2013-2016 Climate, Energy, and Environment Policy Committee Action Plan

Resource Guide

Working Update July 2014

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INTRODUCTION

Metropolitan Washington Council of Government (COG) Climate, Energy and Environment Policy Committee (CEEPC) adopted the 2013-2016 CEEPC Action Plan in May 2013. The CEEPC Action Plan is a list of short-term goals and actions that will assist the region in achieving the long-term *Region Forward* targets and goals in the *2008 National Capital Region Climate Change Report.* This document, the 2013-2016 CEEPC Action Plan Resource Guide, provides a description, best practice examples, and resources for all of the implementation actions in the 2013-2016 CEEPC Action Plan. The purpose of the Resource Guide is to assist COG member jurisdictions with understanding and implementation of the actions in the 2013-2016 CEEPC Action Plan.

Background

Region Forward is a commitment by COG and its member governments, who together seek to create a more accessible, sustainable, prosperous, and livable National Capital Region. *Region Forward* targets have been established to help the region address challenges and move towards long-term goals for the region in the areas of prosperity, sustainability, accessibility, and livability. *Region Forward* draws its sustainability targets; including targets related to greenhouse gas (GHG) emission reduction, green building, reducing vehicle miles traveled (VMT), increasing alternative transportation trips, development in activity centers, and affordable housing in activity centers; from the *2008 National Capital Region Climate Change Report*.

The *National Capital Region Climate Change Report* examined potential climate change impacts on our region, evaluated mitigation strategies focused on building energy conservation, transportation system management, land use, use of renewable energy, adaptation, and outreach and education. The report was adopted by the COG Board of Directors in November 2008, proposes significant short-term, medium term and long-term greenhouse gas reduction goals for the region. The report's regional greenhouse gas emissions reduction goals include 10% below business as usual by 2012, 20% below the 2005 levels by 2020, and 80% below 2005 levels by 2050.

The Climate, Energy and Environment Policy Committee (CEEPC) was created in 2009 by the COG Board of Directors to provide leadership on climate change, energy, green building, alternative fuels, solid waste and recycling issues and to help support area governments as they work together to meet the goals outlined in the 2008 *National Capital Region Climate Change Report*. In January 2010, CEEPC adopted a 2010-2012 Action Plan and is the predecessor to the 2013-2016 CEEPC Action Plan.

2013-2016 CEEPC Action Plan Framework

The 2013-2016 CEEPC Action Plan identifies overarching goals in the areas of regional greenhouse gas reduction, the built environment and infrastructure, renewable energy, transportation and land use, sustainability and resiliency, and outreach. For each of these goals, numerous implementation actions are identified within several sub-categories. The goals and implementation action sub-categories are as follows:

Regional Greenhouse Gas Reduction Goal:
To reduce the region's greenhouse gas emissions to 20% below 2005 levels by 2020.

Implementation Action Sub-Category:

- ❑ Greenhouse Gas (GHG) Inventories and Plans

Built Environment and Infrastructure Goal:
To reduce non-transportation energy consumption, which accounts for two thirds of the region's greenhouse gas emissions, by 20% below 2005 levels by 2020.

Implementation Action Sub- Categories:

- ❑ Energy Efficiency
- ❑ Energy Financing
- ❑ High Performance/Green Building
- ❑ Water Resources

Renewable Energy Goal:
To increase renewable energy production in line with state Renewable Portfolio Standards, meeting 10% of regional electricity consumption with power from renewable sources by 2016.[i]

Implementation Action Sub-Category:

- ❑ Renewable Energy

Transportation and Land Use Goal:
To minimize the greenhouse gas impact of our transportation system, which contributes one third of regional emissions, by reducing vehicle miles travelled and increasing the use of alternative fuel and high efficiency vehicles.

Implementation Action Sub- Categories:

- ❑ Transportation
- ❑ Land Use

Sustainability and Resiliency Goal:
To increase the resiliency and sustainability of the region's infrastructure, economy, and environment.

