

Update on California Actions to Minimize Community Health Impacts from Freight



California Air Resources Board Meeting

March 21, 2019

Path Forward on Freight

Tighten CARB rules & add facility infrastructure/compliance

Support district facility-based measures & port initiatives

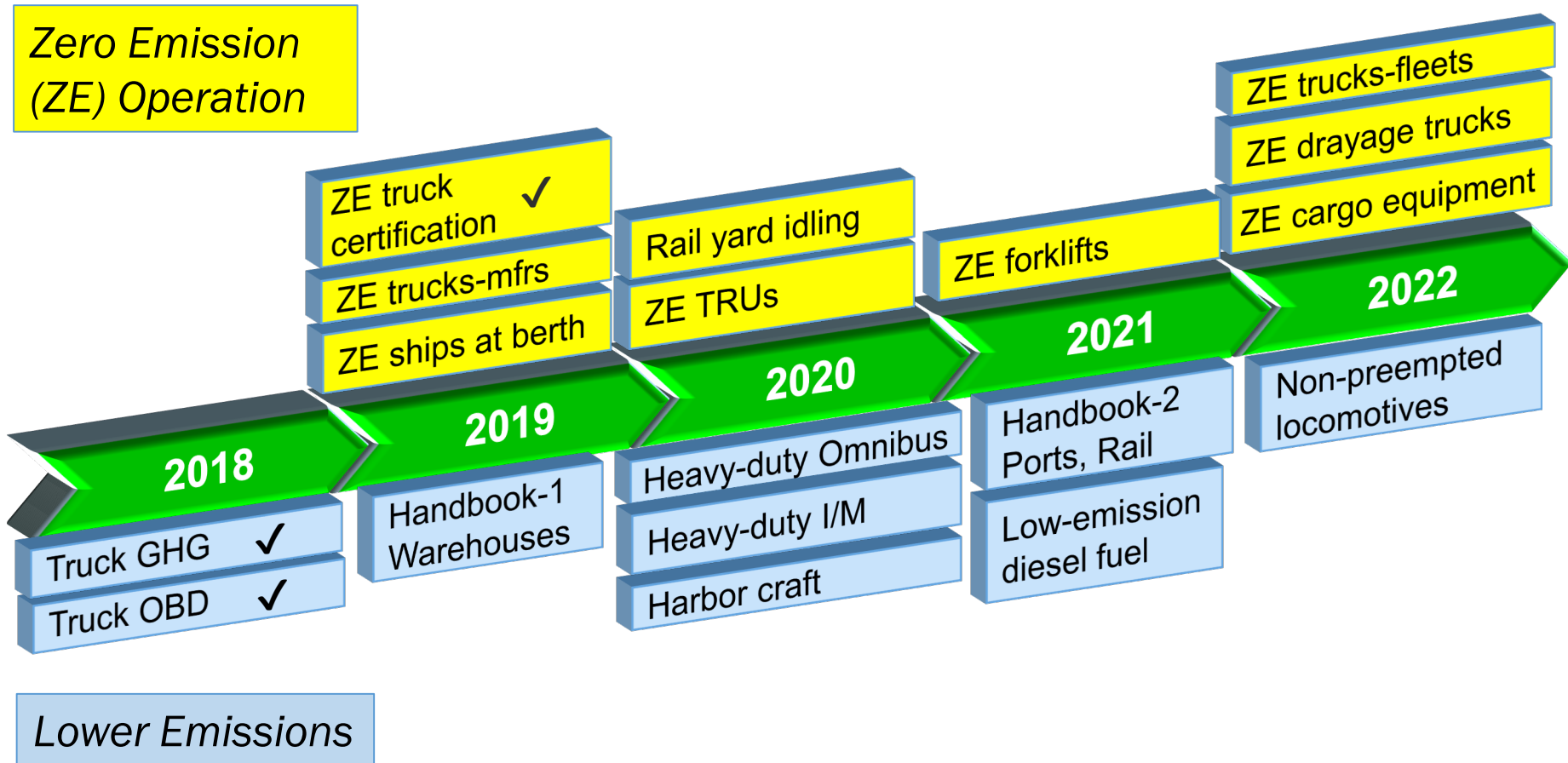
Protect communities near freight facilities

Pursue stricter federal & international standards

Coordinate & expand incentives for freight transition to zero emission operations

New CARB Freight Actions

(1st Board hearing dates shown)

