November 27, 2012- Land of Sky’s Clean Cities Coalition presented to the Board, encouraging Waynesville to push for alternative clean fuels usage for Town vehicles.

June 17, 2013 Board approved the Assigned Vehicle Program for the Police Department, to include AFV’s (propane).

FY-14 Budget included Propane Filling Station at Public Works and the purchase of 14 Dodge Chargers for the Police Department to implement assigned vehicles.
Program History and Highlights

- October – December 2014 Propane Filling Station Constructed and an initial 18 vehicles converted to propane
  - 14 new Police Chargers plus 4 existing Town vehicles

- To date an additional 13 vehicles and 3 mowers have been converted to propane

- The Town had an initial goal of 85% propane usage in these vehicles
  - So far; we’re averaging just over 60% usage among all Town propane vehicles
Bumps in the Road

- Dodge Chargers are a new platform for Propane AutoGas
- Engine/CPU Overheating issues
- Filter change/Software update
- Staubli Nozzle installation issues
- March 2017 Autogas fleet maintenance performed on all propane vehicles
Cost to Date

- Alliance provided dispenser & tanks at no cost to Town

- Electrical work to tie into our Fuelmaster System $8,150.00

- Propane conversions were $5,600 - $5,800 (each) depending on vehicle

- To date we have converted 31 vehicles at a cost of $163,400 (Alliance converted two vehicles at no cost)

- Mower Conversions are $850 each

- The Town has purchased 68,000 gallons of propane at an average cost of $1.26 per gallon; Approximately $85,680
Cost Comparison

- Fuel station and conversions $163,400

- Fuel Savings
  - (to date, at $1.11/gal. diff) $78,200
  - Sept. 2014 to Aug. 2017 (2.93 years)

- Difference $85,200
  - Need 3.27 more years of similar savings to break even
    - Approximately $26,066 per year
Propane Pros

- Propane has been cheaper (by about $1.11 per gallon)
  - Over the life of Waynesville’s program
- Propane is abundant and American
- Propane is much cleaner:
  - 24% less Greenhouse Gas (GHG) emissions
  - 20% less Nitrogen Oxide (NOx) emissions
  - 60% less Carbon Monoxide (CO) emissions
  - 100,000 fewer lbs. of carbon emissions per year
- Propane is safer than gasoline in a collision
Propane Cons

- It’s more tedious to dispense (specific process)
- Vehicles have to be converted to run propane
- Conversions add to vehicle costs
- Have to have a high usage to break even on conversions
- Has been a learning curve for operators and maintenance staff
Conclusion

- So far in FY-2017, we averaged 65% propane usage over all vehicles
  - Since we are not reaching our goal of 85% propane usage; we have a “missed” a savings of approximately $14,000 per year.
- At 65% usage; conversion/implementation costs will be recouped by FY-2021 (FY-2019 at 85% usage)
- Environmental Impact (over one year):
  - Our Fleet used 385 less barrels of oil by utilizing AutoGas
  - Reduce CO2 Emissions by 50 tons
  - Equivalent to planting 1,176 trees that grew over 10 years
- Reducing the Town’s dependency on foreign petroleum products
Cost Conclusion

- Total spent on propane program: $163,400
  - Since FY-2014
- Projected savings over life of vehicle(s): $186,200
  - Assuming vehicles are kept 7-8 years as proposed (June 17, 2013)
- Total Savings/Cost Benefit to Town: Net gain of +$22,800
  - Maintaining 60% usage

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- If we keep vehicles 10 Years (at current 60%) Net=+$102,600
  - Won’t work for patrol vehicles
- If we increase average usage to 80% Net=+$143,600
  - For life of vehicles (next 3 years)
Questions