

Container Diversion and Economic Impact Study

Effects of Higher Drayage Costs at San Pedro Bay Ports

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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)

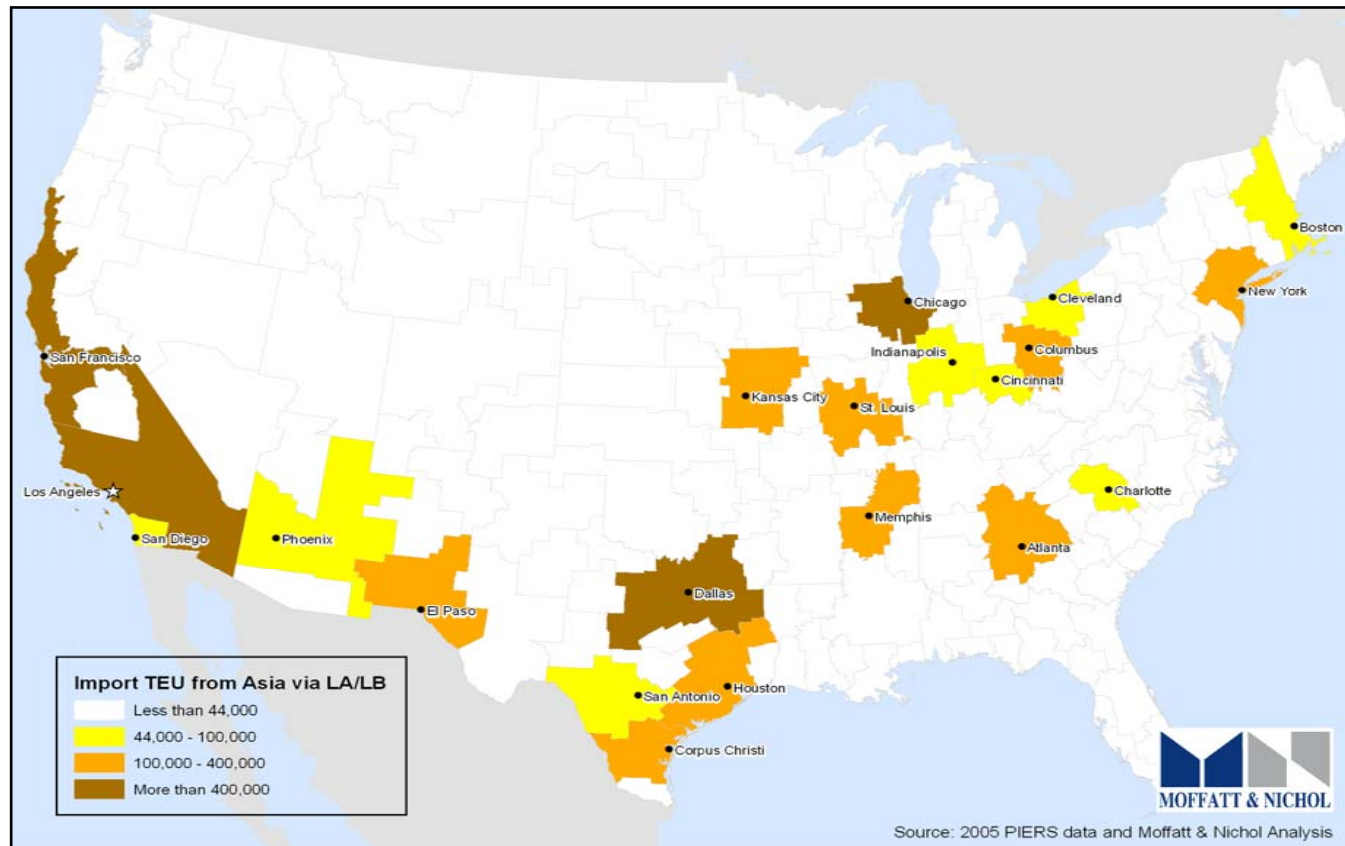
- ◆ What is impact?
 - Container diversion (M&N) is based on demand shifts due to higher costs
 - Economic impacts (BST) based on reduced container moves via SPB

