Marine Shipping Update

Board of Directors
Santa Barbara County
Air Pollution Control District

Dave Van Mullem
Director / APCO
March 15, 2012

Inspiration Pt, Anacapa Island

www.OurAir.org
• Shipping a major source of air pollution:
  – Diesel particulate, air toxics, sulfur dioxide, greenhouse gases
  – Ozone-forming pollutants – nitrogen oxides (NOx) and reactive organic compounds

County Sources of NOx (2010 Clean Air Plan)
Update Overview

- State Fuel Rule
- Coast Guard Study
- International Regulations
- Meeting with Maersk Lines
- Conclusions & Variables
- Looking Ahead
State Fuel Rule

- Jul 2009: lower-sulfur fuel mandated when vessels travel through Santa Barbara Channel (24nm off CA coast)
- Goal: reduce stack emissions of diesel particulate, toxics, and sulfur
- Ships went around Channel to avoid rule
- Effective Dec 2011: rule extended to 24nm outside Channel Islands
Channel Trip Trend

Number of Transits through the Santa Barbara Channel
2000 - 2011

- 9/2008 - Recession
- 7/2009 - ARB Fuel Rule
- 3/2011 - Tsunami
- 12/2011 - Fuel Rule Footprint Expanded
Emissions Benefits Documented

- NOAA plane flies over Maersk ship
- Measures pollutants from stack before and after switch to low-sulfur fuel (state fuel rule) and voluntary speed reduction
- Several pollutants, including particulate and sulfur dioxide, reduced by 90%
  - Did not measure NOx
Coast Guard Study

• Port Access Route Study initiated Apr 2010
  – Concerns about ship traffic in area outside Channel without approved shipping lanes and in Navy missile testing range
  – Focus on safety, traffic management, marine environment
• Study released Nov 2011 – recommended:
  – Creating new traffic lanes outside Islands
  – Moving existing lanes closer together (further north of Islands, protecting marine sanctuary)
• Federal rulemaking required to implement
**Emission Control Areas**

- International Maritime Organization designates Emission Control Area (ECA)
  - Ships traveling up to 200 miles off North American must meet stricter fuel and new engine standards
  - Fuel sulfur limits effective Aug 2012 – different standards and timeline than state

**North American ECA**
February Meeting with Maersk

• Met with Lee Kindberg, Director of Environment and Sustainability, Maersk Shipping Lines
• Representatives from District Board, APCD staff, NOAA, Environmental Defense Center, UCSB Bren School, Star Crest (emissions inventories)
• Initiate discussion and exchange with shipping industry leader
Maersk Overview

• Largest container shipping company in the world
• Green leader in industry
  – Only shipping company to support creation of the North American ECA
Maersk Green Initiatives

- Voluntarily reducing fuel sulfur levels
- Steady steaming
  - Fuel use and costs increase exponentially at higher speeds; lowest *constant* speed is best
- Low carbon leadership
  - Documenting supply chain for customers
  - Quantify and verify GHG reductions
Clean Cargo Working Group

Industry Efforts to Measure and Reduce Environmental Impacts

www.bsr.org

Clean Cargo Working Group is a business-to-business forum with the goal “to promote more sustainable product transportation.”

CCWG’s membership (2010)

- Standardized footprint calculation tools
- Annual environmental performance survey and benchmarking
- Working to harmonize environmental calculations globally
- Emissions factors published by trade lane.

June 15, 2011  Slide no. 29
Industry Challenges

- Need to make it to ports by time certain
  - Slowing speeds means adding vessel to route
  - Costs of slipping on schedule
- Concerns about ability to steer ship at slow speeds
Additional Variables

• Potential for route changes away from CA ports and air quality improvements
  – Panama Canal expansion will allow larger ships through Canal
  – Expense of lower sulfur fuel (ECA and state) a factor
  – Sustainability initiatives reducing costs and environmental impacts
Looking Ahead

• Information gathering
  – Continue to meet with industry, ports, partners
  – Increase data capture and accuracy
  – Interest in vessel speed reduction for potential NOx and GHG reductions
  – Following state speed reduction study