



Proposition 1B: Goods Movement Emission Reduction Program

Concepts for Updates to Program Guidelines

March 1-4, 2010



Air Resources Board

California Environmental Protection Agency

California Air Resources Board

- Meet health-based air quality standards for particles and ozone
- Reduce cancer risk from air toxics like diesel particulate matter (PM)
- Cut greenhouse gas emissions



Freight-Related Diesel Pollution - Impacts at Multiple Levels



Prop 1B: Goods Movement Emission Reduction Program

- \$1B to reduce emissions from freight transport in the four priority trade corridors
- Upgrade diesel trucks, locomotives, ship berths, cargo equipment, and harbor craft
- Goal: reduce emissions/health risk as quickly as possible in heavily impacted communities

Trade Corridors

Bay Area

Central Valley

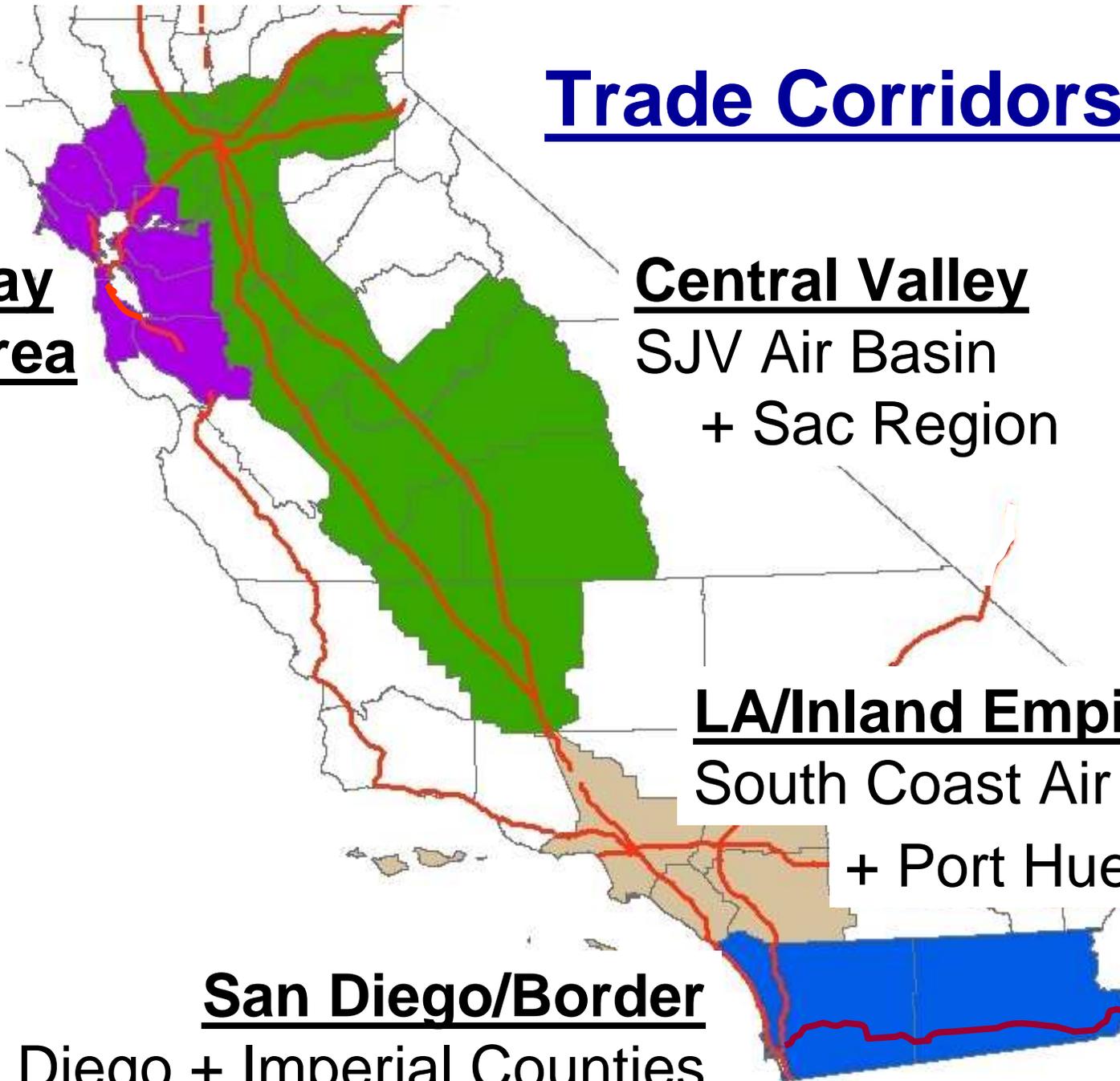
SJV Air Basin
+ Sac Region

LA/Inland Empire

South Coast Air Basin
+ Port Hueneme

San Diego/Border

San Diego + Imperial Counties

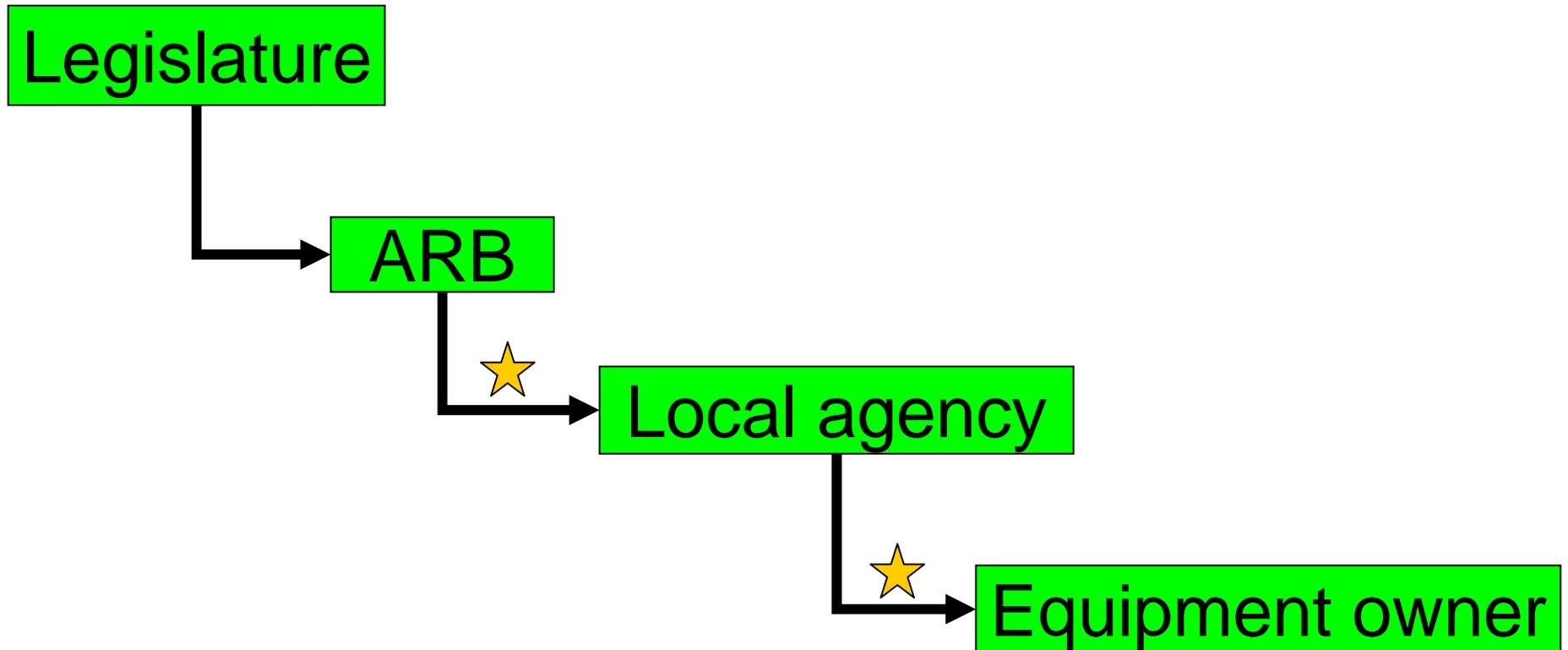


Reductions Must be Early or Extra

Key existing ARB rules/requirements:

