



DEPARTMENT OF ENVIRONMENTAL PROTECTION

Isiah Leggett
County Executive

Robert G. Hoyt
Director

MEMORANDUM

February 18, 2010

TO: Isiah Leggett
County Executive

Nancy Floreen, President
Montgomery County Council

FROM: Robert G. Hoyt, Director 
Department of Environmental Protection

Jane Nishida, Co-Chair 
Sustainability Working Group

SUBJECT: Annual Report of the Sustainability Working Group

Pursuant to Section 18A-14(e) of the Montgomery County Code, the Sustainability Working Group (SWG) is pleased to submit an annual report to the County Executive and County Council that specifies:

1. the actions taken to implement the Climate Protection Plan in the preceding fiscal year; and
2. whether the County is meeting the goals identified in the Climate Protection Plan.

Following the transmission of the County's first comprehensive Climate Protection Plan (CPP) in January 2009, the focus of the SWG and its member departments and agencies shifted to implementation. The attached matrix reflects the results of these efforts. As you can see from the matrix, the County has begun to implement all but a handful of the 58 actions recommended in the CPP. The County should be commended for this work, but we clearly have a very long way to go.

Montgomery County's CPP sets an ambitious goal of reducing the County's GHG emissions (relative to the FY05 baseline) by 10 percent every five years between 2010 and 2050. This translates to an 80 percent reduction by 2050.

A draft independent analysis of the CPP conducted by Science Applications International Corporation (SAIC) indicates that the County, were it to implement the CPP's most viable short term actions, would achieve only 12 percent of the total reductions needed to meet its long-term goal. In short, the report notes that, "the County may need to consider further steps beyond those contemplated in the Climate Protection Plan to help ensure that the 2050 goal is met." (Green Map: Implementation Plan for the Climate Protection Plan, SAIC, Draft, January 2010.) Over the next few months, the SWG will review SAIC's analysis and use the report to help guide future discussions.

Looking ahead over the next year, the SWG plans to focus on the following areas:

- Energy Efficiency – Numerous recommendations in the CPP relate to energy efficiency and can be pursued immediately utilizing funding received through the Energy Efficiency and Conservation Block Grant funds. These include the Home Energy Loan Program, commercial/multi-family energy efficiency analyses and incentive programs, County and HOC building retrofits, and training for building energy managers, energy efficiency analysts and contractors.
- Education and Outreach – This is a top priority for the SWG and includes, among other initiatives, development of education and outreach materials, and the establishment of a Community Leaders program and "green" coalition to help raise awareness of climate change and sustainability issues and spur action on the part of all those who live and work in the county.
- Long-Term Sustainability Issues – While the SWG's initial charge was to develop the CPP, we are interested in broadening our focus and subsequent reporting to include issues beyond climate change (e.g., water and air quality, conservation of natural resources, etc.) which may affect sustainable development in the county.

We would also like to highlight an initiative that the County is involved in that should be of great benefit moving forward as we seek to understand the impact of development decisions on greenhouse gas emissions. The County is one of four jurisdictions selected to receive technical support through the U.S. Environmental Protection Agency's Smart Growth Implementation Assistance program. Specifically, this assistance is designed to expand the County's analytical capacity to facilitate a more detailed picture of the emissions impacts of major infrastructure investments and land use policy decisions (e.g. area and sector plans). Work is expected to begin in the next couple of months. A draft Statement of Work for this effort is attached.

We would be pleased to meet with you to discuss this information in greater detail. Thank you for your consideration.

**Implementation Status of 2009 Climate Protection Plan Recommendations
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Item #	Short Description	Implementation Steps to Date
RE-1	Maintain the commitment of the County government and County agencies to purchase a percentage of annual electricity consumption from clean energy sources. Establish energy policy criteria recognizing the benefits and prioritizing the purchase of various clean energy options.	<ul style="list-style-type: none"> • The County government, County agencies, and municipalities executed a contract that increased the volume of renewable energy purchased (via Renewable Energy Certificates) by over 200% above FY08. • The County is working with the University of Maryland to identify and, if viable, procure long-term renewable energy (electricity and RECs) from regional sources. • WSSC continues to purchase a third of its power directly from a wind farm in southwestern Pennsylvania and will be paying a fixed price for this clean energy for a decade. According to EPA, WSSC is the #5th largest purchaser of clean, renewable energy in the United States.
RE-2	Adopt building design guidelines applicable to all County government and agency buildings requiring the use of geexchange, or the most effective system available, as the primary heating and cooling energy source.	<ul style="list-style-type: none"> • In FY10, MCPS increased the number of schools with geo-exchange from four to eight including six elementary schools, one middle school, and one high school. Each of these systems is the primary source of heating and cooling for the facility. An additional 12 geo-exchange projects are in construction or design.
RE-3	Support the installation of solar photovoltaic systems through the use of power purchase agreements in public facilities.	<ul style="list-style-type: none"> • MCPS is hosting production-scale solar photovoltaic (PV) systems on four schools with a capacity of 614 kilowatts (kW) through power purchase agreements. MCPS is increasing the number of hosted solar PV systems to eight. When these are complete, the total solar PV capacity hosted by MCPS will exceed 1 megawatt. These systems will provide between 20-40% of the electricity requirements during peak production hours for these schools. • DGS has developed RFP language for power purchase agreements or leases to site renewable energy on County facilities. • The existing 83 kW of College-wide photovoltaics are being supplemented by an additional 25 kW on the new Rockville Campus Science Building and 35 kW on the new Germantown Campus Bioscience Education Center. Additional array opportunities are being examined as well as a condition assessment of the existing 900 evacuated tube solar thermal array on the Germantown campus.
RE-4	Provide revolving and low-interest loans for on-site renewable energy installations.	<ul style="list-style-type: none"> • The Home Energy Loan Program (HELP) will provide loans to homeowners for energy efficiency improvements and renewable energy projects, with repayment of loans through the property tax bill. The County has allocated approximately \$1.5 million of Energy Efficiency & Conservation Block Grant (EECBG) funding to support the development of the program, and is evaluating long-term funding strategies such as the qualified energy conservation bonds. • The County is working with the Maryland Clean Energy Center (MCEC) to develop a model program that could be utilized throughout Maryland.