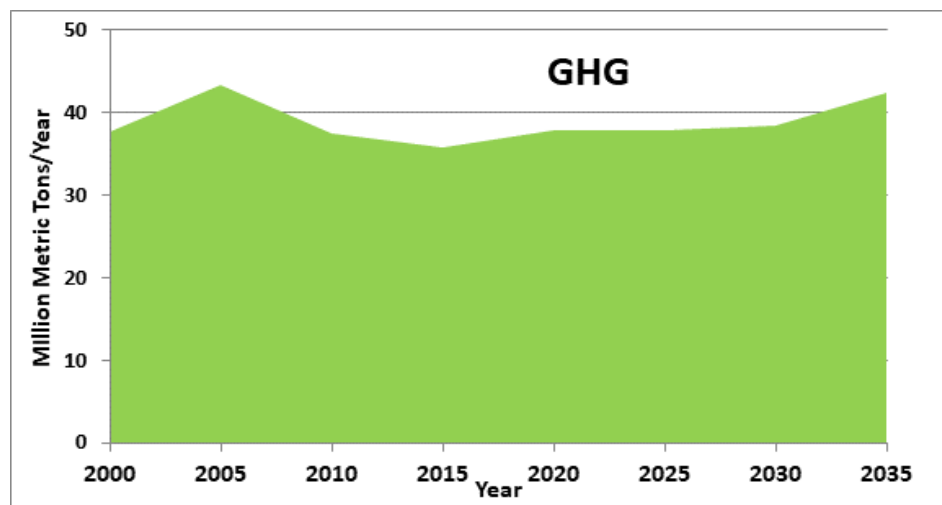
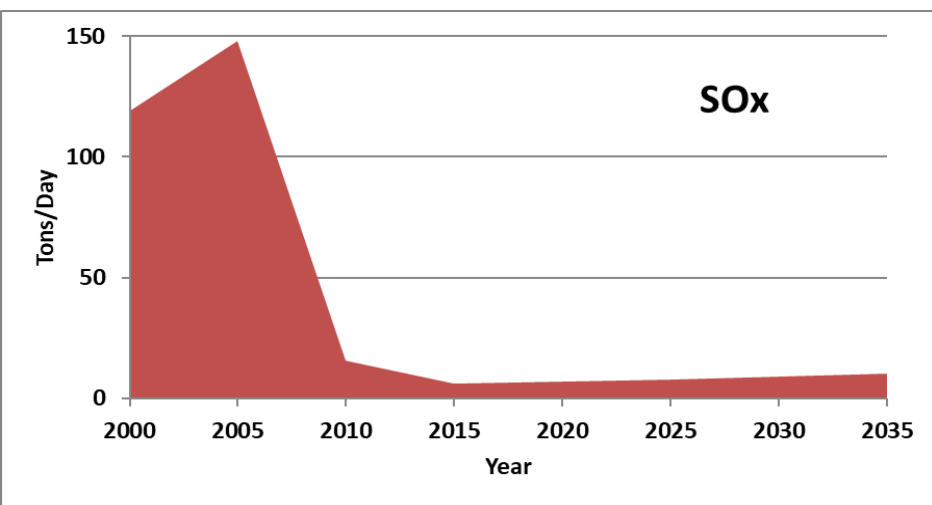
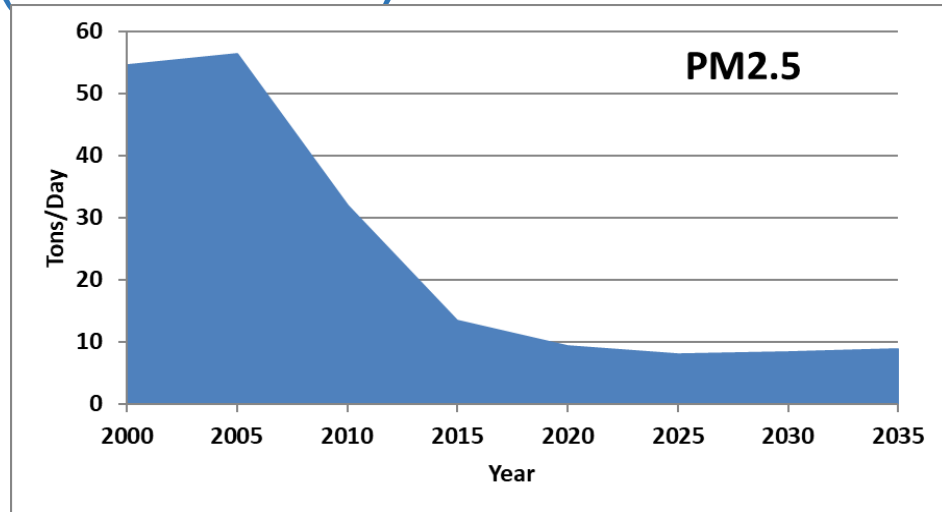
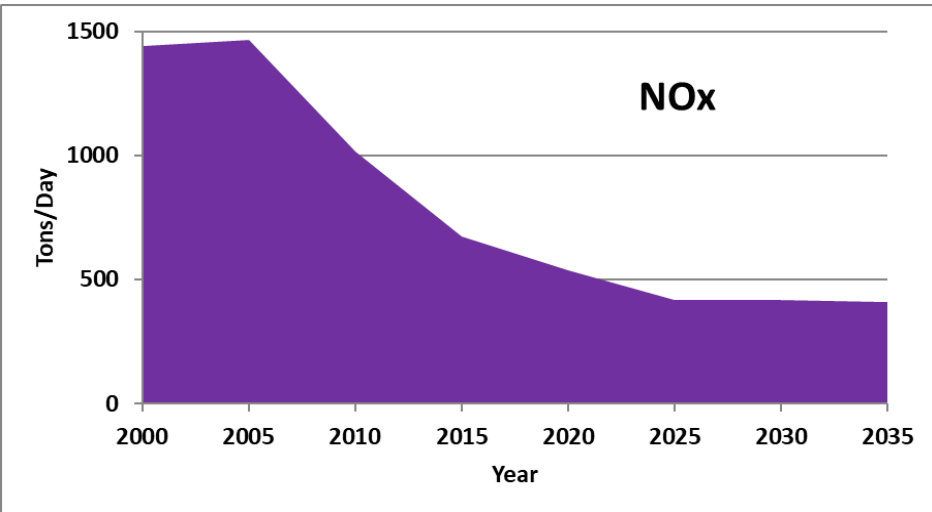


