

Container Diversion and Economic Impact Study

Effects of Higher Drayage Costs at San Pedro Bay Ports

September 20th, 2007

Presented by:



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Project Overview

- ◆ Clean truck program initiatives are estimated to raise drayage costs
 - + TWIC (Security considerations) & ongoing growth **28%**
 - + Current mixture of IOO's and LMC's with clean trucks **16%** more
 - + All port trucks and drivers to be part of LMC's **20%** more (**40%** vs. TWIC-base)

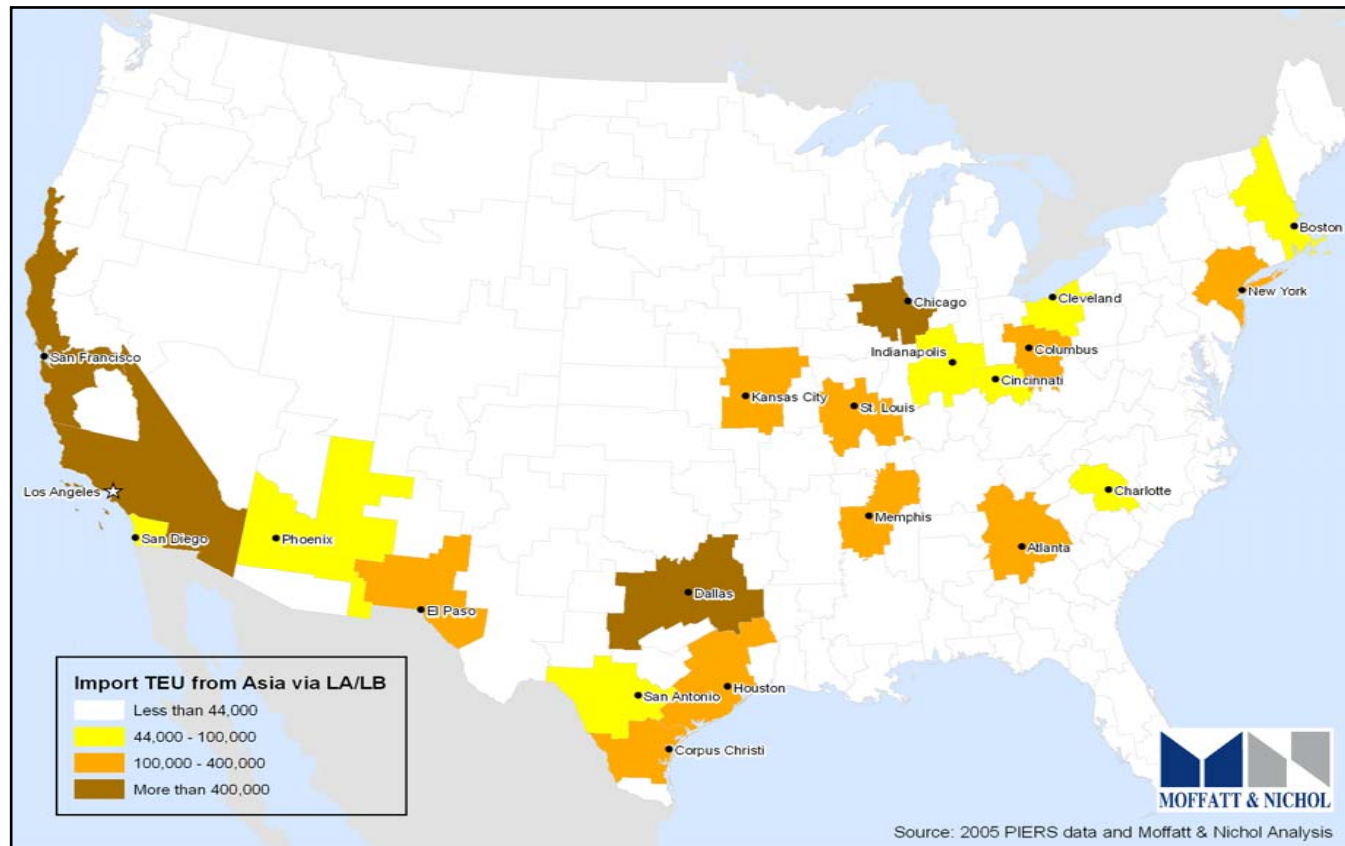
- ◆ What is impact?
 - Container diversion (M&N) is based on demand shifts due to higher costs
 - Economic impacts (BST) based on reduced container moves via SPB

