UNC CHARLOTTE FLEET STUDY
FLEET CLIMATE

• Campus is slightly over 1000 Acres
• 12 miles of road
• 61 buildings
• 506 vehicles LSVs, trucks, golf carts, utility carts, trams
• Central shop located on campus 5 techs, 7 bays
HISTORY OF THE MAINTENANCE FLEET

• Went electric in 2004 with Global Electric Motorcar (GEM) vehicles
• 2012 16% of our fleet was electric, 2015 22% of our fleet is electric
• Current fleet also includes Electric Club Cars, Star Trams, Vantage Electric Mini Vans
• GEMs make the largest percentage of electric vehicles with over 100 on campus
ADDITIONAL VEHICLES IN THE FLEET

• Kawasaki Mules
• Club Car Diesel and Gas powered
• Dump trucks
• Various construction equipment medium and heavy duty
COSTS

• Year 2017 electric Vehicle miles were 163015
• Fuel Mileage on a typical Ford Ranger (replacement) around campus is 15mpg
• Fuel savings 10868 (approx.)
• $18,000 saved in fuel (gross savings)
• Average cost per mile on Ranger $18.20 *
• Average cost per mile on GEM $.85 *
• Started using VeBar Electric Telemetries to monitor Electric Vehicles
HIGH COSTS OF BATTERIES

• Went from lead Acid to Absorbent Glass Mat Batteries
• Monthly preventive maintenance on high use electric vehicles
• Budget for Batteries was high. We wanted to see if we could lower this cost even more.
TYPICAL ISSUES ELECTRIC VEHICLES

• Extreme cold movement (Battery Freeze)
• Charging port not active
• Accessory left on
• Not plugged in
VEBAR MONITORING SYSTEM

• Originally designed for shipping and warehouse operations
• Can cover fleets of forklifts and keep a strict monitoring system on the operation
• Never used in a LSV fleet application
• VeBar approached UNC Charlotte about testing
GOALS FOR THE FLEET DEPARTMENT

2 years

- 25% electric
- Demo new technology

5 years

- 30% Electric
- Electric Small Vans
- Hybrid Trucks

10 years

- 40-50% Electric
- Plug In Hybrids
QUESTIONS?