Engineering, Operations, & Technology Committee

Zero Emission Fleet Transition

Item 6c

January 8, 2024

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Zero Emission Fleet Transition

Subject

Overview of fleet assets and transition to zero emission vehicles (ZEV)

Purpose

Metropolitan is transitioning its fleet vehicles to zero emission over the next several years. This update provides an overview of fleet assets, new regulatory requirements, and the transition plan including the implementation of charging infrastructure

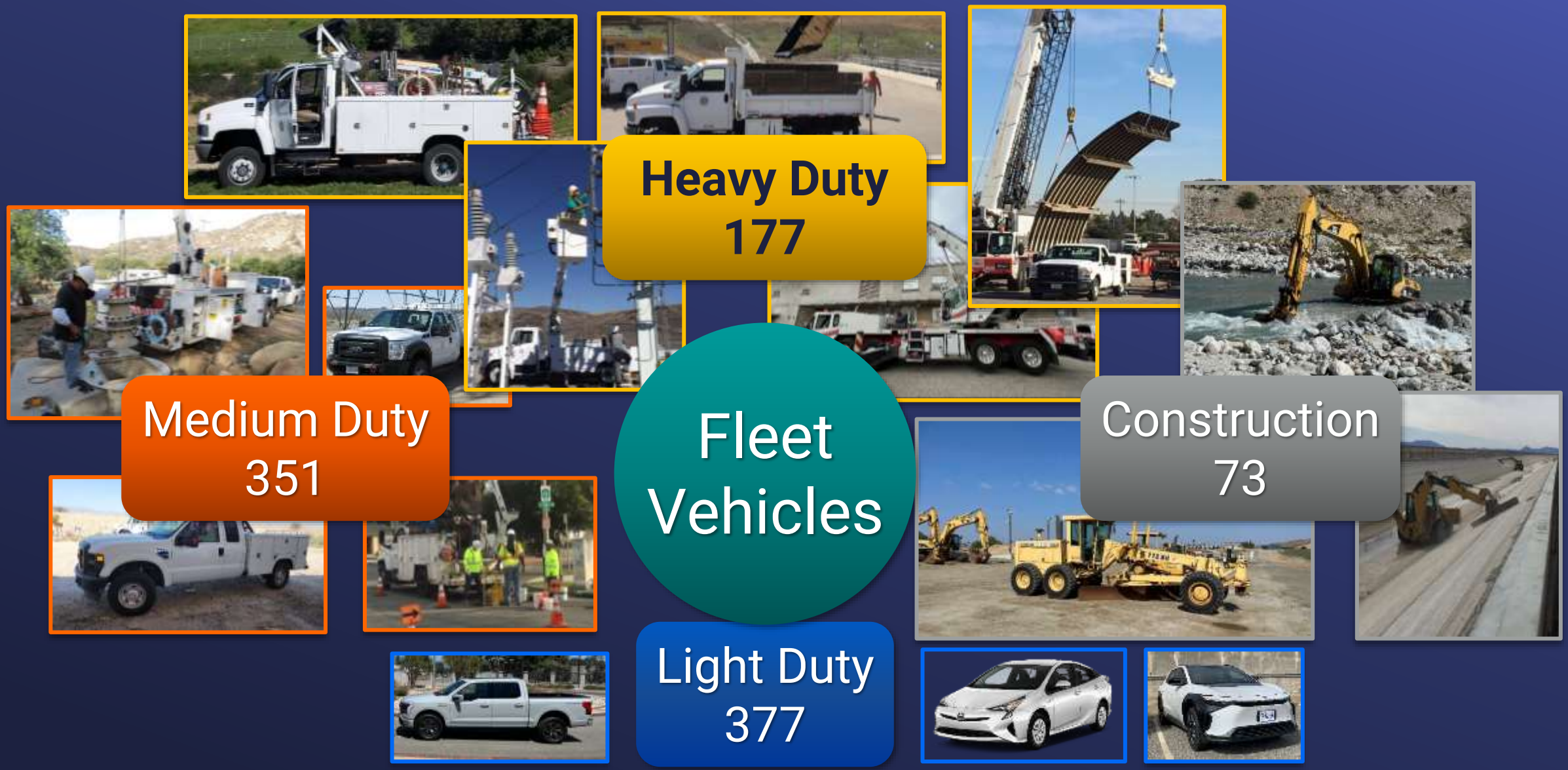
Next Steps

Future Board updates on ZEV transition and financing options

Metropolitan Fleet Service Area

- 1,200+ fleet assets
- 5,200 square mile service area & desert regions
- Across five counties
- Over 5,300 structures
- 320 miles of patrol roads

