



# CLT Bus Replacement Plan



# Current Situation

- Current contract for diesel buses is expiring
- 70 traditional low-floor buses
- Average 13 buses out of service daily, (75% emissions related)
- 1,500 gallons fuel per day; 547,500 gallons per year
- Total ~ 2M miles per year
- 8 year life cycle

# Comparison

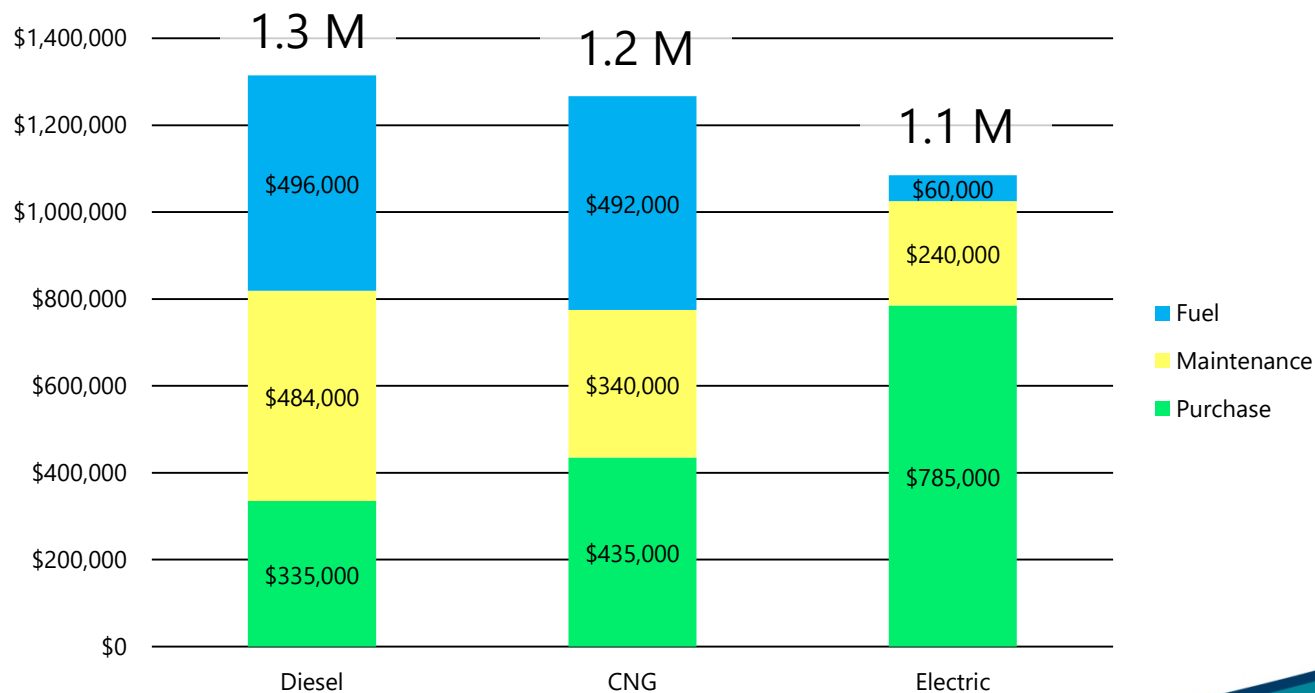
	<b>Diesel</b>	<b>CNG</b>	<b>Electric</b>
Maintenance	Emissions System & Preventative Maintenance	Preventative Maintenance	Minimal Preventative Maintenance
Technician Training	Status Quo	Some Training	Substantial Training
# Of Buses	Status Quo	Some Reduction (-10%)	Significant Reduction (-25%)
Range <small>*125 Miles/day typical</small>	250 Miles	250 Miles	350 Miles
Emissions	Status Quo	No Particulates	Zero Emissions

# Financial Comparison

	<b>Diesel</b>	<b>CNG</b>	<b>Electric</b>
Infrastructure	\$0	\$1.5 M	\$1.5 M
Purchase Price	\$335,000	\$435,000	\$785,000
Maintenance (CPM)	\$1.21	\$0.85 (Est)	\$0.60 (Est)
Fuel Cost / Mile (\$2.10/gal)	\$1.24	\$1.23 (DGE)	\$0.15 (\$0.15/kWh)
Total Cost of Ownership	\$1.3M	\$1.2 M	\$1.1M

# Cost of Ownership Per Bus

(8 years, 50k miles per year)



# Clemson Usage Review

- E-Buses: 6 originally, up to 18
- In Service Date: 2014
  - Electrics are more dependable
  - Save \$1/mile on maintenance
  - Fuel costs less than half of diesel
  - 5 years of use, batteries still at 98% capacity
  - Buses are so quiet, the AC fans are now the most noisy system
  - Really enjoy the buses



# Decision

Based on:

- Decreased tailpipe emissions
- Greater availability = fewer buses
- Decreased maintenance cost
- Lower total cost of ownership

Transition to electric buses beginning FY20

# Transition to Electric Buses