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RE-5	The County should facilitate customer aggregation of renewable energy, including voluntary purchases of electricity from renewable sources or renewable energy certificates, and renewable energy installations.	<ul style="list-style-type: none"> • Montgomery County is working with Nonprofit Montgomery and the Arts & Humanities Council to host a forum with competitive energy suppliers to explore options to purchase competitive energy supply, preferably clean energy, for non-profits in the County. If cost-efficient purchasing options are identified, the intent is to pool purchases for participating nonprofits that will reduce electricity costs.
RE-6	Establish a public-private, non-profit entity to promote, facilitate, develop and invest in clean energy sources for the benefit of Montgomery County agencies, businesses and residents.	<ul style="list-style-type: none"> • In March, 2009 Montgomery County was selected to host the Maryland Clean Energy Center (MCEC). The MCEC will provide a coordinated approach to building a strong, clean energy economy in Maryland through technology commercialization, business incubation, technology fund development and operation and workforce development and training.
RE-7	Investigate the feasibility of adding sustainable energy biogas/combined heat & power (CHP) facilities to WSSC Seneca and Piscataway wastewater treatment sites.	<ul style="list-style-type: none"> • WSSC's FY10-15 approved CIP includes \$345,000 for a feasibility study to develop a comprehensive program for the engineering, design and construction of sustainable energy equipment and systems to produce biogas at the Seneca and Piscataway Wastewater Treatment Plants.
EER-1	Develop promotional giveaways and buy-downs of low-cost energy efficient products.	<ul style="list-style-type: none"> • Montgomery County was awarded \$70,000 for a pilot programmable thermostat giveaway program, primarily for low to middle income communities in the County. • Utilities serving Montgomery County (PEPCO, BGE and Allegheny) received approval from the MD Public Service Commission in 2009 to implement energy efficiency incentive programs providing benefits such as subsidized energy audits, rebates on energy efficiency equipment and appliances, and others.
EER-2	Develop energy efficiency programs, in coordination with State and utility-based programs, to assist low income households address their energy needs.	<ul style="list-style-type: none"> • Montgomery County supported utility/state low-income programs and federal weatherization funding. • The County, with support from American Recovery & Reinvestment Act (ARRA) funds, will weatherize 900 homes over the next three years. • The Housing Opportunity Commission (HOC) received an award for \$250,000 to upgrade 25 to 40 agency-owned townhouses. The County has proposed the same process for 50 or more properties with \$515,000 of EECBG funding. • Electric utilities serving Montgomery County received approval to administer ratepayer supported limited income weatherization programs in addition to federal and county programs.

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EER-3	Enhance consumer awareness of energy consumption by advocating for utility programs that provide home-energy consumption displays and develop other County programs to increase availability and affordability of in-home energy displays.	
EER-4	Develop a low cost loan program to facilitate residential energy efficiency improvements.	<ul style="list-style-type: none"> • The Home Energy Loan Program (HELP) will provide loans to homeowners for energy efficiency improvements and renewable energy projects, with repayment of loans through the property tax bill. The County has allocated approximately \$1.5 million of EECBG funding to support the development of the program, and is evaluating long-term funding strategies such as the qualified energy conservation bonds. • The County is working with the Maryland Clean Energy Center (MCEC) to develop a model program that could be utilized throughout Maryland.
EER-5	Create an effective residential energy education and outreach program with the goal that 50% of Montgomery County homeowners will take steps to reduce the annual consumption of energy in their homes by at least 25% by 2020.	<ul style="list-style-type: none"> • Electricity utilities serving the County have received regulatory approval for a general awareness campaign in support of the EmPower Maryland program. The target of the entire program, including incentives, is to reduce per capita electricity consumption in the state 15% by 2015. • DEP has proposed using EECBG funding to develop a comprehensive educational program, including a residential green guide, energy community leaders program, and educational components of HELP.
EER-6	Promote the deployment of smart grid technologies by utilities serving Montgomery County.	<ul style="list-style-type: none"> • The County has advocated for cost-effective advanced metering infrastructure (AMI) and smart grid deployment at the pilot and full deployment levels. • Montgomery College has installed and implemented centralized demand management capable equipment. Integrated Building Automation Controls (BAC) allow MC to receive “smart grid” pricing signals when available. MC has also implemented a college-wide network that can allow secure communications between the College and the utilities.
EEC-1	Require ENERGY STAR appliances and equipment, and EPEAT registered IT equipment, in public facilities.	<ul style="list-style-type: none"> • All County purchased laptops and desktops are EPEAT Gold certified and are ENERGY STAR qualified. • The Interagency Procurement Coordinating Committee (IPCC) has drafted a green procurement policy and plans to create a list of environmentally responsible products with bid and contract specifications (including model specifications), third party certification standards, information on cost and quality, and calculators to estimate financial and environmental benefits.