- Port and rail yard truck rule
- Statewide truck and bus rule
- Truck idling and refrigeration unit rules
- Ship fuel and at-berth rules
- Harbor craft rule
- Cargo equipment rule
- Locomotive/rail yard agreements

Funding Flow

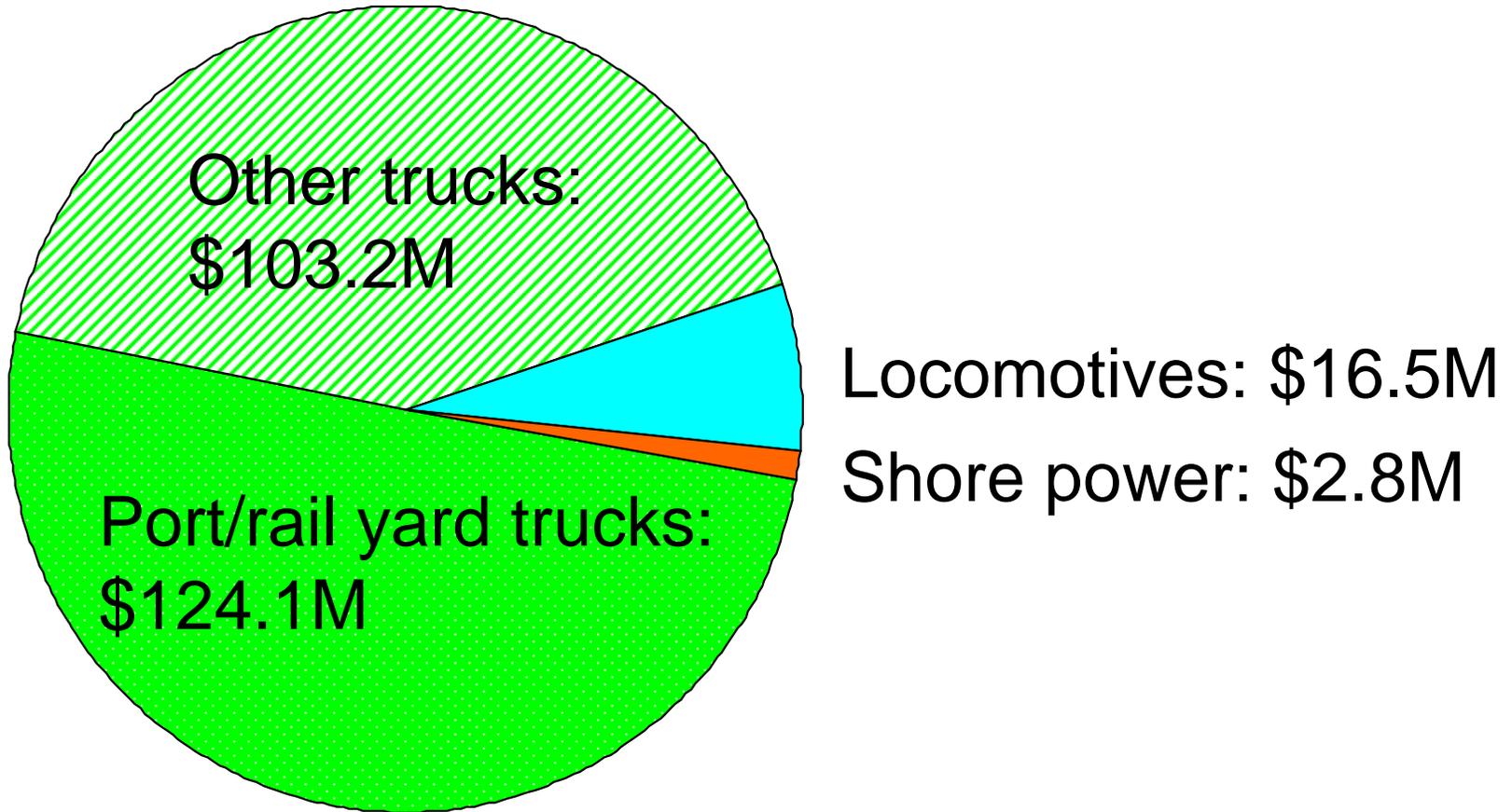


- \$250M per year in appropriations
- Cash to implement depends on bond sales
- ★ Competitive process to select projects