Implementation Action Sub- Categories:

- ❑ Climate Resiliency and Adaptation
- ❑ Energy Security
- ❑ Green Infrastructure
- ❑ Green and Local Economies
- ❑ Waste Reduction and Recycling

Outreach Goal:
To improve public understanding of climate change and promote positive change in individual and institutional behaviors to reduce energy use and greenhouse gas emissions and increase use of renewable energy.

Implementation Action Sub-Categories:

- ❑ Outreach
- ❑ Advocacy

REGIONAL GREENHOUSE GAS REDUCTION GOAL

To reduce the region's greenhouse gas emissions to 20% below 2005 levels by 2020.

Greenhouse Gas (GHG) Inventories and Plans Implementation Actions

1) 100% of jurisdictions complete GHG inventories for government operations.

Description: Local jurisdictions conduct a greenhouse gas (GHG) emissions inventory of government facilities and operations and, where possible, use a 2005 baseline assessment year to provide a common baseline across the region. The inventory can be conducted using an emissions management/assessment tool, such as those provided by ICLEI - Local Governments for Sustainability, World Resources Institute, and others.

Examples:

- ❑ The City of Falls Church, VA used ICLEI's Clean Air and Climate Protection Software to complete government greenhouse inventories for 2003 (base year), 2008, 2009, and 2010.
- ❑ Frederick County, MD completed inventories for 2007 (base year) and 2010 using protocols from ICLEI, California EPA Local Government Operations Protocol (LGOP) and EPA Landfill Gas Emission Model (LandGem).
- ❑ Loudoun County, VA developed their 2007 base-year inventory using World Resources Institute and ICLEI protocols.

Resources:

- ❑ A number of organization provide guidance on developing GHG inventories, including: EPA, The Climate Registry, ICLEI (HEAT+), ICLEI (Clear Path), and the World Resources Institute.
- ❑ Energy Information Administration Greenhouse Gas Reporting Fuel Emission Co-Efficients
- ❑ EPA's eGrid Database provides regional greenhouse gas emission factors and detailed energy generation data.
- ❑ COG maintains a Sharepoint Climate site to share regional utility consumption data.

2) 100% of jurisdictions complete community-wide greenhouse gas inventories.

Description: Local jurisdictions conduct a greenhouse gas (GHG) emissions inventory of government facilities and operations and, where possible, use a 2005 baseline assessment year to provide a common baseline across the region. The inventory can be conducted using an emissions management/assessment tool, such as those provided by ICLEI - Local Governments for Sustainability, World Resources Institute, and others.

Examples:

- ❑ The District of Columbia Greenhouse Gas Inventory was completed using a base year of 2006 and was updated in 2012 using 2009-2011 data. The updated inventory shows a 12.5% reduction in community-wide emissions. Both the baseline and updated inventories used the ICLEI Local Government Operations Protocol v1.1.

- ❑ Arlington County has prepared GHG inventories for 2000, 2007, and 2012. In 2007, the Arlington County Board adopted a goal of reducing GHG emissions from government operations 10% by 2012 from a 2000 baseline. The 2012 inventory shows that the County has achieved a reduction of 11.7% in its emissions, even as its services and facilities increased.

Resources:

- ❑ ICLEI Greenhouse Gas Accounting Protocols
- ❑ Energy Information Administration Greenhouse Gas Reporting Fuel Emission Co-Efficients
- ❑ EPA's eGrid Database provides regional greenhouse gas emission factors and detailed energy generation data.
- ❑ COG maintains a SharePoint Climate site to share regional utility consumption data.

3) 100% of jurisdictions adopt GHG emission reduction plans for government operations.

Description: Local jurisdictions create plans to reduce greenhouse gas emissions in government operations, including specific strategies, policies, and actions. Key strategies for reducing GHG emissions include improving energy efficiency, switching to alternative energy sources, and reducing vehicle miles traveled. Plans should indicate which parties or agencies are responsible for each recommended action, and where it's feasible, indicate timelines for completion and funding sources.