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% |

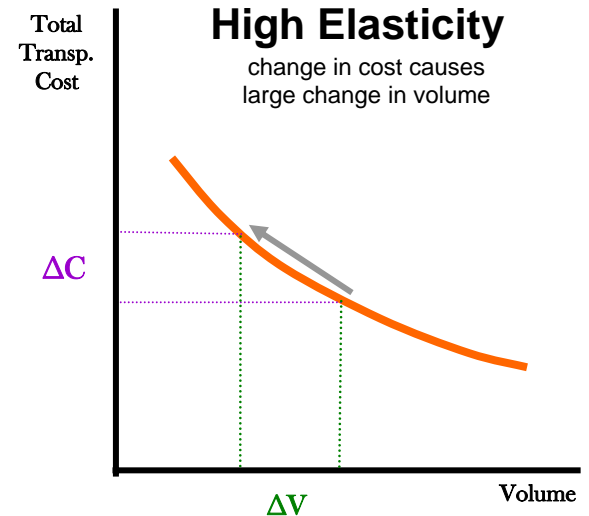
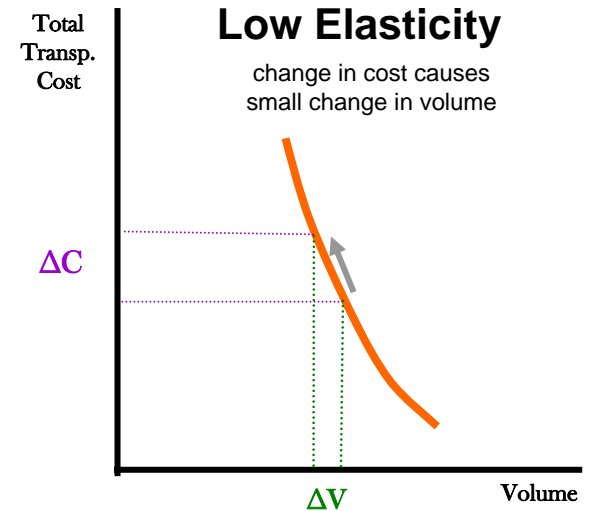
Hinterland Market Areas

