



Best Practices for a Sustainable Utility Fleet



2019 Green Transportation Summit & Expo
Paul Chamberlain, Fleet Services Manager

Who We Are

Customer-owned utility providing Water and Power

- 203,000 electric service customers - 628 square mile
 - Hydro, Wind & 248MW Natural Gas Turbine Power plant
 - 54 Substations / switching stations
 - 6,600 miles of T&D line on 59,352 poles



- 31,897 water service customers - 220 square miles
 - 35 wells / 51 booster stations and 788 miles of distribution
 - Capacity to pump more than 35 million gallons of water per day

A customer owned electric and water utility with a core mission of service the residence and businesses of Clark County Washington with reliable power, clean water, stable rates, and exceptional customer service, while insuring resource sustainability in conjunction with environmental stewardship

Clark Public Utilities Fleet



Fleet Assets

264 total units

- 173 light, medium & heavy duty on-road vehicles
- 73 trailers, industrial, trailered tools & off-road equipment
- 18 support services equipment

Fleet Talking Points

- 1.5 million miles driven annually
- Consume 165,000 gallons of fuel
- Capital Budget of 1.2 million
- O&M Operating budget of \$2.3 million

Green Talking Points

- 50 plus Idle Management systems in fleet
- Fuel Diversified Fleet – Propane, Electric, Renewable Diesel, Gasoline
- Fleet & Public EV Charging Infrastructures
- Truck Wash using Biodegradables Chemicals for a Closed Loop System
- Shop Recycling Program

