



# Expanding Zero Emission Operations for Freight

Bonnie Soriano, Chief  
Freight Activities Branch  
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# Existing CARB strategies to cut freight emissions and health risk

Trucks	Ships	Locomotives	Equipment	Harbor Craft
<ul style="list-style-type: none"> <li>• Idling and smoke limits</li> <li>• International trucks</li> <li>• Drayage trucks</li> <li>• All on-road trucks</li> <li>• GHG limits for tractor-trailers</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel standards</li> <li>• At berth reductions</li> <li>• Ship incineration ban</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel standards</li> <li>• Fleet emission limits for South Coast</li> <li>• Diesel soot reduction at rail yards</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel standards</li> <li>• Port &amp; rail equipment</li> <li>• Gas forklifts</li> <li>• Airport equipment</li> <li>• Transport refrigerators</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel standards</li> <li>• Harbor craft</li> </ul>

-----Incentives for cleaner equipment-----

# CA freight strategies are effective

Change in cancer risk since 2005:

**85% reduction  
at largest seaports**

**40-70% reduction  
at highest risk rail yards**



# Why does California need to do more?

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Cut air  
toxics  
health risk



Attain air  
quality  
standards



Mitigate  
climate  
change

← Zero-emission technology/ renewable energy →

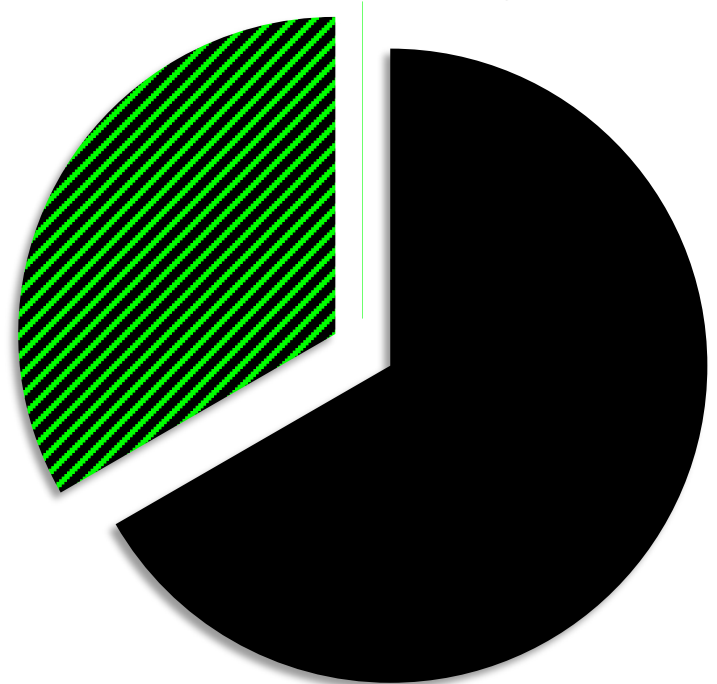
# Freight is still significant in California

