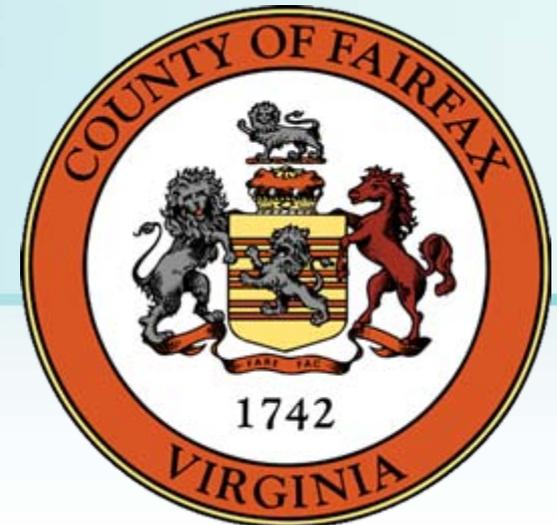
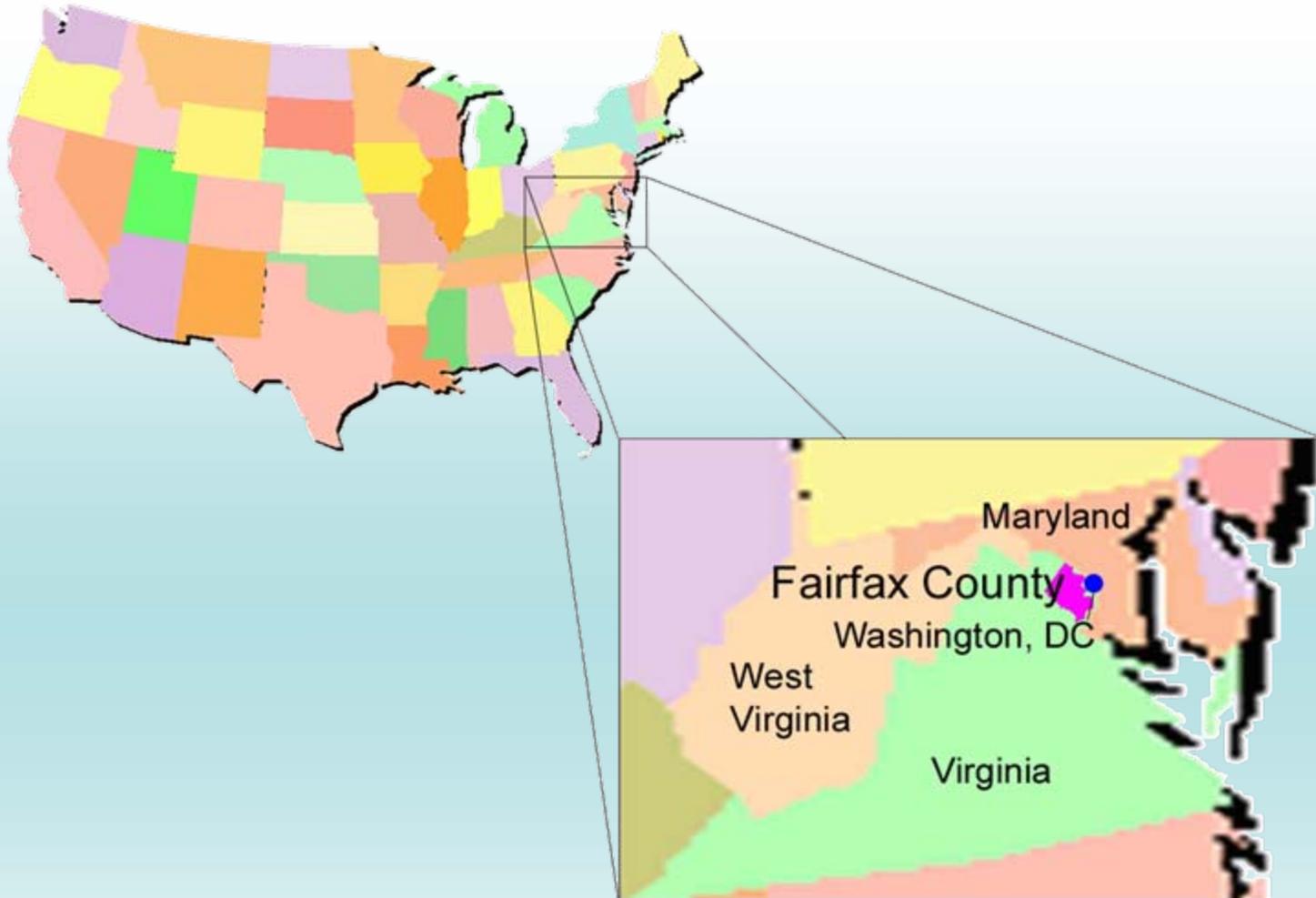


