2015 GFOAT Conference
Fleet Maintenance
Overview
About Richardson

- Population of 102,430
- 1,021 budgeted full-time employees, 24 in Fleet and Materials Management
- Fleet Operating Budget of $4,665,786 and Department Maintenance is funded from Fleet accounts.
- Maintain 686 pieces of equipment, including 405 pieces of rolling stock
- Manage acquisition & maintenance of all stock including Fire, Police, Residential & Commercial Solid Waste, Parks, Streets, Water Utilities
Next–Gen Fleet Maintenance

- Next–gen considerations in maintaining a Fleet:
  - **Planning & Acquisition**: Cooperative Contracts & Change-Outs
  - **Fuel Type and Fueling Infrastructure**
  - **Facility Infrastructure**
  - **Warranty, Maintenance, and Repairs**: Oil Analysis, Tire Recapping/Nitrogen, Complexity of Vehicles
  - **Utilization, Life–Cycle Costs, and Final Disposition**: Training Needs, Motor Pools
Planning & Acquisition

- What type of vehicles/equipment need to be acquired for a specific operation?
- Cost/benefit analysis
- User Department Staff need to be involved in the planning.
  - Understand Department needs versus wants
Planning & Acquisition Example

Purchasing a Fire Apparatus for the Fire Department:

- Generally one of the most expensive equipment purchases
- 9–12 months to deliver from order
- Can take up to 200 hours of planning & logistics to purchase
Using a Cooperative Purchasing Agreement from an established entity can reduce the time spent by over 50%!

Vendors have already submitted basic pricing structure and bids

Easy to award the purchase

After award, set up delivery for the specified unit
With experienced technicians, change-outs can be performed in-house, saving time and money.

Richardson staff convert a new Tahoe to a Police vehicle in three days and install:
- Radio system
- GPS system
- Prisoner partitions/seat and restraint system
- Console/laptop mounting system
- Emergency lighting & controls
- Weapons storage
- Digital camera & recorder
- Various other equipment
Primary Fueling Resources
- 20,000 gallons unleaded and 40,000 gallons diesel/bio-diesel at service center (Fuel purchased through Inter-local Contract)
- 2,000 gallons of diesel/unleaded at remote fire station and golf course

Secondary (Back-up) Fueling Resources
- Richardson – Wright Express Fuel Card (Various Retail Sites)

Dual CNG/LNG Fuel Facility

Richardson Service Center
Facility Infrastructure

- Should be designed to support all operations and functions
- Staging, storage, repair & maintenance, tools storage, etc.

Richardson:
- 18,000 sq. ft. facility with six work bays
- 8,000 sq. ft. parts warehouse
- 11,000 sq. ft. general warehouse
Warranty, Maintenance & Repairs

- Maintenance and Repairs are a necessity for longevity and operability of the unit.

- Warranties can impact operational costs as well equipment down-time for departments.

- Depending on complexity, repairs may be performed in-house, outsourced, or a combination of both.

- All maintenance and repairs must be documented.
Manufacturers recommend an oil change every 3,000 miles for typical vehicles.

Richardson introduced an oil analysis program in 2012. Technicians use a computer to analyze oil quality and determine if an oil change is actually needed.

Oil doesn’t wear out – the additive package depletes, or the oil becomes contaminated.

One police unit was able to go 20,000 miles before an oil change was actually needed.
A tire recapping program was instituted in 2003
- Cost reduction strategy
- Reduces the number of tires sent to scrap.

New 445/65R22.5 tire costs $600 versus $203 for a recapped version

Nitrogen Generation Machine purchased in 2006
- Inert gas that works better than compressed air.
Because manufacturer’s software is proprietary, in-house repairs are becoming less frequent.

Vehicles must be returned to the manufacturer for software upgrades and diagnostics.

Complexity Example: Laptop computer being used to program how the emergency lighting sequence and lighting functions are used in a Police Tahoe.
Complexity of Vehicles (cont.)
Established life-cycles are one of the most important tools to have in place.

Utilization reports and life-cycle costs go hand in hand.

Benchmarks for unit utilization should be established and used in justifying units and maintaining Fleet size.
Richardson’s Life–Cycles

- Truck Configurations, Classes 2 – 8, refer to DOT Classifications

- Life–cycles should be based upon historical data and the environment which they operate in.

<table>
<thead>
<tr>
<th>Description</th>
<th>Projected Life–Cycle (in years)</th>
<th>Projected Miles/Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loader/Backhoe</td>
<td>10</td>
<td>6,000+</td>
</tr>
<tr>
<td>Trucks</td>
<td>8</td>
<td>100,000+</td>
</tr>
<tr>
<td>Shuttle Buses</td>
<td>5</td>
<td>100,000+</td>
</tr>
<tr>
<td>Patrol Units (SUV)</td>
<td>3</td>
<td>120,000</td>
</tr>
<tr>
<td>Patrol Units (Sedan)</td>
<td>2</td>
<td>80,000</td>
</tr>
</tbody>
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Fleet Training Needs

- Training is important for technicians that work on the units as well as the operators who will use the vehicle.

- NFPA mandates that all technicians making repairs or modifications to emergency vehicles be certified through Automotive Service Excellence (“ASE”) or Emergency Vehicle Technician (“EVT”) designations.

- We regularly conduct vehicle care and usage training for our operators.

- For commercial vehicles, operators & technicians should be properly licensed.
Damaged Main Boom, Loader/Backhoe

Main Boom Arm had to be replaced
Total Cost of Repair = $19,979.67
Equipment Enhancements

- Systems can be purchased to automate some required routine maintenance
- Example – Automatic Lubrication System for greasing Front Loader
Motor Pools

- Sentimental tendencies can have an impact on fleet size and dispositions

- Utilization and life-cycle costs should justify whether each department needs their own unit

- Noting that several departments had similar classes of under-utilized equipment, Richardson began a motor pool program in 2013

- Do four departments need two backhoes each if only three of the eight are ever in use at the same time?
Ernie Ramos, *Fleet & Materials Manager*
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