Examples:

- ❑ Fairfax County's Annual Report on the Environment recommends policy changes and agency actions across government operations to reduce GHG emissions, and is updated annually. The Facilities Management Department (FMD) has set an internal goal of reducing energy use per square foot (kBTU/sf) by 1% per year (see page 14 of the report). Over the last decade, FMD has achieved this goal, avoiding over $7 million in energy costs in that time.
- ❑ Frederick County Sustainable Action Plan for County Operations sets goals in the areas of leading by example, conserving energy and reducing emissions, green building, green purchasing, green infrastructure, recycling and reducing waste, and transportation alternatives. Each goal area identifies guiding principles, an action plan, highlights of current success, and how success will be measured.
- ❑ U.S. EPA State and Local Climate and Energy Program Local Climate Action Plan Examples

Resources:

- ❑ EPA Local Government Climate and Energy Action Strategy Series Energy Efficiency in Local Government Operations: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs
- ❑ The American Council for an Energy Efficient Economy (ACEEE) created the Energy Efficiency Policies for Local Governments factsheet to provide examples of policies and mechanisms to increase energy productivity in their own operations and in across their communities. Their Policy Calculator will help communities decide which policies work best for them.

4) 75% of jurisdictions adopt plans to reduce GHG emissions community-wide.

Description: Local jurisdictions create plans to reduce greenhouse gas throughout the community, including specific strategies, policies, and actions. Key strategies for reducing GHG emissions include improving energy efficiency, switching to alternative energy sources, and reducing vehicle miles traveled. Plans should indicate which parties or agencies are responsible for each recommended action, and where it's feasible, indicate timelines for completion and funding sources.

Examples:

- ❑ Takoma Park's Local Action Plan for Reducing Greenhouse Gas Emissions includes the community greenhouse gas inventory and describes in detail action measures by sector including municipal, commercial/residential, natural resources, waste, and transportation sectors.
- ❑ Montgomery County Climate Protection Plan includes 58 recommendations in the categories of renewable energy; residential building energy efficiency; commercial, multi-family and public building energy efficiency; transportation; forestry and agriculture; land use and planning; and outreach. Each recommendation contains a summary, detailed background information, and implementation steps.

Resources:

- ❑ Under the U.S. Conference of Mayors Climate Protection Agreement, participating cities strive to meet or beat the Kyoto Protocol targets in their own communities and urge state and federal government to enact measures that will reduce greenhouse gas emissions more comprehensively. Alexandria, the District of Columbia, Chevy Chase, Gaithersburg, Rockville, and Takoma Park are signatories.
- ❑ The Cool Counties Initiative began as an agreement between the Sierra Club and Fairfax County, King County, WA, and Nassau County, NY to reduce global warming emissions 80% by 2050. It has now become a nationwide collaboration between community members, organizations, businesses, and local leaders. The Cool Communities Policies and Programs Template can help local governments implement climate actions.
- ❑ The Center for Climate and Energy Solutions provides a Climate Action Plans Map, which provides links to state GHG reduction plans.
- ❑ EPA provides step-by-step guidance for local governments in developing climate action plans and GHG inventories.

BUILT ENVIRONMENT AND INFRASTRUCTURE GOAL

To reduce non-transportation energy consumption, which accounts for two thirds of the region's greenhouse gas emissions, by 20% below 2005 levels by 2020.

Energy Efficiency Implementation Actions

5) 100% of jurisdictions track and/or benchmark energy performance in all government buildings.

Description: Tracking energy performance is the process involving monitoring, recording, reviewing, and analyzing energy bills and data on a regular basis to identify how energy is used, and reduce costs and consumption. Reliable data tracking is an important step in identifying and gathering all data needed for benchmarking energy performance. Benchmarking energy performance compares the energy use of a building or group of buildings with other similar structures or looks at how energy use varies from a baseline. It can be used to identify best practices that can be replicated within a building or across a portfolio of buildings.