Based upon J. Husing's Presentation on September 5th, 2007

Scenario	Revenue per truck/driver	% Increase	% Increase from post-TWIC base
Current	\$ 107,100		
After TWIC	\$ 137,100	28%	(TWIC affects all ports)
TWIC + Clean Trucks	\$ 159,200	49%	16%
TWIC + Clean Trucks + EMP	\$ 191,700	79%	40%

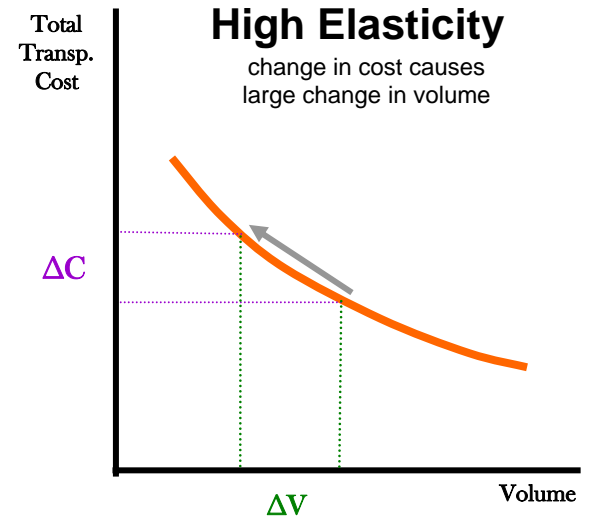
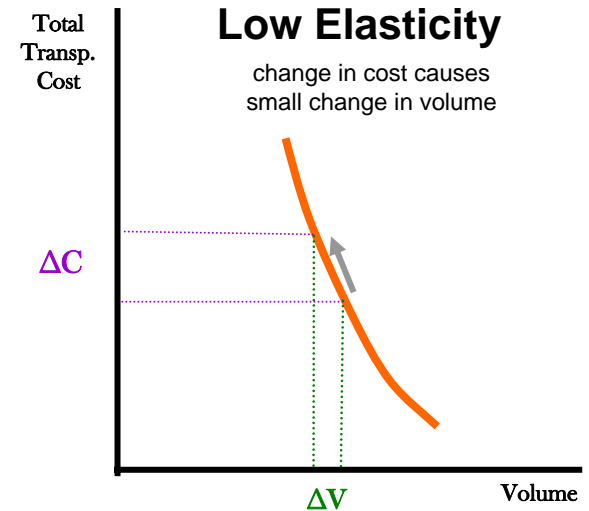
Hinterland Market Areas

