



Comparing the alternatives

- ⦿ Each alternative fuel can offer advantages and disadvantages.
- ⦿ Make choices based on your application and intended use.
- ⦿ No “one size fits all” option.
- ⦿ Things to consider:
 - miles traveled daily;
 - highway miles or stop-and-go;
 - vehicle type/size.

CNG Fueling Options

- Publicly accessible fueling stations can be difficult to find. Know your vehicle range, and your fueling options.
- Fueling station at Wilsonville's fleet facility is currently fueling four small buses, but was designed to handle up to seven vehicles (six buses, and one service truck).
- This station was paid for via the reinvestment of BETC funds.
- No public stations near Wilsonville, but there is one in Eugene. ("Truck and Travel," current price \$2.29/GGE.)

Other things to consider

- ① Your maintenance facility.
- ① Who maintains your vehicles?
- ① Age of current fleet - when will you replace vehicles?
- ① What are your neighboring fleet operators up to? Opportunities for partnerships?

Prepare for future implementation

- ⦿ Order all gasoline fueled vehicles with “gaseous fuel prep package,” even if you do not have current plans to convert. OEMs offer this package for a nominal cost - currently between \$300-\$600.
- ⦿ Does not affect vehicle operation in any way, but allows for future retrofit to CNG or Propane.
- ⦿ Warranty requirement if a vehicle is converted.
- ⦿ Reputable conversion vendors will not convert vehicles without this prep package.

Facility considerations

- Maintenance shop code requirements.
- Infrastructure:
 - natural gas service sizing;
 - electrical system.
- Conduits, conduits, conduits.

How much per “gallon” of CNG?

- ⦿ Natural gas is billed in “therms.”
- ⦿ Convert therms to gallon equivalent, on an energy content basis.
- ⦿ 1.25 therms equals the energy content of one gallon of gasoline.
- ⦿ 1.25 therms natural gas, at \$0.97 per therm = \$1.21
- ⦿ Required compressor maintenance = \$0.31
- ⦿ Electricity, at mid-peak KW rates = \$0.02

