Current Fairfax County Efforts in Support of a Cool Counties Initiative

Some examples of current Fairfax County efforts in support of a Cool Counties Initiative include:

Green Vehicle Solutions:

- **Hybrid Vehicle Replacement Program** - The fleet currently has 90 hybrid vehicles: 56 Toyota Priuses and 34 Ford Escape Hybrids. The county plans to replace an additional 10 vehicles in 2007 with Hybrid equivalents. This would bring our total hybrid fleet to 100 by year end. In 2005 the fuel savings on using hybrids amounted to 12, 939 gallons of unleaded gas which equates to a savings of 126 tons of CO_2 emissions. Most recently, the county converted one of its Priuses to a "plug-in-hybrid-electric" vehicle. This car travels up to 30 miles on electric power alone before dual power is used and could have a fuel efficiency averaging over 100 miles per gallon of gas. The county is also pursuing grant funds to have a plug-in-hybrid-electric school bus transition completed. It is expected that a 40 percent decrease in diesel fuel consumption would be achieved by this process.

Energy Efficiency Solutions:

- **Green Buildings** - The Department of Public Works and Environmental Services has informally adopted the LEED rating criteria for its building designs. DPWES has also accomplished innovative energy saving measures in many of its industrial plant processes. For example, the Noman M. Cole, Jr. Pollution Control Plant uses methane gas from landfills in its sludge burning process. Methane gas is also used to generate electricity at the I-95 landfill site. The Division of Solid Waste collects and transports trash in Fairfax County to produce electricity in the Waste to Energy Facility. The Department of Vehicles Services is also very active in reducing energy consumption for the County's vehicles fleet with the use of hybrid cars and proposed electric cars. The Fairfax Center Fire Station, a green building project, opened recently and a second green building fire station project, Crosspointe is expected to open soon. DPWES is incorporating the green building approach on nearly twenty active building development projects. The Park Authority will also be using Green Building technology on an expansion to one of its Recreation Centers. In addition, there are several other Green Building initiatives taking place in the county.

- **Energy Efficiency** - The county's Facilities Management Department has started an energy efficiency program for the buildings in its inventory. In 2005, 4,232,639 kWh were saved and in 2006 an additional 2,398,036 kWh were saved. Natural gas consumption was also reduced by 111,440 therms per year. These savings would be higher but for the new square footage that came on line during those fiscal years. This Department has set an internal goal of 1 percent reduction in kBTU/SF and recent numbers show an annual reduction averaging 1.9%. The annual savings are cumulative; therefore, after a 10 year period we expect between 10-20% reductions in energy usage per square foot.

Renewable Energy Solutions:

- **Wind Energy Purchase -** The county purchased 5.8 million kWh wind energy in 2005 from Washington Gas Energy Services/Community Energy/Mountaineer Wind Farm in West Virginia, bringing a reduction of 6.2 million pounds of CO_2 in the two-year contract. Fairfax County will continue the commitment of purchasing 5% of the general county's energy from wind in 2007 and 2008, and have made a commitment to expand to 10% of the general county usage in 2009.

- **Waste-to-Energy -** The Department of Public Works and Environmental Services has adopted a waste-to-energy (WTE) approach, recovering methane (CH_4) and controlling nitrous oxide (N_2O) and generating electricity from solid waste. Methane traps 21 times more heat per molecule than CO_2, and N_2O absorb 310 times more heat. The WTE plant at the I-95 landfill generates electricity offsetting the CO_2 emissions equivalent to that of an 80MW coal-fired power plant. Also, gas produced can be sold so the recovery offsets energy that would be generated by fossil fuel.

- **Land Fill Gas Recovery and Utilization** - The county is in the process of using landfill gas (LFG) generated at the closed I-66 Sanitary Landfill as a fuel source to heat county buildings on the West Ox Campus. In particular, the new Department of Vehicle Services (DVS) garage has radiant heaters that can be easily converted to burn LFG, as was done for the shop building at the I-95 Landfill. In 2005, the county began the Phase 1 planning and design for the project. Construction of the necessary infrastructure to use landfill gas from the I-66 Complex (closed landfill) as a source of renewable energy to heat the Transfer Station Administration Building and Department of Vehicle Services Maintenance Garage will be accomplished in Phase 2, which is planned for 2007. Total project cost is $300,000 with estimated annual savings of $65,000 per year in reduced natural gas consumption. LFG pipeline would be approximately 2,500 feet from the existing flare station to the DVS shop. The project would require 4" HDPE pipe to transmit LFG. Approximately 150-200 scfm of LFG would be required to heat the garage. In addition, LFG is also used to generate an

additional 6 MW of electricity at I-95, and as fuel for sludge processing at Noman Cole Wastewater Treatment Plant.