- ◆ Major destinations of container imports moving through SPB ports

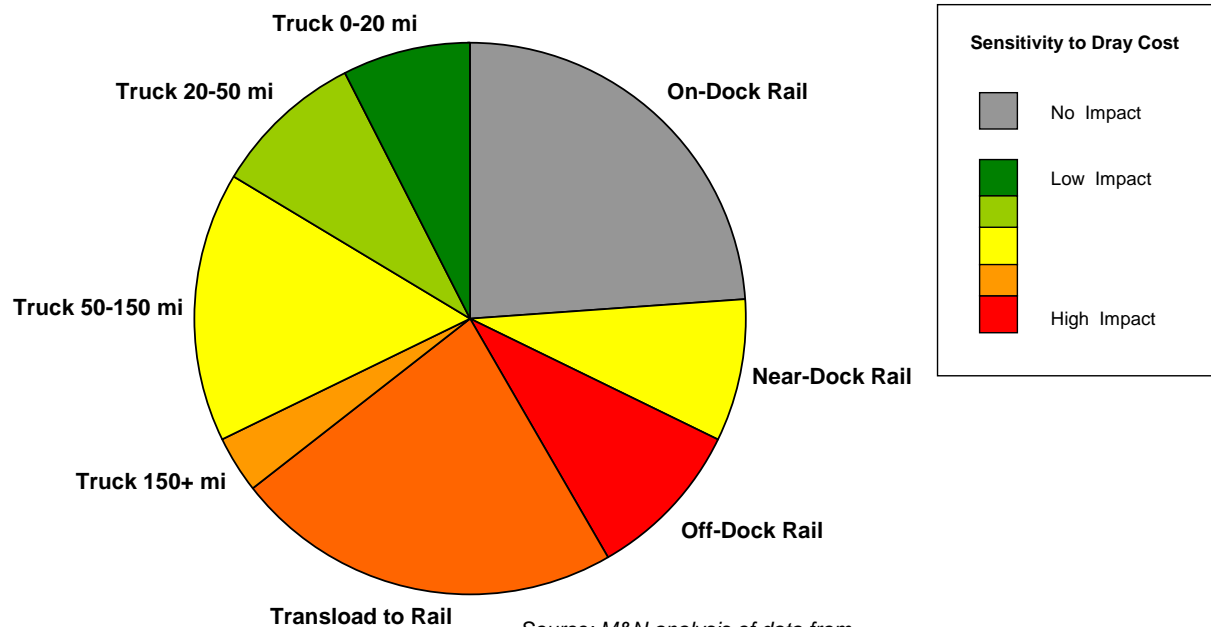


Background to “elasticity,” or demand = f(price)

- ◆ Classify movements at port by mode and distance
- ◆ Estimate elasticities for each kind of movement



Movements at San Pedro Bay Ports (2006)

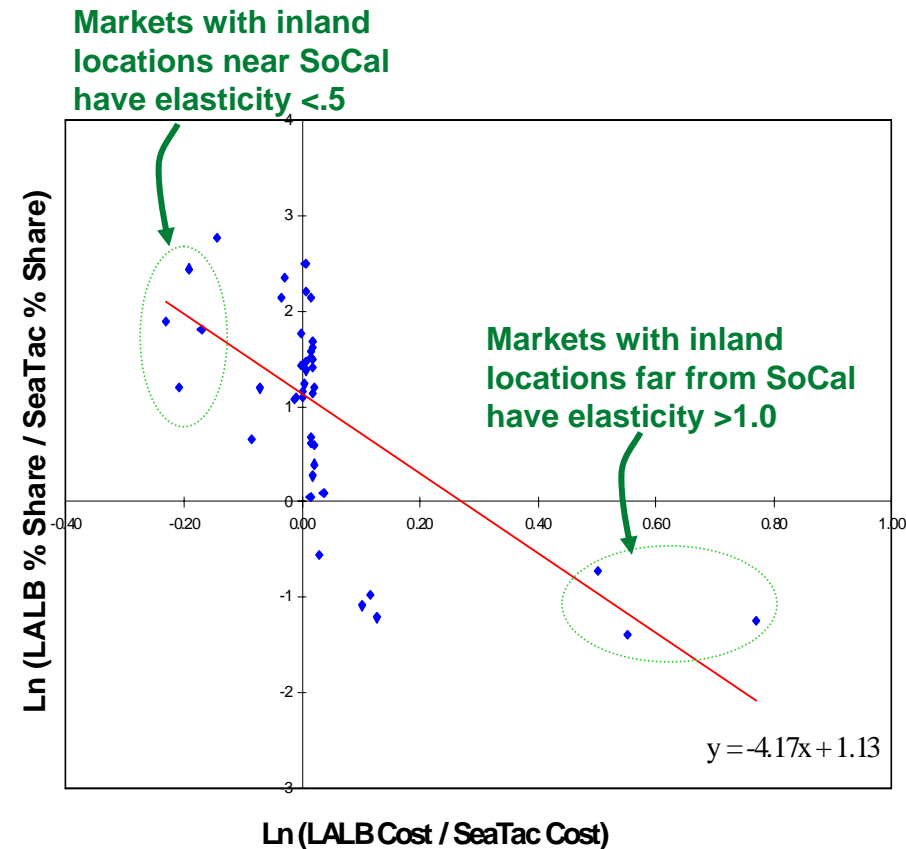


Source: M&N analysis of data from ACTA, August, 2007 and Meyer Mohaddes Associates, April 2004