Sustainable Stewardship

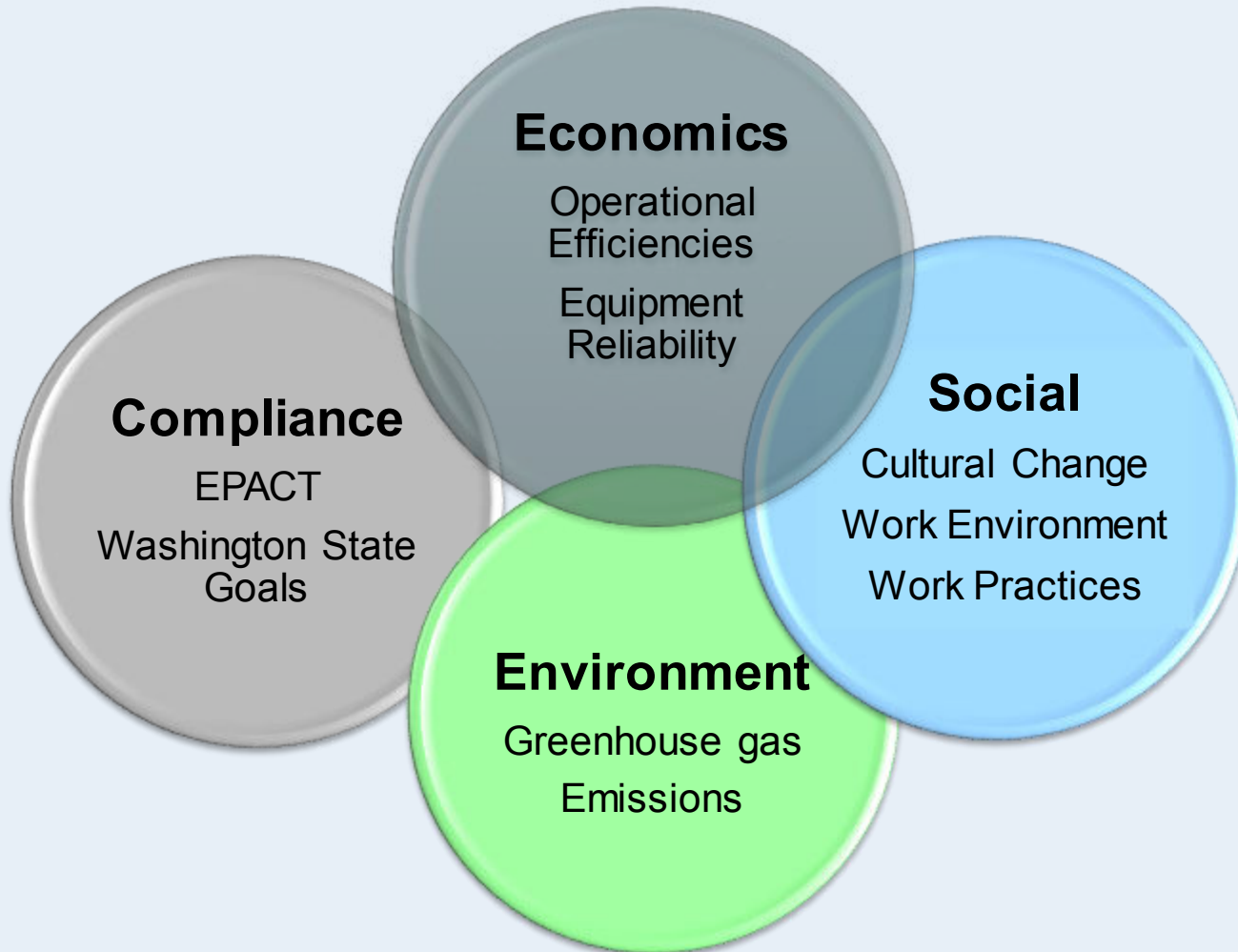
Our Commitment

To reduce the utilities transportation carbon footprint by reducing vehicle emissions, fuel usage, and applying feasible options for alternative sources of energy while advocating collaborative actions toward sustainable practices

Our Strategies

- Evaluate and if feasible reduce the number of underutilized vehicles
- Transition from eight cylinder engines to six cylinder engines whenever possible
- Purchase and use smaller sized vehicles where possible
- Increase the use of hybrid / electric vehicles where work methods and the work environment allows
- Research, identify, and implement technology that can be used to reduce idling
- Evaluate and when feasible, transition to low carbon fuels and lubricants
- Increase the use of fleets internal motor pool vehicles
- Transition to biodegradable products for washing, cleaning and shop use
- Reduce our dependency on chemicals harmful to the environment

Fleet Challenges



Analysis on Idling

AM55 Aerial Manlift International Trucks

Engine Wear & Tear

Idle Hours	Hour to Mileage Idling Equivalency	Work Days	Annual Miles of Idling Wear & Tear	Annual Miles Driven	Annual Engine Mileage	Engine Wear Reduction by Eliminating Idling
5.2	25	325	42,250	9,000	51,250	82%

Cost of Idling

Annual Idling Hours	Annual Engine Hours	Annual Maintenance & Fuel Cost to Idle	Annual Idling Efficiency Expected	Annual Maintenance & Fuel Cost with Idle Management	Annual Maint/Captl Savings with Idle Management	Cost for Heater/Idle Management	Payback for Idle Management
1,690	2,050	\$7,054.23	25%	\$5,939.93	\$4,269.36	\$6,500	1.52

System Key Benefits

■ **Driver Benefits**

- Auto-start system is activated as soon as the chassis is started
- There is no need for the driver to monitor the system
- Starting and auxiliary batteries are continually managed for state of charge

■ **Economical**

- Chassis and body seamlessly integrate for managing accessories
- Thermostatically controlled option for start / stop management
- Fuel savings and reduced maintenance

■ **Safety / Reliability**

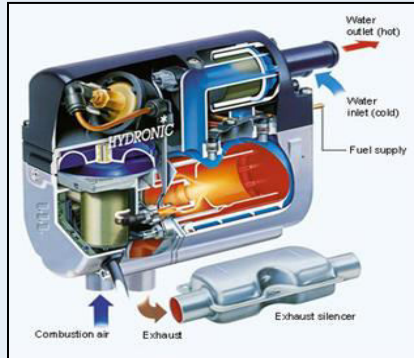
- Less downtime of vehicle due to idling related issues
- Engine-off power for emergency lighting and cab comfort
- Multiple safety checks and activation of anti-theft system
- Fleet vehicle emissions are lower as engine hours are reduced

■ **Flexible**

- Installs on most make or model vehicles and equipment
- Retrofits into our existing fleet vehicles

What Works for Us

Espar fuel-fired Heater



Idle management control module assembly



(1) Trojan deep-cycle lead-acid battery



1800 watt inverter w/built-in charger w/shore power



Proximity switches at multiple locations

Fleet Makeup



Strategies for Success

- Formalize your Commitment to Sustainability
- Identify the challenges, set your goals, have a plan
- Know your fleet and end user work requirements
- Promote Sustainability in your workplace
- Apply practices that show your Commitment
- Educate, Remind & Prompt
- Promote Your Successes
- Never give up!

Never Give Up



You must be the change you wish to see!

Gandhi