Prior Board Actions

Date:	Action:
Feb 2008	Adopted Program Guidelines
May 2008	Awarded 1 st Year Funds (\$250M)
Mar 2009	Aligned truck incentive programs
May 2009	Extended grant deadlines, shortened contract terms, and reduced drayage truck requirements

FY2007-08 Project Funding (\$246.6M*)



* ARB administrative costs of ~\$3.4M (1.4%)

Results of FY2007-08 Projects

- In 2009-2010
 - 5,100 new and retrofitted trucks operational
- In 2010-2011
 - 3 ship berths equipped with electrical power
 - 14 locomotives upgraded
- Estimated emission reductions
 - 2.3 million lbs PM
 - 40 million lbs NOx

Community Input

- To local agencies on project proposals (i.e., priorities for trucks v. rail v. ships)
- To ARB on Program requirements and funding awards within each region



Looking Ahead



Update to Program Guidelines

March 2010 proposal will update:

- Administrative elements to reflect changes made for FY2007-08 and future year funds
 - Improve efficiency and ease of use
- Project specifications for future year funds
 - Reassess technology, cost, demand, and regulatory requirements

Trucks and Truck Stops



Trucks

Retrofit

- \$5-10k to retrofit MY1994-2006 engine with a PM filter (only MY2004-2006 for drayage)
- \$20k to retrofit MY1994-2006 engine with a PM+NOx device to meet MY2007 levels or lower

Repower

- \$30k to repower truck with MY1994-2006 engine with new MY2010 level engine

Replacement – MY2003 or older engine

- \$60k to replace with MY2010 level truck
- \$40k to replace with *used* MY2007 level truck

Trucks

Three-way transaction

- \$65k for three-way transaction to:
 - Replace *middle-aged* truck (MY1998-2006) with MY2010 level truck,
 - Retrofit *middle-aged* truck with PM filter, and
 - Scrap/replace *old* truck (MY1993 or earlier) with *middle-aged* truck

Electrification of trucks stops, distribution centers

Concept

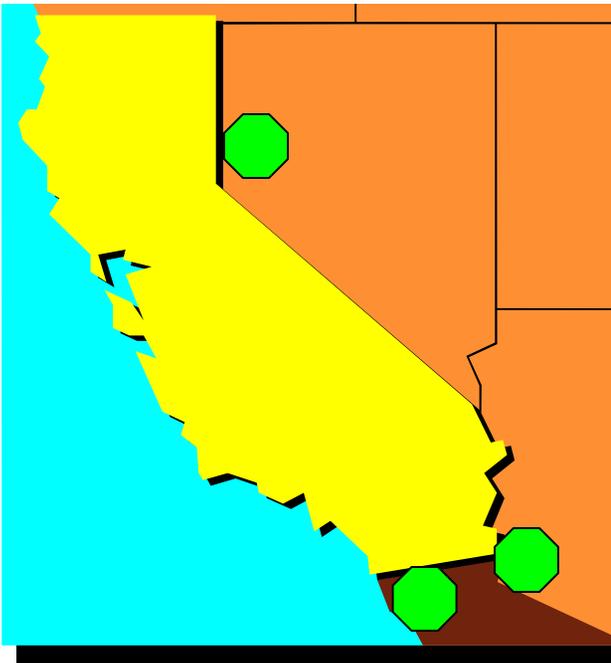
Other Possible Changes for Trucks

- Combine port/rail yard trucks & other trucks
- Lower weight to 60,001+ lbs GVW or CGW
- Default mileage (also consider hours)
- Retrofits compete with other options
- Owner's ability to change/leave contract

Concept

California Operation for New Truck

- Current: 100% CA operation
 - Greatest travel in the trade corridors and in highly-impacted communities
 - Least staff resources needed to monitor



