



Terminals, Infrastructure, and Air Quality Impacts

**Faster Freight - Cleaner Air Conference
Oakland, CA**

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Realities

- ◆ Major increased freight volume
- ◆ Little increased ship calls
- ◆ Little increased terminal area
- ◆ Increased density
- ◆ Needed increased efficiency



Trucks, Trucks ... Coming & Going



Overview

- ◆ Air quality drivers
- ◆ Infrastructure solutions
- ◆ Operational solutions



Air Quality Drivers

- ◆ Regulatory
- ◆ Indirect
- ◆ Non-regulatory



Regulatory Drivers

- ◆ Emission standards
 - ↗ Trucks
 - ↗ Support equipment
 - ↗ Ships
- ◆ Air quality attainment plans
 - ↗ Ozone
 - ↗ Toxic/Risk
 - ↗ Particulate
 - ↗ SO₂



Indirect Drivers

- ◆ NEPA/CEQA
- ◆ Conformity
- ◆ Land use
- ◆ Etc



Non-regulatory Drivers

- ◆ Traffic
- ◆ Visual
- ◆ Noise



Infrastructure Solutions

- ◆ Off terminal solutions
- ◆ Marine side solutions



Off Terminal Solutions

- ◆ Roadway access/circulation
- ◆ Dedicated on & off ramps
- ◆ Fast corridors



FAST Corridor



Freight Action Strategy for the Everett-Seattle-Tacoma Corridor

Marine Side Solutions

- ◆ Cold ironing (AMP)
- ◆ Alternate fuel logistics



Miscellaneous

- ◆ Plug-ins
 - ↗ Reefers
 - ↗ Cabs, for overnighiter
- ◆ Alternate fuel logistics



Operational Solutions

- ◆ Scheduling
 - Gate appointment incentives
 - Off peak movements
- ◆ Off site staging



**Air quality related issues
will drive infrastructure
changes getting
to and from terminals**



Infrastructure for Speedy Communications



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