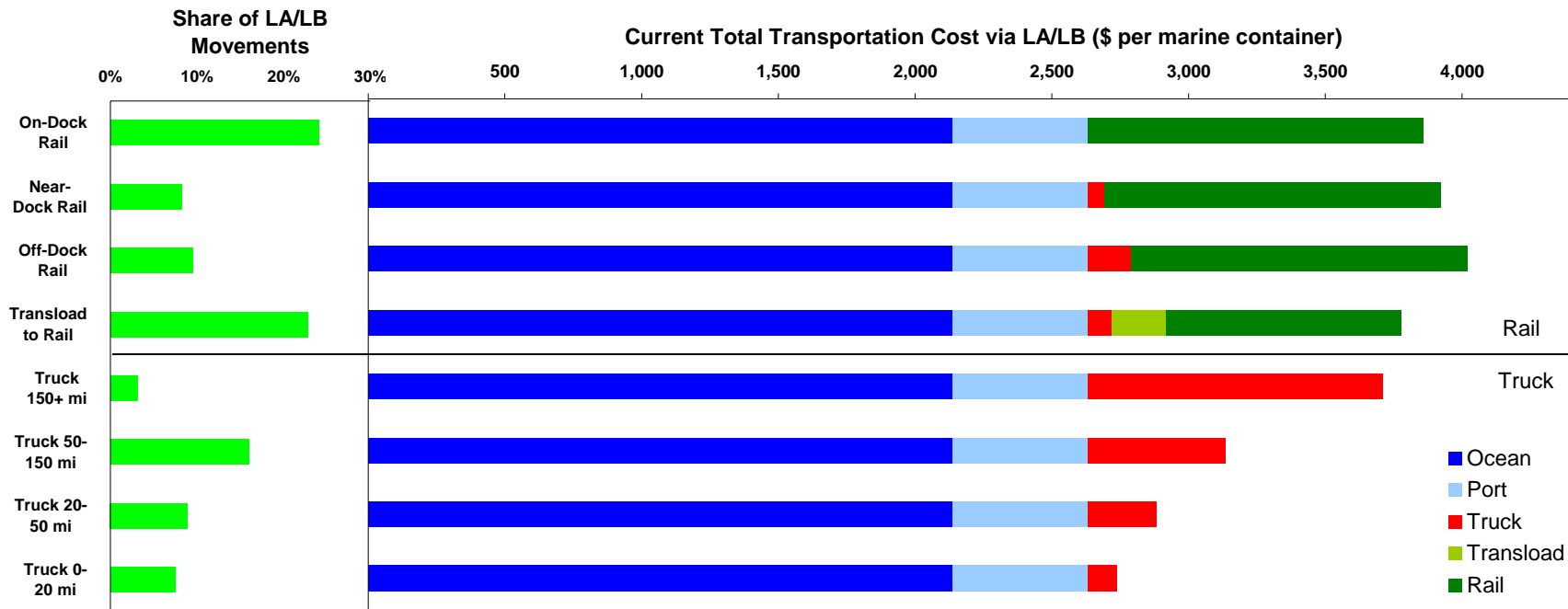
- ◆ On-dock and near-dock rail largely unaffected by clean truck policies; while off-dock rail will be affected by Clean Truck requirements
- ◆ Local moves and transloads via near dock (<50 mile) warehouses are less sensitive to changes in trucking costs as these loads have a current reason to stay in SoCal
- ◆ Long-haul truck moves and transloads via distant warehouses are most susceptible to diversion to other ports

Observed relationship between cost ratio and market share

- ◆ LALB compared with
 - Seattle/Tacoma
 - Oakland
 - NY/NJ and
 - Savannah
- ◆ Each point is a market
 - Asian Trade Region – Inland BEA
 - Ratio of transportation costs vs. Ratio of market shares
- ◆ Cost is a major factor
 - Accounts for 46% of the decision



Import Transportation Cost (to shippers & cargo owners)



- ◆ For most moves, trucking cost is a small % of overall transportation costs
 - Relative to total transportation cost
 - Relative to avg. value of cargo, \$70,000 per container ¹

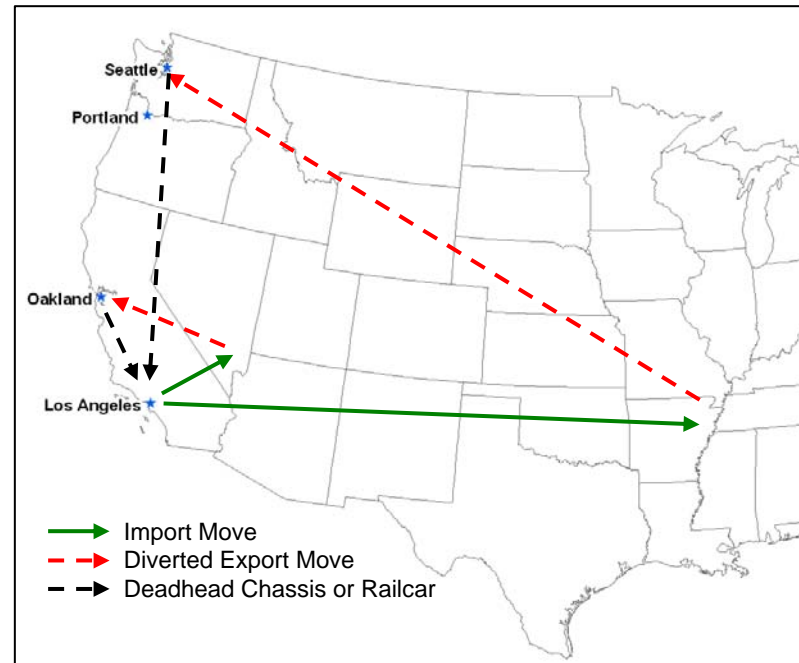
- ◆ Imports bear cost of returning container to Asia