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EEC-2	Improve the energy performance of public facilities through enhanced data acquisition and energy efficiency measures.	<ul style="list-style-type: none"> • A baseline energy study of County Government facilities is complete. • Proposed EECBG strategy includes \$2,700,000 for energy-efficiency projects. • DGS, MCPS, and M-NCPPC are pursuing utility Demand Side Management incentives that provide substantial buy-downs of the costs of energy efficiency equipment. • Montgomery College has enabled enhanced data acquisition via its Building Automation Controls (BAC) and is implementing enhanced measurement and verification protocols (M&VP) in all new College facilities.
EEC-3	Establish specific energy performance requirements and timelines for the benchmarking, commissioning and improvement of new and existing commercial and multi-family buildings in order to reduce energy consumption by 25% by 2020. This will be achieved by a combination of education and outreach efforts, incentives, market forces and, if necessary, mandates.	<ul style="list-style-type: none"> • Proposed EECBG strategy includes \$400,000 for a comprehensive analysis of the County's commercial building sector. • Proposed EECBG strategy includes \$1.8 million for a commercial grant program to fund energy efficiency projects.
EEC-4	Develop a process for adopting new energy efficiency standards for commercial and multi-family buildings.	
EEC-5	Advocate for cost-effective utility-based energy efficiency and demand reduction programs, and form partnerships with local utilities to extend programs to businesses and residents.	<ul style="list-style-type: none"> • All electricity utilities serving the County received approval to develop demand reduction programs.
EEC-6	Advocate for peak pricing and tiered electricity rate structures that encourage energy conservation by providing pricing signals for energy consumption during peak periods or by large users.	<ul style="list-style-type: none"> • The MCPS peak load management (PLM) program is in its third year and has steadily increased the cost avoidance from capacity charges through a system-wide program to limit demand during the summer peak hours. • Montgomery College is evaluating PLM opportunities and if feasible will be able to actively participate after existing County sponsored electric supply contracts expire.
EEC-7	Develop and implement programs to support energy efficiency improvements by residents, managers and owners of multifamily properties, particularly affordable and low-income properties.	<ul style="list-style-type: none"> • Proposed EECBG strategy includes \$180,000 to customize nationally recognized curricula to increase the energy management skills of new and incumbent facility energy managers of commercial and multi-family properties. • A key area of focus for Montgomery County's competitive \$36.7 million EECBG application is to create financing options for multi-family properties. The application also included a workforce program tailored for multi-family management and retrofit professionals.

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EEC-8	Use energy efficient lighting technologies when installing new streetlights or replacing existing streetlights.	<ul style="list-style-type: none"> Montgomery College continues to design and implement energy efficient exterior and parking lot lighting which also limits light pollution and light trespass. Strategies include proper design for optimum light levels, fixture placement, high performance light sources, efficient fixtures and multiple controlled circuits which optimize light levels and reduce energy consumption.
T-1	Conduct parking supply and pricing study to ensure parking policies and zoning requirements are consistent with transportation demand management goals.	<ul style="list-style-type: none"> The County Council authorized this study for the FY10 budget, with funding provided jointly via the Executive Branch and the Planning Department. The study is in-progress. A draft report for the first part of Phase I has been received. The remaining elements of Phase I and Phase II of the study are scheduled to be completed by March 2010.
T-2	Establish a car sharing program in Parking Lot District facilities	<ul style="list-style-type: none"> The Department of General Services has developed a draft RFP for a car share program.
T-3	Support the Ridership Growth Initiative by 2020 by implementing bus rapid transit on Veirs Mill Road and Georgia Avenue, and study and implement where appropriate light rail transit and bus rapid transit systems in other corridors.	<ul style="list-style-type: none"> The Executive and County Council transmitted their joint recommendation on the Locally Preferred Alternative for the Corridor Cities Transitway to MDOT on November 30, 2009. DOT has funding in FY10 for the Veirs Mill BRT study and FY11 for the Georgia Avenue Busway study. MCDOT has had an initial meeting with Maryland Department of Transportation to develop the scope of services for MDOT to take the lead technical role in the study. The Washington Metropolitan Area Transit Authority is studying BRT concepts on Veirs Mill Road as a part of the Q2 operational study. DOT is involved in a Council of Governments funded study of all the Bus Priority Corridors to determine the system benefits of implementing bus rapid transit services in these 24 corridors. The initial draft of the study was reviewed at the end of 2009. Additional technical work by the consultant is expected in early 2010. DOT is actively participating in the WMATA Bus Priority Corridor study of Veirs Mill. The purpose of this study is to implement a new MetroExtra service that is a premium service to attract the longer distance rider. This new service was implemented on December 27, 2009. However, this new service did not include the new MetroExtras service because of budget constraints. The new service should improve the quality of service in the corridor and improve on reliability. This effort has involved extensive public involvement with the riders and communities in the corridor. DOT has initiated a facility planning study for a countywide network of potential BRT corridors with study results expected during FY 11.

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T-4	Conduct transportation planning studies during 2009 in order to better target transportation-related GHG reduction programs.	<ul style="list-style-type: none"> • The County received a grant under the EPA Smart Growth Implementation Assistance program for technical assistance to develop a model to estimate transportation-related GHG emissions and tools for estimating emissions and assessing the effectiveness of various planning and policy countermeasures. The technical assistance study is in the work scope development phase.
T-5	Identify pedestrian improvements to maximize walking and bicycling to recreation centers, libraries, shopping centers and schools.	<ul style="list-style-type: none"> • MCPS observed arrival and dismissal at 20 elementary and middle schools in the county to identify pedestrian movements to and from school. Safe walking route maps have been developed for 4 schools • DOT has launched an annual program of a series of Pedestrian Roadway Safety Audits (PRSA) at High Incidence Areas around the County to target areas in specific need of safety improvements. Audits develop recommended engineering improvements which are subsequently evaluated by DOT and MSHA for implementation within budget allocations. These improvements, while reducing crashes, will also serve to promote walkability and multi-modal connectivity. Education activities and enhanced enforcement are also targeted to these locations. • All recent master and sector plans approved or under consideration recommend specific connections to improve walkability.