CARB strategies already implemented to cut freight emissions and health risk

Trucks	Ships	Locomotives	Equipment	Harbor Craft
<ul style="list-style-type: none"> •Fuel/engine •In-use trucks/turnover •GHG limits •Idling and smoke limits •In-use compliance 	<ul style="list-style-type: none"> •Fuel •At berth reductions •Ship incinerator ban 	<ul style="list-style-type: none"> •Fuel •Fleet emission limits for South Coast •Diesel soot reduction at rail yards 	<ul style="list-style-type: none"> •Fuel/engine •Port & rail equipment •Forklifts •Airport equipment •Transport refrigerators 	<ul style="list-style-type: none"> •Fuel •Harbor craft engines

Incentives to demonstrate & deploy cleaner models

Progress in Reducing Freight Emissions Statewide (2000-2035)



But Freight Impacts are Still Significant



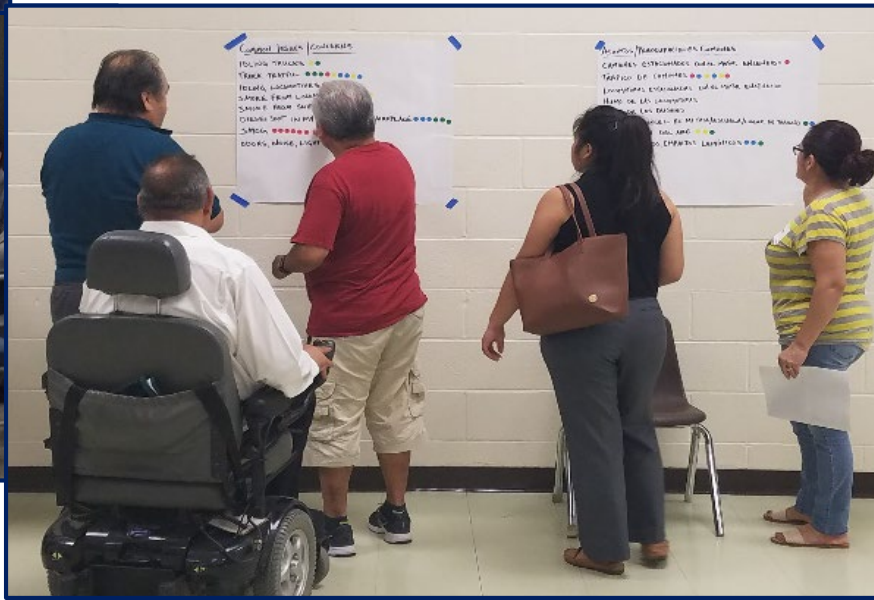
~1/3 of economy/jobs, ~1/2 of air pollution

Freight Impacts:

- Elevated cancer risks in communities near hubs
- Premature death, cardiac and respiratory disease
- Largest contributor to unhealthy levels of regional fine particulate and ozone pollution
- Rising greenhouse gas emissions

Public Engagement

- Input from communities, agencies, industry
- Monthly meetings with CA Cleaner Freight Coalition
- Industry workgroups



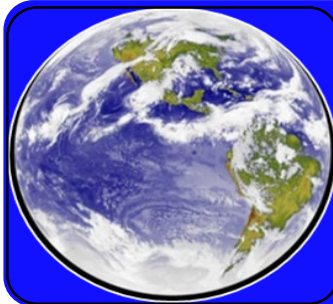
CARB Freight Actions Designed to Meet Multiple Objectives



Cut community health risk
(support AB 617 emission reductions)



Attain regional air standards
(support State Implementation Plan)



Mitigate climate change
(support Scoping Plan and SLCP Plan)

Progress on Freight Actions Underway

- | | |
|------------------------------------|---|
| 1. Freight Handbook | 7. Zero-emission demonstrations |
| 2. Cleaner trucks (new and in-use) | 8. Freight regulations reporting system |
| 3. Ocean going vessels at berth | 9. California Sustainable Freight Action Plan |
| 4. Transport refrigeration units | 10. Advocacy with other agencies |
| 5. Rail yards and locomotives | 11. South Coast facility measures |
| 6. Harbor craft | |

Freight Handbook

- Guidance on siting, design, construction & operation of freight facilities to minimize impacts
- Strategies to reduce emissions and exposure, plus support community participation



