mutually reinforce (or undermine) desired outcomes;
- How market structure (i.e. the number of market participants, their capabilities and financial structure) contributes to sustainability;
- How alternative CTP models would affect the externalized costs;

We examined three broad options for the CTP:

- Under all of these options the proposed truck ban schedule and safety and security requirements remain constant;
- The first option we evaluated (Option I, or the “Basic Model”) provides for drayage by both employee truckers and IOOs, sets a minimum level of concession criteria for LMCs, and makes CTP public financing available to both LMCs and IOOs for new trucks. In addition exemptions from the ECF are included that are intended to encourage migration towards cleaner trucks in advance of the ban schedule;
- The second option (Option II, or the “Enhanced Model with Market Incentives”) also allows for both employee and IOO drivers, tightens LMC concession criteria to further recognize the impact of marginal LMCs on the community and on sustainability, and limits CTP public financing to LMCs. In addition, the fees and exemptions to fine tuned to further favor the ‘greenest’ trucks and private investment. Taken together this interdependent set of elements may have the market effect of encouraging market consolidation and enable a long term sustainable clean truck program.
- Finally the third option (Option III, or the “Enhanced Model with Market Incentives and an Employee Commitment”) overlays onto Option II some form of employee commitment that will ensure the phasing in of employees into the drayage market over time. A range of different forms of employee commitment were considered.
We evaluated three options for the CTP

I: Basic plan

- Levers designed to minimize disruptions to drayage market
  - $35 / TEU, exemptions based on truck technology, funding source, and timing of purchase

II: Enhanced model with market incentives

- Create sustainable and orderly asset based market, incent faster adoption of clean tech.
  - $35/TEU, optimized exemptions to encourage cleaner technology and private funding

III: Enhanced model with market incentives and employee commitment

- PLUS: Require employees and asset based market to ensure long term sustainability

<table>
<thead>
<tr>
<th>1</th>
<th>Environmental Cargo Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Truck ban</td>
</tr>
<tr>
<td>3</td>
<td>Safety and security</td>
</tr>
<tr>
<td>4</td>
<td>Concession</td>
</tr>
<tr>
<td>5</td>
<td>Truck financing program</td>
</tr>
</tbody>
</table>

Progressive truck ban as outlined

TWIC criteria as mandated by TSA

Basic operational criteria allowing LMCs to use employee and IOO drivers

More stringent operational criteria to help maintain oversight (without employee commitment)

Subsidies given to authorized concessions only (scrap required)

PLUS: dirty truck buyback program for IOOs and LMCs
PLUS: business outreach program for transition assistance

PLUS: added control, training and compliance among employees (via concession)

PLUS: explicit commitment for drivers to become employees over a set period of time

The Boston Consulting Group
Executive summary (III)
Option I (basic model) & Option II (enhanced model with market incentives)

Our assessment is that Option I will satisfy the immediate near term environmental goals triggered by the truck ban but will fail to create a sustainable long term drayage market that will enable continued progress in improving environmental outcomes and enabling green growth

- As the concession requirements for LMCs are minimal and IOOs are enabled to get new trucks but with limited requirements for them to maintain and replace these trucks the drayage market would continue to be very fragmented, with marginal economics driving the returns for both LMCs and truckers.
- The local community will continue to bear the burden of a fragmented IOO pool (e.g. neighborhood parking) while enforcement of safety/security across many IOOs/LMCs continues to be challenging.

Option II, the Enhanced Model with Market Incentives, addresses these shortcomings by deploying a focused array of measures that should create the market conditions to encourage evolution of the SPB drayage market towards an asset based (i.e. LMC truck owning) market. Key elements in Option II and their effects are

- LMCs are enabled to invest in trucks but are subject to concession requirements that will discourage the marginal, under capitalized participants.
- Under Option II, drayage can be provided by employees or IOOs. This will allow an orderly progression from the market today and be flexible to absorb swings in demand
- Option II encourages a migration to an employee based trucking market as asset owning LMCs seek out drivers for their trucks. We predict over time that this should result in a migration of trucker incomes towards prevailing comparable levels
- Finally, by encouraging consolidation in larger more well capitalized LMCs with employees Option II should also create incentives for further continual improvement in the efficiency of the port drayage market.
- The key risks in Option II are
  1) That the above benefits may not be realized if, for example, private players continue to fund and support marginal IOOs, and/or create a ‘marginal contractor’ labor market for truckers who sub-lease LMC controlled trucks
  2) That the complex mix of employee and IOO based LMCs complicates the enforcement of safety and security requirements
Executive summary (IV)
Option III (enhanced model with market incentives and an employee commitment)

Option III, the Enhanced Model with a Market Incentives and an Employee Commitment, contains all of the elements found in Option II but in addition specifically favors an employee based trucking model by requiring all LMCs providing drayage services to commit to use employee drivers

- Uses concession and other CTP levers to encourage a move towards an asset based, and employee based model while also requiring LMCs to use some level of employees to provide trucking services

A requirement should guarantee the movement of the drayage market in the longer term towards an asset and employee based model. This will maximize the likelihood of creating a market in which the reciprocal obligations between the Port (granting a commission) and LMCs (providing drayage services) create a sustainable reliable supply of truckers attracted to stable and relatively well paying jobs in an operationally efficient and orderly drayage market.

We considered four broad options for an employee commitment:

- A 100% employee driver requirement, phased in over five years;
- A fixed proportion short of 100% (e.g. 80%) requirement reflecting average load, also phased in over time;
- A requirement that each LMC controlled truck be associated with at least one full time employee
- A requirement imposed only on those who take public financing
- Of these options, the 100% requirement is recommended, being transparent, aligning incentives and easiest to administer

With a 100% employee commitment Option III will drive up wage rates more quickly than Option II and will also eliminate some proportion of IOOs who do not wish to become employees. However, our analysis shows that the impact of this increase should be manageable provided all market participants behave economically rationally.

- While trucker supply could fall by as much as 40%, over time other labor pools could be drawn on and additional diversion will be minimal.
- Key risk is that BCOs steer work away from the SPB on non direct economic grounds (e.g. through fear of future disruption or instability). This threat is material; e.g. members of the Coalition for Responsible Trucking alone control discretionary volume representing 14% of SPB cargo that could be readily diverted to alternative ports.
Our overall conclusion: Option III provides the best path to long term sustainability, but with near term risks

<table>
<thead>
<tr>
<th>Current state</th>
<th>I: Basic plan</th>
<th>II: Enhanced model with market incentives</th>
<th>III: Enhanced model w. market incentives &amp; employee commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short term</td>
<td>Long term</td>
<td>Short term (1)</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td>Long term (1)</td>
</tr>
<tr>
<td>Port Operations</td>
<td>Truck &amp; trucker supply</td>
<td></td>
<td>Short term (2)</td>
</tr>
<tr>
<td>Safety and security</td>
<td></td>
<td></td>
<td>Long term</td>
</tr>
</tbody>
</table>

1) Risk of failure to create sustainable market structure enabling continuing investment in newer greener trucks and enforceable safety/security
2) Risk of near term disruption caused by BCO diversion

Note: Short-term represents a 1-5 year time span and considers system condition and risks, while long-term represents 5+ years and is primarily based on sustainability
Executive summary (V)
Comparison of options and conclusions

We compared all three options against the objectives of both short term (1-3 years) and long term (3-5 year+)
environmental improvement, operational stability, reliability of supply of trucks and drivers, and safety/security

- Option I scores relatively well in the short term but falls well short of Options II and III in providing the conditions for long
term environmental improvement, and reliability of supply. Option I will also complicate ensuring safety and security
- Both Options II and III are superior to Option I in terms of their potential to create a drayage market that meets the CAAP
objectives (environmental, operational and safety/security) not only in the near term (the terms of the ban) but also in the
long term (creates a sustainable, mature drayage market)
- Option II however carries the risk that long term sustainability is undermined if market participants or third parties are able
to find ways to hold employee incomes below prevailing levels needed to ensure a reliable supply of truckers (e.g. by
financing existing IOOs)
- Option III directly addresses this risk and offers the best guarantee of long term sustainability, but at the cost of introducing
a new element of operational uncertainty.

One potential outcome could be that the ports of Long Beach and Los Angeles adopt different programs. The Port of
Long Beach has adopted a program like Option I. Were the Port of Los Angeles to adopt either of Options II or III there
is risk that volume of containers and supply of truckers could rapidly divert between the two markets.

- Under a combination of Options I/II while total diversion may be minimal the Port of Los Angeles, in adopting a “Enhanced
Approach with Market Incentives” might find some of the desired outcomes (rapid adoption of the cleanest trucks,
encouragement of more well capitalized LMCs and improvement in driver incomes to attract and retain a more stable
workforce) undermined by the ability of marginal LMCs/IOOs to support themselves serving Long Beach alone
- A combination of Options I and III is more risky as the barrier to BCOs diverting their discretionary containers from Los
Angeles to Long Beach would be minimal. We expect diversion of activity up to the capacity of Long Beach to absorb it,
further exacerbating the operational and environmental stresses on the Port of Long Beach.

In conclusion we recommend that decision makers seek a unified approach to the San Pedro Bay Clean Truck Program.
Decision makers’ preference between Options II and III will hinge on the relative weight they give to risk of LMC/BCO
actions versus risk of market participants exploiting loopholes to sustain a lower wage, marginal economics based
SPB drayage market and failure to achieve sustainable advantages in line with CAAP goals
Agenda

CTP objectives
To see if the CTP meets objectives, we looked at the dynamics of the goods movement system

Example: Import system

- **Manufacturer or Consolidator**
- **Shipping Line**
- **Terminal Operator**
- **Drayage**
- **Rail**
- **Distribution Center**
- **Beneficial Cargo Owner (BCO)**

**Flow of goods (imports)**

**Flow of payments**

**Permitting**

National / State / City governments

Port of LA / LB

Note: BCOs often have influence over selection of participants in goods movement system, including port, shipping lines, LMCs and others

Source: Port interviews
The Port’s objectives for the CTP span three dimensions: environmental, port operations, and safety/security.