- ◆ Major destinations of container imports moving through SPB ports

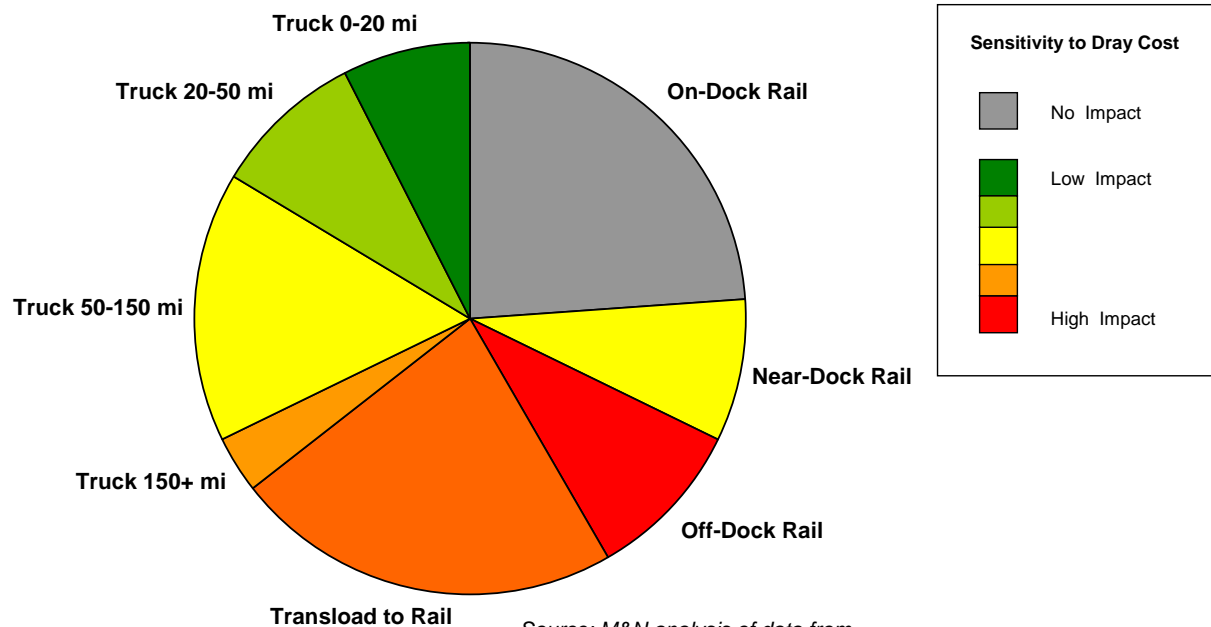


Background to “elasticity,” or demand = f(price)

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



Movements at San Pedro Bay Ports (2006)

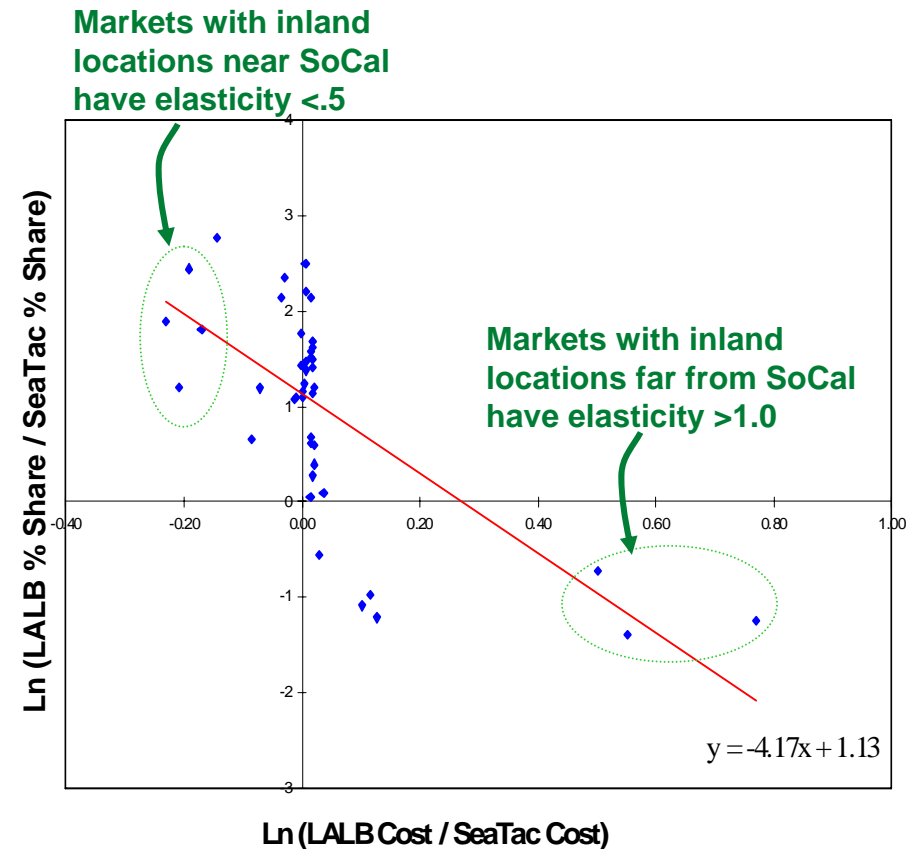


Source: M&N analysis of data from ACTA, August, 2007 and Meyer Mohaddes Associates, April 2004