1. US customs declared value

Export / Empty Diversion

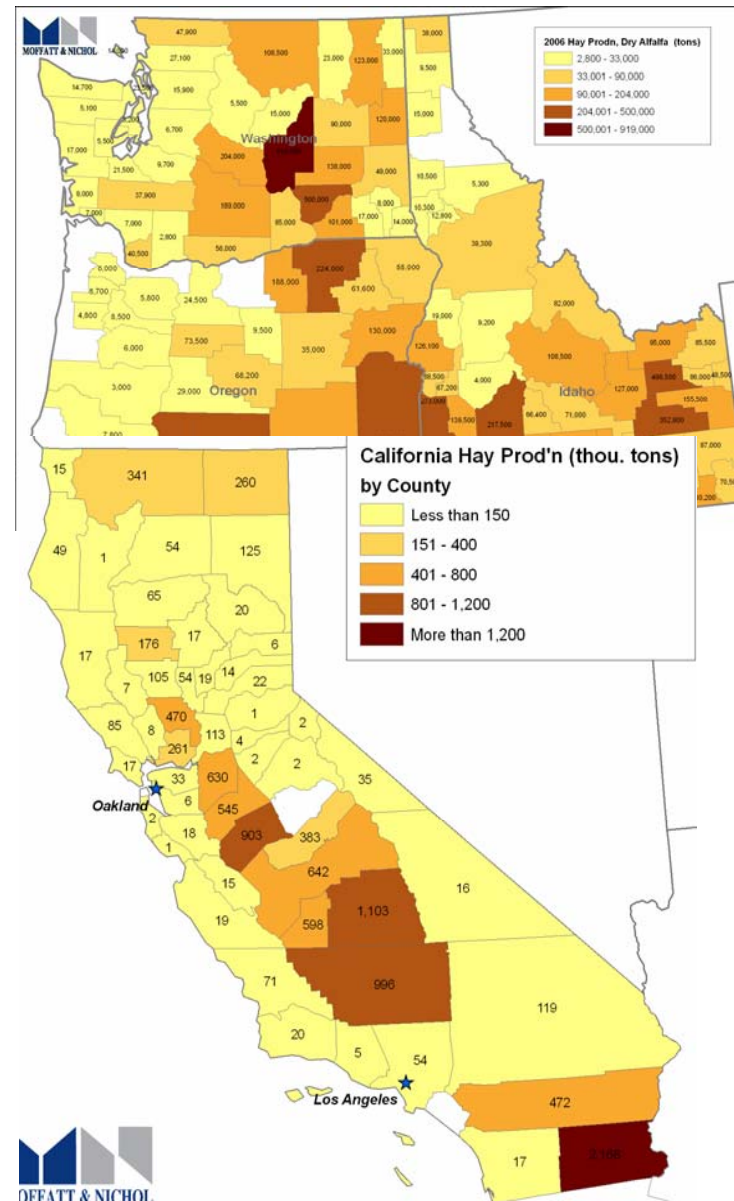
- ◆ Exports bear incremental cost vs. empty return
 - Lower avg. value per TEU
- ◆ Some export/empty diversion from San Pedro Bay occurred in 2006
$$3 \text{ Import} = 1 \text{ Export} + 1.8 \text{ Empty} + 0.2 \text{ Diverted}$$
- ◆ Diversion of exports/empties will be tied to imports
 - Chassis under the program will be returned with clean trucks
 - Railroads discourage non-revenue intermodal railcar moves