**Environmental**
- Reduce emissions from drayage (port trucking) to comply with CAAP guidelines
- By 2011, CAAP requires an aggregate reduction in pollutants from all Port sources including trucks
  - 47% DPM
  - 45% NOx
  - 52% SOx
- Enable continued migration towards newer and cleaner technologies over time

**Port operations**
- Improve stability of the port trucking market
  - establish stable drayage service business
  - avoid service disruptions during implementation
- Ensure long term sustainability
  - truck fleet and market participants
  - incomes that attract and retain drivers
- Enable green growth
  - improvements in trucking operational efficiency and reliability

**Safety and security**
- Ensure compliance with safety standards
  - vehicle safety
  - driver
- Ensure that port security objectives are met

Source: CTP / CAAP presentations, 2006 CAAP Overview
This is a challenging agenda: No other port undertaking so stretching, or all encompassing an initiative

<table>
<thead>
<tr>
<th>Name of programs</th>
<th>Trucking Initiatives</th>
<th>Comparison to CTP</th>
</tr>
</thead>
</table>
| **Port of Seattle** | • Diesel Emissions Reduction  
• Reduced Air Emissions – freight and other port actions | • Broad usage of low-sulfur diesel fuel  
• Increased efficiency of truck routes  
• Redeveloped terminal layout and local road infrastructure | • Shared focus on reducing emissions from short-haul trucks  
• No broad plan to replace trucking fleet |
| **Port of NY/NJ** | • Port Inland Distribution Network  
• Green infrastructure and transportation enhancements | • Shift from trucking to rail transport of cargo  
• Relocated gates to reduce trucking delays | • Goal to reduce dependency on trucking, not replace trucks  
• No broad plan to replace trucking fleet |
| **Port of Houston** | • Clean Air Initiatives funded by Texas Emissions Reduction Plan | • Few goals directly related to trucking | • Focused on non-truck port vehicles and engines  
• Funded solely by state grants without a port tariff |
| **Port of Shenzen** | • Green Port: expansion of one of China’s major ports | • Environmental evaluation in conjunction with port expansion  
• Utilize inland waterways and rail for short-haul routes | • Relying on government subsidies to make "greening" cost effective  
• Focus on sustainable development to handle growth |
| **Port of Rotterdam** | • Port Vision 2020 | • Redevelop facilities, infrastructure, and processes for higher efficiency  
• Reduce non-essential road transport and reliance on trucking | • Plan engage surrounding region with plans and projects  
• Reducing environmental impact, maintain competitive position |
| **Port of Oakland** | • Maritime Air Quality Improvement Plan (MAQIP) | • Comprehensive Truck Management Plan | • Shares many aspects of the CTP, but smaller in scale, and likely to follow CTP. |
| **Port of Vancouver** | • Truck Licensing System | • Application based licensure system introduced to stabilize drayage labor market | • Employment only, but viewed as having laid foundation for future environmental improvements |

Source: web and press search

BCG Report 3-13-08 final.ppt
# Today: Current state of SPB drayage market

## Trucks
- ~16,800 frequent and semi-frequent trucks complete 80% of SPB drayage\(^1\)
- ~24,000 non-frequent trucks complete remaining 20% of SPB drayage\(^1\)
- ~2,000 frequent and semi-frequent trucks servicing the port are pre-1989\(^2\)

## Drivers
- Most drayage drivers (85% or more) are Independent Owner Operators (IOOs)\(^2\)
- Estimated 15-22% of drayage drivers ineligible to receive TWIC certification\(^2\)
- Drayage drivers earn an estimated average net income of $11.60-$12.70/hr\(^3\)

## LMCs
- There are 800-1,200 LMCs with drivers servicing the SPB ports\(^2\)
- Majority of LMCs are small, carrying the services of less than 75 IOOs\(^4\)
- Driver payments represent ~68-72% of LMC revenues\(^5\)
- Most LMCs have low margins (~5%) and few capital assets\(^2\)
- Entrepreneurial culture, start in drayage but prefer more lucrative trucking\(^4\)

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1. SPB Ports CAAP Technical Report, trucks with at least 0.5 trips/day  
2. John Husing, SPB Ports CAAP Economic Analysis of CTP  
3. Kristin Monaco and CGR Management Consultants – SPB Ports driver surveys published 2007, incomes may vary due to fuel pricing  
4. Interview with Tom Brightbill, CGR Management Consultants  
5. Husing report and Interview with Bob Curry
Current drayage market is not very concentrated
Top 20% of LMCs represent only 50% of trucks providing drayage

Share of trucks involved in drayage
Share of truck drayage as a function of size of LMC

Potential concentration if largest LMCs focused 50% of available trucks on drayage
Potential concentration if port drayage reflected total LMC truck availability
Estimate of concentration in market today

Top 20%
- ~120 LMCs with over 75 trucks (avg ~250 trucks/LMC)
- But only 25-40% dedicated to drayage
- 50-70%+ of total drayage capacity

Bottom 20%
LMCs with <10 trucks <4% of total drayage

Fragmented market imposes high administrative costs, loss of flexibility, and operational inefficiency

1. From Starcrest analysis. Includes all trucks entering the port. 2. Includes not only frequent and semi-frequent drayage trucks (estimated at 16,800) that complete ~80% of drayage work but also the large pool of infrequent trucks (~24,200) that complete the remaining ~20% of drayage work. 3. From Husing’s report.
Source: Husing, SPB CAAP Economic Analysis of the Proposed CTP. Starcrest Consulting Group, Draft Methodology for Estimating Heavy Duty Diesel Truck Activity at POLA and POLB
SPB has large fluctuations in goods movement demand...
Seasonality of TEU demand at the San Pedro Bay Ports

Peak-trough fluctuations:
~27% seasonal average
~38% swing in 2004
~36% swing in 2006

Source: Tioga Group and Global Insight, San Pedro Bay Cargo Forecast December, 2007. Data from POLA and POLB websites
Variation observed even on weekly and daily basis
Cargo movement demand and ship arrivals at the SPB ports

On a week to week basis, cargo movement demand can vary up to ~30%

On any given day, the number of ships entering the ports can vary over ~50%

1. Normalization based on average weekly containers moved from Jun-06 to May-07
2. Average number of ship arrivals from April-Sept 2006
Source: Data from POLB (through Tom Brightbill), Dewry Container Shipper Insight Report (through American Shipper Feb 2007)
Even for comparable hauls, non-drageage work commands higher rates than drageage trucking.

### Trucking haul cost per mile comparison

<table>
<thead>
<tr>
<th>Distance</th>
<th>Drayage ($/mi)</th>
<th>Non-drageage ($/mi)</th>
<th>National fleet ($/mi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>~20 miles</td>
<td>~$8</td>
<td>~$6</td>
<td>~$8</td>
</tr>
<tr>
<td>~50 miles</td>
<td>~$8</td>
<td>~$6</td>
<td>~$6</td>
</tr>
<tr>
<td>~100 miles</td>
<td>~$8</td>
<td>~$6</td>
<td>~$6</td>
</tr>
<tr>
<td>~500 miles</td>
<td>~$8</td>
<td>~$6</td>
<td>~$6</td>
</tr>
<tr>
<td>~800 miles</td>
<td>~$8</td>
<td>~$6</td>
<td>~$6</td>
</tr>
</tbody>
</table>

% of gross rate to driver:
- ~70% for ~20 miles
- ~70% for ~50 miles
- ~70% for ~100 miles
- ~75% for ~500 miles
- ~80% for ~800 miles

### Premium of non-drageage over drageage

- LMCs have slightly less pricing power in drageage work
  - BCOs and shipping lines constrain LMC margins
- LMCs are compensated for the added capital and services provided in non-drageage work
  - Trailer/chassis
  - Container
  - Pick-up and drop-off at any location
  - Loading and unloading

But, base pricing for drageage is relatively high
- Wait time at the port terminal adds cost to all drageage hauls

Source: Drageage rate sheet from Jon Haveman (Beacon Economics), Schneider Trucking website, phone conversation with Brian Griley (Southern Counties Express)

1. $/mi calculated using $ to driver per haul and % given to driver
2. Round-trip distance from Haveman’s rate sheet or Google Maps, The miles correspond to hauls from the San Pedro area to Carson, Commerce, Ontario, Fresno, and Phoenix respectively.
3. According to Brian Griley (Southern Counties Express)
Current drayage market creates externalized costs

<table>
<thead>
<tr>
<th>Cost bearer</th>
<th>Externalized cost examples</th>
<th>Estimated annualized cost savings (Year 5)</th>
</tr>
</thead>
</table>
| Truckers and LMCs           | • Overall burden of operational inefficiency e.g.  
|                             |   – truck under-utilization from port, freeway congestion  
|                             |   – port congestion  
|                             | • Driver health and other benefits                                                                                                                                                                                                 | $180-320M                                 |
| Public health¹              | • Premature death  
|                             | • Hospital admissions  
|                             | • Respiratory illness and acute symptoms  
|                             | • Workday and school-day loss  
|                             | • Restricted activity  
|                             | • Enforcement and other administrative costs  
|                             | • Road maintenance  
|                             | • Vehicle and driving safety  
|                             | • Environmental damage  
|                             | • Residential neighborhood impacts from truck parking and ingress/egress                                                                                                                                                   | $100-590M                                 |
| City and community          |                                                                                                                                                                                                                           | $210-830M                                 |
|                             |                                                                                                                                                                                                                           | **Total: $0.5 – 1.7B**                    |

1. Husing’s SPB CAAP Economic Analysis report states cost estimated at $1.7-10.1 billion over 2008-2025 with a median of $5.9 billion (analysis by CARB)
As a consequence, drayage incomes below other trucking segments

**Median income (\$/year)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Median Income</th>
<th>Effective Wage</th>
<th>Avg. Work Week</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPB Drayage IOOs</td>
<td>$29,000(^1)</td>
<td>$11.60/hr</td>
<td>50</td>
<td>No</td>
</tr>
<tr>
<td>SoCal Trucking IOOs</td>
<td>$38,300(^2)</td>
<td>$15.32/hr</td>
<td>50</td>
<td>No</td>
</tr>
<tr>
<td>LA region employee truckers</td>
<td>$36,858(^1)</td>
<td>$17.72/hr</td>
<td>40 + 1.1OT</td>
<td>Yes</td>
</tr>
<tr>
<td>Yellow transport(^6)</td>
<td>$54,526(^1)</td>
<td>$22.21/hr</td>
<td>40 + 6.1 OT</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Sources:** CTP Technical report, Husing SPBP CAAP Economic Analysis Proposed CTP, CGR SPBP Driver Survey, Tom Brightbill, CRT and LMC interviews, BCG economic model

1. Median incomes either taken directly from Husing report.
2. Scaled up using Husing’s numbers for 2005 growth to 1Q2007 wages.
3. All numbers from Husing report.
4. Assuming 50 weeks worked per year. Calculated with overtime (1.5 normal wage) taken into consideration.
5. Value of benefits not included in wage.
6. Predominantly regional or national long haul trucking.
Despite low compensation, working as a drayage driver has some advantages over other trucking work ...

