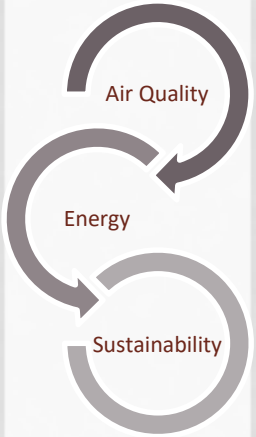
STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

AIR QUALITY, ENERGY, AND SUSTAINABILITY

DRAYAGE TRUCK REGULATORY CONCEPTS

BUREAU OF MOBILE SOURCES



Stakeholder Meeting - September 10, 2020

OVERVIEW

1. What concepts are we considering
2. The NJ drayage fleet and their emissions
3. How the concept would work
4. Electric drayage truck options from the industry
5. Answer questions and discuss issues

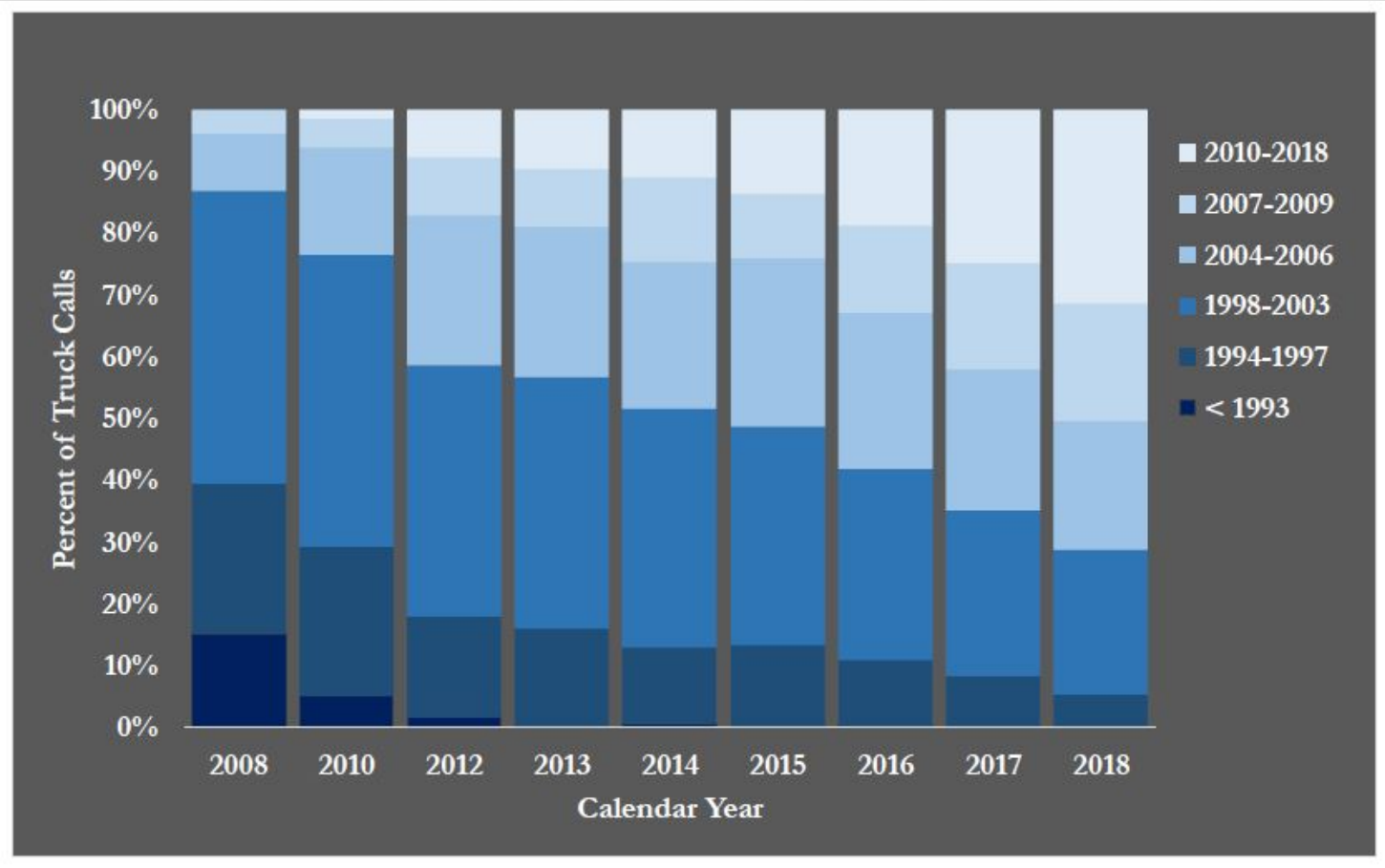
CONCEPTUAL PROPOSAL

- California is developing updated regulations to require electrification of the drayage fleet.
- Once adopted by California, New Jersey could adopt by reference relevant sections of the California Code of regulations.