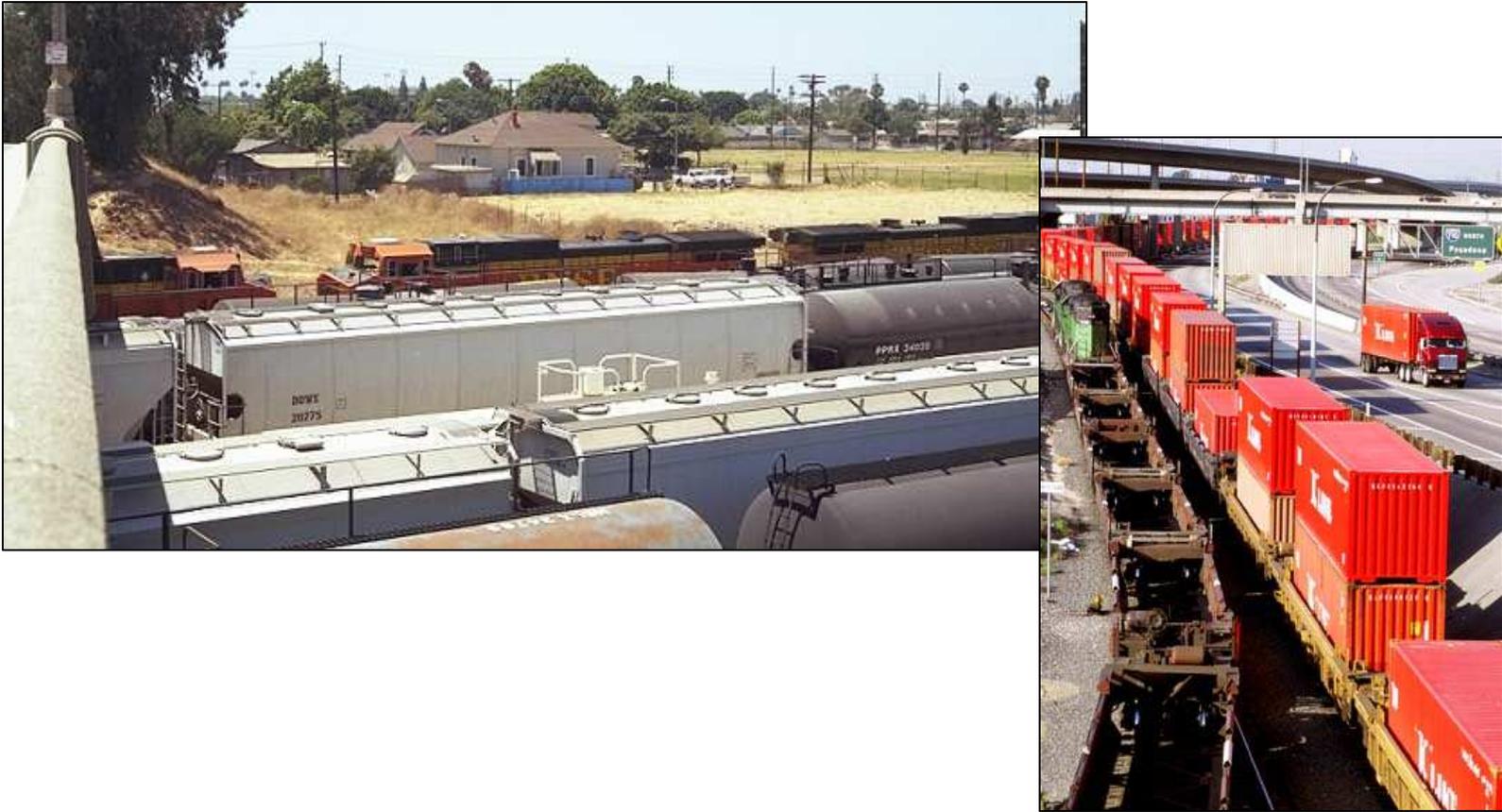
- Evaluate 90% CA operation with lower Prop 1B funding
 - Local agencies could opt-in
 - Owner pays for GPS with “geofence” capability and monthly monitoring