Fresno, California

Handbook: Objectives



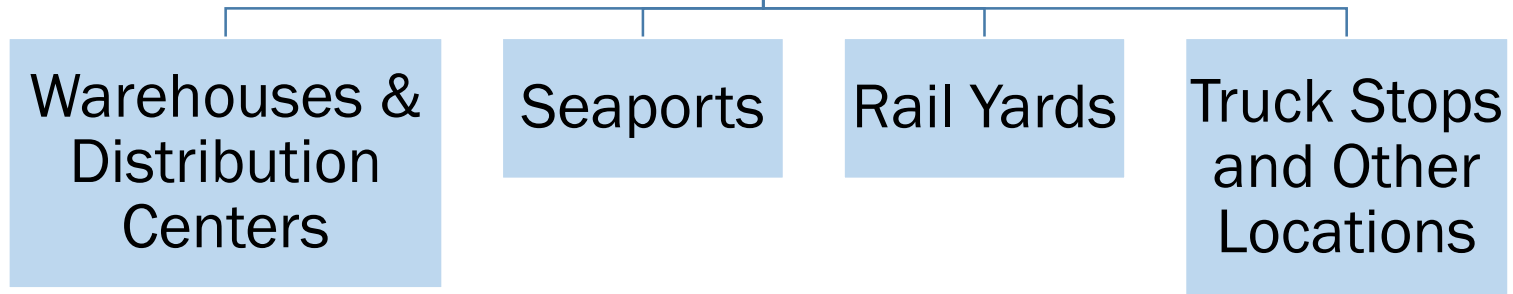
- Respond to community requests for “official” CARB recommendations that advocates can use locally
- Inform local decision makers of tools available to avoid/mitigate pollution
- Share “best practices” with facility developers
- Make a compelling case for facilities designed from the ground up to support zero-emission operations

Handbook: Structure

Main document:



Modules:



Next public meetings: Spring 2019

Cleaner Trucks

- ZE Advanced Clean Trucks
To be implemented concurrently:
 - Phase 1: Manufacturer sales %
 - Phase 2: Fleet purchase %
- Heavy-duty Omnibus regulation for new engines
- Heavy-duty Inspection & Maintenance
- Next public meetings:
April 2019



Ocean Going Vessels At-Berth

- Require more visits to reduce emissions at berth
 - Include more visits, vessel types, ports
 - Hold ports, terminals, technology providers accountable for doing their part too
- Next public meetings: May 2019