Diverse Pool of Fleet Assets



New CARB Regulations

Light-Duty Vehicles (377)

2026-2035 Increase to All ZE Sales

Medium-Duty Heavy-Duty Vehicles (528)

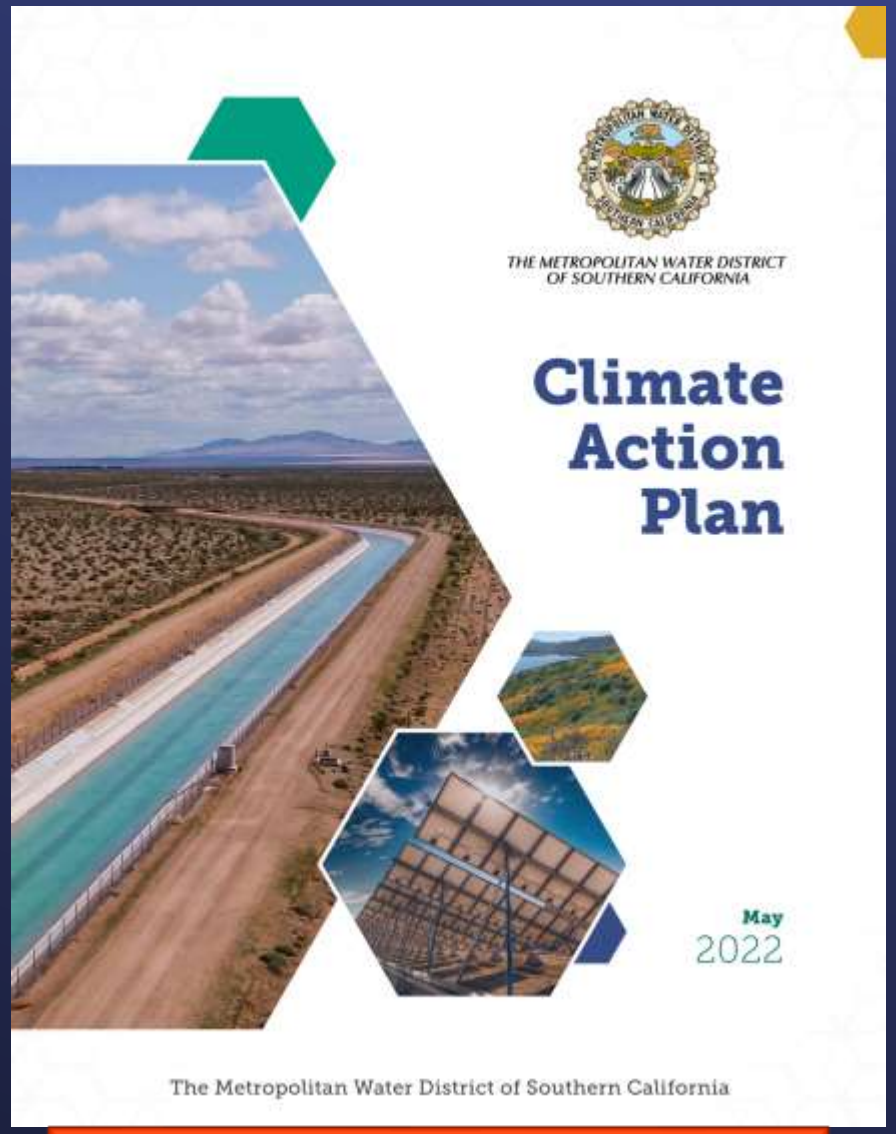
2024 - 50%; 2027-100% Public Fleet ZE Purchases

Diesel Construction Equipment (73)

2024-2028 Phaseout of 47 Units

Propane/Gas Forklifts (18)