DRAYAGE TRUCK FLEET

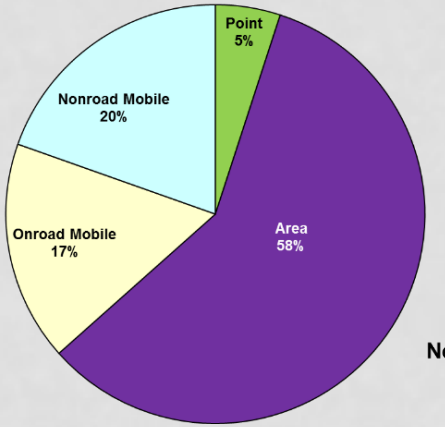
- Drayage trucks serve the ports generally making several short trips per day moving containers between ships and area warehouse and distribution centers
- Data indicate over 12,000 trucks visit the port daily
- Over 5,800 of these are pre-2010
- Unlike CA, the NJ drayage fleet is largely made up of individual owner/operators rather than fleets

DRAYAGE FLEET INVENTORY

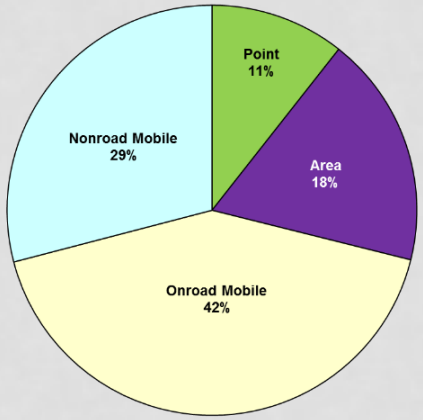


CONTRIBUTION OF MOBILE SOURCES TO AIR POLLUTION

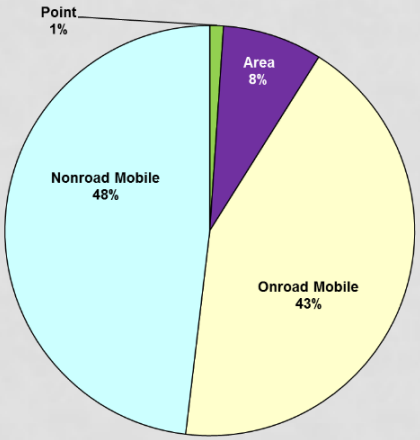
New Jersey 2017 Volatile Organic Compounds
Projected Emissions Inventory
Tons Per Year



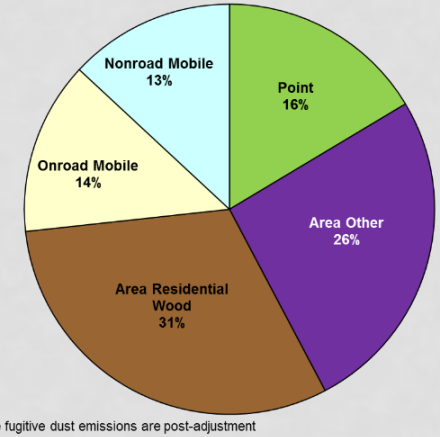
New Jersey 2017 Nitrogen Oxides
Projected Emissions Inventory
Tons Per Year



New Jersey 2017 Carbon Monoxide
Projected Emissions Inventory
Tons Per Year



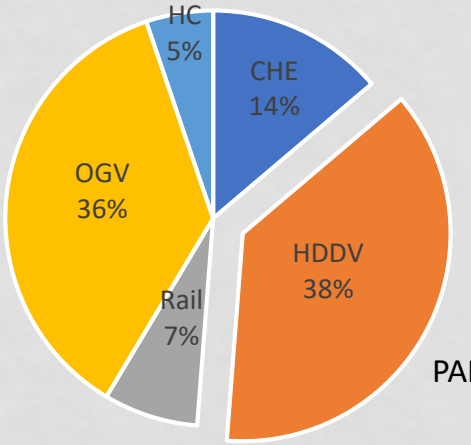
New Jersey 2017 Fine Particulate Matter
Projected Emissions Inventory
Tons Per Year



