

Centre Area Transportation Authority (CATA)

**Compressed Natural Gas (CNG)  
Vehicle Program**  
1993-Present

Hugh Mose, General Manager

May 12, 2011



# Who We Are:

Our Facilities



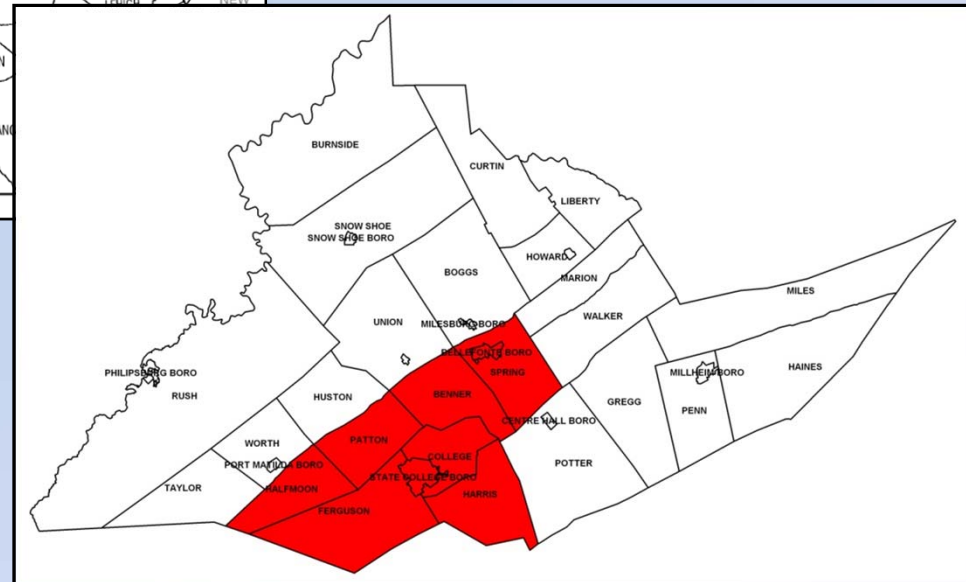
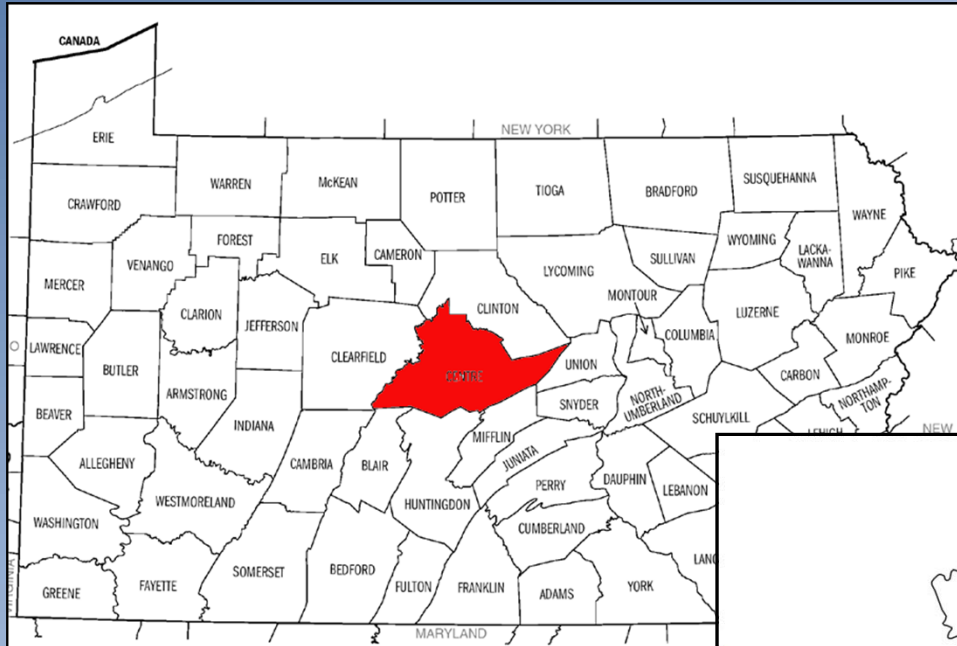
Our Fleet



11/24/2009  
Our People



# CATA Service Area



# CATABUS COMMUNITY SERVICE (CENTRE LINE)

Regional bus system connecting participating municipalities with Downtown State College and the Penn State Campus.



# CATABUS CAMPUS SERVICE (LOOP/LINK)

Fare-free Downtown/Campus circulator LOOP and cross-Campus LINK service.