<table>
<thead>
<tr>
<th>Drayage</th>
<th>Other trucking</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Local work, able to spend time with family when not trucking</td>
<td>• Higher compensation</td>
</tr>
<tr>
<td>• Short-term work, low commitment</td>
<td>• Avoid port related congestion and inefficiencies</td>
</tr>
<tr>
<td>• Familiar and tight knit driver culture</td>
<td>• Low compensation, providing a commodity service</td>
</tr>
<tr>
<td>• Can utilize local options for refueling and maintenance</td>
<td>• Local issues of traffic (I-710) and port congestion</td>
</tr>
<tr>
<td></td>
<td>• Poor working conditions (air quality)</td>
</tr>
<tr>
<td></td>
<td>• Atypical and somewhat inflexible work schedule</td>
</tr>
<tr>
<td></td>
<td>• Time not driving is often spent away from home</td>
</tr>
</tbody>
</table>

Source: Husing, SPB CAAP Economic Analysis Proposed CTP, Discussion with Tom Brightbill, POLA, and LA Mayor's Office
... And the option of doing so as an IOO brings its own mix of benefits and costs

<table>
<thead>
<tr>
<th>Drayage IOOs</th>
<th>Employee Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Flexible work schedule, can work as much or as little as one wants</td>
<td>• Consistent work, paid by the hour</td>
</tr>
<tr>
<td>• Own trucks, can use for personal transportation</td>
<td>• Higher overall compensation including benefits</td>
</tr>
<tr>
<td>• Choose when to enter into or leave working agreement with LMC</td>
<td>• Operating and truck financing costs covered by employer</td>
</tr>
<tr>
<td>• Family business, local work and familiar culture raises job satisfaction</td>
<td>• Possibility of better working conditions with union organization</td>
</tr>
<tr>
<td>• From supply perspective, less consistency/ reliability of driver source or control over driver behavior, training</td>
<td>• Lack of flexibility in work schedule</td>
</tr>
<tr>
<td>• Low compensation due to providing a commodity service</td>
<td>• Unable to earn more compensation by working additional discretionary hours</td>
</tr>
<tr>
<td>• Must cover truck operating and financing costs</td>
<td>• If part of union, must pay dues and abide by labor agenda</td>
</tr>
</tbody>
</table>

Source: Husing, SPB CAAP Economic Analysis Proposed CTP, Discussion with Tom Brightbill, POLA, and LA Mayor’s Office
Agenda

CTP operating model components and levers
There are five interlocking elements in the CTP

<table>
<thead>
<tr>
<th>CTP components</th>
<th>Port’s intent</th>
</tr>
</thead>
</table>
| 1 Environmental Cargo Fee | • Generate revenues for the grant program  
                               • Ensure BCOs internalize pollution costs  
                               • Credit positive investment in trucks and incent turnover of dirty trucks                     |
| 2 Truck ban             | • Remove heaviest polluters in a timely fashion to ensure emissions targets are achieved            |
| 3 Safety & security     | • Comply with national security standards for port safety, enhance local enforcement  
                               • Improve vehicle safety and driver safety                                                        |
| 4 Concession            | • Achieve environmental, operational, and safety / security goals through improved Port control and oversight of trucking fleet  
                               • Assure competition: adequate service level and level playing field  
                               • Assure driver supply: incomes and living standards to attract truck operators                  |
| 5 Truck financing program | • Incentivize replacement or retrofit of dirty trucks with newer, cleaner technology  
                               • Force scrapping of old trucks so emissions cannot be shifted elsewhere                         |
## Environmental Cargo Fee

### Definition
A Port tariff paid by cargo owners, and assessed on every loaded container entering or leaving the Port via drayage truck

### Levers

<table>
<thead>
<tr>
<th><strong>Amount</strong></th>
<th>$35 / TEU billed to BCO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timing</strong></td>
<td>Effective October, 2008</td>
</tr>
<tr>
<td><strong>Exemptions</strong></td>
<td></td>
</tr>
</tbody>
</table>
  • $0-$35 by truck technology type, private/CTP funded?
  • Before or after Oct 31\(^{st}\) 2008?
  • Flat or modulated over time?
  • Requirement to scrap an old truck?
  • Proportional to frequency of drayage at Ports (Y/N)? |

### Illustrative range of choices

---

Source: Proposed Clean Trucks Program Funding Program, memo dated 2/15/2008; POLA Clean Trucks Fact Sheet; interviews with POLA staff
Truck ban

Definition
A progressive ban on older, dirtier drayage trucks to help reduce port-related truck pollution over a period of five years

Levers

Truck criteria and timing

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre 1989</td>
<td>Ban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989-1993</td>
<td></td>
<td>Ban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994-2003</td>
<td></td>
<td></td>
<td>Ban all un-retrofitted</td>
<td></td>
</tr>
</tbody>
</table>

Exemptions
Day pass and extra fee for:
• Infrequent interstate trucking
• Trucks not meeting emissions criteria
• Not in the drayage trucks registry
• Other?

Source: Tariff schedule from POLA website
# Safety and security

## CTP components

### Definition

Ensure compliance with TSA mandated TWIC certification to ensure proper credentials and security clearance for workers with access to secure maritime transportation areas; reinforce with checks through the concession. Improve driver and vehicle safety through LMC accountability for equipment and training of drivers.

### Levers

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Comply with TSA rules for port security - applicants disqualified for:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Lack of legal resident and work status</td>
</tr>
<tr>
<td></td>
<td>• Conviction of certain criminal offenses</td>
</tr>
</tbody>
</table>

### Timing

Likely starting January, 2009

• Determined by TSA

### Enforcement (by Coast Guard)

Spot checks starting early 2009

• Full enforcement using biometric card scan in mid-2009

Source: Interviews with POLA staff; TWIC guidelines from www.TSA.gov/TWIC
### Concession

**Definition**
A set of requirements LMCs must meet in order to receive a concession to provide drayage services at the Port

<table>
<thead>
<tr>
<th>Levers</th>
<th>Illustrative range of choices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criteria</strong></td>
<td>• Parking requirement (off street, designated lot, etc.)?</td>
</tr>
<tr>
<td></td>
<td>• Healthcare offering (none, proof of offer, mandate)?</td>
</tr>
<tr>
<td></td>
<td>• Place of doing business (Y/N)?</td>
</tr>
<tr>
<td></td>
<td>• Types of trucks in fleet?</td>
</tr>
<tr>
<td></td>
<td>• Truck maintenance and insurance requirements?</td>
</tr>
<tr>
<td></td>
<td>• Frequency of drayage for trucks/fleet?</td>
</tr>
<tr>
<td></td>
<td>• Employee commitment (0-100%, or ratio of truck to employees)?</td>
</tr>
<tr>
<td><strong>Recipient</strong></td>
<td>• Per LMC? Per truck? Allowance for flex capacity?</td>
</tr>
<tr>
<td><strong>Number of concessions</strong></td>
<td>• 1-unlimited (#)</td>
</tr>
<tr>
<td></td>
<td>• Transferable (Y/N)</td>
</tr>
<tr>
<td><strong>Fee</strong></td>
<td>• $0-$10,000+ per LMC? Fixed or auction price? Variable per truck?</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td>• One to 5 or more years</td>
</tr>
</tbody>
</table>

Source: "Concession Operations Requirements" from memo titled *RFP San Pedro Ports Drayage Permit Administration*; interviews with POLA staff
## Truck financing program

### Definition

A one time subsidy program financed by the ECF to help applicants acquire new, cleaner trucks

### Levers

<table>
<thead>
<tr>
<th>Amounts</th>
<th>Illustrative range of choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-$$$ for each truck type (i.e., clean diesel, alt. fuel, hybrid)?</td>
<td>• Financial or credit score?</td>
</tr>
<tr>
<td>Given as grant for purchase or lease option</td>
<td>• Dray frequency going forward for new truck (e.g., certain number of trips per month for X years)?</td>
</tr>
<tr>
<td>0-$ for eligible retrofits?</td>
<td>• Scrapping requirement or fee without a trade-in?</td>
</tr>
<tr>
<td>0-$ for eligible banned scrap trucks?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financing criteria</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial or credit score?</td>
<td></td>
</tr>
<tr>
<td>Dray frequency going forward for new truck (e.g., certain number of trips per month for X years)?</td>
<td></td>
</tr>
<tr>
<td>Scrapping requirement or fee without a trade-in?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financing recipient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LMCs and/or IOOs?</td>
<td></td>
</tr>
<tr>
<td>Differential programs for larger or smaller enterprises?</td>
<td></td>
</tr>
<tr>
<td>Favoring frequent visitors with history of drayage?</td>
<td></td>
</tr>
<tr>
<td>Favoring firms with employees?</td>
<td></td>
</tr>
</tbody>
</table>
Our evaluation carefully considered the interactions between the different pieces of the CTP ...

Source: BCG analysis; Moffet and Nichols Data “Container Breakdown by Mode with ACTA data.xls, “Economic Analysis of the Proposed SPB Clean Trucks Program”, by John Husing and CGR Consultants
Example: ECF exemptions and financing programs can be optimized to incentivize green growth before the bans

Partial exemptions provide limited incentives towards clean technologies

Further reduced exemptions incentivize clean technologies before the ban

Notes: ‘07 Diesel’ trucks meet 2007 standards; LNG one example of several alternative fuel options, additional analysis for CNG, Hybrid, Electric and other alternatives required.

1. Annual operating costs for 2007 Diesel and LNG trucks calculated to be roughly equal using a variety of secondary and primary sources; also includes driver cost and margins.

If CTP levers not well-defined, many things could go wrong

Potential risks

1. Lack of orderly progression from dirty trucks to clean trucks
   • Too many trucks leave market at once leading to truck shortage

2. Disruption in market for trucking services
   • Too many LMCs leave market abruptly and others do not enter

3. Loss of flexibility needed to meet fluctuations in goods movement demand

4. Lack of supply of potential truckers
   • Incomes insufficient to attract and retain truckers in drayage

5. Challenges in implementation and/or enforcement of CTP levers

6. Excessive public financing burden and lack of private investment

7. Lack of sustainability if market participants do the bare minimum needed to comply and do not build up capital to maintain and upgrade trucks

8. Unintended consequences or gaming of the system (e.g. dray-off)

9. BCOs divert cargo based on perception of above risks
Agenda

BCG’s analytical approach
In evaluating the likely impact of CTP we have examined two distinct time periods

**Environmental**

- Will the emissions goals for trucks be met or exceeded?