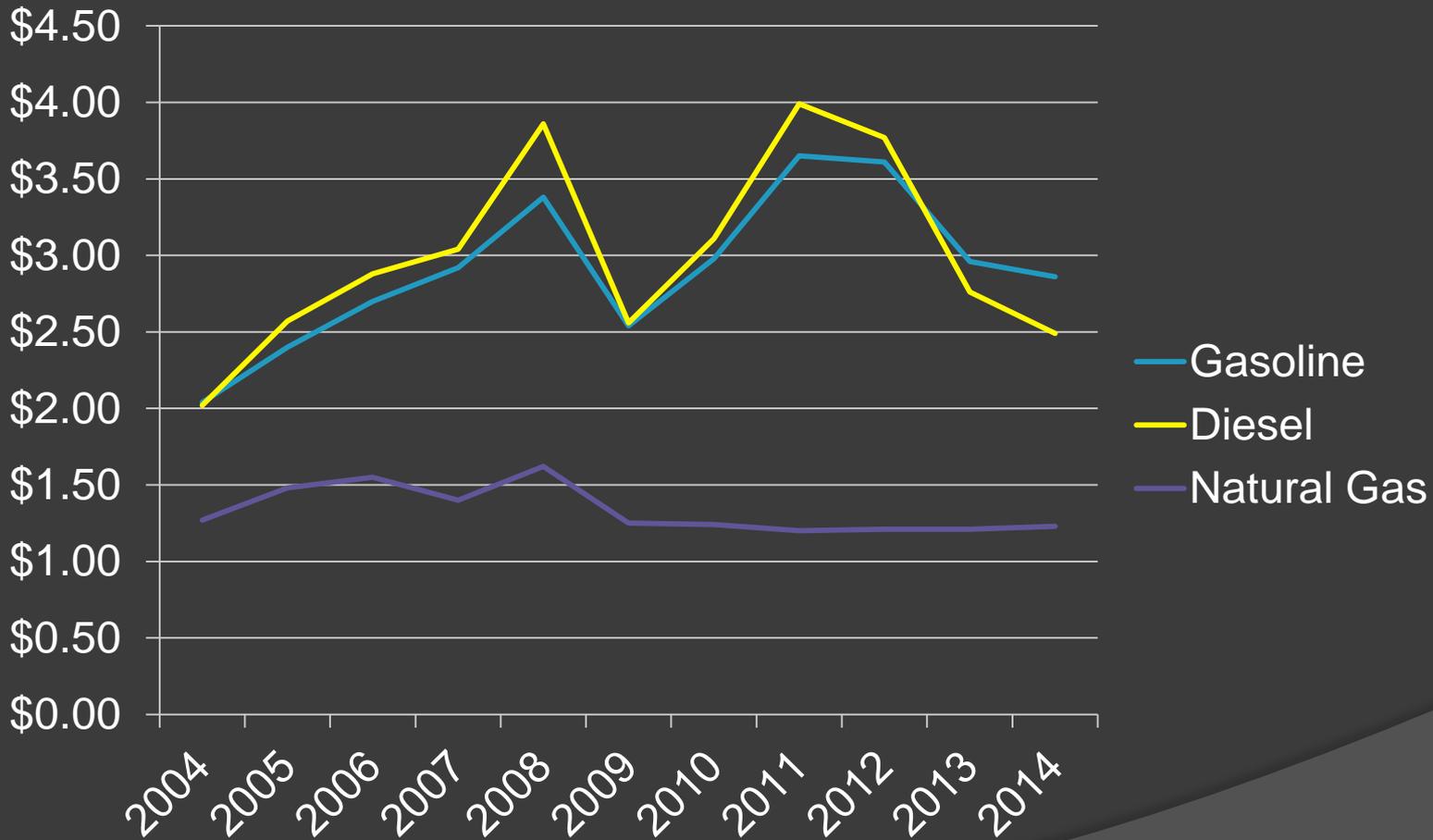
\$1.54 per GGE

Wilsonville's experience

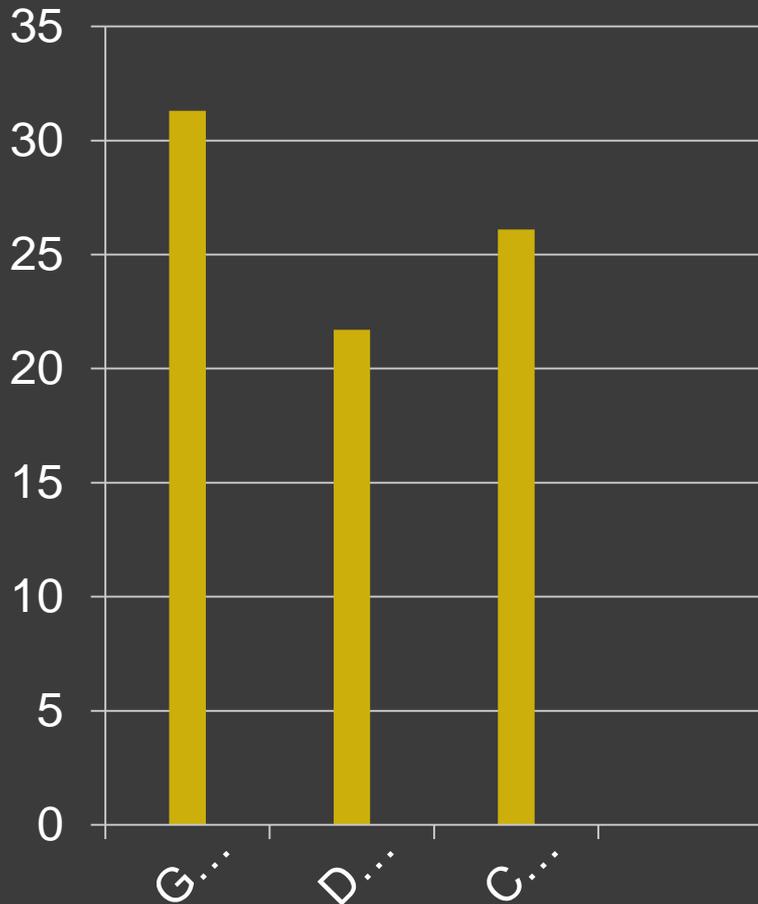
- Support from elected officials.
- Timing of new maintenance facility.
- Successful grant applications.
- BETC funds to invest.