Concept

Assistance for Smaller Trucking Fleets

- Less documentation needed to apply
- Grants for used MY2007+ trucks
- Improved access to financing
 - Expanded lease-to-own programs
 - Combined grant and loan guarantee
 - Subsidy for non-profits offering financing
- Truck reuse in low-use or agricultural fleets, plus fleets in NOx-exempt areas

Locomotives and Rail Yards



Freight Locomotives

Switcher (1,006 – 2,300 hp)

- \$750k to meet better than Tier 3 stds
- \$1M to meet Tier 4 stds for NOx or PM only
- \$1.2M to meet Tier 4 stds for NOx and PM

Line-haul (2,301-4,000 hp)

- \$750k to meet better than Tier 3 stds
- \$1.0M to meet Tier 4 stds for NOx or PM only
- \$1.5M to meet Tier 4 stds for NOx and PM

Line-haul (4,001 hp or higher)

- \$1.2M to meet Tier 3 or lower stds
- \$1.5M to meet Tier 4 stds for NOx or PM only
- \$2.0M to meet Tier 4 stds for NOx and PM

Freight Locomotives

Hood technology at rail yards

- 85% capture and control efficiency
- Funding to achieve cost-effectiveness of at least 0.15 lbs/State \$ to compete

Eligibility for Class I Railroads in the South Coast

- Allow projects to compete for funding if the upgraded locomotives are excluded from the fleet average calculations under the 1998 agreement

Ships at Berth and Cargo Handling Equipment



Ships at Berth

Grid-based shore power – 10 yr life

- Eliminate early requirements (pre-2014)
- Increase extra requirements beyond rule

Non-grid-based shore power – 5 yr life

- Begin usage requirements in 2012
- Lower operating hours for small ports

Hood technology for ships – 10 yr life

- 85% capture and control efficiency
- Funding to achieve cost-effectiveness of at least 1.0 lbs/State \$ to compete

Cargo Equipment

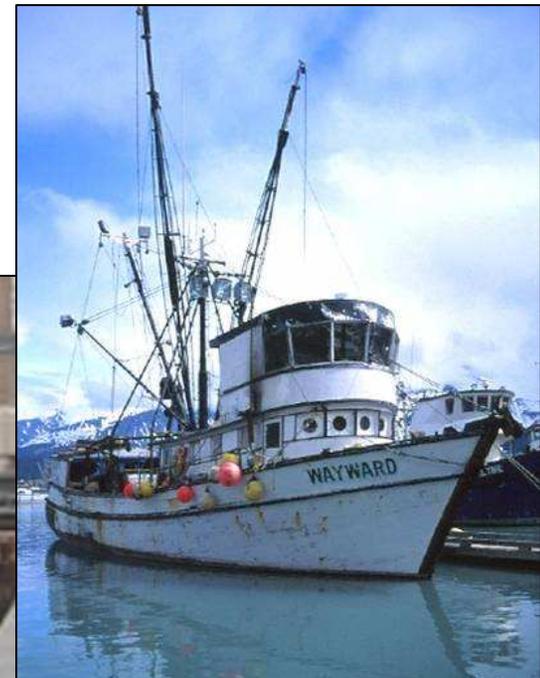
Rubber-tired gantry crane

- Remove - energy storage system option
- Add - repower with electric or zero-emission power system at \$100k or 50% of eligible cost

Yard truck with off-road MY2004-06 engines

- Add - replace with electric or zero-emission yard truck at \$50k or 50% of eligible cost