**Port Operations**

- Will CTP cause cargo diversion, Port disruption?
  - Which CTP levers greatly impact the GM system?
  - Is there a sufficient supply of trucks and drivers with CTP levers applied?
  - Are fluctuations in demand met?

- How will the drayage and labor markets evolve as CTP levers are applied?

**Safety/Security**

- Are safety and security standards met?

**Short-Medium Term**

- From program start to 2012

**Long Term**

- Years 6+

- From 2012 and beyond

- Will drayage operators continue to upgrade trucks after CTP financing complete?

- Is the CTP operating model scalable to meet future demand?

- Will the objectives of the CTP be sustained in the long run?
  - Are driver incomes adequate to attract required supply?
We used information from many previous studies
Sources of secondary information used by BCG


Haveman, Jon and Christopher Thornberg. Clean Trucks Program. Beacon Economics. 2008

Husing, John E. Economic Analysis of Proposed Clean Truck Program. 2007.


The Tioga Group. San Pedro Bay Cargo Forecast. 2007


Our research was supplemented by interviews with many study authors and market participants
We built a rich drayage system model to evaluate the CTP
Analytical model couples drayage supply changes to pricing, cargo movement demand

Drayage demand by SPB Ports

Drayage capacity for SPB

Key outputs

Key inputs

Efficiency

Key Levers

Analytical approach
Overall assumptions for our drayage system model

Private trucking fleets are utilized primarily based on their BCO’s discretion (not market pricing)
  • Fixed percentage of cargo is drayed by private fleets, unaffected by price changes

A fraction of infrequent drayage trucks act similar to private trucking fleets (not market pricing)

Open drayage market utilizes capacity primarily based on price, independent of clean/dirty distinction

All drayage haul types (e.g. off-dock, transload, etc) are performed by all trucks, independent of truck segment (e.g. model year, ownership type)

Drayage price to BCO is the only variable cost. Non-drayage costs do not change in our analyses (ship, dock equipment, rail, etc)

On-dock rail is roughly at capacity, therefore there is essentially no elasticity between drayage and rail

Drivers are modeled as FTEs, working 50 hours per week and 50 weeks per year

Overall port volume forecasted as flat through 2012 to allow isolation of pricing and diversion impacts

Operational efficiencies or drayage capacity improvements are not included in model
Our model is grounded on the price elasticity of SPB...
SPB 2006 container movement drayage costs and share of demand by transport segment

Non-discretionary cargo is relatively price inelastic

Discretionary container moves ~68%

Non-Discretionary container moves ~32%

Trucking costs are a small portion of overall costs to ship a container

Little elasticity between truck and rail due to supply constraints and high cost for local rail transport

Source: Moffet and Nichols Data “Container Breakdown by Mode with ACTA data.xls, “Economic Analysis of the Proposed SPB Clean Trucks Program”, by John Husing and CGR Consultants
...A detailed understanding of trucking supply...
Illustrative trucking supply stack for current market segments to participate in SPB drayage

Effective drayage price to BCO ($/hr)

Current drayage trucking demand\(^1\) ~26 M hrs
Note\(^1\): Private fleets and infrequent IOOs satisfy ~20% of BCOs' drayage demand separate decision economics (~6M hrs not shown)

Current weighted average drayage price ~$43/hr

Analytical Approach

<table>
<thead>
<tr>
<th>Truck segments:</th>
<th>Frequent/semi-freq</th>
<th>Freq/semi-freq: Non-drayage</th>
<th>LA IOOs</th>
<th>IE IOOs</th>
<th>LA employee driven</th>
<th>IE employee driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drayage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>employee driven</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nationals</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Blend of heavy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trucks and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tractor trailers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Private fleets and infrequent IOOs account for ~6M hrs demand.
2. 2004-2006 supply to small to be seen on chart.
3. Median income divided by typical hours worked per year.
4. Estimates based on reports and conversations with John Husing and Tom Brightbill.
5. Includes extra costs associated with employment including benefits and hour restrictions/overtime.
... And the market for truck drivers
Illustrative trucker supply stack shows potential drivers and their required rates for drayage labor

Current drayage driver time demand^1
~26 M hrs

Current weighted average drayage effective wage rate ~$11.60/hr

Labor segments: Frequent/semi-freq: Drayage Freq/semi-freq: Non-drayage LA IOOs IE IOOs LA regional employee driven Construction and other substitutes IE employee driven
Drivers:^3 ~16K ~16K ~8K ~11K ~32K >150K^4 ~23K
Rate to attract to drayage:^3 $11.60 $15.32 $15.32 $20.08 $21.27 $21.97 $22.67

(1) Private fleets and infrequent IOOs account for ~6M hrs demand. (2) 2004-2006 supply to small to be seen on chart (3) Estimates based on reports and conversations with John Husing and Tom Brightbill and scaled by utilization % to arrive at supply hours (4) 2006 CA EDD data – for Los Angeles County construction (5) Average wage rate for UPS and Yellow trucking

Sources: CTP Technical report, Husing SPBP CAAP Economic Analysis Proposed CTP, CGR SPBP Driver Survey, Tom Brightbill, CRT and LMC interviews, BCG economic model
Impact of CTP levers calculated for each year
Model mechanics rely on prior year output as input for following year

Baseline SPB drayage market:
• Current cargo demand
• Current trucks/labor servicing demand by segment
• Current drayage pricing by segment

Estimated impacts of CTP as inputs for all 5 years of program

Year 0 market (10/07-10/08) baseline

Potential CTP effects starting Year 1 (2008)
CTP effects starting in 2008¹
• Environmental Cargo Fee
• Pre-1989 truck ban
• TWIC regulations
• Concessionary requirements
• Grant program

Impacts estimated using existing studies/analysis:
• Net change of trucks by segment
• Net change of incomes and LMC costs by segment

Year 1 SPB drayage market:
• New weighted avg pricing based on Year 0 demand
• New trucks/labor servicing demand by segment
• New drayage pricing by segment
• New cargo diversion to be applied to Year 2 demand

Potential CTP impact starting Year 2 (10/09-10/10)
CTP impacts starting in 2009:
• Continued grant program
• Continued concessionary requirements

Model estimates impact of CTP through Year 5

Year 1 market (10/08-10/09) model output

Potential CTP effects starting Year 2 (10/09-10/10)

Estimated impacts of CTP used as model inputs

¹ Impacts of CTP levers accounted for within the year they are implemented
Agenda

CTP operating model options and evaluation
We evaluated three options for the CTP

I: Basic plan

<table>
<thead>
<tr>
<th>Approach to achieve CTP objectives</th>
<th>Levers designed to minimize disruptions to drayage market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Cargo Fee</td>
<td>$35/TEU, exemptions based on truck technology, funding source, and timing of purchase</td>
</tr>
<tr>
<td>Truck ban</td>
<td>Progressive truck ban as outlined</td>
</tr>
<tr>
<td>Safety and security</td>
<td>TWIC criteria as mandated by TSA</td>
</tr>
<tr>
<td>Concession</td>
<td>Basic operational criteria allowing LMCs to use employee and IOO drivers</td>
</tr>
<tr>
<td>Truck financing program</td>
<td>Subsidies to IOOs and LMCs to fund upgrade of banned trucks (scrap required)</td>
</tr>
</tbody>
</table>

II: Enhanced model with market incentives

<table>
<thead>
<tr>
<th></th>
<th>Create sustainable and orderly asset based market, incent faster adoption of clean tech.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$35/TEU, optimized exemptions to encourage cleaner technology and private funding</td>
<td></td>
</tr>
</tbody>
</table>

III: Enhanced model with market incentives and employee commitment

<table>
<thead>
<tr>
<th>PLUS: Require employees and asset based market to ensure long term sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plus: dirty truck buyback program for IOOs and LMCs</td>
</tr>
<tr>
<td>PLUS: business outreach program for transition assistance</td>
</tr>
</tbody>
</table>
## Option I: “Basic model”

<table>
<thead>
<tr>
<th>Lever</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Environmental Cargo Fee** | • $35 / TEU fee with some exemptions:  
  - Privately funded (post 10/08): CD with scrap ($17.50 fee), LNG / alt. fuel with scrap ($0 fee), (pre 10/08 same exemptions but scrap not required)  
  - CTP funded: No exemptions |
| 1 | • Encourage rapid adoption of cleaner truck technology  
  • Promote the use of private investment |
| **Truck ban** | • Progressive ban on the dirtiest trucks:  
  - Oct 1, 2008: All pre-89 trucks  
  - Jan 1, 2010: All 89-93 and un-retrofitted 94-03  
  - Jan 1, 2012: All trucks not meeting 07 standards |
| 2 | • Ensure heaviest polluters are removed from the Port drayage market |
| **Safety & Security** | • Comply with TWIC criteria as mandated, but full enforcement not active till January, 2009 |
| 3 | • Compliance required by law, but the infrastructure required for enforcement may take time to implement |
| **Concession** | • Requirements: TWIC/registered drivers, prove health insur. offered, clean truck compliant, RFID tags, truck maint. schedule, and follow existing on-street parking restrictions  
  • concession for 5 years, fee of $250 plus $100/year/ truck  
  • Allows LMCs to use employee and/or IOO drivers, preference for drivers with previous port drayage work |
| 4 | • Provides Ports with greater oversight of trucking operations  
  • Allows opportunity for large portion of current drayage operators (LMCs and IOOs) to continue serving the market |
| **Truck financing program** | • Criteria for financing: scrap old trucks, must be frequent / semi-frequent, priority given to oldest trucks (pre-89) and applicants with previous port drayage work  
  • Financing options:  
    - Lease to own (7 years, $500-700/mo),  
    - Grant for purchase ($60-75K / CD, $90-120K / LNG),  
    - Grant for retrofit (up to $20K, can re-apply for purchase grant in future net of retrofit funds) |
| 5 | • Subsidies will provide one time assistance to ensure sufficient truck supply  
  • Most IOOs assumed to need financial assistance to switch to using a clean truck |
### Option I evaluation: Environmental

<table>
<thead>
<tr>
<th>Benefit/ Risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Satisfy near term environmental goals as triggered by truck ban; continued emissions reductions dependent on CARB schedule</td>
<td>ECF exemptions and financing insufficient to favor cost structure of cleaner trucks; lack of IOO financial capabilities to invest</td>
</tr>
<tr>
<td>-</td>
<td>Risk of failure to create a sustainable long term drayage market that will enable continued progress in improving environmental outcomes and enabling green growth</td>
<td>Concession requirements for LMCs are minimal and IOOs are enabled to get new trucks but with limited requirements to maintain them, risk that IOOs unable to maintain trucks to standards</td>
</tr>
<tr>
<td>-</td>
<td>Newer diesels used but risk that cleanest technologies (e.g. LNG, Electric, Hybrids, others) minimally adopted</td>
<td>Majority of IOOs unable/unwilling to privately fund cleanest alternative fuel trucks; lack of exemption for CTP funded alt fuel vehicles</td>
</tr>
</tbody>
</table>
## Option I evaluation: Port operations