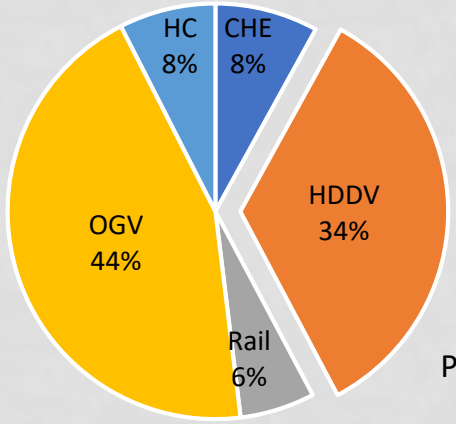
Note:
Area Source fugitive dust emissions are post-adjustment

CONTRIBUTIONS AT THE PORT – THE DRAYAGE FLEET

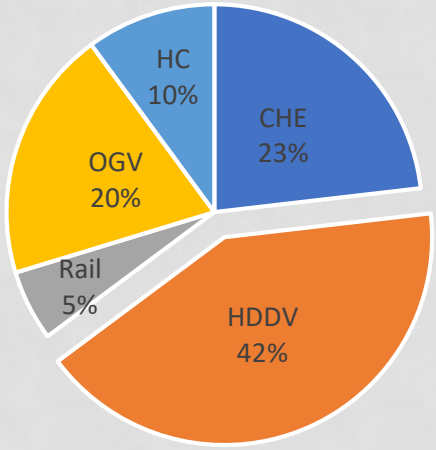
PANYNJ 2018 VOC TPY



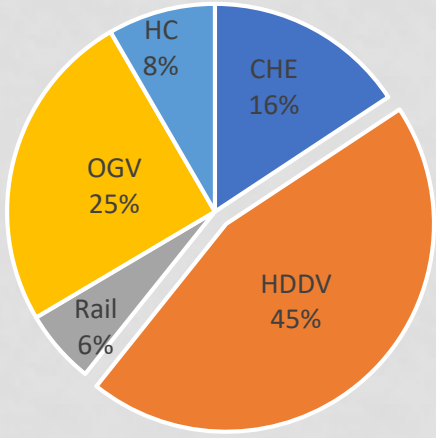
PANYNJ 2018 NOx TPY



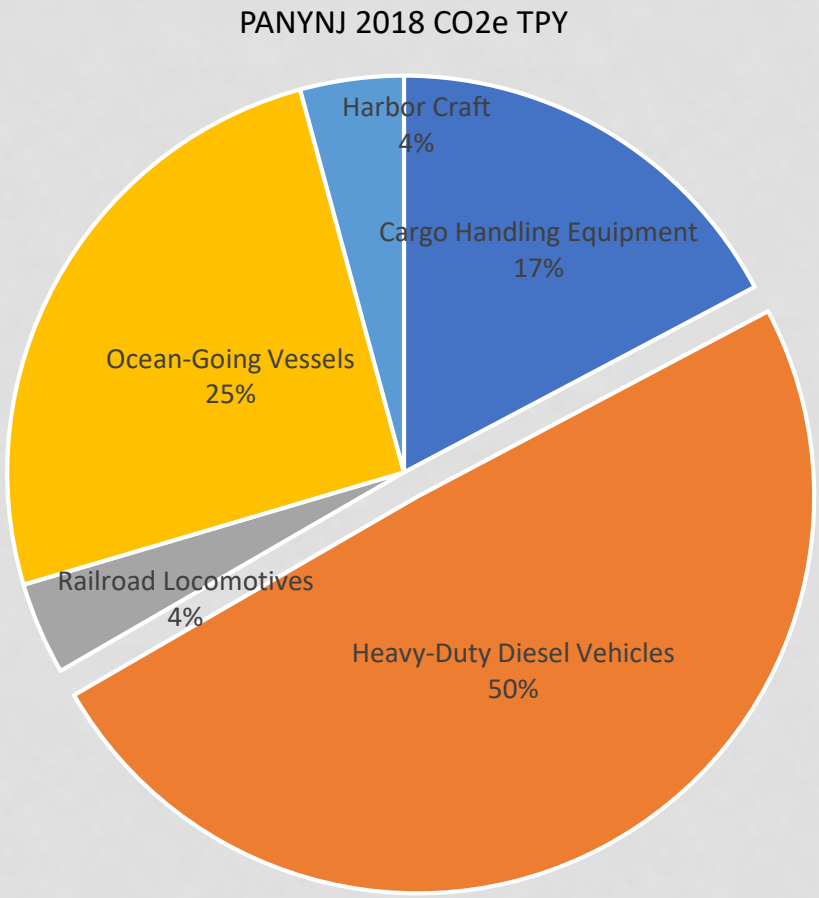
PANYNJ 2018 CO TPY



PANYNJ 2018 PM2.5 TPY



GHG FROM DRAYAGE FLEET



DRAYAGE TRUCK IMPACTS

- Over 12,000 trucks visit the port daily
- Numerous residential neighborhoods surrounding port impacted
- Adverse health effects at much higher rates in these areas

CARB'S APPROACH