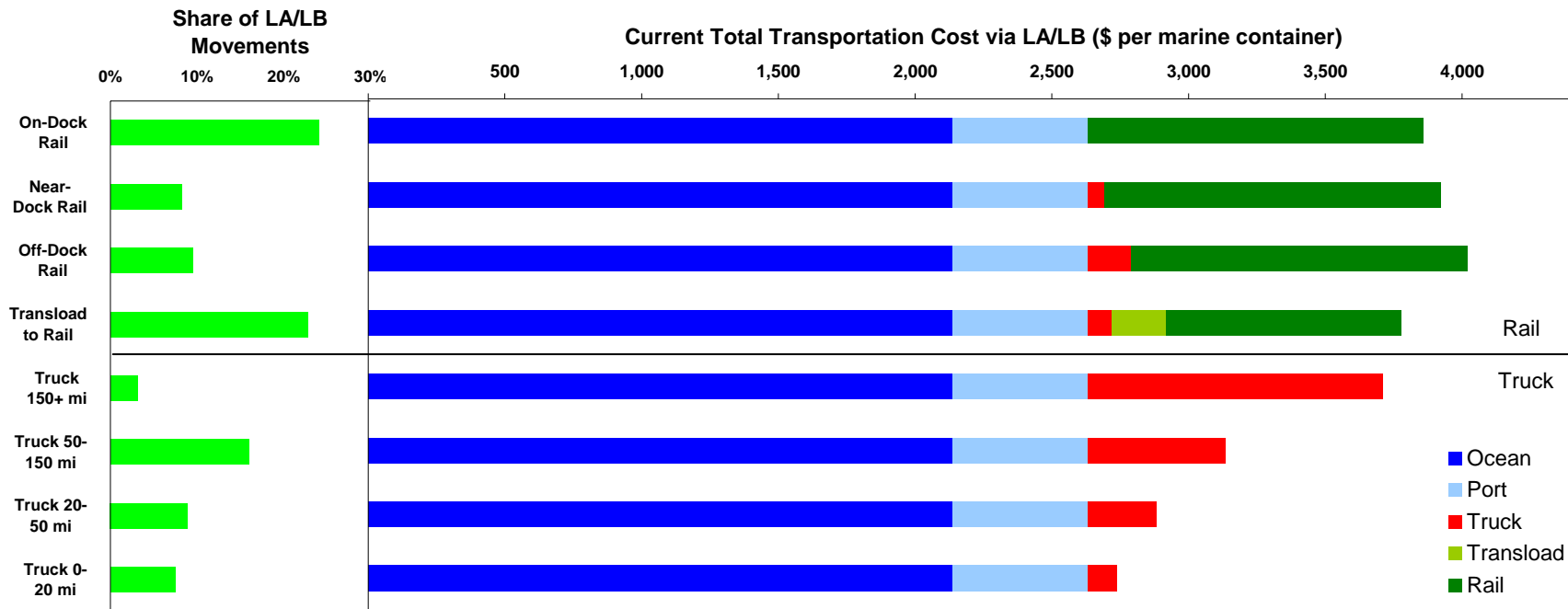
- ◆ On-dock and near-dock rail largely unaffected by clean truck policies; while off-dock rail will be affected by Clean Truck requirements
- ◆ Local moves and transloads via near dock (<50 mile) warehouses are less sensitive to changes in trucking costs as these loads have a current reason to stay in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

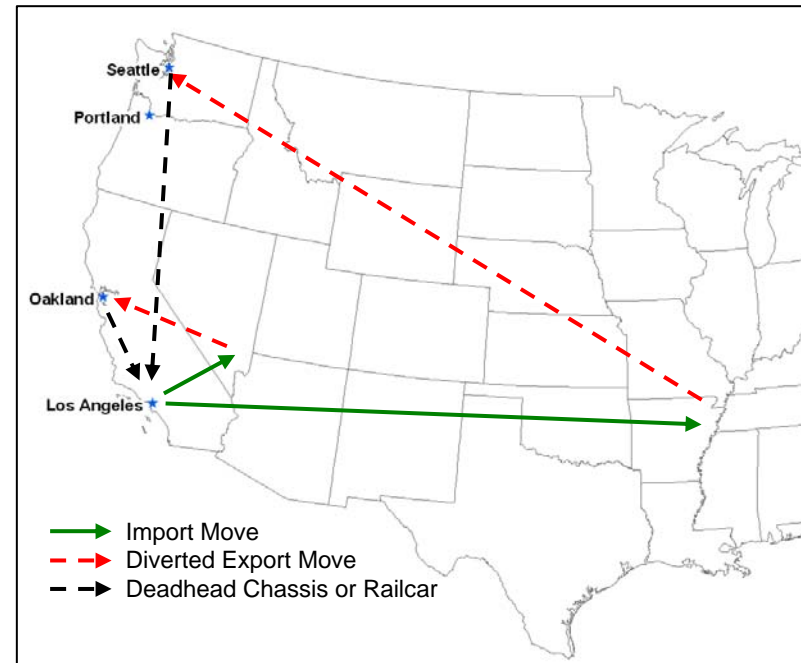
- ◆ Imports bear cost of returning container to Asia