2024-2031 Phaseout to ZE



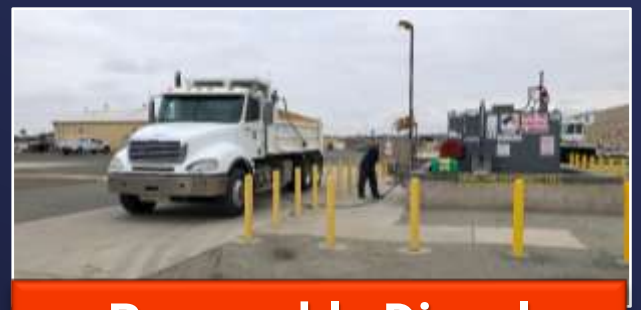
Board Adopted May 2022

Objectives

- Strengthen commitment to environmental sustainability
- Increase resiliency of operations
- Strategically achieve greenhouse gas (GHG) reduction goals
- Comply with CARB requirements

Actions Taken to Date

Ford Lightnings



Renewable Diesel

- Established Zero Emission Vehicle (ZEV) task force
  - Cross group collaboration on ZEV transition that includes SRI, SRT, Engineering, Finance, Admin Svc, & WSO
- Initiated “try before you buy” effort to evaluate implementations, gain market awareness and educate staff
- Completed vehicle & power needs inventory and market assessment
- Initiated CIP for EV infrastructure
- Created online fleet tool to screen ZE replacement vehicles
- Piloted renewable diesel in mid-2021 at Lake Mathews; available at all sites by end of 2022

Increase ZEV Awareness & Understanding

Members of ZEV Task Force

Demos and Trials

Pursuing Vouchers & Incentives

Metropolitan Fleet Assets - Types & Uses

- Variety of vehicles used for O&M & CIP
  - Medium duty 8,501 to 14,000 lbs.
  - Heavy duty 14,001+ lbs.
- Fitted to suit maintenance and operational needs
  - E.g., tools, cranes, weld machines, traffic signs
- Central to our ability to be resilient