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>No transformative change in port operations or drayage market</td>
<td>Minimal concession requirements and broad access to financing will not materially impact current market participants</td>
</tr>
<tr>
<td>+</td>
<td>Total diversion will be minimal – approximately 1% based on direct economic-based decisions resulting from drayage price increase</td>
<td>Very fragmented and competitive market will not result in significant drayage price increases</td>
</tr>
<tr>
<td>-</td>
<td>Risk that future growth and efficiency improvements are limited</td>
<td>Enforcement of standards and operational improvements more difficult with highly fragmented market; low pricing and low barriers to entry prevent investment of needed capital</td>
</tr>
</tbody>
</table>
## Option I evaluation: Safety and security

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>...and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Drayage market will continue to be very fragmented with marginal economics driving returns for both LMCs and truckers</td>
<td>Concession requirements for LMCs are minimal and IOOs are enabled to get new trucks but with limited ability/motivations to maintain and replace them</td>
</tr>
<tr>
<td>-</td>
<td>Risk that local community will continue to bear the negative externalities of a fragmented IOO pool (e.g., neighborhood parking)</td>
<td>Very fragmented market with marginal economics results in similar community externalities to current market; LMCs have no incentives to internalize costs</td>
</tr>
<tr>
<td>-</td>
<td>Risk that enforcement of safety/security across many IOOs/LMCs continues to be challenging</td>
<td>No reciprocal obligations: LMCs not accountable for safety/security; IOOs incentivized to cut corners</td>
</tr>
</tbody>
</table>
Option I: Analytical evaluation

Environmental

- Dirty trucks leave system when banned
- Un-banned dirty trucks pick up some slack during early years

Total SPB drayage trucking time (M hrs)

Operations

- Cumulative diversion reaches ~1.2%

Cumulative Diversion (% SBP demand)

Drayage market

- Income increases to ~$12.3/hr in first year due to TWIC, but stays flat in out years due to un-restricted driver supply

Avg. drayage income ($/hr)

Option I

1. Private includes blend of clean diesel and alt fuel, mix will depend not only on CTP incentives (e.g. ECF exemptions) but also factors not modeled such as private funding, tax treatment etc
2. Source: BCG drayage market supply and demand economics model, March 2008

Environmental Operations Drayage market

- 100% IOOs throughout all 5 years

Truck type utilization (equivalents, %)

Avg. drayage costs per container ($)
Option II optimizes the CTP levers in an effort to accelerate achievement of a sustainable drayage solution

<table>
<thead>
<tr>
<th>Component</th>
<th>Design principle</th>
<th>Possible model levers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Environmental Cargo Fee</td>
<td>• Incent cleaner trucks ahead of ban, green growth</td>
<td>• More exemptions on cleaner trucks to help level costs</td>
</tr>
<tr>
<td></td>
<td>• Encourage private investment</td>
<td>• More exemptions on privately funded trucks</td>
</tr>
<tr>
<td>4 Concession</td>
<td>• Create orderly market</td>
<td>• Concessions available only to LMCs that meet criteria</td>
</tr>
<tr>
<td></td>
<td>• Cover admin costs</td>
<td>• Concession priced to ensure LMC commitment and adequate administration/enforcement</td>
</tr>
<tr>
<td></td>
<td>• Ensure sufficient supply of trucks and drivers</td>
<td>• Concession requirements need to prevent LMCs from creating a drayage labor spot market</td>
</tr>
<tr>
<td></td>
<td>• Improve security</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve safety</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve worker conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduce negative impacts on local community</td>
<td></td>
</tr>
<tr>
<td>5 Truck financing program</td>
<td>• Subsidize cleaner trucks</td>
<td>• More financing on cleaner trucks</td>
</tr>
<tr>
<td></td>
<td>• Reinforce orderly market</td>
<td>• Truck financing only available to LMCs</td>
</tr>
<tr>
<td></td>
<td>• Support upstanding small businesses</td>
<td>• Financing needed for a small business program for IOOs to become LMCs</td>
</tr>
<tr>
<td></td>
<td>• Reinforce sustainable market</td>
<td>• Scrap program open to all SPB drayage participants, oldest vehicles first</td>
</tr>
</tbody>
</table>
Our rationale in Option II is to encourage long term development of an *asset based* drayage model ...

<table>
<thead>
<tr>
<th><strong>LMC asset based</strong></th>
<th><strong>IOO ownership</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market dynamics</strong></td>
<td></td>
</tr>
<tr>
<td>• LMCs own and maintain trucks, employ drivers</td>
<td></td>
</tr>
<tr>
<td>– Higher barriers to entry</td>
<td></td>
</tr>
<tr>
<td>• LMC motivated to maximize efficiency</td>
<td></td>
</tr>
<tr>
<td>– Of truck and driver</td>
<td></td>
</tr>
<tr>
<td>• LMC must internalize costs: total costs integrated into decision making</td>
<td></td>
</tr>
<tr>
<td><strong>Incentives</strong></td>
<td></td>
</tr>
<tr>
<td>• Higher cost of employees and assets</td>
<td></td>
</tr>
<tr>
<td>– Higher compensation and wage rates to attract employees</td>
<td></td>
</tr>
<tr>
<td>– Overhead costs of employee drivers, trucks and maintenance</td>
<td></td>
</tr>
<tr>
<td>• Less flexibility to cope with peaks, e.g.</td>
<td></td>
</tr>
<tr>
<td>– Overtime, temp, part time</td>
<td></td>
</tr>
<tr>
<td>– Access to additional trucks</td>
<td></td>
</tr>
<tr>
<td><strong>Risks</strong></td>
<td></td>
</tr>
<tr>
<td>• Easier as LMC is accountable for both employees and assets</td>
<td></td>
</tr>
<tr>
<td><strong>Enforcement</strong></td>
<td></td>
</tr>
<tr>
<td>• Drivers own and maintain trucks, independently contract with LMCs</td>
<td></td>
</tr>
<tr>
<td>– Low barriers to entry</td>
<td></td>
</tr>
<tr>
<td>• LMC and IOO motivated to minimize costs, IOO motivated to maximize work</td>
<td></td>
</tr>
<tr>
<td>• Many costs externalized: only variable costs integrated into decision making</td>
<td></td>
</tr>
<tr>
<td>• Unreliability of supply as IOOs service many different markets</td>
<td></td>
</tr>
<tr>
<td>• Few incentives for system wide operational efficiency</td>
<td></td>
</tr>
<tr>
<td>• High administrative costs and burden</td>
<td></td>
</tr>
<tr>
<td>• Risks if marginal LMCs/IOOs unable to comply with new standards</td>
<td></td>
</tr>
<tr>
<td>• More difficult with large number of IOOs</td>
<td></td>
</tr>
</tbody>
</table>

Source: BCG analysis; Haveman and Thornberg (Beacon Economics), Clean Trucks Program, February 2008
Asset based trucking firms are likely to make their own environmental and efficiency improvements

<table>
<thead>
<tr>
<th>Illustrative examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S.C. Johnson</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>• Multi-national manufacturer of consumer products and chemicals</td>
</tr>
<tr>
<td><strong>Key transport issues</strong></td>
</tr>
<tr>
<td>• Trucks were not used at their optimized load capacity</td>
</tr>
<tr>
<td><strong>Initiative</strong></td>
</tr>
</tbody>
</table>
| • Truck-load optimization  
  – Definition of optimal load per truck  
  – Introduction of multi-product loads |
| **Results**            |
| • 1,900 tons of greenhouse gases eliminated  
  • Used 2,100 fewer trucks  
  • Used 170K gallons less diesel  
    – $1.6M cost savings |

| **Wal-Mart and logistics partners** |
| • Largest retailer in the world |
| • Aging truck fleet  
  – Mainly diesel trucks  
  – High greenhouse gases footprint |
| • Upgrade truck fleet  
  – Auxiliary power units  
  – Energy-efficient tires  
  – Enhanced trailer aerodynamics |
| • 7M tons of greenhouse gases eliminated  
  • Less 600M gallons of diesel used  
    – $1.8B saved |

Source: Company websites; other web research
Option II: Key adjustments to Option I to encourage a long term sustainable asset based drayage market

1. **Incent cleanest trucks faster**
   - More ECF exemptions on cleaner trucks to lower all below “dirty” diesel
   - Grandfather ECF exemption on all clean trucks prior to October 1, 2008
   - Payout for scrap of trucks

2. **Create sustainable orderly market and enable productivity gains:**
   - More ECF exemptions on private investment in cleaner trucks
   - Strict concession criteria to enable more effective enforcement
     - with day-passes to ensure minimal port disruptions
   - Adjusted concession fee to enable effective administration and market oversight
   - CTP financing only to LMCs for new trucks

3. **Allow pathway for small businesses to grow**
   - Business outreach program providing transition assistance to current drayage participants

Note: “Clean trucks” are those complying with 2007 emissions standards
### Option II: “Enhanced model with market incentives”