Commercial Harbor Craft



Concept

Commercial Harbor Craft

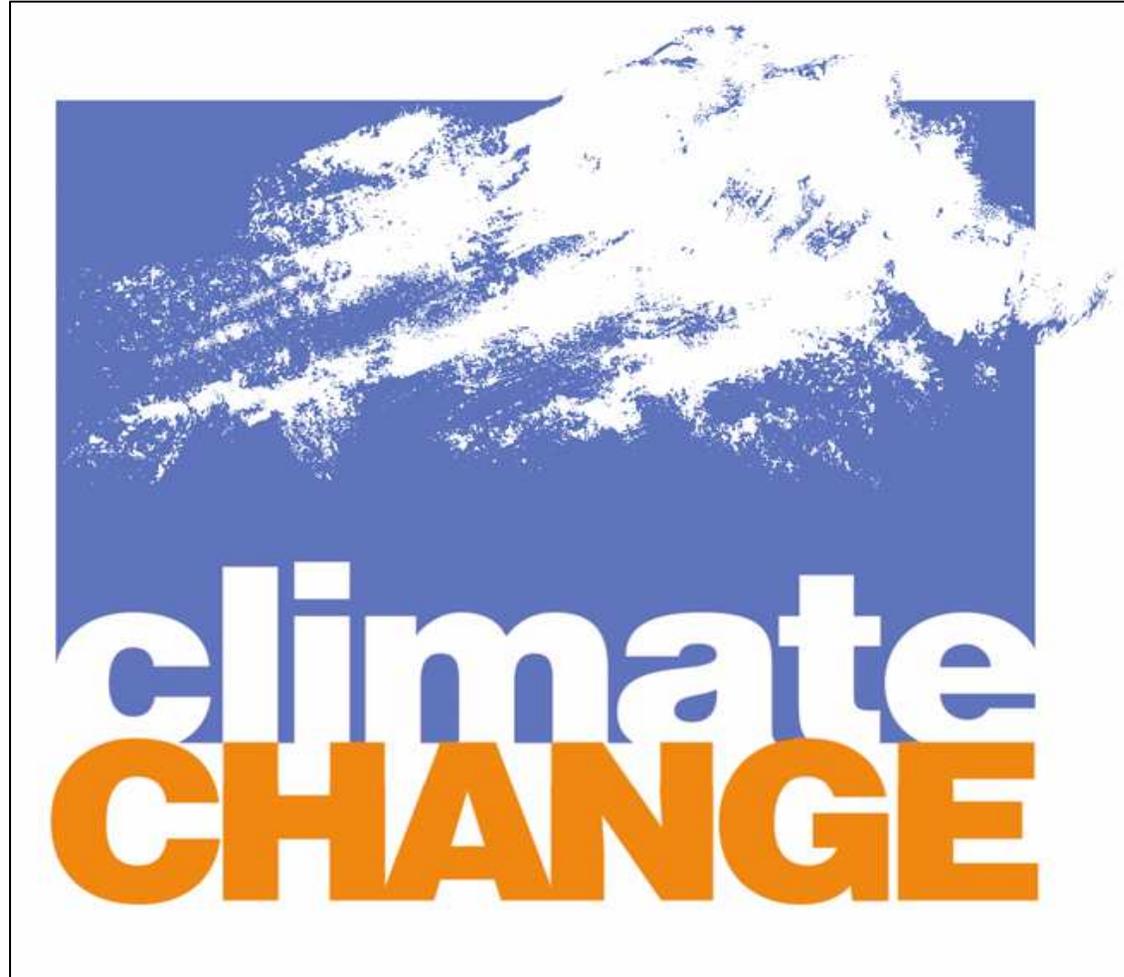
- Reduce project life to 8 yrs

Repower/replacement – standard engine

- Upgrade Tier 0/1 engines with Tier 2/3 engines
 - \$140/hp or 50% for regulated vessels
 - \$190/hp or 80% for not regulated vessels

Retrofit or replacement - hybrid power system

- \$100/hp or 80% of eligible costs
- Can be combined with engine repower grant



Reducing Greenhouse Gases

- Prop. 1B projects include conversion to electrification and alternative fuels, plus upgrades to more fuel efficient engines
- Proposal to exclude other State funds from cost-effectiveness calculation for projects with significant greenhouse gas reductions
 - Combine State AB118 and Prop. 1B \$ for alternative fuel/hybrid trucks
 - Projects compete based on Prop. 1B \$ only

Next Steps in 2010

Tentative:

March – Board hearing on guidelines

April – Call for local agency proposals

May/June – Evaluation & workshops

June – Board hearing to award funds

(contingent on cash availability)



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