1. US customs declared value

Export / Empty Diversion

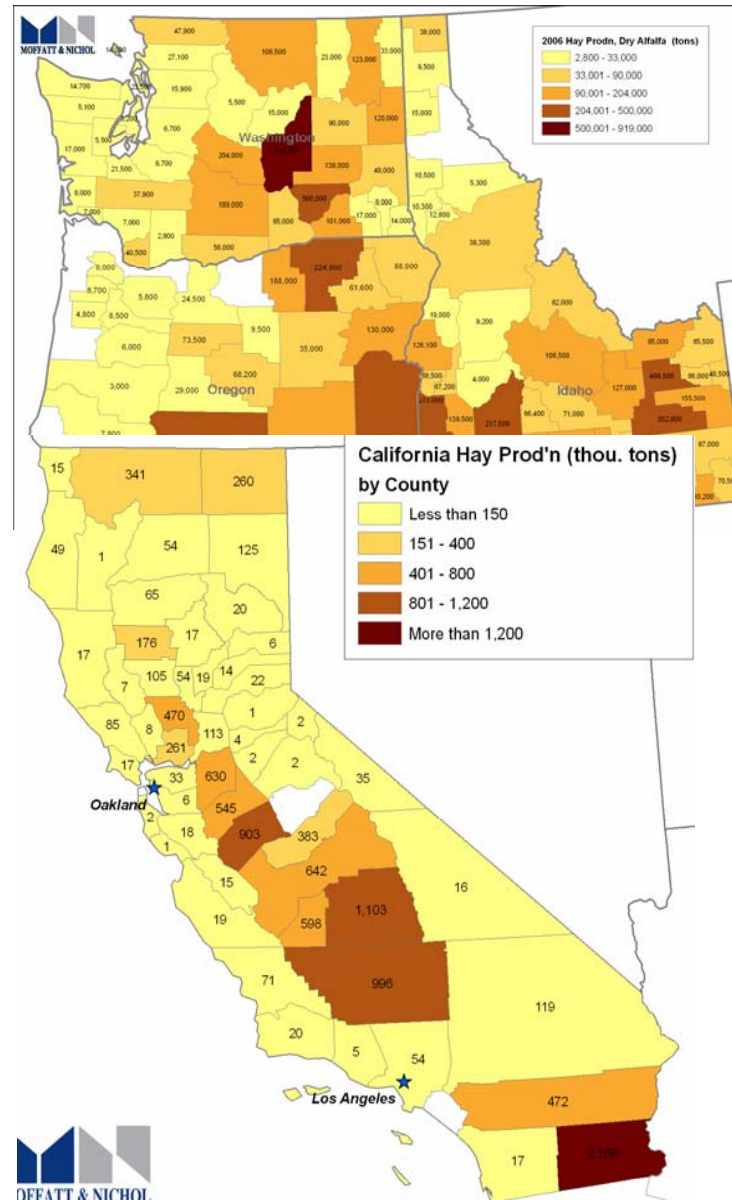
- ◆ Exports bear incremental cost vs. empty return
 - Lower avg. value per TEU
- ◆ Some export/empty diversion from San Pedro Bay occurred in 2006
$$3 \text{ Import} = 1 \text{ Export} + 1.8 \text{ Empty} + 0.2 \text{ Diverted}$$
- ◆ Diversion of exports/empties will be tied to imports
 - Chassis under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