Shore Power

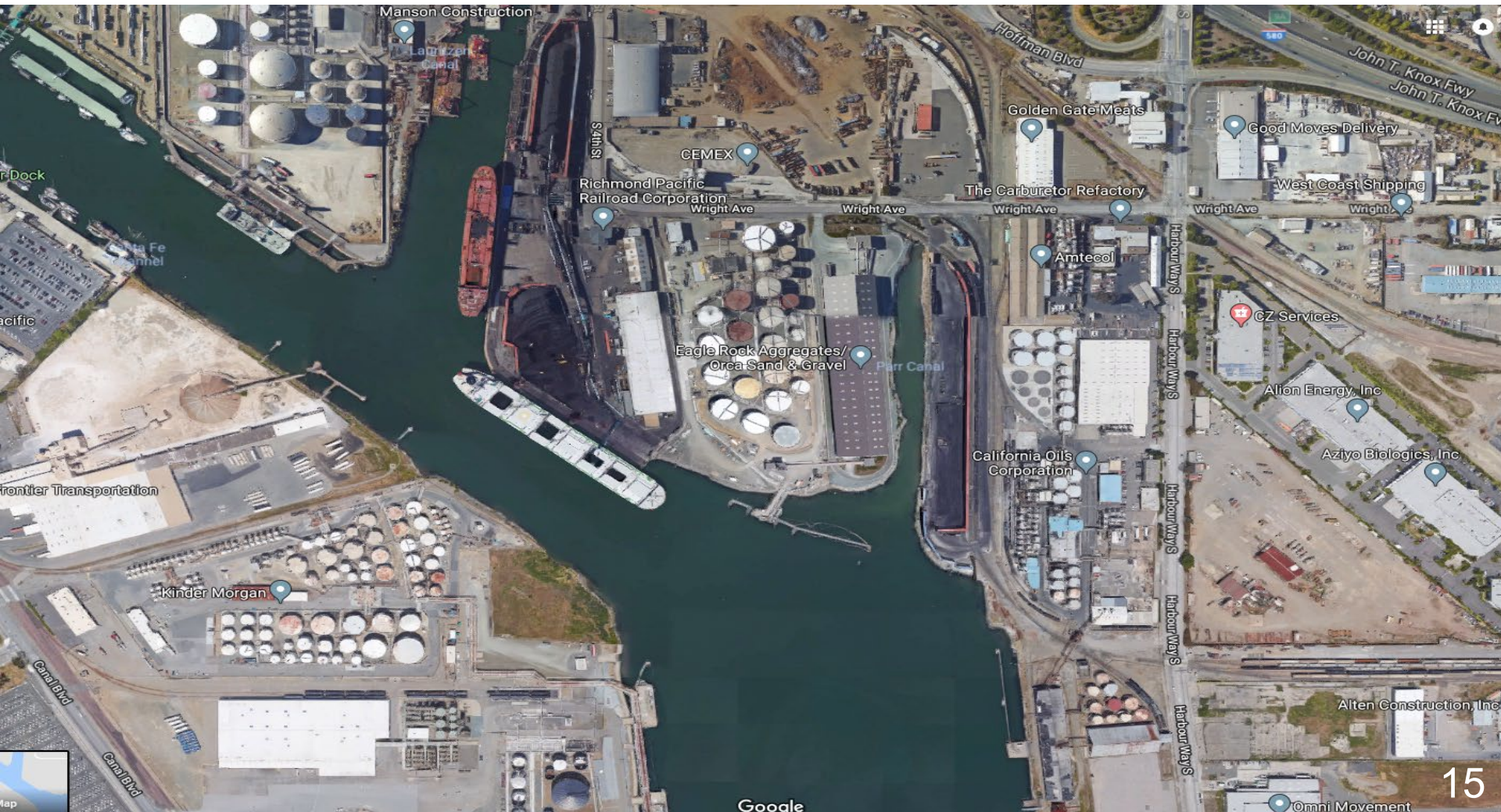


AMECS Barge-based
Capture & Control



ShoreKat Land-based
Capture & Control

Vessels: Berth by Berth Analysis to Identify Feasible Control Options



Vessels: Potential Reductions at Berth

Diesel PM cancer risk

~ 70% in Bay Area

~ 60% in South Coast

NOx

~ 6 tpd

~ 3 tpd



Transport Refrigeration Units (TRU)

- Focus on transitioning to ZE operation
 - ZE truck TRUs
 - Plug-in trailer TRUs when stationary
 - Facility infrastructure
 - Electronic tracking
- Next public meetings: Mid-2019



TRU: Identifying Infrastructure Needs

- Require facilities to expand plug-in infrastructure to allow for ZE operation if TRUs are stationary
 - Evaluate facilities and locations needed

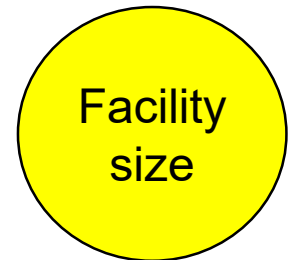


TRU: Operations at Cold Storage Warehouses Pose Elevated Risks

- Near-source cancer risks at high-activity facilities (~1,000 in a million)
- Facilities often sited in clusters