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~1/2 of air pollution



~1/3 of economy/jobs



# 2016 California Sustainable Freight Action Plan



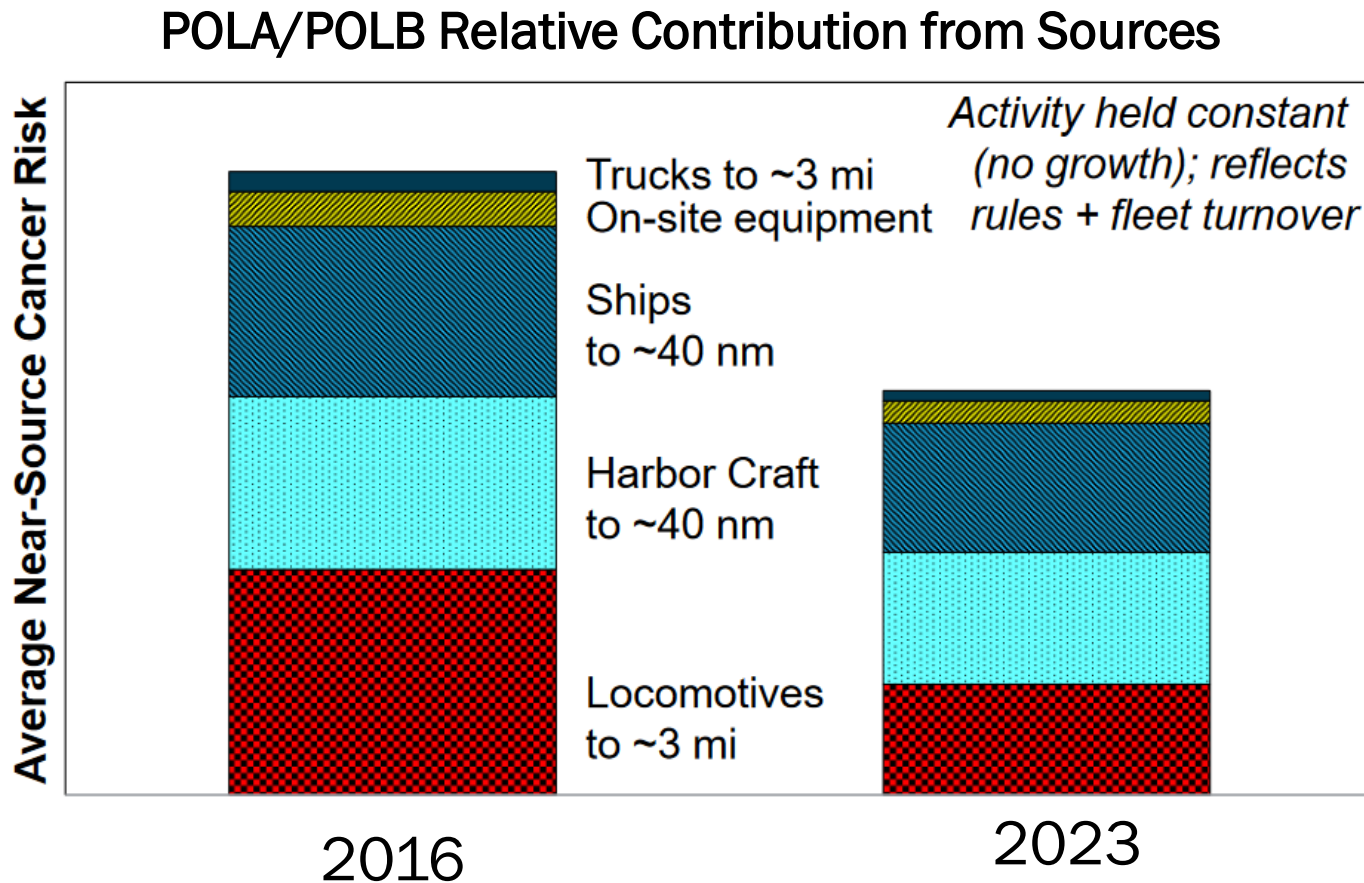
## Governor's Executive Order B-32-15

- Improve freight efficiency
- Transition to zero emission operations
- Increase economic competitiveness