Maintenance, Repairs, & Traffic Control



Shutdowns & Emergency Response

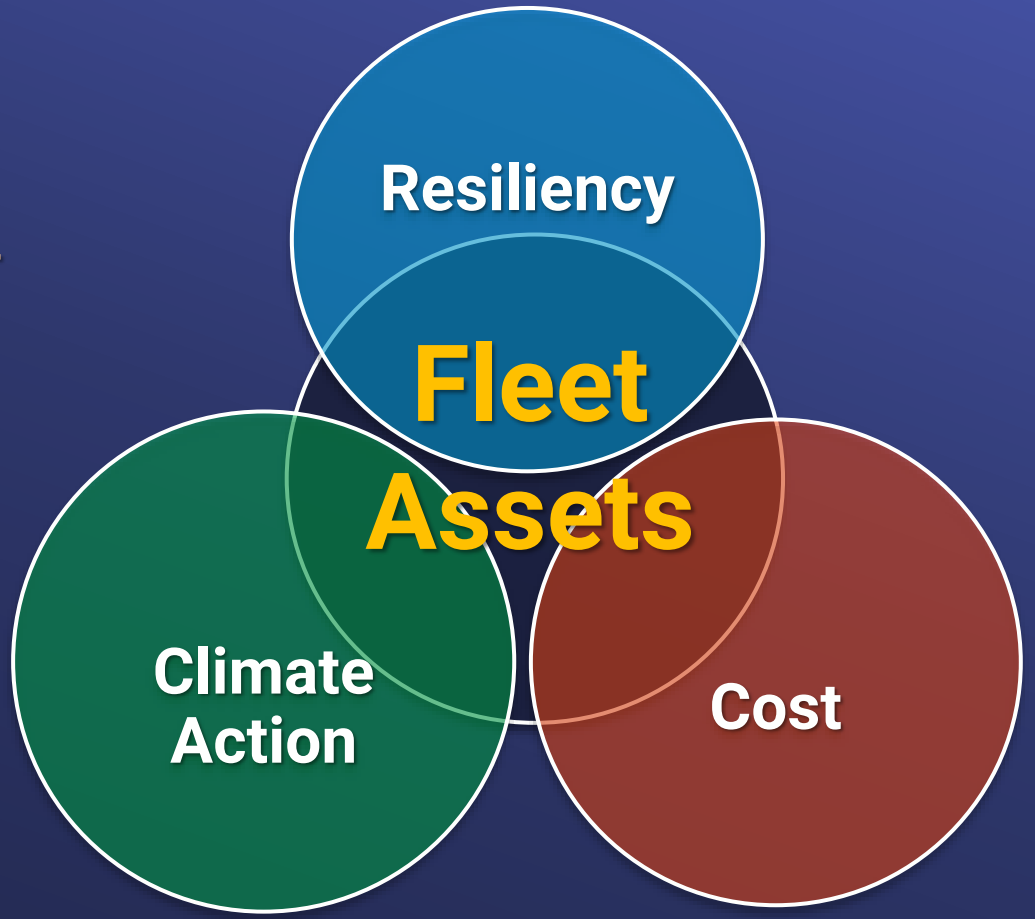


Patrolling & Support Ongoing Operations



ZEV Transition Plan & Challenges

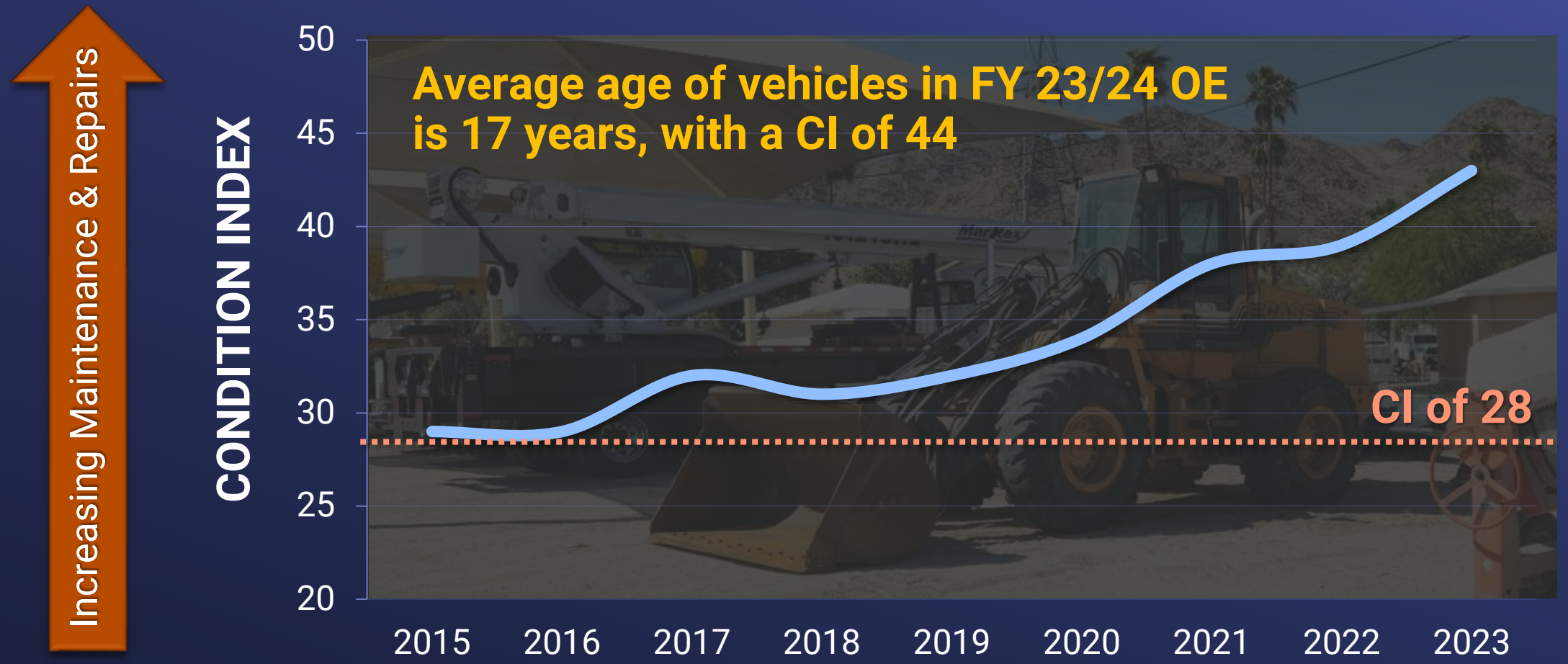
- Targeted ZEV transition
  - In town vehicles, low miles driven, and lower weight first
  - Pilot & evaluate emerging options for other use cases
- ZEV charging infrastructure
  - La Verne facilities & Union Station first
  - Interim charging at several sites to support targeted transition
- Replace critical high-mileage & aged medium/heavy-duty vehicles with more efficient ICE vehicles over next 3-4 years