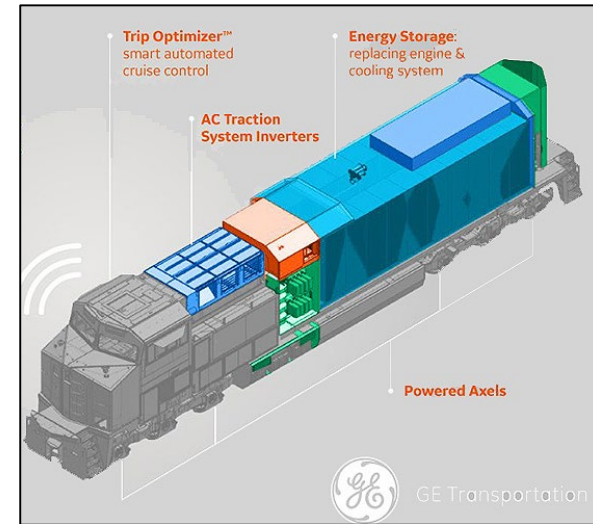


*Example:
Salinas CA*

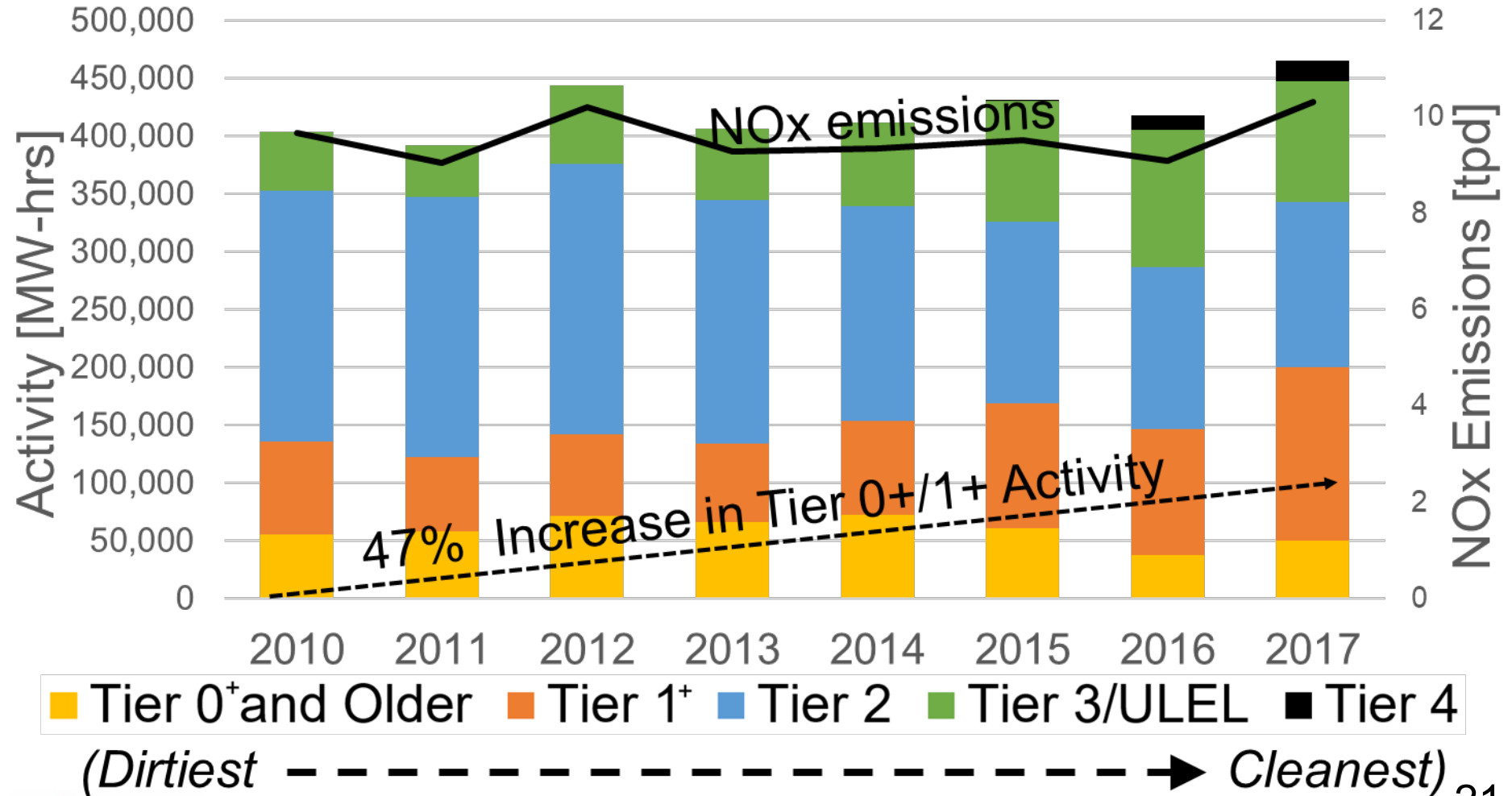


Rail Yards and Locomotives

- Staff working to consolidate two new regulatory measures
- UP and BNSF are complying with the 1998 Agreement
- ZE demo projects & Tier 4 grants in progress
- Next public meetings: Late 2019



Rail Yards: Activity of Older Locomotives Increasing in South Coast



Harbor Craft

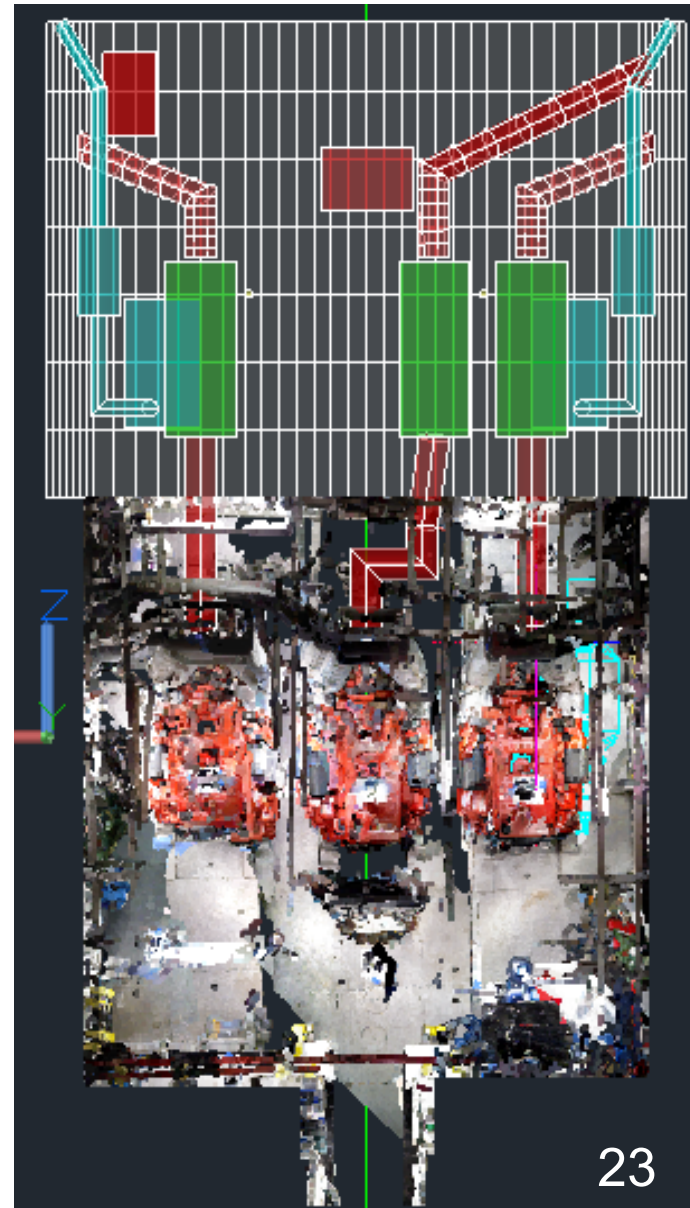
- Focus on cleaner combustion for in-use and new engines
- Support introduction of zero-emission technologies in ferries, excursion, other
- Next public meetings: Spring 2019