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T-6	Plan, design and construct bicycle paths, lanes and shared signed roadways, as well as facilities supporting bicycling, to encourage increased use of bicycling for commuting and other transportation needs.	<p>DOT has:</p> <ul style="list-style-type: none"> • Completed 14 bike route sign plans ready for installation. • Supported Bike to Work Day (May 15) and distributed 1,000 bike safety lights and bike safety brochures to encourage increased usage of bicycles. • Purchased 15 bicycle racks and installed 12 in the public rights-of-ways upon request, countywide. • Installed 8 new kiosk signs w/directional maps on the Bethesda Trolley Trail (BTT). • Published and distributed 3,000 brochures for the BTT. • Completed 1500 linear feet of bike path on Jackson Road (New Hampshire Ave to Martin Luther King Park). • Completed 1000 linear feet of contraflow bike lane on Cedar Street (Wayne Ave to Bonifant St). • Commuter Services has created and published detailed bike/ped/transit maps for several areas of the County, including the Silver Spring Transportation Management District, Medical Center, and White Oak/FDA and Vicinity. These maps show bike/ped routes in these areas, along with access points from the broader regional system to those routes, amenities available in those areas, and bus and rail transit routes serving those areas. <p>The Planning Department has:</p> <ul style="list-style-type: none"> • Identified 21 candidate bicycle and pedestrian projects for consideration in facility planning or design for the FY 11 budget, incorporated in Appendix G of the 2009-2011 Growth Policy report. • Delivered two master plans for White Flint and Gaithersburg West to the County Council that incorporate improved bike recommendations, with notable additions including a diamond lane (shared bus/bike lane) along Rockville Pike in White Flint, designation of the White Flint Sector Plan area as a bicycle and pedestrian priority area under state legislation, and a new network of local bikeways within the Life Sciences Center. The Planning Board draft plan for the Takoma/Langley Crossroads area includes recommendations for “cycle tracks” (an innovative buffered bikeway treatment) along University Boulevard in coordination with the Prince George’s County Planning Department. • Montgomery College has installed bike racks on all campuses and specifically implemented the practice during new building design or renovation to obtain LEED rating credit for this activity.
T-7	Explore ways to reduce vehicle travel to schools by expanding walking, bicycling and use of buses.	<ul style="list-style-type: none"> • Completed engineering work on 11 elementary and middle school neighborhoods in order to increase safety for walkers and bikers. Education activities targeted to students and parents in cooperation with school officials also implemented. • Developing educational programs at 41 schools to increase pedestrian activity and safety among drivers near schools

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T-8	Develop a policy that requires the consideration of roundabouts whenever traffic signalization is being pursued.	<ul style="list-style-type: none"> • DOT analyzes roundabouts as an option when conducting traffic studies for modification of intersection traffic controls.
T-9	Develop comprehensive idling policies supporting Maryland's vehicle anti-idling law with an emphasis on both education/outreach as well as effective enforcement of the law.	<ul style="list-style-type: none"> • Transit Services has a SOP (OP0010) on bus idling which limits the idling of buses to three minutes. Decals with the policy have been installed on bus fareboxes. Transit Services strictly enforces this rule with progressive disciplinary action for violators of the policy. • An automatic feature has been implemented on the Ride On fleet which will automatically idle down buses idling longer than 5 minutes. All buses except for CNG-fueled buses have this feature. • MCPS has been actively monitoring and enforcing an idle reduction policy for school buses that requires drivers to turn off engines immediately upon stopping if buses are expected to remain stopped for 5 minutes or more. The employee disciplinary code in the department includes an offense related to violating the idling policy.
T-10	Increase the County government employee commuter benefit to be consistent with US government agencies.	<ul style="list-style-type: none"> • Given current fiscal constraints, this is not an opportune time to propose increasing Get-In. However, DOT has compiled information on implementation options to enable pre-tax payroll deduction for employees with transit costs over the \$35 provided thru Get-In. This would permit pre-tax deduction of transit and vanpool costs up to the new federal maximum of \$230/month. Information on these options has been provided to OHR. Preliminary work on this could begin this year, with a goal of implementation in FY11.

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T-11	Create an effective transportation education and outreach campaign to modify resident and business transportation behavior to reduce GHG emissions.	<ul style="list-style-type: none"> • Commuter Services is continuing to develop and implement transportation education and outreach campaigns targeted to businesses in the County with the goal of promoting the use of commuting modes other than the single occupant vehicle (SOV). In addition, through its FareShare and Super FareShare programs the County partnered for a number of years with employers to buy down the cost of transit and vanpools for their employees, thus encouraging them to use these lower-emission commuting options. • CSS also conducts a limited amount of outreach to residents of the County, within the constraints of current resources, and operates two TRiPS Commuter Stores – one in downtown Silver Spring, one in Friendship Heights – which sell transit fare media and provide information and assistance to all members of the traveling public. • Budget constraints have resulted in reduced funding available for outreach and marketing efforts, and the pending suspension of all of the County’s transit subsidy partnership programs. However, Commuter Services is continuing efforts to promote use of non-SOV modes by making use of as many low-cost approaches as possible. CSS is continuing to work with employers to implement their Traffic Mitigation Plans and with developers to implement their Traffic Mitigation Agreements. • Commuter Services has coordinated closely with DEP on the creation and implementation of transportation elements of the County’s Green Business Certification Program. Through this certification process more County businesses will become aware of CSS’s programs and services and hopefully will opt to implement strategies to reduce SOV commuting by their employees. • Montgomery College provides various transportation options through its transportation management program, web based information and supports free access to Montgomery County Ride-on for College students.
T-12	Coordinate with other regional, state and federal governments and organizations on activities that will result in reduced emissions from the transportation sector as a result of a more efficient transportation system and the use of more efficient modes of transportation.	<ul style="list-style-type: none"> • The Planning Department’s Transportation Planning Chief is serving as the Chair of the Climate Change and Energy Task Force for the Institute of Transportation Engineers (ITE). The task force mission is to “facilitate transportation solutions that incorporate global climate change and energy concerns spanning the range of ITE member interests.” • DOT is participating in the Transportation Planning Board “What Would It Take Scenario Study” that examines greenhouse gas emissions with different transportation, land use, and technology alternatives.
F&A-1	Develop an accurate inventory of forest cover and tree canopy in Montgomery County, and set forest cover and tree canopy goals.	<ul style="list-style-type: none"> • M-NCPPC has completed the forest cover layer and is nearly finished with QAQC procedures. DEP is nearing completion of the tree canopy layer and began QAQC in late 2009. • Montgomery College has completed forest conservation studies on all three campuses and has implemented recommendations for some campuses.