ICE = Internal Combustion Engine

Fleet Operational Reliability & Resiliency

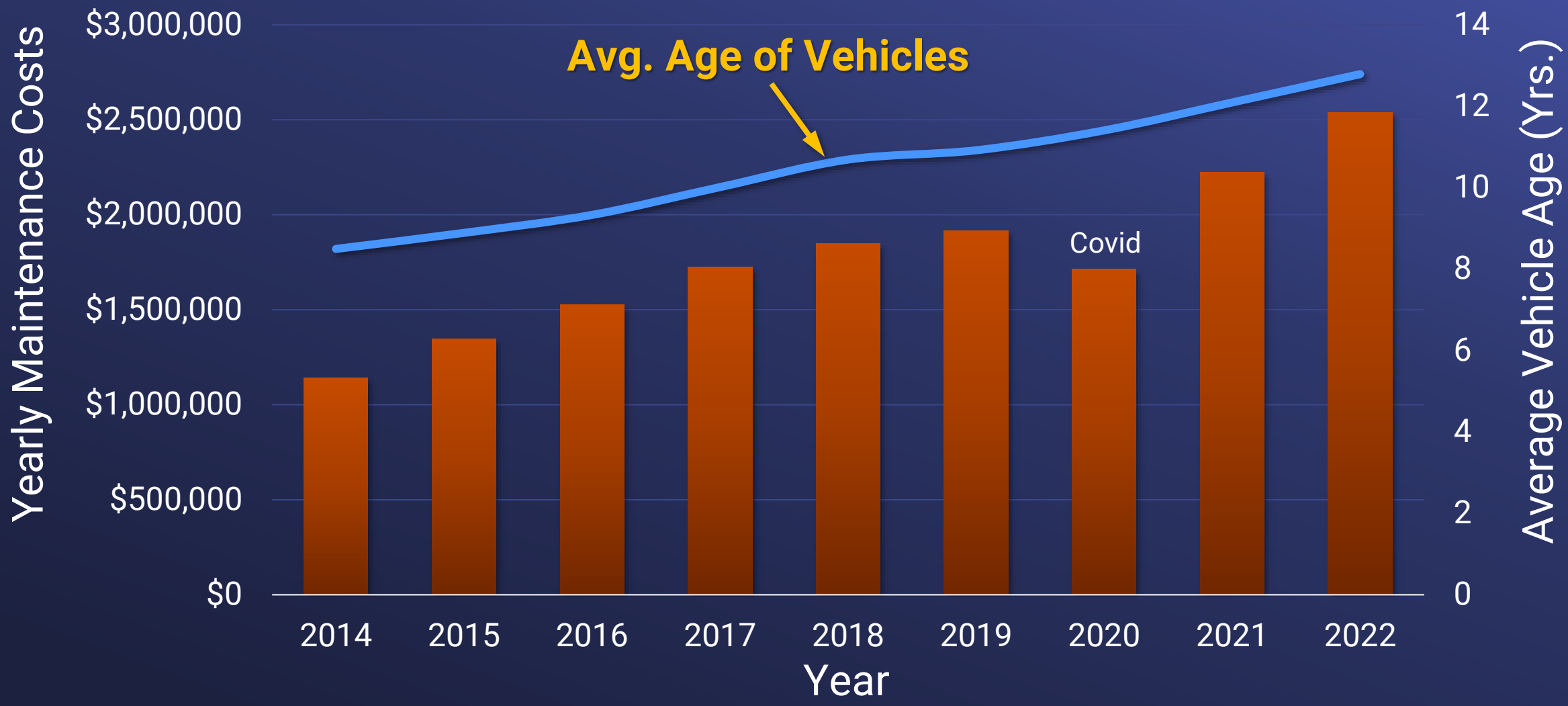
Condition Index (CI)* gauges a fleet asset's reliability and cost to maintain– typically, vehicles with CI of 28 or higher should be replaced