Harbor Craft: Measuring Engine Space for Upgrade (Cal Maritime Academy)



3D scanner
with laser



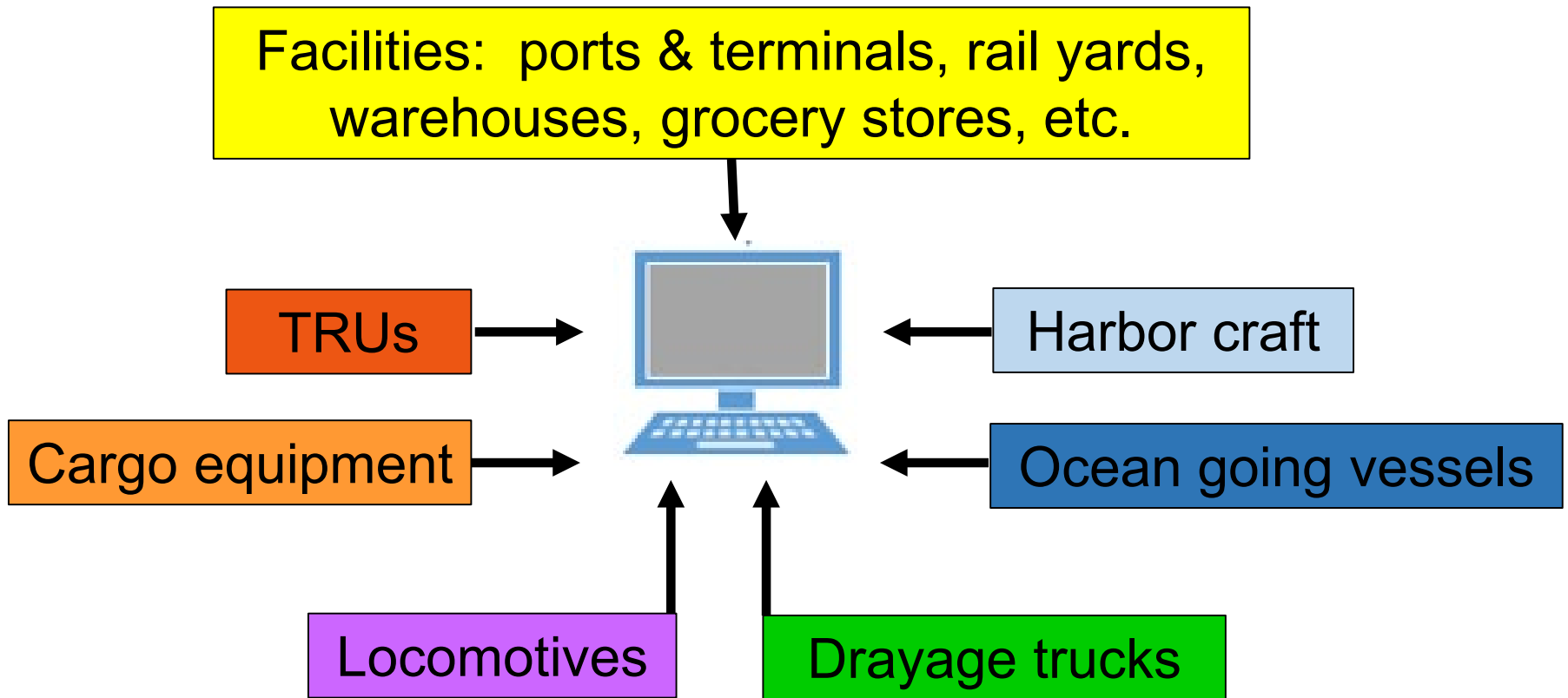
Recent Freight Facility Funding

- \$205 million in CARB grants for zero/near-zero emission equipment and infrastructure at facilities
- 11 projects are located in disadvantaged communities
- Projects range from electric locomotives, trucks and TRUs to a hybrid tugboat and electric cranes and forklifts