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F&A-2	Develop a comprehensive approach that protects and enhances forest and tree resources.	<ul style="list-style-type: none"> DEP has developed a proposed approach to the comprehensive regulation of trees and forests, and is working with stakeholder groups to refine this concept.
F&A-3	Lobby the State of Maryland and the Department of Natural Resources (DNR) to revise and update the State Roadside Tree Law (RTL) and its implementing regulations, as well as enforce the existing law. Explore opportunities to increase the role of the County departments and agencies in protecting trees in the right-of-way (ROW).	<ul style="list-style-type: none"> The Maryland General Assembly passed the Natural Resources - Roadside Trees - Protection and Enforcement Bills (HB 800/SB 581) which requires a roadside tree permit from DNR prior to local jurisdictions issuing building permits if activity impacts street trees. The law gives local governments the ability to develop ordinances and regulations for closer supervision of trees along public rights-of-way.
F&A-4	Extend the County's current property tax credit for energy conservation and renewable energy measures to include tree planting.	
F&A-5	Create landscape incentives in urban areas to increase number, quality, and survivability of trees planted in the public right-of-way and on private property.	<ul style="list-style-type: none"> The Planning Department offers \$25 coupons for individuals to plant trees from authorized local nurseries.
F&A-6	Increase shade tree planting and maintenance in public and private parking lots.	<ul style="list-style-type: none"> The Planning Board has proposed a new commercial/residential zone that requires minimum canopy coverage of surface parking lots.
F&A-7	Develop simplified processes to enable landowners to establish conservation easements or protection areas.	

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F&A-8	Encourage and foster school programs integral to curricula that promote increased student involvement and engagement in forest and tree planting, conservation and maintenance programs within their communities and on available public property. Engage surrounding communities in planting and conserving trees on private property.	<ul style="list-style-type: none"> • MCPS, in collaboration with various organizations in the GreeNetwork, created a garden template site on its webpage entitled "How to Create a School Garden at a Montgomery County Public School." The site provides planting and lesson suggestions, maintenance protocols, and the steps to create an instructionally-based garden at school sites. Four choices of garden templates are provided, each with suggested plants: two native plant habitat gardens (one for shade and one for sun), a senses garden, and a butterfly garden. The target audiences for this website are parents, teachers and other MCPS staff. • The MCPS Outdoor and Environmental Education Programs, DEP, and the Montgomery County Water Quality Advisory Group hosted students and homeowners for the viewing of the documentary film <i>RiverSmart</i>. The event, which included a post-screening discussion with a panel of technical experts focusing on how residents can improve local water quality through enhanced stormwater management, is part of MCPS' Environmental Documentary Project in which students write and produce their own environmental documentaries. • Montgomery College has a Landscape Technology Program on the Germantown Campus that is active in promoting best practices of forest conservation and use of native, non-invasive species.
F&A-9	Develop an educational campaign to convey the vital role trees play in the long-term sustainability and health of the County.	
F&A-10	Manage non-native invasive pests that threaten forests and trees.	<ul style="list-style-type: none"> • The Department of Parks has an active program to manage invasive pests on parkland.
F&A-11	Expand local production of fruits and vegetables.	<ul style="list-style-type: none"> • At the request of Councilmember Ervin, the Department of Parks created the County's first community garden. The organic garden contains 33 plots, a rain garden, community bulletin board, on-site water, seating, and new fruit trees and blueberry and fig plants. • DED has had preliminary discussions with the Montgomery Countryside Alliance regarding the prospect of their hosting an on-line directory to connect landowners of available land not in agricultural production with farmers interested in renting land for crop production. • The Green Economy Task Force's preliminary draft report recommends the creation of a small farm incubator to expand the production of local organic produce.

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LUP-1	The County's Growth Policy should direct growth to areas with significant existing or planned transit resources, and promote development that fulfills smart growth criteria such as those required as part of the LEED) for Neighborhood Development or more stringent County standards.	<ul style="list-style-type: none"> The County Council adopted the 2009-2011 Growth Policy in November 2009, including a Special Mitigation Standard component that allows applicants near transit service to reduce area-wide traffic mitigation requirements (under Policy Area Mobility Review) by providing residential uses, including more energy-efficient development than would otherwise be required.
LUP-2	Amend the Zoning Code.	<ul style="list-style-type: none"> The first installment of the new zoning code, the Commercial/Residential (CR) zone has been transmitted to the County Council for introduction. This zone allows a mixture of businesses and homes around transit served areas as specified by the master plan. The minimum requirements include open space, shading of parking lots and provision of bike parking and shower facilities. Property owners wishing to build up to the maximum density and height allowed by the master plan will need to provide additional benefits to the environment, connectivity, design and diversity. Once officially introduced, it will come back to the Planning Board for a public hearing in the fall and then be heard at County Council afterward.
LUP-3	Master Plans should plan for redevelopment to create compact, livable places with a variety of housing types and mixed uses that invite people to walk or bike safely to work, to shop, and to participate in community life without a long commute by car. The Agricultural Reserve should continue to be protected for food production, recreation, and carbon sequestration.	<ul style="list-style-type: none"> The following master plans have been transmitted to the County Council based on these principles: Germantown, Gaithersburg West, and White Flint. This fall, Kensington and Takoma-Langley Crossroads will also be sent to County Council. Wheaton CBD is underway. Long Branch and Chevy Chase Lakes Sector plans have just begun.
LUP-4	A Green Infrastructure Plan should be adopted to protect an interconnected network of forests, fields and wetlands and provide priorities for protection, restoration and mitigation of loss of natural resources. This plan will be considered in master plans, development proposals (both public and private) and park acquisition for natural resource protection.	<ul style="list-style-type: none"> The Green Infrastructure Plan will be published for public hearings this spring and transmitted to the County Council after Planning Board worksessions.

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LUP-5	A Water Resources Functional Master Plan should be adopted to provide priorities for water resources goals in other functional and area/sector master plans; development proposals; park acquisition that focuses on forest cover, wetland, and tree canopy protection; restoration and enhancement; as well as Environmental Site Design (ESD) implementation.	<ul style="list-style-type: none"> The Water Resources Functional Master Plan has been published for public hearings and will be transmitted to the County Council in the spring.
ED-1	Develop a branded communication platform that will enable the County to speak with one voice about its mission to reduce GHG emissions.	
ED-2	Develop and provide presentation toolkits to support a social marketing campaign that raises awareness about Climate Protection Plan programs and encourages active participation throughout the County.	<ul style="list-style-type: none"> DEP has proposed using EECBG funding to develop educational programs, including a residential green guide, energy community leaders program, and educational components of HELP.
ED-3	Develop, provide access to and promote an on-line tool to promote the Climate Protection Plan and other related programs in order to raise awareness of the need to reduce greenhouse gases, provide specific actions, and encourage community based sustainability.	<ul style="list-style-type: none"> The County, in partnership with the Montgomery County Chamber of Commerce, launched the Green Business Certification Program in the fall of 2009. The program, which includes a checklist of 260 actions, is designed to help businesses voluntarily reduce their ecological footprint through changes in day to day operations and policies (many of which reduce GHG emissions). Certified businesses are listed in the Green Business Directory. See ED-2. Montgomery College is currently partnering with Montgomery County Government and has become an educational provider for County Government sponsored USGBC LEED AP, Green Business Certification Program and “green collar” training programs.
ED-4	Build and maintain an information network service that provides online Climate Protection Plan updates on County programs and regular specific suggestions such as “Green Tips” to inform and encourage residents to take action to reduce greenhouse gases.	