# CATARIDE

Curb-to-curb transportation for seniors and people whose disabilities prevent their use of fixed-route buses.



# CATACOMMUTE

Carpool matching, Vanpools and Guaranteed Ride Home for long-distance commuters.



# Compressed Natural Gas (CNG) Vehicle Program



# 1993

The CATA Board of Directors decided to replace all of CATA's fleet with buses fueled by compressed natural gas (CNG).



# 1995

CATA, the PA Dept. of Environmental Protection and Columbia Gas of PA partnered to build CATA's CNG compressing, storage and dispensing facility.



# 1996

CATA took delivery of its first 16 CNG buses, arranged with an adjacent UniMart to provide CNG to the public.



# 1997, 1998, 2001, 2004

CATA purchased 34 additional CNG-fueled low-floor New Flyer and Eldorado buses.



# 1999

A third CNG dispenser, donated by Columbia Gas, was installed to provide additional fueling capacity.



# 2002

Canopy placed over the CNG dispenser so that the Maintenance staff could fuel buses out of the weather.



# 2003

A second dispenser was installed to provide a back-up.



# 2005

Arrival of two Ford CNG-fueled minibuses gave CATA the distinction of being one of the first transit systems on the East Coast with a 100% CNG bus fleet.



# 2006-2007

CATA and PSU's Larson Transportation Institute (LTI) partnered to convert a CNG bus to run on a Hydrogen/CNG blend (HCNG).



# 2008 - 2009

CATA replaced two of the original CNG compressors and added a new gas dryer.



# 2009 - 2010

CATA acquired ten “used but still useful” 35’ CNG buses from Orlando; subsequently traded two of them for 40’ buses from Indiana, PA.



# CNG Program Components: Fueling Facility



Compressors



Storage  
Tanks



Fueling  
Station

# CNG Buses



Clamshell  
Cowling



CNG  
Tanks



Fuel  
Filler

# Building Improvements



Natural Gas  
Sensors



Emergency  
Shut-off  
Switchgear

# Employee Buy-in

Initial resistance gave way to skepticism, then tolerance, then support, now enthusiasm



# Benefits: Public Support

The CNG initiative has been more well-received by the general public than any program in CATA's history.



# Funding Strategy

By going with CNG, CATA has been able to secure additional funding.



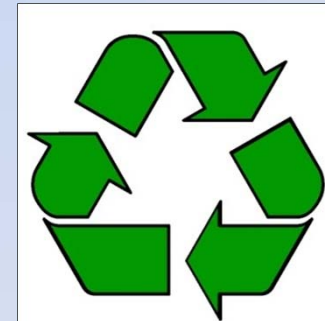
# “Locally Grown” Fuel

Even before Marcellus Shale, Centre County was a natural gas producing area.



# Energy Independence

Over 90% of the natural gas America uses is domestically produced.



# \$\$\$ Savings

Although the cost or savings has fluctuated over time, right now CATA is buying natural gas for a fraction of the cost of diesel fuel.



# It's the Right Thing to Do!

We're promoting energy independence, supporting the state's economy, helping to keep the air clean, and saving money.



# The Numbers

- Costs:
  - Infrastructure - \$2.0+ million invested
  - Buses – cost an extra \$50,000+ each
  - Additional maintenance costs - ???
  - Added maintenance staffing – 0.5 FTE
- Savings:
  - Current CNG cost = \$0.92 per diesel gallon equivalent (DGE)
  - With Alt Fuels tax credit - \$0.38/DGE!
  - Most recent diesel purchase = \$3.699/gallon

# Challenges

- The “Penalty for Taking the Lead”
- Technical “Surprises”
- Natural Gas Purchasing Know-how
- Lack of Redundancy
- Fear of Natural Gas Service Outage
- Natural Gas Vehicle De-Emphasis
- Resurgence of Interest in NGVs

# Next Steps

- Purchase of 11 New 40' CNG Buses
- CNG Tank Replacement
  - Tanks are certified for only 15 years
- Replacement of Gas Detection System
- Extension of NGV Tax Credit
- Future Acquisitions
  - CNG-electric hybrid buses
  - CNG powered service vehicles
  - CNG articulated buses

# One Non-Problem: Safety!

CNG is a very safe fuel. Our one incident had a very happy ending!



# Questions?

**Hugh A. Mose**

CATA General Manager



**Centre Area Transportation Authority (CATA)**

2081 W. Whitehall Road, State College, PA 16801

(814) 238-CATA(2282)

[www.catabus.com](http://www.catabus.com)