

CASE STUDY: GASTON COUNTY PUBLIC WORKS

PROGRAM SNAPSHOT

In December, 2011, Gaston County began converting sixteen vehicles to the Prins VSI bi-fuel LPG system. We were fortunate to have funding provided by the American Recovery and Reinvestment Act (ARRA) and administered by the NC Solar Center. Having already begun purchasing HEV vehicles, Gaston County was interested in other methods to reduce gasoline usage and curtail harmful emissions from our Fleet. We converted 6 Ford E450 vans and 10 Ford E350 vans. Fifteen of these vans are operated by Gaston County ACCESS, our regional transportation system, and one van is operated by the Sheriff Office as a prisoner transport vehicle. All the conversions were installed by Light-n-Up in Spartanburg, SC. Alliance AutoGas supplied the fueling station and our local Blossman Gas franchise supplies the LPG. The ACCESS vehicles average 20,000 miles per year each and the Sheriff Office transport van averages 30,000 miles per year. We estimated using 26,500 gallons of LPG per year but our actual usage has been much higher.

WORKING WITH ALLIANCE AUTOGAS

Alliance AutoGas was instrumental in helping us apply for the ARRA funding, coordinating with Light-n-Up to accomplish the installations, and installing/setting up the fueling station. We completed all 16 conversions in 2 months and the process was smooth and efficient. We performed 4 of the conversions at our Fleet Maintenance facility with the help of Alliance AutoGas staff so that our technicians would be intimately familiar with the systems and how they worked. Our technicians also attended training classes sponsored by AAG. We can now service/troubleshoot most any issue that may arise with the Prins system.

RESULTS AND AUTOGAS BENEFITS

The results have been excellent. In 2012, we used 35,683 gallons of LPG saving Gaston County approximately \$69,500. In 2013, we used 36,421 gallons of LPG saving approximately \$72,000. This includes the savings of LPG over gasoline and the \$.50/gallon federal rebate. Once we fine-tuned each vehicle, we have had minimal issues with running LPG.

MOVING FORWARD

Beginning in March, 2014, we began converting another 16 vehicles to run the Prins system. We are now finished with those conversions. Our fleet now numbers 32 LPG capable vehicles. Funding was provided by the 2013 CFAT grant, administered by the NC Solar Center. The Clean Fuels Advanced Technologies Grants purpose is to help lower harmful greenhouse gas emissions in the EPA non-attainment areas of North Carolina. Carolina CAT and Force 911 performed the conversions for us. The vehicles converted this round were 2 Ford F150 trucks, 2 Ford Crown Victorias, 5 Ford E350 vans, 6 Ford E450 vans, and 1 2014 Dodge Charger (one of the first in NC). These vehicles will be used in the Public Works Department, Parks and Recreation, ACCESS, and the Sheriff Office. The vehicles converted range from general work trucks, regional shuttle bus transportation, state wide prisoner transports, and Sheriff Office administration staff transportation. Sherriff Alan Cloninger has been pleased so far with the savings LPG provides his department and the additional range the bi-fuel setup provides his prisoner transports. We are working with AAG on his behalf to determine if converting the new Ford Interceptor Explorers and Sedans will be possible. If so, Sheriff Cloninger plans to convert all of his incoming new Interceptor vehicles and future



Gaston Co. Public Works
Gastonia, NC
Michael Lee,
Project Coordinator

FLEET STATISTICS

FLEET TYPE: Public Safety and County Service Departments (Public Works, Parks & Rec, Sheriff Office, ACCESS)

AUTOGAS VEHICLES IN FLEET:
32

TOTAL ESTIMATED ANNUAL SAVINGS:
\$120,000

ADDITIONAL VEHICLES SLATED FOR AUTOGAS CONVERSION:
0 at this time

ANTICIPATED ANNUAL USAGE (gallons of gasoline displaced):
60,000 gallons

ANNUAL MILEAGE (per vehicle):
15,000 to 20,000

AUTOGAS FUELING:
Onsite autogas fueling infrastructure, including two 1,000-gallon autogas tanks

TIME OPERATING ON AUTOGAS:
2.5 years

CASE STUDY: GASTON COUNTY PUBLIC WORKS

MOVING FORWARD (CONTINUED)

Interceptor vehicles as well. We have also installed another LPG fueling station, provided by AAG. Our goal is to almost double our current usage to approximately 60,000 gallons of LPG used per year. Both fueling stations are linked to the County network and provide us with offsite monitoring and setup.