Historical fuel price comparison

Sources: Fleet Dept. fuel purchase records, NW Natural Gas



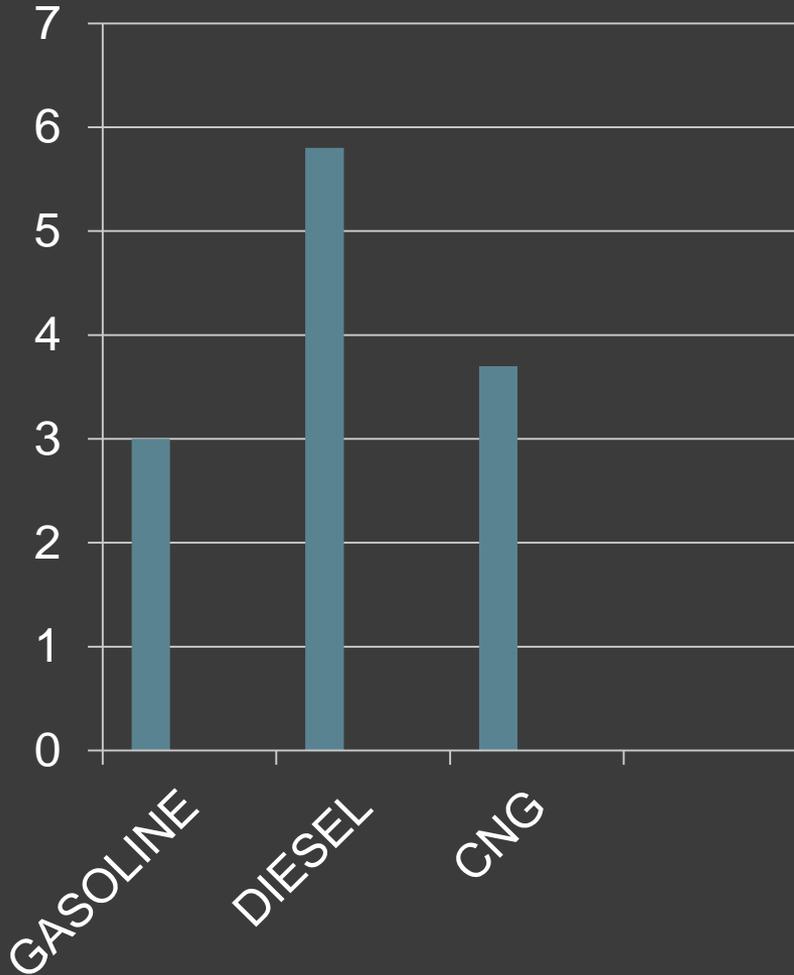
Current fuel costs, in cents per mile



- Fuel cost comparison
 1. Gasoline \$2.13 (6.8 MPG)
 2. Diesel \$1.98 (9.1 MPG)
 3. CNG \$1.54 (5.9 MPG)

Routine maintenance costs

(in cents per mile)



- ⦿ Gasoline narrowly beats CNG. Many similarities, although CNG produces substantially lower emissions.
- ⦿ Diesel is highest. Mainly driven by:
 1. Modern emissions equipment;
 2. Larger oil capacity;
 3. Shorter drain intervals;
 4. Higher filter costs.

Fuel and Maintenance (cents per mile)