- Project locations
- Vehicle deployment areas

Freight Regulation Reporting System

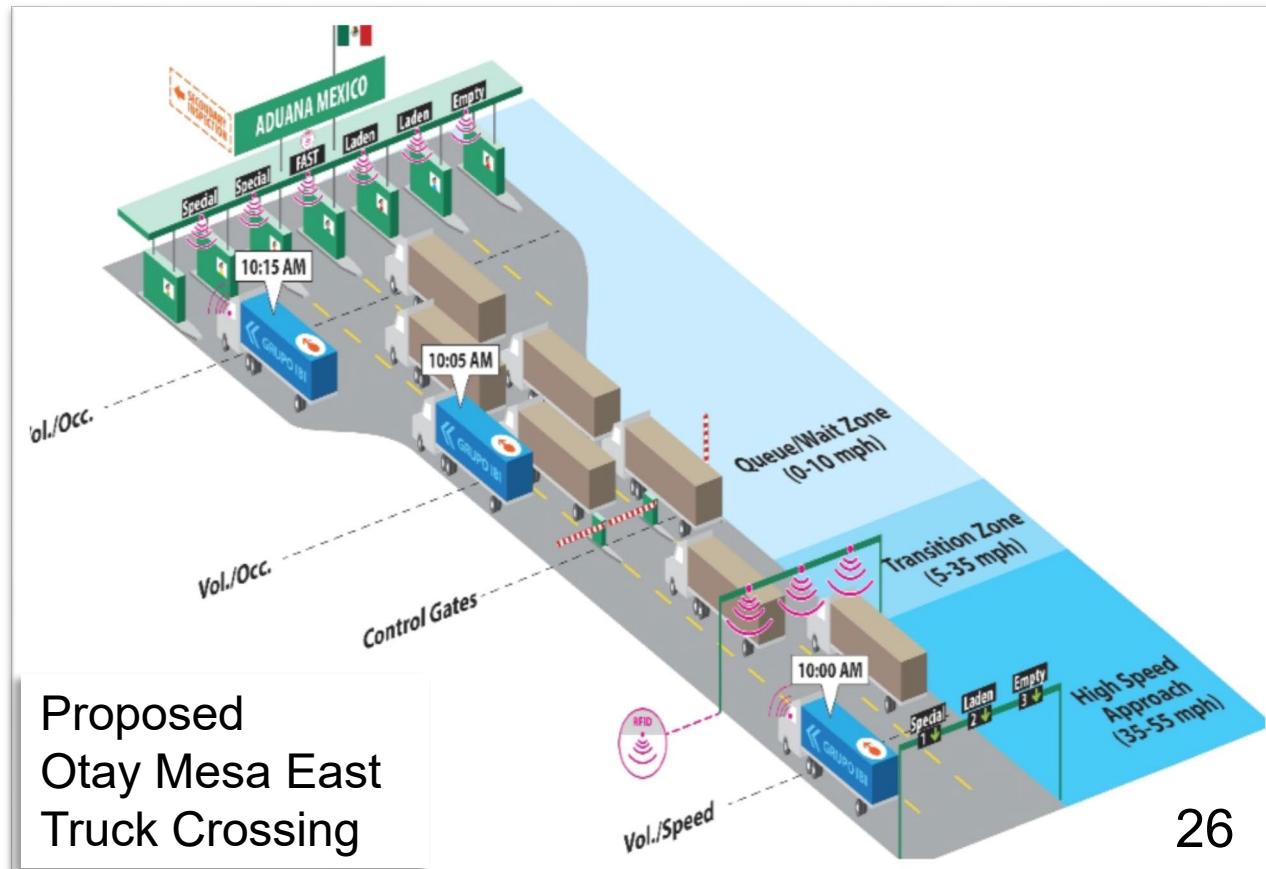


A new web-based system for registration, compliance reporting & analysis, enforcement, and public access

California Sustainable Freight Action Plan

- Accelerating zero-emission operations
- Increasing efficiency
- Developing the workforce

CALIFORNIA
**SUSTAINABLE
FREIGHT**
ACTION PLAN



Advocacy with Other Agencies




SAN PEDRO BAY PORTS
CLEAN AIR ACTION PLAN 2017

Final
 Clean Air Action Plan Update

NOVEMBER 2017

**Revised Draft
 Seaport Air Quality
 2020 and Beyond Plan**
 December 14, 2018



PORT OF OAKLAND


Volume I of II

West
 Oakland

**TRUCK
 MANAGEMENT
 PLAN**

DRAFT
 PLAN for PUBLIC REVIEW
 November 16, 2018
 to
 January 4, 2019

An action-based plan
 designed to reduce
 the effects of transport
 trucks on local streets
 in West Oakland



 A partnership between the City of Oakland and Port of Oakland

FREIGHT PLAN
 California Freight
 Mobility Plan

California Freight Mobility Plan 2019

South Coast District: Board Direction on Facility-Based Freight Measures



Rule concept
+ econ study



Rule +
explore MOU



MOU



MOU

To Further Progress on Sustainable Freight

- Adoption of proposed CARB regulations
- Emphasis on strategic development of freight infrastructure with CPUC, CEC, utilities
- Continued incentives for ZE demonstration and deployment (equipment + infrastructure)
- Local political will to insist on zero-emission operations at new freight facilities