<table>
<thead>
<tr>
<th>Environmental Cargo Fee</th>
<th>Lever</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemption amount (net fee)</td>
<td>Privately funded: CD ($0 to 17.50 TBD), LNG / alt. fuel / hybrid ($0)</td>
<td>Cleaner ahead of ban, green growth</td>
</tr>
<tr>
<td></td>
<td>CTP funded: CD ($35), CD after financing paid off ($0), LNG / alt. fuel, hybrid ($0)</td>
<td>Encourage private investment</td>
</tr>
<tr>
<td></td>
<td>Prior to Oct 1 ($0) grandfathered for any clean truck</td>
<td></td>
</tr>
<tr>
<td>Exemption timing</td>
<td>Flat across time with rights to adjust in future as needed</td>
<td></td>
</tr>
<tr>
<td>Concession recipients</td>
<td>LMCs only</td>
<td></td>
</tr>
<tr>
<td>Concession criteria</td>
<td>Parking requirement (inspected off street)</td>
<td>Create orderly market</td>
</tr>
<tr>
<td></td>
<td>Strict revocation if trucks not properly maintained</td>
<td>Cover admin costs</td>
</tr>
<tr>
<td></td>
<td>Identifiable place of doing business</td>
<td>Ensure sufficient supply</td>
</tr>
<tr>
<td>Price of a Concession</td>
<td>~$2000-3000 TBD for concession, $100 annually per truck</td>
<td>Improve security</td>
</tr>
<tr>
<td></td>
<td>Right to change price of concession in future</td>
<td>Improve safety</td>
</tr>
<tr>
<td>Concession term</td>
<td>5 years standard</td>
<td>Reduce worker condition</td>
</tr>
<tr>
<td></td>
<td>May be revoked for any infractions</td>
<td></td>
</tr>
<tr>
<td>Exceptions</td>
<td>Day passes for trucks servicing port less than X visits per year</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concession</th>
<th>Financing recipient</th>
<th>Amount of CTP financing</th>
<th>Financing criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LMCs only for new trucks</td>
<td>CTP Grant: ~80% for New Diesel, Up to 80% for LNG/Alt. Fuel/Hybrids/New technology</td>
<td>Financial requirements set by commercial partner</td>
</tr>
<tr>
<td></td>
<td>LMCs or IOOs for truck buyback for scrap</td>
<td>Truck scrap program: starting with ~$5000 per pre-89 truck, requires prior SoCal registration and history of SPB drayage</td>
<td>Dray frequency going forward for new truck of at least (#) visits/week</td>
</tr>
<tr>
<td></td>
<td>Business outreach program for transition assistance</td>
<td>No retrofit financing, unless technology meets 2007 standards</td>
<td></td>
</tr>
</tbody>
</table>

Note: Truck ban schedule and TWIC security requirements as per Option I

Blue = adjustment from Option I
One specific element of Options II is provision of a Business Outreach Program for LMCs

<table>
<thead>
<tr>
<th>Example benefits</th>
<th>Description</th>
</tr>
</thead>
</table>
| Educational resources | Business seminars to provide education on best practices under the new CTP program. Illustrative seminar examples:  
• Compliance with new CTP regulations  
• Operational efficiency best practices  
• Managing finances / CTP funding  
• Human resources guidelines for employees |
| Financing [At Port’s discretion] | Driver safety training courses and truck maintenance options |
| Criteria | Short term, low interest rate loans to cover educational seminars and business transition expenses |
|  | Open to any LMC, with preference for financing given to those with a history of drayage work |

Source: interviews with POLA staff
## Option II evaluation: Environmental

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Conditions created to accelerate switch to greenest trucks ahead of ban schedule</td>
<td>Economics favor cleaner trucks: Full exemption on all privately purchased clean trucks and full exemption on all alternative fuel vehicles regardless of funding source</td>
</tr>
<tr>
<td>+</td>
<td>“ Dirty” diesels rapidly removed from SPB region</td>
<td>Scrap program will provide good money and an exit strategy for IOOs facing ban/restriction; LMCs will be incentivized to scrap old trucks</td>
</tr>
<tr>
<td>+</td>
<td>Participants should continue to invest in truck improvements</td>
<td>Concession criteria will enable stringent and ongoing oversight; asset based model promotes investment in up-to-date technology</td>
</tr>
<tr>
<td>-</td>
<td>Risk that long term sustainable environmental and operational stability undermined</td>
<td>No employee requirement: risk that LMCs choose not to hire employees and under-capitalized IOOs remain significant factor in market</td>
</tr>
</tbody>
</table>
### Option II evaluation: Port Operations

<table>
<thead>
<tr>
<th>Benefit/</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Continual improvement in the efficiency of the port drayage market are likely with LMC consolidation and move to asset-based</td>
<td>Larger more well capitalized LMCs with employees able to invest in and push for efficiency improvements; LMCs have more skin in the game; efficiency efforts in consolidated market more likely to be implemented and rewarded</td>
</tr>
<tr>
<td>+</td>
<td>Orderly transition to asset based market with limited change to port operations and ability to absorb swings in demand</td>
<td>Flexibility with IOOs or employees servicing market and transition assistance through the implementation of business outreach program</td>
</tr>
<tr>
<td>+</td>
<td>Labor market incomes improve and mix shifts towards employees</td>
<td>Financial benefit for LMCs to buy clean trucks and hire employees as IOO rates increase</td>
</tr>
<tr>
<td>+</td>
<td>Migration to a mix of IOO and employee based trucking market</td>
<td>Asset owning LMCs will seek out employee drivers for their trucks</td>
</tr>
<tr>
<td>+</td>
<td>Migration of trucker incomes towards prevailing comparable levels according to mix of IOOs and employees</td>
<td>Prevailing wage required to attract additional IOO and employee drivers</td>
</tr>
<tr>
<td>-</td>
<td>Total diversion will be slightly greater than Option I – approximately 2% based on rational economic decisions resulting from drayage price increase</td>
<td>More consolidated market will result in drayage price increases especially due to labor changes</td>
</tr>
<tr>
<td>-</td>
<td>Risk that private players continue to fund and support marginal IOOs and/or create a “marginal contractor” labor market for truckers who sub-lease LMC controlled trucks</td>
<td>No explicit employee requirement allows for opportunities to ‘game the system’</td>
</tr>
<tr>
<td>-</td>
<td>Risk that LMCs do not pass on gains to IOOs or employees</td>
<td>No control over contractual dynamics between LMCs and IOOs</td>
</tr>
</tbody>
</table>
## Option II evaluation: Safety and security

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved port security</td>
<td>Stricter concession criteria with improved oversight; reciprocal obligations with port grant concessions to only those LMCs accountable for safety/security</td>
</tr>
<tr>
<td>+</td>
<td>Improved driver and community safety</td>
<td>Improved maintenance and driver training</td>
</tr>
<tr>
<td>-</td>
<td>Risk that the mix of employees and IOOs complicates the enforcement of safety and security requirements</td>
<td>Potential difficulty in maintaining oversight and transparency due to different mechanisms for dealing with employees and IOOs</td>
</tr>
</tbody>
</table>
Option II: Analytical evaluation

Environmental

- Clean trucks enter system more quickly than Option I due to optimized exemptions

Operations

- Cumulative diversion reaches ~2.0% due to higher wage rates and employee costs (vs. ~1.2% in Option I)

Drayage market

- Rate increases to ~$16-17/hr mix of IOOs and employees hired by asset based LMC (vs ~$12.3/hr in Option I)

1. Private includes blend of clean diesel and alt fuel, mix will depend not only on CTP incentives (e.g. ECF exemptions) but also factors not modeled such as private funding, tax treatment etc

Source: BCG drayage market supply and demand economics model, March 2008
With move to more of an asset based model we will expect improvements in operational efficiency: examples

<table>
<thead>
<tr>
<th>Efficiency improvement</th>
<th>Action required</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase matching of inbound and outbound loads</td>
<td>LMC investment in GPS systems for trucks and routing or scheduling software</td>
<td>Reduction in miles driven without a load (bobtail)</td>
</tr>
<tr>
<td>Decreased time spent within the port terminal</td>
<td>Terminal operator application of appointment systems or investment in terminal redesign</td>
<td>Less wait times at the port and therefore shorter turn times</td>
</tr>
<tr>
<td>Improve truck operating efficiency</td>
<td>LMC investment in newer trucks, wholesale fuel purchasing, and high maintenance standards</td>
<td>Lower fuel costs, as well as less time lost due to truck repairs</td>
</tr>
<tr>
<td>Higher daily truck utilization</td>
<td>Slip-seating management by LMCs or IOOs voluntarily allowing others to drive their trucks</td>
<td>Near 24 hour driving time of each truck, increasing usage capacity</td>
</tr>
<tr>
<td>Increase drayage during off-peak time periods</td>
<td>Direction by LMCs to pick-up and drop-off containers during non-traditional hours</td>
<td>Less traffic leading to overall mile per hour increase during driving time</td>
</tr>
<tr>
<td>Increased truck speeds, reduced wait times, and improved matching combined</td>
<td>Generous investment and commitment in all categories above</td>
<td>No net change in overall drayage rates as efficiency improvements mitigate price increases</td>
</tr>
</tbody>
</table>

Source: Haveman and Thornberg (Beacon Economics), Clean Trucks Program, February 2008
However, Option II carries some specific risks

Risk of emergence of some new form of labor market which continues to be unattractive to the long term supply of truckers e.g.
  • “Taxi cab” like contract employees
  • LMC truck lease to IOOs
  • “IOO cooperatives” in which IOOs have little stake in incomes earned

Risk that BCOs directly perpetuate existing market by stepping in to fund IOO trucks
  • BCOs have signaled willingness to encourage these sorts of options
    – example: Coalition for Responsible Transportation

Risk that Ports’ ability to ensure safety and security is compromised by continued existence of a complex market structure with large numbers of both employees and IOOs

Risk that long term sustainable environmental and operational stability undermined if under-capitalized IOOs remain a significant factor in market
Example: BCOs willing to make investments in drayage
Coalition for Responsible Transportation supports BCO investment in cleaner trucks

Mission statement
- “To allow private sector companies to address goods movement-related environmental issues by implementing innovative solutions to alleviate diesel-related emissions and promoting sustainable business practices in communities surrounding our nation’s ports.”
- “C.R.T. encourages and invites shippers, trucking companies and ocean carriers to join the Coalition so we can collectively provide cleaner, safer and more reliable drayage service at the Ports of Los Angeles and Long Beach.”

Action plan details
- “1. Trucking Company would arrange for all Clean Truck purchases or leases.
- 2. Trucking Company would provide the independent owner operator with a loan for the down payment or facilitate direct financing from third parties, as provided for in "Business Model" above, in exchange for a service commitment from the independent owner operator.
- 3. A Market Adjustment Fee would be charged to all BCO’s.
- 4. Fees would be billed and collected by the Trucking Company and then disbursed to the truck manufacturers or leasing companies and independent owner operators.
- 5. Trucking Companies would be subject to Clean Vehicle audits by the Ports or any other government agency. Fleets could be converted within 12 months.
- 6. Owner-Operator status could still be preserved and companies would still be subject to fines or restricted from Port access for failure to comply.”

Key players
- “TTSI (Total Transportation Services Inc.) will help the owner-operator truckers lease-to-buy or outright purchase low-emission vehicles through financial assistance and/or by obtaining public grant funds.”
- “TTSI will purchase LNG (liquefied natural gas) vehicles and new 2007 model diesel trucks, or retrofit 2000 model or newer trucks with cleaner engines. All of these vehicles will meet the ports' rigid standards contained in the Clean Air Action Plan.”
- “NYK Line, Target, and other members will be prepared to contribute to higher adjusted market freight rates in order to compensate the owner operators for the added costs.”