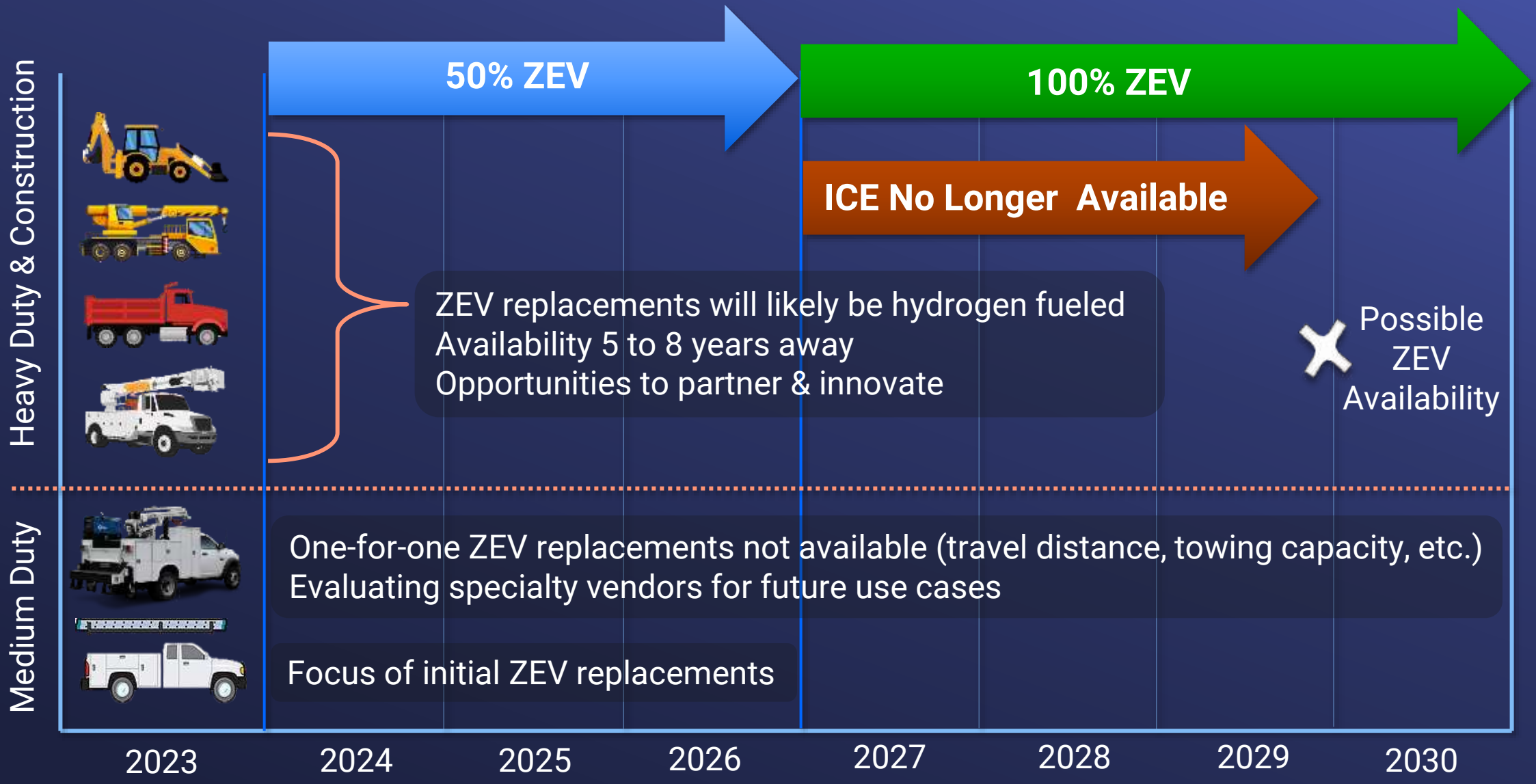
**CI is based on a vehicle's age, miles/hours, service severity, reliability, maintenance costs, condition, and utilization*