Land Use and Transportation Policy:

- **Board of Supervisors' Environmental Agenda and of the county's Comprehensive Plan** - Transit-oriented, pedestrian friendly, mixed use centers. The concentration of new development in relatively high intensity, transit-oriented centers characterized by a mix of residential, employment and retail uses, and the provision of opportunities for non-motorized transportation to, from and within these centers should serve to reduce, in aggregate, the number of motor vehicle trips and vehicle miles traveled, and the associated CO_2 emissions, that would otherwise occur through more traditional suburban development patterns in the region. Numerous Area Plan Amendment and zoning actions have been taken to encourage and implement this approach to development, and the Planning Commission is reviewing the concept of transit-oriented development in order to provide a definition and guidance for TOD to include in the Comprehensive Plan.

- **Ride Sharing and Telework** - Transportation policies that serve to reduce vehicle trips and vehicle miles traveled (e.g., provision of transit support facilities; transportation demand management efforts such as ride sharing programs and incentives, **telework** opportunities, bicycle parking and shower facilities in offices, shuttle bus service, transit incentives, etc.) are implemented routinely through the zoning process.

Numerous transportation programs are also in place that serve to reduce vehicle trips and vehicle miles traveled, therefore reducing overall CO_2 emissions. These include:

- **Employer Services Program** – This program promotes transportation demand management strategies and associated outreach efforts to employers in Fairfax County, thereby reducing single occupancy vehicle trips.
- **South County Bus Plan** – This program has increased bus ridership significantly on Richmond Highway.
- **Fairfax County Transit Program** – This multi-modal transportation program supports Metro and VRE services. Metrorail trains will soon expand to eight car trains, VRE will have new double deck passenger cars, and CUE bus service will continue to be subsidized. Ridership on all transit systems (Fairfax Connector, Metro, VRE) serving the county has increased. To further encourage the use of mass transit, on Code Red Days, the entire region's transit systems offer free rides to all passengers.
- **Metrocheck** – This is a fare card voucher program that benefits employees using public transportation. Fairfax County's Employees Transportation Benefits Program provides up to $105.00 per employee for transportation by bus, rail, or vanpool.
- **Ridesources** – This program provides ridematching services to county employees and residents along with a marketing program to encourage its use.

In addition, the county has retrofitted 436 school buses with diesel particulate filters that reduce NOx emissions and indirectly benefit greenhouse gas reduction.

- Also of particular note is the **county's telework program**. Currently, more than 1,000 county employees telework. Fairfax County is the first jurisdiction to reach — and then exceed — the regional goal set by the Metropolitan Washington Council of Governments to have 20 percent of the eligible workforce teleworking by the end of 2005. The county's outreach efforts on telework and other transportation demand management efforts have broader benefits countywide.

- Facilities that support non-motorized transportation also serve to reduce motor vehicle trips and motor vehicle miles traveled. The county has provided substantial funding for the construction of trails in support of non-motorized transportation.

- **Tree preservation and planting** - Planting efforts can also reduce CO_2 concentrations, as trees sequester carbon by absorbing CO_2 during photosynthesis and by storing carbon as biomass. For every acre of forest that the county is able to preserve and keep healthy, approximately 20 to 30 tons of carbon is stored. Fairfax County's tree canopy is currently estimated to cover 41 percent (104,000 acres) of the county; therefore, this equates to between roughly two and three million tons of carbon storage. An earlier study estimated that the biomass of the county's tree canopy stored over 3.5 million tons of carbon. It has also been estimated that the county's current tree canopy absorbs and stores an additional 11,700 tons of carbon annually. A single tree is capable of absorbing and storing an additional 600 to 700 pounds of carbon per year. We therefore calculate that between 110 and 130 trees can offset the carbon "footprint" (77,400 pounds of carbon dioxide) that is estimated to be produced by each household in Virginia annually. These data underscore the value of our urban forestry programs and other efforts that serve to protect and restore tree cover. Requirements for the preservation of Resource Protection Areas and commitments during the zoning process to tree preservation efforts, landscaping efforts and the preservation and restoration of Environmental Quality Corridors all serve to enhance overall carbon sequestration, thereby supporting reduced atmospheric CO2 concentrations. The establishment and enforcement of limits of clearing and grading on site plans, subdivision plans and grading plans also support reductions in CO2 concentrations, as do tree planting initiatives and public outreach focusing on land stewardship issues such as tree preservation and planting. The county continues to support legislative efforts to strengthen local government authority to require tree preservation during development.

National Recognition

- 2007 Green Power Partner recognized by the U.S. Environmental Protection Agency (EPA) for efforts to reduce the risk of climate change through green power purchasing.
- 2007 Energy Star Partner recognized by the U.S. Environmental Protection Agency.
- 2006 National Association of Counties Achievement Award for Environmental Excellence A 20-Year Vision - Environmental Improvement Program.
- 2006 Fairfax County was first among large counties in National Association of Counties Change a Light Campaign, a two-month nationwide campaign challenging county employees to change incandescent bulbs with compact florescent bulbs.
- 2005 U.S. Environmental Protection Agency Landfill Methane Outreach Program Community Partner of the Year Award for use of landfill gas as a renewable energy source, saving the county $5,000 a year in fuel.
- 2005 National Association of Counties Achievement Award for Improving Air Quality in the Washington Metropolitan Region, a Commitment to Air Quality Excellence - Air Quality Protection Strategy.