Empty and Export Diversion



Southern California Exports – qualitative assessment

- ◆ Waste paper & plastic
- ◆ Cotton
- ◆ Animal feed



Estimated diversion from SPB ports – Case #1

◆ Existing model with Clean Trucks

- Relative to TWIC/Security, 16% increase in truck-driver costs & rates
- 75,000, or 0.5% of SPB port's total, TEU diverted to alternate port gateways

	SPB Throughput in TEU	Trucking Cost (\$ per box)	Transportation Cost (\$ per box)	Change in Transportation Cost (\$ per box)	Elasticity	Change in Market Share (%)	Change in SPB Throughput (TEU)
On-Dock Rail	3,800,000	\$0	\$3,860	\$0	1.0	0.0%	0
Near-Dock Rail	1,300,000	\$60	\$3,920	\$10	1.0	-0.3%	-3,000
Off-Dock Rail	1,500,000	\$160	\$4,020	\$30	1.0	-0.7%	-11,000
Transload to Rail	3,600,000	\$90	\$3,780	\$10	1.0	-0.3%	-10,000
Truck 150+ miles	500,000	\$1,080	\$3,710	\$170	1.0	-4.6%	-23,000
Truck 50-150 miles	2,500,000	\$500	\$3,130	\$80	0.3	-0.8%	-19,000
Truck 20-50 miles	1,400,000	\$250	\$2,880	\$40	0.3	-0.4%	-6,000
Truck 0-20 miles	1,200,000	\$110	\$2,740	\$20	0.3	-0.2%	-3,000
Total / Average	15,800,000	\$184	\$3,570	\$29		-0.5%	-75,000

Estimated diversion from SPB ports – Case #2

◆ Proposed Concession with employees & Clean Trucks

- Relative to TWIC/Security, 40% increase in truck-driver costs & rates
- 193,000, or 1.2% of SPB port's total, TEU diverted to alternate port gateways

	SPB Throughput in TEU	Trucking Cost (\$ per box)	Transportation Cost (\$ per box)	Change in Transportation Cost (\$ per box)	Elasticity	Change in Market Share (%)	Change in SPB Throughput (TEU)
On-Dock Rail	3,800,000	\$0	\$3,860	\$0	1.0	0.0%	0
Near-Dock Rail	1,300,000	\$60	\$3,920	\$20	1.0	-0.5%	-7,000
Off-Dock Rail	1,500,000	\$160	\$4,020	\$60	1.0	-1.5%	-22,000
Transload to Rail	3,600,000	\$90	\$3,780	\$40	1.0	-1.1%	-38,000
Truck 150+ miles	500,000	\$1,080	\$3,710	\$430	1.0	-11.6%	-58,000
Truck 50-150 miles	2,500,000	\$500	\$3,130	\$200	0.3	-1.9%	-48,000
Truck 20-50 miles	1,400,000	\$250	\$2,880	\$100	0.3	-1.0%	-15,000
Truck 0-20 miles	1,200,000	\$110	\$2,740	\$40	0.3	-0.4%	-5,000
Total / Average	15,800,000	\$184	\$3,570	\$74		-1.2%	-193,000

Economic Impacts

- ◆ Focus on transportation industry impacts
 - Port industry
 - Port Users

- ◆ Diversion estimates from M&N

- ◆ Direct impacts
 - Jobs
 - Income

- ◆ Total economic impacts
 - IMPLAN Model
 - 5 county region
 - State of California

Summary of Impacts - Employment

- ◆ Case 1 (Existing model w/Clean Trucks)
 - Divert 75,000 TEUs
 - Region loses 1,580 jobs
 - State loses 1,960 jobs

- ◆ Case 2 (Concession with Employees & Clean Trucks)
 - Divert 193,000 TEUs
 - Region loses 4,450 jobs
 - State loses 5,440 jobs

- ◆ Important caveat
 - Economic impact studies measure a snap shot in time
 - Annual growth will absorb these losses

Impacts include direct, indirect and induced effects

Summary of Impacts – Income (\$Millions)

- ◆ Case 1 (Existing model w/Clean Trucks)
 - Divert 75,000 TEUs
 - Region loses \$112 million
 - State loses \$131 million

- ◆ Case 2 (Concession with Employees & Clean Trucks)
 - Divert 193,000 TEUs
 - Region gains \$260 million
 - State gains \$213 million

- ◆ Important note
 - Increased wages for truckers offset the loss of income from cargo diversions

Impacts include direct, indirect and induced effects