Fleet Operational Reliability & Resiliency

Aging assets have outdated emissions & cost more to maintain

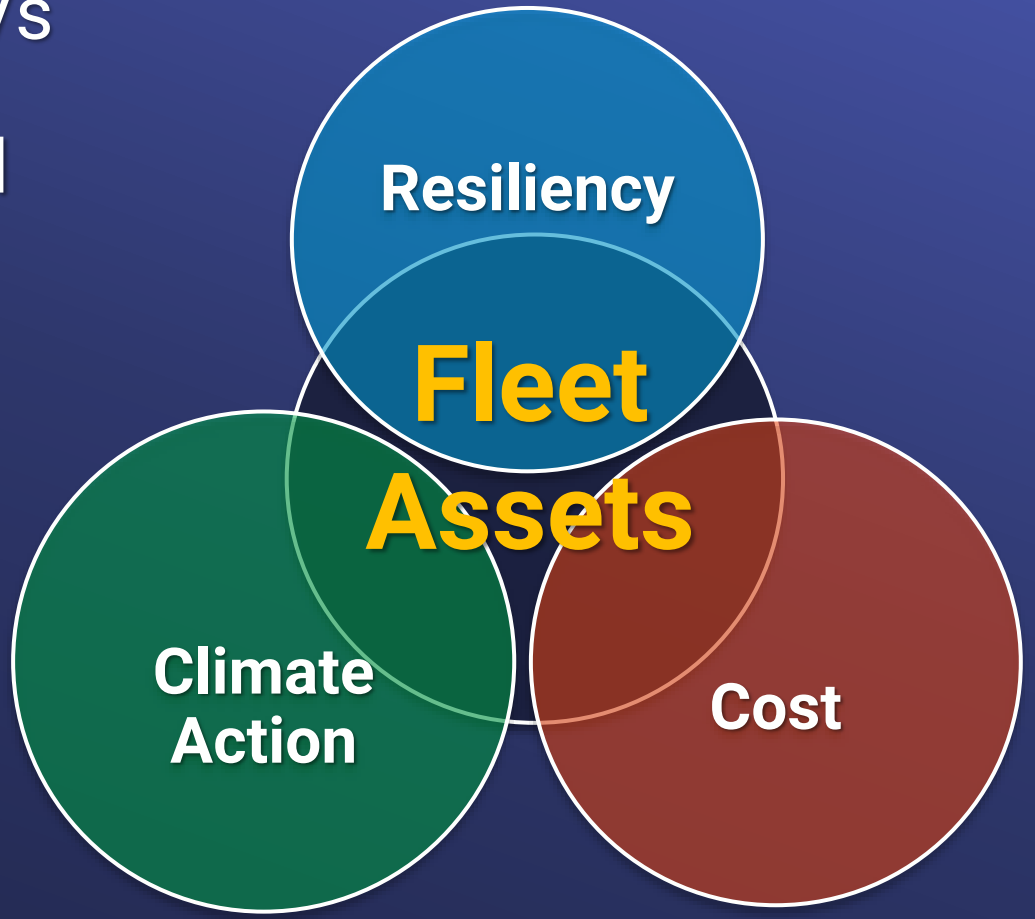


Regulatory Timeline and Impacts to Fleet Vehicles



ZEV Transition Plan & Budgetary Challenges

- High cost to renew and replace with ZEVs
- Critical more expensive OE reaching end of life (cranes, motor graders, etc.)
- Limited timeframe to act considering regulatory milestones
- Financial “bandwidth” needs to be expanded to meet needs
- Finance team evaluating options including debt financing



ZEV replacements generally cost 30% more

ZEV Infrastructure – Capital Project

- Purpose
  - Transition underway from fossil fuel-powered motor vehicles to electric/hydrogen vehicles
  - New “fueling stations” are required at multiple facilities
  - Current focus on electric vehicles

- EV Charging Infrastructure Components
  - Electrical components
  - Charging stations
  - Electrical demand management system

Level 2

208/240 Volt (Typical)

Level 3

480 Volt (Typical)

Initial Facilities for Assessment

- Union Station & La Verne
  - Consultant Design (Stantec)
  - Scope of Work
    - Develop conceptual site plans
    - Determine infrastructure needs
    - Locate charging stations & recommend types
    - Utility coordination & permitting
    - Evaluate safety upgrades
    - Develop an overall schedule & construction estimate

- RFQ for additional consultants to expedite design of other facilities

Going Forward

- Over 20 ZEVs proposed for FY 24/25 OE budget
- Continuing “Try before you buy” effort
- Continue employee outreach and education
- Taking advantage of incentives where possible
- Advance capital projects for charging infrastructure
- Looking to partner with industry & other agencies
- Continued updates to Board on ZEV transition and financing options

Summary & Closing Comments

- Staff committed to ZEV conversion while ensuring reliability
- Managing an aging fleet, regulatory timeline, and cost is a challenge
- Opportunities to innovate & partner with industry


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928