BCG Report 3-13-08 final.ppt
... Option III builds on Option II and creates the requirement for an *employee based* drayage market

**Objectives of the employee commitment:**
- Ensure continued supply of drivers through creation of positions offering attractive incomes and benefits, while
- Maintaining a reliable and responsive supply of trucks and truckers to accommodate peaks and troughs in demand, and
- Ensuring LMCs held accountable for safety and security

**Benefits of an asset and employee based drayage system**
- Creates *reciprocal obligations*
  - Port provides concession and demands performance in return
  - LMC invests in drayage capacity (trucks and employees) and obtains benefit from income generated through concession
- Creates *aligned incentives* – e.g. both parties benefit from improvements in operational efficiency through better utilization of assets/trucks and employees
- Strongest basis for *ensuring highest levels of accountability*
  - Environmental e.g. truck maintenance to keep up green performance
  - Safety and security e.g. employer accountable for employee
A range of different types of employee commitments were considered

<table>
<thead>
<tr>
<th>Employee commitment option</th>
<th>Key considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 100% of LMC utilized drivers serving port</td>
<td>• How to phase in? (e.g. 20% for 5 years)</td>
</tr>
<tr>
<td></td>
<td>• How to meet fluctuations in demand? (e.g. peak exemptions, flexible workers, overtime etc)</td>
</tr>
<tr>
<td>B. Fixed proportion (e.g. 80%) of LMC utilized drivers serving port</td>
<td>• What is the appropriate level to set to accommodate flexibility?</td>
</tr>
<tr>
<td></td>
<td>• How to phase in? (e.g. 20% for 4 years)</td>
</tr>
<tr>
<td></td>
<td>• How to measure and monitor?</td>
</tr>
<tr>
<td>C. Set ratio of LMC controlled trucks: employees serving port</td>
<td>• What is the appropriate ratio? (e.g. 1:1 or 1:2)</td>
</tr>
<tr>
<td></td>
<td>• Will this slow move to cleaner trucks?</td>
</tr>
<tr>
<td>D. Link CTP financed trucks to employees</td>
<td>• Will this slow move to cleaner trucks?</td>
</tr>
<tr>
<td></td>
<td>• What will happen to drivers for privately funded trucks?</td>
</tr>
<tr>
<td></td>
<td>• Why would LMCs take advantage of such a program with restrictions?</td>
</tr>
</tbody>
</table>
Option C – Why link employees to LMC controlled trucks?
Idea anchored in observation of structure of national trucking fleets

<table>
<thead>
<tr>
<th>Trucking firm</th>
<th># IOOs</th>
<th># Employees</th>
<th># Company Trucks</th>
<th>% IOOs</th>
<th>Employee to truck ratio</th>
<th>Union status</th>
</tr>
</thead>
<tbody>
<tr>
<td>YRC Worldwide (formerly Yellow)</td>
<td>0</td>
<td>66,000</td>
<td>27,786</td>
<td>0%</td>
<td>2.4</td>
<td>Yes, Teamsters</td>
</tr>
<tr>
<td>JB Hunt Transportation</td>
<td>1,107</td>
<td>17,150</td>
<td>10,961</td>
<td>6%</td>
<td>1.6</td>
<td>Non-union</td>
</tr>
<tr>
<td>Swift Transportation</td>
<td>2,950</td>
<td>21,900</td>
<td>14,977</td>
<td>13%</td>
<td>1.5</td>
<td>Non-union</td>
</tr>
<tr>
<td>Werner Enterprises</td>
<td>820</td>
<td>14,326</td>
<td>8,180</td>
<td>6%</td>
<td>1.8</td>
<td>Non-union</td>
</tr>
<tr>
<td>Old Dominion Freight Line</td>
<td>n/a</td>
<td>10,762</td>
<td>4,643</td>
<td>NA</td>
<td>2.3</td>
<td>Non-union</td>
</tr>
</tbody>
</table>

Source: Company 10-Ks, Transport Topics Top 100 For-Hire Carriers of 2007
## Pros and cons of different forms of employee commitment

### Option III

<table>
<thead>
<tr>
<th><strong>A</strong> 100% of drivers serving the port</th>
<th><strong>B</strong> ~80% of drivers serving the port</th>
<th><strong>C</strong> Set ratio of trucks to employees</th>
<th><strong>D</strong> Link CTP funded trucks to employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Guarantees employee commitment</td>
<td>• High level of employee commitment</td>
<td>• Clear logic of one truck = 1+ employee</td>
<td></td>
</tr>
<tr>
<td>• Monitoring employee status less complex</td>
<td>• Some supply flexibility for peak demand periods</td>
<td>• Matches employment and truck ownership pattern in other trucking markets</td>
<td></td>
</tr>
<tr>
<td>• Encourages employers to maximize employee flexibility</td>
<td>• Matches patterns of employment in other trucking markets</td>
<td>• Allows for flexibility via IOOs</td>
<td></td>
</tr>
</tbody>
</table>

#### Pros

- • Requires clearly defined alternatives to scale drivers up for peak demand e.g. mechanism to relax commitment under peak load
- • Guarantees employee commitment
- • Some supply flexibility for peak demand periods
- • High level of employee commitment
- • Complexity in measuring compliance
- • Matches patterns of employment in other trucking markets
- • Ensures tight control over commitment through financial means
- • High level of employee commitment
- • Complexity in measuring compliance
- • Ensures tight control over commitment through financial means

#### Cons

- • Requires clearly defined alternatives to scale drivers up for peak demand e.g. mechanism to relax commitment under peak load
- • Guarantees employee commitment
- • Some supply flexibility for peak demand periods
- • High level of employee commitment
- • Complexity in measuring compliance
- • Matches patterns of employment in other trucking markets
- • Ensures tight control over commitment through financial means

#### Recommendations

- **100% commitment is simplest and most direct target, phase in of commitment over time gives opportunity to measure and fine tune the above mechanisms**
- **100% commitment is simplest and most direct target, phase in of commitment over time gives opportunity to measure and fine tune the above mechanisms**
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- **100% commitment is simplest and most direct target, phase in of commitment over time gives opportunity to measure and fine tune the above mechanisms**

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*The Boston Consulting Group*
# Option III: “Enhanced model with market incentives and an employee commitment”

<table>
<thead>
<tr>
<th>Component</th>
<th>Lever</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Cargo Fee</strong></td>
<td>Privately funded: CD ($17.50 or less), LNG / alt. fuel / hybrid ($0) CTP funded: CD ($35), CD after financing paid off ($0), LNG / alt. fuel, hybrid ($0) Prior to Oct 1 ($0) grandfathered for any clean trucks</td>
<td>• Cleaner ahead of ban, green growth • Encourage private investment</td>
</tr>
<tr>
<td><strong>Exemption amount (net fee)</strong></td>
<td>Flat across time with rights to adjust in future as needed</td>
<td></td>
</tr>
<tr>
<td><strong>Exemption timing</strong></td>
<td>LMCs only</td>
<td></td>
</tr>
<tr>
<td><strong>Concession recipients</strong></td>
<td>• Parking requirement (inspected off street) and identifiable place of bus. • Strict revocation if trucks not properly maintained • 100% employee commitment (phased in over 5 years) – priority to be given to existing truckers when creating new employees • Certification of employees having completed mandated safety training</td>
<td>• Create orderly market • Cover admin costs • Ensure sufficient supply • Improve security • Improve safety • Improve worker condition • Reduce negative impacts on local community</td>
</tr>
<tr>
<td><strong>Concession criteria</strong></td>
<td>~$2000-3000 TBD for concession, $100 per truck, Right to change price of concession in future, or offer seasonal</td>
<td></td>
</tr>
<tr>
<td><strong>Price of a concession</strong></td>
<td>5 years standard May be revoked for any infractions or lack of performance</td>
<td></td>
</tr>
<tr>
<td><strong>Concession term</strong></td>
<td>Day passes for trucks servicing port less than X visits per year Option to relax employee commitment at times of peak load</td>
<td></td>
</tr>
<tr>
<td><strong>Exceptions</strong></td>
<td>LMCs only for new trucks LMCs or IOOs for truck scrap Business outreach program for transition assistance</td>
<td>• Cleaner trucks • Reinforce orderly market • Support upstanding small businesses • Reinforce sustainable market</td>
</tr>
<tr>
<td><strong>Financing recipient</strong></td>
<td>CTP Grant: ~80% for New Diesel, Up to 80% for LNG/Alt. Fuel/Hybrids/New technology Truck scrap program: starting with ~$5000 per pre-89 truck, requires prior SoCal registration and history of SPB drayage No retrofit financing, unless technology meets 2007 standards</td>
<td></td>
</tr>
<tr>
<td><strong>Amount of CTP financing</strong></td>
<td>Financial requirements set by commercial partner Dray frequency going forward for new truck of at least (#) visits/week</td>
<td></td>
</tr>
</tbody>
</table>
### Option III evaluation: Environmental

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Conditions created to accelerate switch to greenest trucks ahead of ban schedule</td>
<td>Economics favor cleaner trucks: Full exemption on all privately purchased clean trucks and full exemption on all alternative fuel vehicles regardless of funding source</td>
</tr>
<tr>
<td>+</td>
<td>“Dirty” diesels rapidly removed from SPB region</td>
<td>Scrap program will provide good money and an exit strategy for IOOs facing ban/restriction; LMCs will be incentivized to scrap old trucks</td>
</tr>
<tr>
<td>+</td>
<td>Participants should continue to invest in truck improvements</td>
<td>Concession criteria will enable stringent and ongoing oversight; asset based model promotes investment in up-to-date technology</td>
</tr>
<tr>
<td>+</td>
<td>Most likely to guarantee sustainable environmental and operational improvements</td>
<td>Asset based LMCs with 100% employees creates increased ability/incentives for investment and operational efficiencies.</td>
</tr>
</tbody>
</table>
## Option III evaluation: Port operations

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Continual improvement in the efficiency of the port drayage market is likely with LMC consolidation and move to asset-based market</td>
<td>Larger more well capitalized LMCs with employees able to invest in and push for efficiency improvements; LMCs have more skin in the game; efficiency efforts in consolidated market more likely to be implemented and rewarded</td>
</tr>
<tr>
<td>+</td>
<td>Labor market incomes improve and mix shifts towards 100% employees</td>
<td>Financial benefit for LMCs to buy clean trucks and hire employees as IOO rates increase</td>
</tr>
<tr>
<td>+</td>
<td>Migration of trucker incomes towards prevailing comparable levels for employee truckers</td>
<td>Prevailing employee trucker wage required to attract employee drivers</td>
</tr>
<tr>
<td>-</td>
<td>Total diversion will be slightly greater than Option I and II – approximately 3% based on rational economic decisions resulting from drayage price increase</td>
<td>More consolidated market with 100% employees will result in highest drayage price increases (vs. Options I and II) especially due to labor changes</td>
</tr>
<tr>
<td>-</td>
<td>Risk of lack of orderly transition to asset based market with ability to absorb swings in demand</td>
<td>If there is a rapid exit of IOOs servicing market the ability to handle swings in demand may be threatened</td>
</tr>
</tbody>
</table>
## Option III evaluation: Safety and security