**Implementation Status of 2009 Climate Protection Plan Recommendations
(As of February 9, 2010)**

Item #	Short Description	Implementation Steps to Date
ED-5	Establish and coordinate a coalition with representation from a broad range of community organizations to support outreach, raise awareness of the climate protection plan and to provide opportunities and support for education programs.	
ED-6	Promote community-based education programs using the model of small, self-facilitated group discussions to motivate and empower members of the community on issues concerning sustainability.	
ED-7	Establish, coordinate and maintain a County interdepartmental education and outreach plan.	
ED-8	The County Government and agencies should adopt broad-based sustainable practices and policies, and use these programs as a basis for outreach to the private sector.	<ul style="list-style-type: none"> • A number of Executive Branch departments and the County Council are beta testing the Green Business Certification Program and considering how best to use the Program to green County operations. • Beginning with FY10, all white, letter-size paper purchased by the County will be recycled paper only. In addition, as part of the County Executive's "Paper and Printing Cost Reduction" initiative, all County departments and offices have been instructed to reduce paper use and printing and mailing costs by 15 percent.
ED-9	Replicate community-based organizations like Bethesda Green under a central umbrella organization.	<ul style="list-style-type: none"> • The County provided Bethesda Green with an FY10 \$20,000 community grant to strengthen and hone the Bethesda Green model. A white paper highlighting its unique structure and strategies will be produced by the end of FY10. • Community leaders in Poolesville founded "Poolesville Green" in February 2010; 501(C)(3) status is pending.

Statement of Work for GSA Schedule Notice:

Smart Growth and Climate Protection Policy Analysis

The following request for proposals describes the requirements for a TBD acquisition under the GSA *Environmental Planning Services and Documentation* contract (899-1).

Summary and Environmental Outcomes:

This project will provide support through the Smart Growth Implementation Assistance Program (SGIA) to Montgomery County, Maryland. The purpose is to help the County expand the tools currently used to measure progress toward the goals adopted in their Climate Protection Plan. In particular, this work will better position the County to make land use and transportation decisions that move them toward the adopted target of an 80 percent reduction of emissions by the year 2050. To accomplish this task the technical assistance team will: survey existing tools used by County staff, develop an approach to filling analytical gaps, and “beta test” any new tools.

The overall goal is to more comprehensively assess the implications of land use and transportation policies on the adopted climate protection plan goals. Specifically, a more detailed picture of the emissions impacts of major infrastructure investments and land use policy decisions (e.g. area and sector plans) is needed. This expanded analytical capacity will help the County identify development strategies that deliver the following environmental and community outcomes:

- increased development in transit-rich corridors, where multiple transportation options exist, thereby lowering VMT associated with the County’s anticipated growth;
- more energy efficient residential and commercial buildings due to a more compact design and greater scope for investment in green technology applications that reduce energy consumption per square foot;
- prioritization of public investments to target support for development that makes the most cost effective contribution to the County’s emissions reduction targets;
- increased use of less energy intensive transportation options that reduce emissions and overall household cost associated with transportation; and
- preserving carbon sequestration assets by reducing consumption of forest, open space and agricultural land for development.

Background:

Montgomery County applied for an SGIA award in April 2009, citing the need for assistance to make progress towards the goals articulated in the Climate Protection Plan (CPP).

<http://www.montgomerycountymd.gov/content/dep/Sustainability/2009mococlimprotplan.pdf>.

This plan was developed with extensive local stakeholder involvement, and approved by the County in January 2009. The Plan estimates that current baseline emissions are from three principal sources, in nearly equal measure: transportation (34 percent), residential building energy use (33 percent), and commercial building energy use (32 percent).

The plan offers 58 recommendations of clear actions that Montgomery County can take to make progress on its target of 80 percent reduction in emissions by 2050. In particular, Montgomery County identified the need for support with one of the 58 recommendations related to land use and transportation:

- Conduct transportation planning studies during 2009 in order to better target transportation-related GHG reduction programs. (T-4 pg. 66-67)

However, an additional item in the CPP is also relevant to the scope of the project.

- Master Plans should plan for redevelopment to create compact, livable places with a variety of housing types and mixed uses that invite people to walk or bike safely to work, to shop, and to participate in community life without a long commute by car. The Agricultural Reserve should continue to be protected for food production, recreation, and carbon sequestration. (LUP-3 pg. 94-95)

The County recognizes the need to educate elected officials, staff, residents, and developers around the role of land use and transportation decisions in supporting their climate protection goals. They also recognize the necessity of establishing rigorous, consistent, accessible and transparent modeling frameworks by which the emissions impacts of such decisions can be quantified. This SOW seeks to respond to these needs by developing a new, unifying analytical approach that considers both residential/commercial development and transportation investments.

The County has already undertaken a number of measures which position it well for achieving its climate protection goals. Those include the creation of the Agricultural Reserve and Rural Density Transfer and pending Building Lot Termination programs, thereby reducing development in exurban locations far from transit, as well as the extensive public planning and investment efforts in its suburban centers (Bethesda and Silver Spring, most notably) to absorb and concentrate development near transit. New master plans are almost complete for White Flint, Takoma Langley and Gaithersburg and under way for Long Branch, Chevy Chase Lake and Wheaton, all around existing or proposed transit stations. New zoning code elements, such as the Transit Mixed Use Zone and proposed commercial-residential zone, will also support more sustainable development by creating a more flexible regulatory framework.

