Vehicle transportation accounts for:
• **39%** of California’s greenhouse gas emissions
• **64%** of Santa Monica’s greenhouse gas emissions

EVs emit 80% less emissions compared to gasoline vehicles

Countries, states and cities are pushing zero-emission vehicles
• California: 1.5 million ZEVs on the road by 2025
• Cities banning fossil fuel vehicles in downtown districts
• Countries banning sale of fossil fuel vehicles
State of Charging in Santa Monica

2,494 registered BEVs + PHEVs

94 public charging ports

Multifamily neighborhoods have the least amount of registered EVs and charging stations
How do EVs fit within Mobility?

- Mobility
  - Reduce SOV Trips

- EV Action Plan
  - Shift to Zero Emission Vehicles

- Walking & Biking
- Low Emission Transit
- Shared Mobility Services
- Zero Emission Vehicles
- Non-ZEVs
EV Action Plan Goals

Goals

• Build a citywide network of 300 smart public charging ports by 2020

• Increase EV ownership to 15% by 2025 (10,000 EVs)

Percentage of EVs in Santa Monica
EV Action Plan Priorities

**PUBLIC INFRASTRUCTURE**
Modernize and expand public EV infrastructure to enhance user experience and sustain operations.

**PRIVATE CHARGING**
Increase EV charging for Multi-Unit Dwellings (MUDs) and Workplaces.

**PUBLIC POLICY**
Update parking policies and practices for efficient charging station use.

**COMMUNITY OUTREACH**
Develop EV outreach programs and resources for residents and businesses.
EVs Transect Many Functions of City & Community
Potential Sources of Funding for Infrastructure & Operations

Program Revenue
- User fees
- Idling charges
- Low Carbon Fuel Standard (LCFS)
- Advertising

Partnerships
- EV manufacturers
- EV charging vendors
- Community Choice Aggregation programs
- Direct Access provider

Grants & Rebates
- California Energy Commission
- California Air Resources Board
- Southern California Edison
- South Coast Air Quality Management District
- VW Diesel Settlement with US Gov’t
2017 Municipal Operations Emissions

- Big Blue Bus: 49%
- Building Electricity: 20%
- Building Natural Gas: 4%
- Streetlights & Traffic Signals: 5%
- Vehicle Fleet: 6%
- Water Treatment & Distribution: 16%
Going Electric

• Sustainable City Plan
  – Reduce Municipal Operations Emissions

• Administrative Instruction
  – Sustainable Fleet Purchasing
    • Operating Divisions must purchase most environmentally preferable vehicle OR
    • Justify need for fossil fueled vehicle
    • Request reviewed by interdepartmental committee
By 2020, 487 vehicles/equipment are expected to be replaced:

- 40 Diesel
- 172 Unleaded
- 53 Flex Fuel
- 10 Propane
- 183 CNG
- 29 Electric
Vehicle Fleet - Unleaded

- 256 total unleaded vehicles/equipment
- Primarily Sedans, SUVs/Vans, and Pickups/Trucks

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedans</td>
<td>100</td>
</tr>
<tr>
<td>SUVs/Vans</td>
<td>40</td>
</tr>
<tr>
<td>Pickups/Small Trucks</td>
<td>20</td>
</tr>
<tr>
<td>Utility Vehicles/ATVs</td>
<td>10</td>
</tr>
<tr>
<td>Lawn Care</td>
<td>5</td>
</tr>
<tr>
<td>Misc. Equipment</td>
<td>10</td>
</tr>
</tbody>
</table>

PD + Fire: 65%
All other departments: 35%
Vehicle Fleet - Flex Fuel

- 55 total Flex Fuel vehicles
- All are used by PD and use only unleaded fuel
## Vehicle Fleet - Diesel