# Direct use of Methane Gas

Amarjit S. Riat, P.E  
Assistant Director  
Solid Waste Management Program,  
Department of Public Works and  
Environmental  
Services



# Where is Fairfax County, VA?



# Diversity of Direct Use Projects

## Diversity of Project Types Direct Use of LFG



**Pottery Studio Sugar Grove, NC**



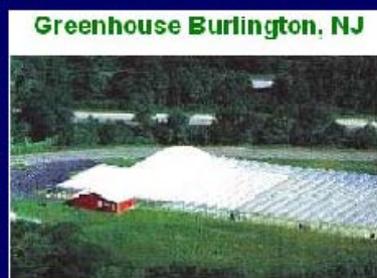
**Wastewater Treatment  
Arlington, TX**



**High-Btu Upgrade  
New York, NY**



**LFG-fired Boiler Ft. Wayne, IN**



**Greenhouse Burlington, NJ**



**BMW Co-Gen Turbine Project  
- Greer, SC**

# Fairfax County LFG Direct use Projects

- LFG Fuel
- LFG to Heat
- LFG for Arts studio



# Methane-Fuel Project

- LFG as fuel source for combusting sludge at Fairfax County waste- water treatment plant.
- 3 miles (4.8 km) pipeline was built to the plant.
- Pipe line cost \$1.25 Million
- Compressor Station
- Cost \$1.00 million
- Compressor/Dryer
- Annual savings over using the utility's gas: \$1 million annually.
- Low Pressure Gas: 10 psi
- No Problems.



# Methane to Heat Phase I

- LFG infrared heater project heats landfill shop.
- Reasonable payback: 5 Years
- Less than 30 cfm LFG needed to heat about 6,500 ft<sup>2</sup> (604 m<sup>2</sup>).
- Fuel cost saving \$20,000/Year
- Minimal gas treatment.
- Low sophistication - simple to operate
- Maintenance
- Problems

# Landfill Maintenance Shop



# LFG Cleaning Process for Shop Heating



# LFG Heater

Overhead  
heating  
system in  
shop



# Methane to Heat Phase II

- County Vehicle Maintenance Garage
- 3500 LF pipe line and Compressor Station for conditioning and conveying gas
- Infra-red Heaters 4.52 Million BTU
- 100 CFM required to heat 30,000 SFT
- Fuel cost Saving \$70,000/annually
- Total Project Cost \$300,000
- Minimum maintenance, operating efficiency 99%





Vantage HE

**CAUTION**

1. Always use proper safety procedures when working on gas appliances.	2. Do not touch the burner or gas valve when the furnace is operating.
3. Do not use flammable liquids or gases near the furnace.	4. Do not use the furnace for anything other than its intended purpose.
5. Do not attempt to repair or modify the furnace yourself.	6. Do not use the furnace if you smell gas or hear a clicking sound.
7. Do not use the furnace if the burner is not lit properly.	8. Do not use the furnace if the gas valve is not fully open.
9. Do not use the furnace if the air filter is dirty or clogged.	10. Do not use the furnace if the vent pipe is blocked or damaged.

# Methane use at Arts Center (Proposed)

- Glass Blowing
- Pottery Studio
- Space Heaters

# Questions?

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