<table>
<thead>
<tr>
<th>Benefit/risk</th>
<th>What we think will happen...</th>
<th>..and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Improved port security (better than options I and II)</td>
<td>Stricter concession criteria with 100% employee requirement will improve oversight; reciprocal obligations with port grant concessions to only those LMCs accountable for safety/security</td>
</tr>
<tr>
<td>+</td>
<td>Improved driver and community safety (better than options I and II)</td>
<td>Improved maintenance and driver training</td>
</tr>
</tbody>
</table>
Option III: Analytical evaluation

Environmental

- Similar outcome to Option II
- Due to exemptions, LMCs choose clean trucks in line with commitment schedule

Operations

- Cumulative diversion reaches ~2.7% due to higher costs under commitment schedule (vs. ~2.0% in Option II)
- Highest rates of all options based on 100% employee rate and associated costs
- % of employees increases according to commitment schedule

Drayage market

- Rate increases to ~$18/hr due to 100% employee commitment (slightly higher than Option II)
- % of employees increases according to commitment schedule

### Total SPB drayage trucking time (M Hrs)

- Clean trucks dominate throughout the years.

### Cumulative Diversion (% SBP demand)

- Diversion increases steadily from 2007 to 2012.

### Avg. drayage Income ($/hr)

- Income increases annually, reaching a peak of ~$18/hr in 2012.

### Avg. drayage costs per container ($)

- Costs vary by distance, with 50-150 Miles having the highest costs.

### Driver time required (M hrs)

- Time required for drivers increases steadily from 2007 to 2012.

### Truck type utilization (equivalents, %)

- Utilization varies by truck type, with Private 1 indicating a significant share of clean trucks.

---

1. Private includes blend of clean diesel and alt fuel, mix will depend not only on CTP incentives (e.g. ECF exemptions) but also factors not modeled such as private funding, tax treatment etc.

Source: BCG drayage market supply and demand economics model, March 2008
However, Option III also carries some specific risks

Risks of additional loss of trucking supply, e.g.:
- Drivers and trucks as IOOs leave the market as they do not wish to become employees
- Risk that trucking firms do not enter the market due to concerns over regulation/costs

Risks of lack of flexibility in supply to meet peak demands, e.g.:
- Failure to create appropriate pools of flexible workers to accommodate peaks and/or
- Employers hiring to minimum rather than peak without part-time employees

Risk of BCOs diverting discretional cargo
- Some BCOs state that the employee commitment makes their supply chain less reliable

Notwithstanding these risks, employee commitment provides best guarantee of long term market sustainability
Key risk in option III is of BCO diversion over and above that driven by drayage pricing alone

Employee commitment has wide range of potential impacts on diversion...

Potential % SPB cargo diversion

Option II baseline

Option III incremental impact

Possible CRT BCO reaction¹

1 Option II without employee commitment impacts price of drayage
- Price increases result in ~2% diversion

2 Employee commitment in Option III may have additional impact on drayage pricing
- Incremental loss of up to ~40% existing truckers results in ~0.6% diversion as new workers drawn in at higher wages

3 Employee commitment may also be considered a threat to BCOs
- Risk that CRT (coalition for Responsible Transportation) BCOs decide to divert discretionary cargo, estimated at ~14% of SPB total volume¹
- Other BCOs may also divert discretionary cargo

Risk of diversion is exacerbated if POLA and POLB adopt different programs – as non discretionary also at risk

1. Coalition for Responsible Transportation participants estimated to comprise ~20% SPB container demand, of which ~70% is estimated to be discretionary

Source: Cargo Demand study, POLA interviews
### Implications of a mixed model from POLA’s perspective

**Initial observations**

<table>
<thead>
<tr>
<th>Drivers</th>
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<tr>
<td>From program start to 2012</td>
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<td>From 2012 and beyond</td>
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<table>
<thead>
<tr>
<th>LMCs</th>
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<tbody>
<tr>
<td>Smaller undercapitalized LMCs may exit POLA and focus their attention on POLB. Larger LMCs should be attracted due to market consolidation and exit of marginal players. Existence of mixed model may accelerate LMC rationalization</td>
</tr>
<tr>
<td>Presence of large, well capitalized LMC’s enables better implementation of operational efficiencies and overall provides high reliability; Marginal LMCs continue to find it difficult to keep up with rising environmental, safety and security standards and over time withdraw from POLB also</td>
</tr>
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<tr>
<th>BCOs and demand</th>
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<tbody>
<tr>
<td>As drayage prices increase, some price sensitive BCO’s may switch to POLB; but those who value reliability and timeliness are likely to be attracted to POLA</td>
</tr>
<tr>
<td>BCO appreciate sustained cost improvements and reliability of supply in POLA and switch higher share of work from other ports</td>
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<th>Scalability with Growth</th>
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<tr>
<td>Operational efficiencies start to take hold as well-capitalized LMCs can afford to spend money improving driver and truck utilization; As market consolidates POLA should have greater ability to work together with participants</td>
</tr>
<tr>
<td>POLA is able to move cargo at reasonable prices, due to implementation of operational efficiencies by TOs and large LMCs</td>
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</table>
Agenda

Comparison of options and conclusions
We considered the benefits and risks for each model in both the near and longer term

<table>
<thead>
<tr>
<th>Option I</th>
<th>Option II</th>
<th>Option III</th>
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<tbody>
<tr>
<td><strong>Basic plan</strong></td>
<td><strong>Enhanced model with market incentives</strong></td>
<td><strong>Enhanced model with market incentives and employee commitment</strong></td>
</tr>
<tr>
<td><strong>Near term (1-5 years)</strong>&lt;br&gt;• Ban satisfies immediate environmental changes&lt;br&gt;• No change in port operations and minimal improvements in safety and security</td>
<td><strong>Near term (1-5 years)</strong>&lt;br&gt;• Creates conditions to accelerate switch to greenest trucks&lt;br&gt;• Limited change in port operations&lt;br&gt;• Discourages marginal LMCs</td>
<td><strong>Near term (1-5 years)</strong>&lt;br&gt;• Creates conditions to accelerate switch to greenest trucks&lt;br&gt;• Potential risk of diversion as BCOs face uncertainty of employee commitment</td>
</tr>
<tr>
<td><strong>Long term (5+ years)</strong>&lt;br&gt;• Fails to create a sustainable long term drayage market that will enable continued progress in improving environmental outcomes and enabling green growth</td>
<td><strong>Long term (5+ years)</strong>&lt;br&gt;• If LMCs hire employees will create conditions for sustainable green growth, <strong>but</strong>&lt;br&gt;• Risk that long term sustainable environmental and operational stability undermined if under-capitalized IOOs remain significant factor in market</td>
<td><strong>Long term (5+ years)</strong>&lt;br&gt;• Most likely to guarantee sustainable environmental and operational improvements&lt;br&gt;• Employee and asset based model enhances ability to improve safety and security</td>
</tr>
</tbody>
</table>

**Benefits**

**Risks**
Our overall conclusion: Option III provides the best path to long term sustainability, but with near term risks

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<thead>
<tr>
<th></th>
<th>Current state</th>
<th>I: Basic plan</th>
<th>II: Enhanced model with market incentives</th>
<th>III: Enhanced model w. market incentives &amp; employee commitment</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Short term</td>
<td>Long term</td>
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<tr>
<td>Environment</td>
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<tr>
<td>Port Operations</td>
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<td></td>
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<tr>
<td>Truck &amp; trucker supply</td>
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<tr>
<td>Safety and security</td>
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</tbody>
</table>

1) Risk of failure to create sustainable market structure enabling continuing investment in newer greener trucks and enforceable safety/security
2) Risk of near term disruption caused by BCO diversion

Note: Short-term represents a 1-5 year time span and considers system condition and risks, while long-term represents 5+ years and is primarily based on sustainability.
Total added costs of move to option III are justified given the benefits realized

Incremental costs of recommended option III over status quo are appx. $1.1B per annum in terms of additional drayage costs
- Cumulative sum of all added drayage costs (ECF, labor rates, employee costs) assuming no change in mix beyond predicted diversion
- Compares to $0.6B under Option I

Additional $0.5-1.1B is less than externalities offset by changed drayage market
- Cost impact of externalities estimated at $0.5-1.7B per annum
  - Externalities include not only annualized health costs but also costs of inefficiency and lost benefits for truckers and LMCs, and community impact

Option III delivers positive cost:benefit ratio from year 3 onwards
- Estimate of cumulative added costs of option III in years 1-5 is $4.6B
- Cumulative benefits over same five year period are in the range of $1.8-6.7B


1. Benefits phased in in proportion to changes in numbers of employees, income levels, and proportion of clean to dirty trucks
Conclusions

1. Option I will not create a sustainable long term drayage market that will deliver reliable supply, ensure continued progress in improving environmental outcomes, and enable green growth (e.g. through creating incentives for operational efficiency)

2. Both Options II and III have the potential to create a drayage market that meets the CAAP and CTP objectives (environmental, operational and safety/security) not only in the near term (the terms of the ban) but also in the long term (creates a sustainable drayage market)

3. Option II carries the risk that long term sustainability is undermined if market participants or third parties find ways to hold employee incomes below prevailing levels needed to ensure a reliable supply of truckers (e.g. by financing existing IOOs)

4. Option III directly addresses this risk and offers the best guarantee of long term sustainability, but at the cost of introducing a new element of operational uncertainty

5. One potential outcome could be that the ports of Long Beach and Los Angeles adopt different programs. The Port of Long Beach has adopted a program like Option I. Were the Port of Los Angeles to adopt either of Options II or III there is risk that volume of containers and supply of truckers could divert from Los Angeles to Long Beach.

6. In conclusion we recommend that decision makers seek a unified approach to the San Pedro Bay Clean Truck Program. Decision makers’ preference between Options II and III will hinge on the relative weight they give to risk of LMC/BCO actions versus risk of market participants exploiting loopholes to sustain a lower wage, marginal economics based SPB drayage market and failure to achieve sustainable advantages in line with CAAP goals