



# City of Seattle: An EV Love Story

April 30, 2014

Andrea Pratt, Strategic Advisor  
Fleet Management Division  
Finance & Administrative Services

# City of Seattle EV Fleet

- 43 Nissan Leafs
- 32 Off Road Scooters/Utilities
- 4 Parking Enforcement Scooters (18 more in 2014)
- 24 Forklifts
- Total of **115 electric-powered** fleet vehicles and/or equipment

# Parking Enforcement EV Scooters



# Forklifts & Off Road Scooters



# E-Dump Truck & Club Car



# Motor Pool EV Sedans



# Motor Pool – EV Success!

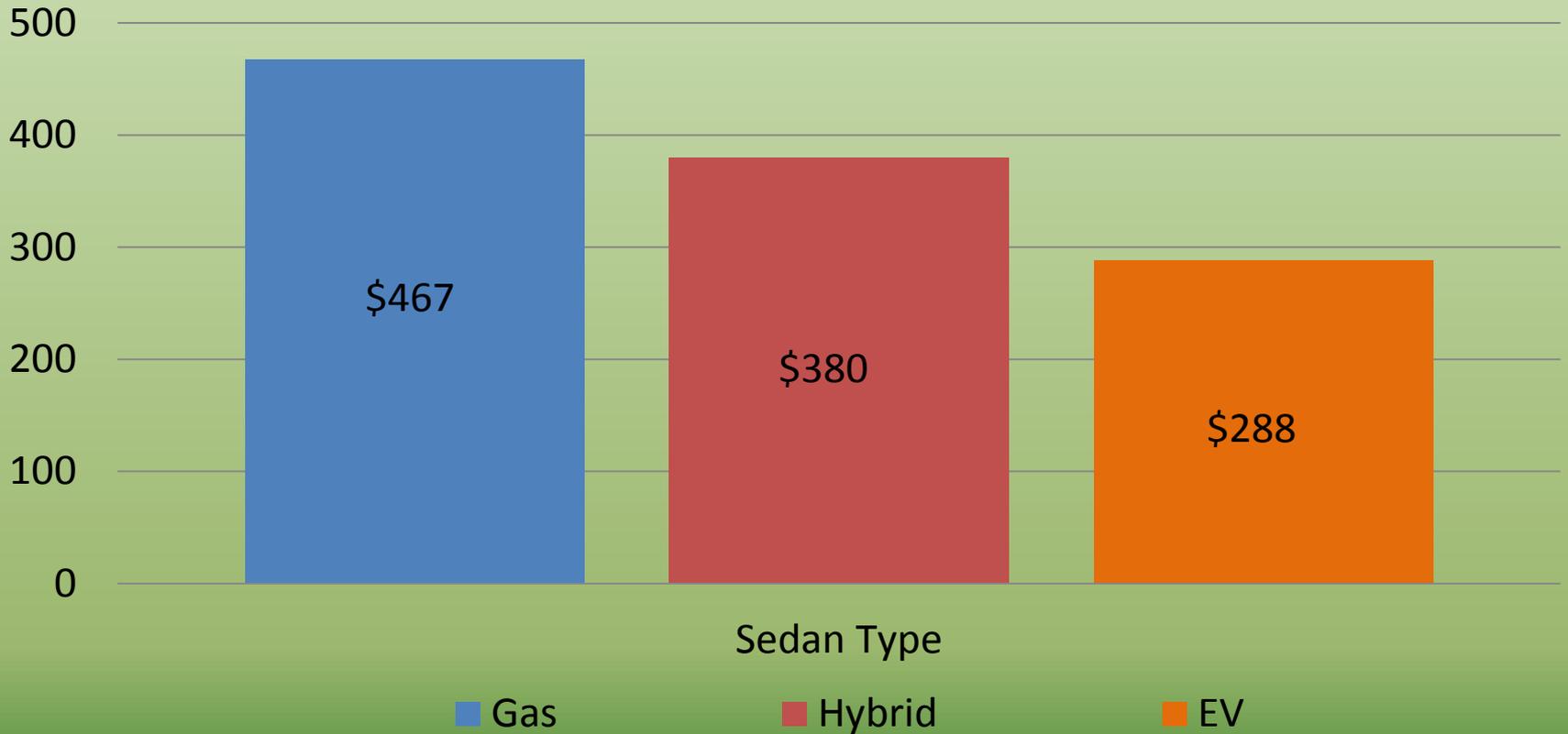
- ARRA Grant Funding Paid for Initial EVSE Infrastructure in 2010
- Half of the City's Motor Pool was converted to EVs - 26 Nissan Leafs
- Early adoption PR Campaign
  - Leaf kick off information “Road-eo” (hands-on demo)
  - Training video required prior to operation
  - Initial and on-going training were key to success

# Leaf Motor Pool Fun Facts

- VMTs = 307,683 miles total (~4600/yr/vehicle)
- Fossil Fuels Displaced = 15,540 gal (in first 3 years)
- Electricity Fueling Cost = \$14/month/vehicle
- PM Cost comparison...

# Annual PM Cost Comparison

## Gas vs. Hybrid vs. EV



# Does The Total Cost Pencil Out?

**Higher Usage = Greater Savings**

<b>Life Miles</b>	<b>Gas Sedan</b>	<b>EV Sedan</b>
50,000	\$31,913	\$38,292
75,000	\$36,963	\$39,192
100,000	\$42,014	\$40,092
125,000	\$47,064	\$40,992

**Breakpoint ~ 88,000 miles**

*Fuel Cost Assumptions: Gas = 19.8 mpg; \$4/gal; EV = \$0.036/mile (\$14/385 miles per mo.)*

# EV Advantages

- Zero tail pipe emissions
- Low, stable operating and maintenance cost
- Total cost of ownership lower than gas vehicles where usage is high (or mpg is low)
- Demonstrates community leadership

# EV Expansion Challenges

- Electric capacity in downtown buildings is MAXED OUT
- Infrastructure upgrades can be cost prohibitive for large installations
- The City is currently investigating cost scenarios at several facilities – no numbers yet
- Creative alternatives to a constrained grid:
  - Solar panel roofs
  - Outside financing options tied to building efficiency
  - Energy conservation measures that free up capacity

# Looking Ahead

- Technology advancements in other vehicle classes will be a game changer
- Need to keep up with emerging options for strategic infrastructure planning
- “Leap Frog” technologies could change the way we think about charging EVs
  - Air batteries
  - Extended (1,000+ mile) range

# Questions?