From a modeling standpoint, the County has made significant investments in developing quantitative tools to estimate greenhouse gas emissions. Those models include:

- Demographic projections
- Travel/3 model
- Local Area Model
- Master Plan greenhouse gas modeling
- Countywide greenhouse gas inventory and forecast
- Forest/tree canopy modeling

The County has invested time and effort into each of these models, although for the most part they remain disparate and distinct from one another. They also function at varying levels of transparency and ease of use. For example, the Travel/3 model is a traditional four-step model, adapted from the MWCOG Version 2.1D Model. Its application is generally limited to

transportation planners and engineers, and is not well-understood by staff from other departments or the general public, despite the fact that transportation-related emissions represent one-third of current emissions. Conversely, the Greenhouse Gas Modeling approach, adapted from a King County application, is based on a spreadsheet for which all of the data and formulas are clear and transparent. It is easily understandable and used, and generally considered to be their “best run” at County-level emissions for the time being, but does not include some important features (e.g. the mobile source emissions are not tied to any locational trip or VMT generation features such as transit proximity; no emissions benefits are associated with energy improvements in transportation technology or the existing building stock; and there is no reflection of alternative sources of energy for buildings).

The County’s GHG Inventory, which provides a quantitative estimate of emissions from building energy consumption, transportation, and municipal solid waste, is the basis for measuring progress towards the County’s GHG reduction goals. SAIC, under contract to the County, will produce deliverables that include a series of tools to quantify GHG emissions from these sources, including the FY07 through FY08 inventories. SAIC is also preparing recommendations for the total County GHG forecast, as well as specific recommendations for inventorying new, scope three, elements not included in the previous inventory such as forest resources, water waste water, and consumer goods. In addition, the contractor will provide a manual that includes the methodology, co-efficient, mechanisms for updating the methodology, all contacts and data sources necessary to repeat the inventory, and critical quality assurance (QA)/quality control (QC procedures).

The support delivered through this SOW (and through the SGIA effort more broadly) will seek to “stitch together” these existing models in one approach that best represents the emissions impacts of various land use and transportation decisions. It shall be used first to create a single, unified baseline which the CPP actions can reference. It shall also lead to the development of a clear visual, mapping component, similar to those produced by sketch models such as INDEX, iPLACES, Envision Tomorrow and other similar tools. As such, it is expected that this tool will enable decision-makers to better evaluate the relative impacts of one development proposal compared to another.

The scale of proposed development associated with area and sector plans has a direct impact on the future of the County’s total transportation related greenhouse gas emissions. For example, the mixed use redevelopment projects associated with the White Flint metro station area have the potential to result in millions of metric tons in avoided emissions. While pedestrian friendly design, improved transit service and good site design generate some of the savings, the redevelopment also reduces emissions by accommodating a greater share of the County’s growth in one of its most accessible areas.

The work under this SOW should enable County staff and decision-makers to consider the implications of changes to sector plans that either increase or decrease the amount of commercial and residential square footage that can ultimately be built.

The County has stated that transparency of the approach is very important, both for the benefit of policy-level decision-makers, as well as for the general public. It is believed that County elected

officials are more likely to support the robust application of such a tool if it can be easily understood and explained to developers and other stakeholders. Equally important is the ability of tool users to display the impacts graphically (as in maps, tables, charts, etc.).

Tasks and Deliverables:

The purpose of this SOW is to develop and implement an analytical approach (“tool”) that will enable the County to establish baseline data for their CPP reductions targets as well as to quantify the emissions impacts of proposed land use developments and transportation investments by the public and private sectors. For all tasks described herein, the Contractor shall at all times ensure that they are acting in a contractual capacity to the US government, and do not represent the US EPA or the federal government vis a vis policy or other recommendations on state and local land use decision making.

Task One – Survey Existing County and Regional Tools

The Contractor shall identify and evaluate all relevant modeling tools currently in use among Montgomery County departments that quantify and/or inventory GHG emissions, or provide data essential to forecasting changes in GHG emissions. The primary focus will be on tools identified in the background narrative above, but may include key other tools or datasets.

Additionally, relevant tools and baseline forecasts managed by the Metropolitan Washington Council of Governments (MWCOG) should also be examined. Specifically the contractor shall examine how the various forecasting tools are related to those currently in use by the County, and explaining how County models mimic or vary from those in use by MWCOG.

The Contractor shall describe each tool, document its use, and assess the degree to which each comports to the following desirable qualities, as expressed by County staff:

- Transparency and ease of understanding
- Ability to relate to and support other existing County models related to emissions calculations
- Difficulty and detail associated with data inputs and analysis, cost of data compilation/collection, and level of skill needed by analyst
- Ability to display impacts graphically/visually

A draft list of models shall be presented via email to EPA staff and discussed in a conference call within two weeks of contract approval. A draft version of the complete summary analysis of these models shall be prepared and delivered to EPA staff within one month of contract approval. Once EPA has consulted with Montgomery County staff and provided feedback to the Contractor, the Contractor shall finalize this summary in the form of a memo to EPA and County officials no later than two weeks after feedback is received.

Task One Deliverables and Timelines:

- 1.a. Draft list of models to be presented via email and discussed in conference call with EPA staff within one week of contract approval.
- 1.b. Draft summary analysis of existing tools within one month of contract approval.

1.c. Final summary analysis of existing tools within two weeks of EPA feedback (on draft version).

Task Two – Propose and Develop New Approach

The Contractor shall propose a new approach for modeling emissions implications of major transportation and land use decisions. The approach should be focused on integrating existing County modeling applications to one another and filling critical gaps where new tools are needed. This new approach shall function as a web among existing models, linking demographic, economic, land use, and transportation modeling projections into a unified approach that illustrates the net effect on emissions associated with proposed developments.