There are an array of diesel vehicles and types of equipment - 81 items in total

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Pressure Washers</td>
</tr>
<tr>
<td>22</td>
<td>Tractors</td>
</tr>
<tr>
<td>5</td>
<td>Pickups</td>
</tr>
<tr>
<td>1</td>
<td>Truck with crane</td>
</tr>
<tr>
<td>9</td>
<td>Mowers</td>
</tr>
<tr>
<td>7</td>
<td>Compressors</td>
</tr>
<tr>
<td>3</td>
<td>Generators</td>
</tr>
<tr>
<td>1</td>
<td>Beach Cleaner</td>
</tr>
<tr>
<td>2</td>
<td>Brush Chippers</td>
</tr>
<tr>
<td>2</td>
<td>Light Towers</td>
</tr>
<tr>
<td>1</td>
<td>Flat Saw</td>
</tr>
<tr>
<td>1</td>
<td>Cold Milling Machine</td>
</tr>
<tr>
<td>2</td>
<td>Tandem Rollers</td>
</tr>
<tr>
<td>1</td>
<td>Patrol Boat</td>
</tr>
<tr>
<td>2</td>
<td>Dump Trucks</td>
</tr>
<tr>
<td>2</td>
<td>Side Loader Trucks</td>
</tr>
<tr>
<td>1</td>
<td>Sweeper</td>
</tr>
<tr>
<td>1</td>
<td>Mobile Command Center</td>
</tr>
<tr>
<td>1</td>
<td>Root Cutter</td>
</tr>
<tr>
<td>1</td>
<td>Sewer Cleaner</td>
</tr>
<tr>
<td>1</td>
<td>Grinder</td>
</tr>
<tr>
<td>1</td>
<td>Compacter</td>
</tr>
<tr>
<td>2</td>
<td>Stump Cutters</td>
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<tr>
<td>1</td>
<td>Paver</td>
</tr>
<tr>
<td>1</td>
<td>Bobcat</td>
</tr>
<tr>
<td>1</td>
<td>Pump</td>
</tr>
<tr>
<td>10/18/2018</td>
<td>Unknown Items</td>
</tr>
</tbody>
</table>
Vehicle Fleet - Propane

39 Vehicles/Equipment

- Generator
- Power VAC
- Trucks
- Sweepers
- Pickups
- Forklifts

Number of Vehicles/Equipment
Vehicle Fleet - CNG

281 Vehicles/Equipment

- Trucks
- Pickups
- Sedans
- SUVs/Vans
- Sweepers
- Fork Lifts
- Motorcycles/Scooters
- Tractor
- CNG Station

Number of Vehicles/Equipment

0 20 40 60 80 100 120

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Vehicle Fleet - Electric

113 Vehicles/Equipment

- SUVs/Vans
- Pickups/Small Trucks
- Sedans
- Lifts
- Scooters
- Sweeper
- Carts
- Fork Lifts

Number of Vehicles/Equipment

0 10 20 30 40 50 60

10/18/2018
Fleet Fuel Consumption

Change since 2014

- 73% Diesel
- 15% CNG
- 50% LPG
- 42% Unleaded
Fleet Fuel Carbon Emissions

- Diesel
- CNG
- LPG
- Unleaded

1995: 4,500 mtCO2e
2014: 2,500 mtCO2e
2015: 2,000 mtCO2e
2016: 1,500 mtCO2e
2017: 1,000 mtCO2e

65% reduction from 1995 to 2017.
Vehicle Fleet Makeup by Fuel Type

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>2016 Fleet</th>
<th>2017 Fleet</th>
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</thead>
<tbody>
<tr>
<td>Electric</td>
<td>851</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Propane</td>
<td>851</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>CNG</td>
<td>851</td>
<td>31%</td>
<td>32%</td>
</tr>
<tr>
<td>Diesel</td>
<td>851</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Flex fuel</td>
<td>851</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Unleaded</td>
<td>851</td>
<td>32%</td>
<td>30%</td>
</tr>
</tbody>
</table>
Fleet EV Charging 2.0

Various Models
Non-networked
Shared with Public

One Model
Networked
Exclusive for Fleet

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What about Big Blue Bus?

- Currently running on Renewable Natural Gas
- $3M Grant for 10 Electric Busses
- Funded by Cap-and-Trade program, SB 1, Transit and Intercity Rail Program (TIRCP)
Thank you!

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