- Current CA regulations limit the age and emissions technology of trucks calling on the port to 2007 specifications
- CARB has just begun development of updated regulations that will (likely) require drayage trucks to transition to all-electric ZEV technology
  - A phase in schedule starting in 2024 is projected
  - Likely to require a full transition by 2030

ELECTRIFICATION BENEFITS

- Eliminate local truck emissions, especially PM2.5 and its associated health impacts
- Reduce total GHG emissions

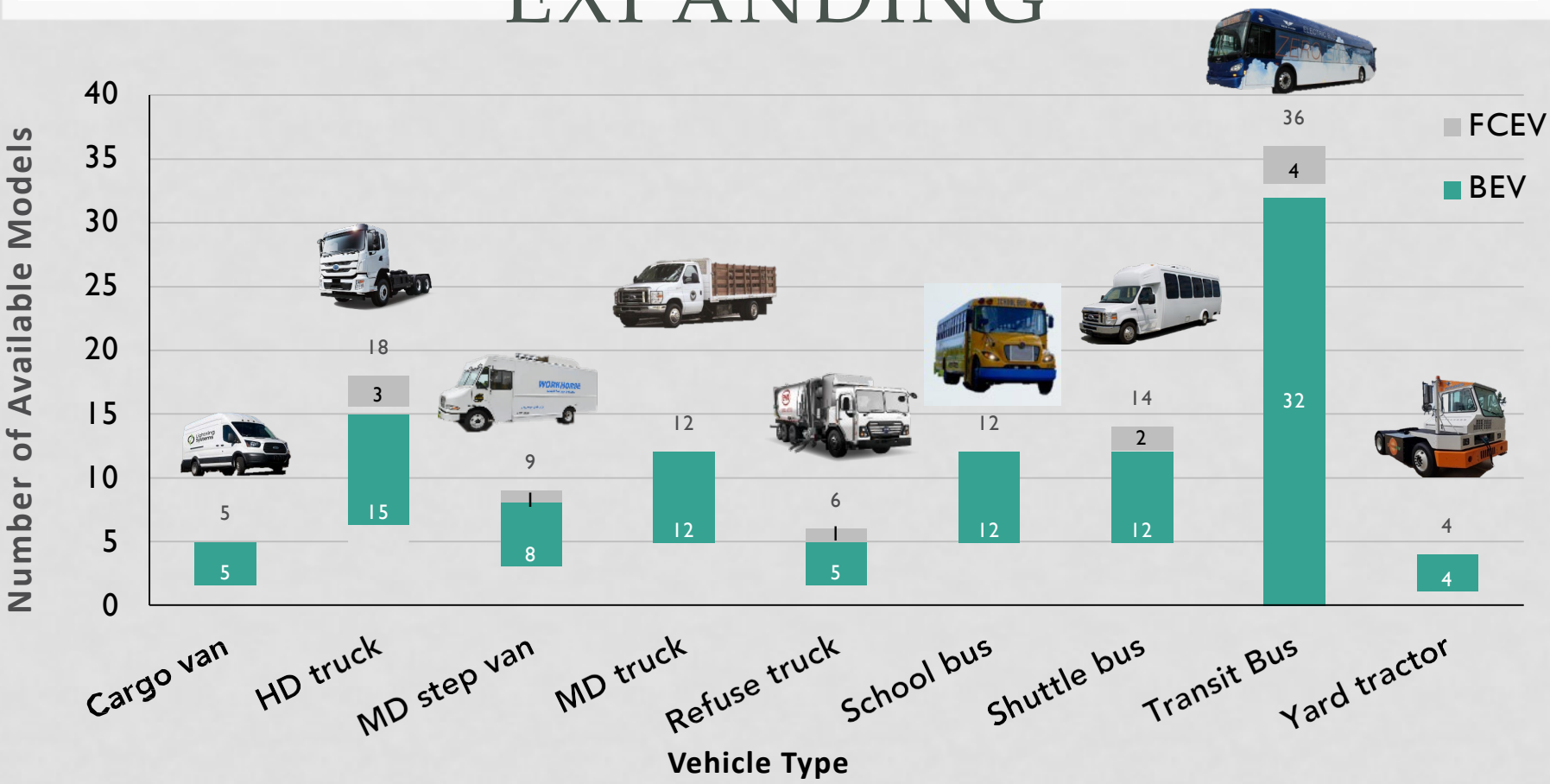
WHAT TYPES OF TRUCKS ARE CURRENTLY SUITABLE FOR ELECTRIFICATION?