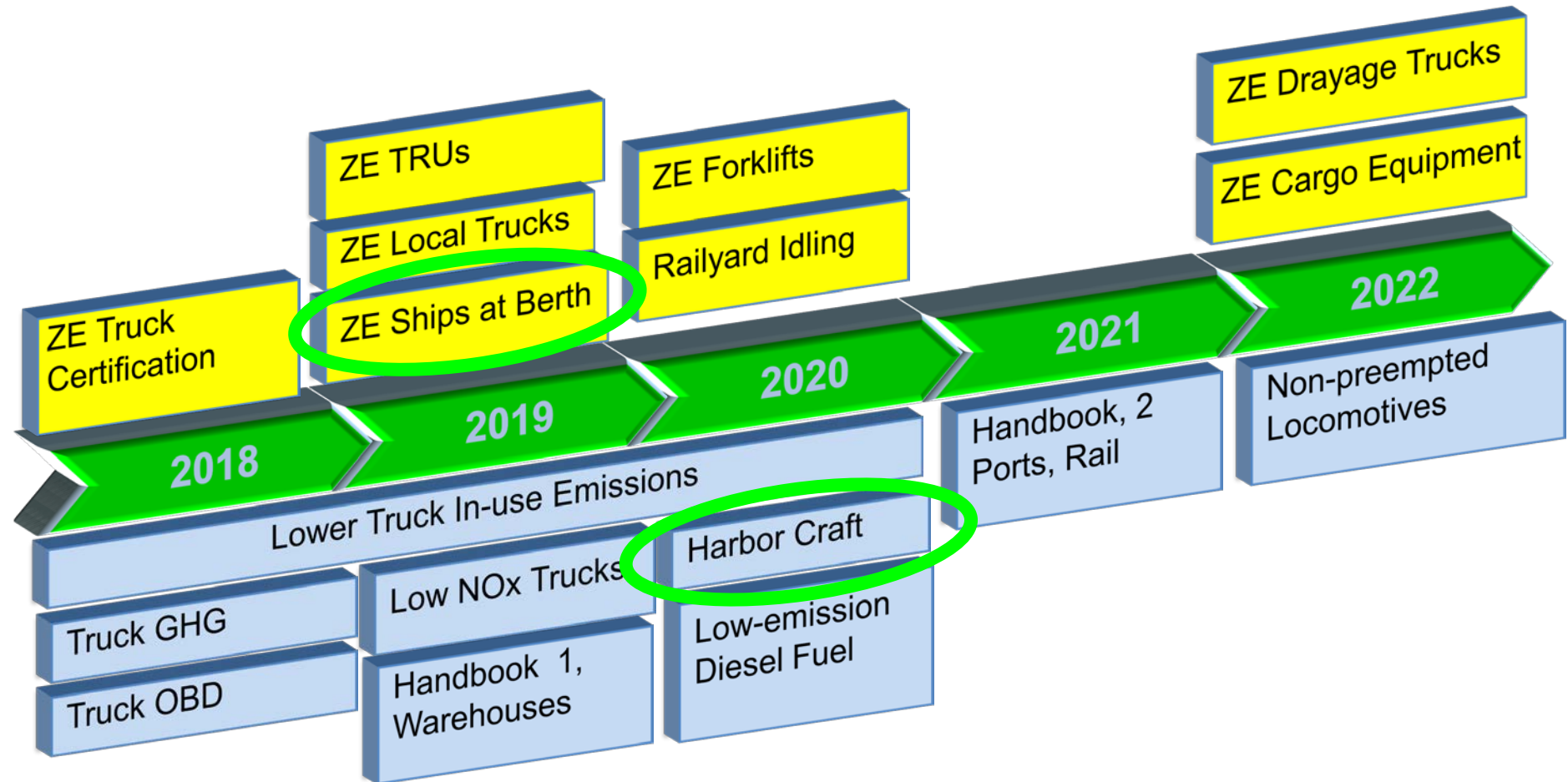
# Concepts to Reduce the Community Health Impacts from Large Freight Facilities

- Existing measures are effective, more reductions are needed



# New CARB rules to be developed focus on zero emissions (ZE)

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# AB 617 Community Air Protection Program

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- Final Draft Blueprint
- Staff Report with recommendations on the communities
- Board consideration on September 27



# Examples of ZE Operations Demonstrations and Incentives

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- Installation of 37 shore power berths
  - Ports of Oakland, Long Beach, Los Angeles and Hueneme
- Port of Los Angeles Green Omni Terminal
  - At berth vessel emissions capture & control system demo: Shore-Kat
- Zero-Emission hydrogen ferry demonstration in Bay Area
- Retrofit tugboat with a hybrid propulsion system



# CARB - Incentive Programs that Fund ZE Port/Marine/Freight Projects

- Low Carbon Transportation Investments and AQIP Funding Plans  
<https://www.arb.ca.gov/msprog/aqip/fundplan/fundplan.htm>
- Carl Moyer Program  
<https://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>
- Community Air Protection Funds to Reduce Emissions in AB 617 Communities  
<https://www.arb.ca.gov/msprog/cap/capfunds.htm>
- Off Road HVIP  
<https://www.arb.ca.gov/msprog/aqip/aqip.htm>
- Volkswagen Environmental Mitigation Trust  
[https://www.arb.ca.gov/msprog/vw\\_info/vsi/vw-mititrust/vw-mititrust.htm](https://www.arb.ca.gov/msprog/vw_info/vsi/vw-mititrust/vw-mititrust.htm)

# CARB contacts

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Commercial Marine Vessels :

<https://www.arb.ca.gov/ports/marinevess/marinevess.htm>