This tool/approach shall reflect the County priorities (as described in Task One), including a capacity to deliver information visually and to be transparent and easily understood in nature. In addition, it shall reflect the following design features:

- Ability to synthesize stationary and mobile source information (land use and transportation)
- Ability to support differing geographies, so that alternatives and metrics can be produced at the policy area level or Countywide
- Ensure sensitivity to policy, market conditions and technology variables (reflect current mix of County regulations and incentives)
- Link inventory to forecasts (in addition to serve to its ability to serve as an agreed-upon baseline for CPP targets)
- Be flexible to support process evolution, nimble, as well as transparent (e.g., support MWCOG model evolution).
- Whenever possible, model components should be “open” with source code distributed to and adaptable by the end user community
- Geographic Information Systems (GIS) components should follow widely adopted GIS standards, support key data interchange formats, and provide open application programming interfaces.

The Contractor shall discuss early thoughts on this tool resulting from the delivery of the Summary Analysis (Task 1.c.) in a phone call with EPA staff and other stakeholders to be identified within one week of the completion of Task One. A draft memo to EPA staff shall be delivered within four weeks of that call, at which time a conference call will also take place to present the approach and answer any questions. Following the conference call and consultations with County staff, EPA will provide formal feedback to the Contractor on the proposed approach, which shall be reflected in the delivery of a final memo describing the approach within two weeks of feedback being received.

Task Two Deliverable and Timeline:

- 2.a. Phone call to discuss initial thoughts on approach within one week of completion of Task One.
- 2.b. Draft memo to and phone call with EPA and County staff within four weeks of phone call.

2.c. Revised memo (if applicable) delivered to EPA staff within two weeks of formal feedback provided by EPA staff.

Task Three – Develop Beta Version of Model and Presentation

Following the completion of Task Two, which shall represent the direction of the approach and methodology to be undertaken by the Contractor, a beta version of the model shall be developed. This model shall be functional enough to be tied to existing County databases, models, or other quantitative resources. It shall be robust enough to deliver initial baseline projections that are perceived by users (County staff, stakeholders) to be valid and appropriate. It shall also include functionality which will permit users to input test cases for proposed land use and/or transportation projects and different assumptions related to market conditions and technologies to generate future projections, and evaluate those projections against current targets. Finally, it shall be calibrated with the County's existing data and tested against other models they have used.

Once developed and tested, the model shall be first presented in person to EPA staff (and others, at EPA's discretion) for reaction and feedback. This shall be completed within two months of completion of Task Two. Once feedback is received and the model is adjusted to reflect those changes, the Contractor shall present this information to the Sustainability Working Group (a key stakeholder group, and fundamental to the development and implementation of the CPP), or other group as EPA determines in consultation with County staff. This presentation will likely take place at an evening meeting in Montgomery County within six weeks after the presentation to EPA staff, and will require at least one telephone call with County staff to plan and prepare.

The Contractor shall be prepared to make modifications to the model in response to that meeting, and in consultation with EPA and County staff. The end product shall be one which can be delivered to County staff to further refine and adapt for ongoing use, but shall represent the best effort by the Contractor to resolve fundamental weaknesses associated with the modeling framework (if there are indeed any). This shall occur no later than one month after the stakeholder group meeting, and shall be accompanied by any necessary written guidelines or documentation that will be essential to its operation by County staff.

Task Three Deliverables and Timeline:

3.a. Presentation to EPA and County staff of first beta version of model, within two months of completion of Task Two.

3.b. Once feedback is received from EPA, and the model is revised accordingly, the Contractor shall present the model and the results of the testing/calibration to the Sustainability Working Group at a regularly scheduled meeting. This meeting will likely happen within six weeks after the first presentation to EPA and County staff (depending on the Working Group schedule of meetings).

3.c. Reflecting feedback received from the key stakeholder group presentation, the Contractor shall deliver the model to EPA and County staff for their use on an ongoing basis within one month of stakeholder group presentation. This shall be accompanied by any necessary written guidelines or documentation that will be essential to its operation by County staff.

Summary of Deliverables and Timelines:

Task One Deliverables and Timelines:

- 1.a. Draft list of models to be presented via email and discussed in conference call with EPA staff within one week of contract approval.
- 1.b. Draft summary analysis of existing tools within one month of contract approval.
- 1.c. Final summary analysis of existing tools within two weeks of EPA feedback (on draft version).

Task Two Deliverable and Timeline:

- 2.a. Phone call to discuss initial thoughts on approach within one week of completion of Task One.
- 2.b. Draft memo to and phone call with EPA staff within four weeks of phone call.
- 2.c. Revised memo (if applicable) delivered to EPA staff within two weeks of formal feedback provided by EPA.

Task Three Deliverables and Timeline:

- 3.a. Presentation to EPA staff of first beta version of model, within two months of completion of Task Two.
- 3.b. Once feedback is received from EPA, and the model is revised accordingly, the Contractor shall present the model to a key stakeholder working group at an evening meeting in Montgomery County. This meeting will likely happen six weeks after the first presentation to EPA staff.
- 3.c. Reflecting feedback received from the key stakeholder group presentation, the Contractor shall deliver the model to EPA and County staff for their use on an ongoing basis within one month of stakeholder group presentation. This shall be accompanied by any necessary written guidelines or documentation that will be essential to its operation by County staff.

Role of Participants in SGIA

Role of Contractor:

- To complete the tasks as laid out in the Statement of Work (SOW)

Role of EPA:

- To procure the services of a Contractor to complete this SOW, and to direct and manage their efforts to successful end
- To organize and facilitate conference calls involving the Contractor and County staff
- To enlist the feedback of County staff on all deliverables, and incorporate those insights to EPA's formal response to the Contractor on draft products
- To ensure that all documents comply with EPA Smart Growth Program's standards for deliverables under the SGIA program

Role of Montgomery County staff:

- To provide all necessary data to Contractor to complete task
- To participate in calls and meetings as laid out in the SOW, and facilitate logistics of on-site meetings as required
- To provide prompt responses to EPA's request for feedback on deliverables (generally one week turnaround); those responses will be incorporated into EPA's formal response to Contractor deliverables
- To participate and assist in calibration and testing efforts undertaken by the Contractor, as appropriate
- To provide strategic guidance to Contractor and EPA staff to ensure that the approach and final model reflects the needs of the County and the community