- Most suited for urban driving
- More efficient in stop-and-go
- In use with many local fleets
- Work well on predictable routes
- Recharge when return to base

ARE ANY ZERO-EMISSION TRUCKS COMMERCIALLY AVAILABLE?

- Over 70 models currently available
- Most offer over 100-mile range > drayage routes
- More offerings each year
- Range keeps increasing

MEDIUM- AND HEAVY-DUTY ZEV MODEL AVAILABILITY EXPANDING



Credit to CARB

MAJOR MANUFACTURERS ENTERING MARKET

- Many major manufacturers have plans to enter the ZEV market prior to 2024
  - Cummins, Ford, Freightliner, Mack, Navistar, Mitsubishi Fuso, Peterbilt, Tesla, Volvo have announced plans for commercial products

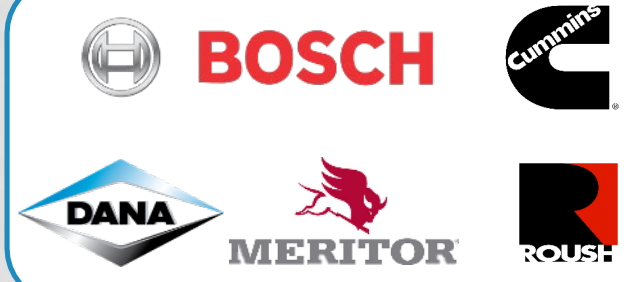



Image source: Ford, Cummins, Mack, Trucks.com

MAJOR SUPPLIERS AND SERVICE PROVIDERS ENTERING MARKET

- Established suppliers entering ZE truck supply chain
  - Partnering with existing ZE vehicle/drivetrain manufacturers
  - Numerous demonstrations underway
- Established companies servicing, distributing, training, leasing ZE trucks

Electric Powertrain Providers



Service, Support, Training

HOW CAN FLEET OWNERS AFFORD TO OPERATE ZERO-EMISSION TRUCKS?

- Higher upfront costs but lower operating costs than conventional trucks.
- Total cost of ownership can be comparable to conventional trucks for certain duty cycles without grants or rebates.
- As battery prices fall and technology continues to improve, the total cost of ownership is expected to become more favorable.
- Incentives are currently available to offset some of the early infrastructure costs.

POTENTIALLY REGULATED PARTIES

- Port trucking contractors
- Truck brokers
- Large fleet owners

PHASE IN SCHEDULE

- Assume CA will do a phase in
  - Oldest trucks to be replaced with EVs first?
  - Large fleets first? (there aren't many of these in NJ)
  - Initial requirements in ## years to allow for charging infrastructure installation (CA projecting 2024 for initial requirements)
  - Fully electric by 2030

DISCUSSION ISSUES

- Issues for discussion:
  - Schedule
    - How much lead time would the industry need?
  - Implementation issues
    - Charging infrastructure
  - Regulated parties
    - Are contractors and brokers in the best position to comply?
    - Should owner/operators be included?
  - Industry assistance
    - Outreach and education
  - Enforcement

COMMENTS

Please send comments and/or technical support information to:

NJAirrulesmobile@dep.nj.gov

Use the following heading in the subject line of the email:

Drayage Trucks

By September 24, 2020