Examples:

- ❑ Montgomery County Department of Parks tracks energy consumption, water use, recycling and waste management in all facilities owned by the Maryland-National Capital Park and Planning Commission.
- ❑ Prince William County is tracking and benchmarking facilities using the EPA Portfolio Manager.

Resources:

- ❑ ENERGY STAR Guidelines for Energy Management and Online Training for Government
- ❑ EPA Portfolio Manager Training: Overview, 101 Session (Getting Started), 201 Session for Advanced Users
- ❑ ENERGY STAR Benchmarking Starter Kit
- ❑ National Association of Counties County Guide to Energy Assessment and Tracking
- ❑ State and Local Energy Action Network Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language and Energy Benchmarking, Rating and Disclosure for Local Governments Fact Sheet
- ❑ Institute for Market Transformation Benchmarking Help Center Guide

6) 75% of jurisdictions participate in a regional EPA Portfolio Manager Master Account Sharing.

Description: Sharing building energy property data Portfolio Manager is made fast and easy through Portfolio Manager. COG has created the MWCOG Regional Portfolio Manager Account creating a regional database allowing COG member governments to connect and share their building data. Sharing building energy property data in this manner will help COG member jurisdictions track local and regional energy, climate, and environmental goals, such as energy and water use, GHG emission reductions, as well as compare energy performance for similar property types on a region-wide

basis. Currently there are 5 local governments and 1 school district that belong to the MWCOG Regional Portfolio Manager Account.

Examples:

- ❑ The Virginia Energy Purchasing Governmental Association (VEPGA) Master Account currently has 335 sites, including Loudoun County, Loudoun County Public Schools, Arlington County, City of Virginia Beach, and Virginia Beach Public Schools.
- ❑ Other state and local public building benchmarking efforts use regional-wide portfolio data sharing to manage their data in Portfolio Manager include: State of Ohio, State of New York's BUILD SMART NY, , and Central Florida Energy Efficiency Alliance (CFEEA)'s Kilowatt Crackdown.

Resources:

- ❑ How to connect, share, and compare portfolio data within the COG Region. Search contacts for "MWCOGCAP". Share in "read only access".
- ❑ Institute for Market Transformation Benchmarking Help Center Guide

7) 75% of jurisdictions disclose energy performance of all government buildings.

Description: The local jurisdiction must first track and/or benchmark energy performance of all government buildings. Annual energy consumption statistics can be summarized for each building and may include information such as energy use, annual greenhouse gas emissions, and an energy performance score (like the EPA ENERGY STAR rating). Local jurisdictions can also aggregate statistics for the entire building stock and/or compare statistics across calendar years. Information can be disclosed through posting information on the local jurisdiction's website and/or post an individual's building results in an entrance/common area of the building where it can be viewed by both building visitors and employees.

Examples:

- ❑ Arlington posts County Building Energy Report Cards on its Arlington Initiative to Rethink Energy (AIRE) website. Click on county building types to view simple charts comparing energy use in each building in 2007 and 2012.
- ❑ The District of Columbia's Build Smart DC website is an energy performance platform for buildings in the District. It contains a detailed list of facilities, facility size, facility type, energy use (kWh), natural gas use (therms), greenhouse gas emissions (MtCO2e), and more.

Resources:

- ❑ State and Local Energy Action Network Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language and Energy Benchmarking, Rating and Disclosure for Local Governments Fact Sheet

8) 75% of jurisdictions prepare an energy plan for local government facilities.

Description: Local jurisdictions prepare and energy plan that outlines measures that will reduce energy consumption at local government facilities and in its operations. Plans may include a current assessment of local government energy use as well as policies, facility improvements, and/or behavior changes related to lighting, heating/cooling, computers, renovation, new construction, renewables, alternatives, purchasing, employee education, etc. Energy plans may be incorporated into a greenhouse gas reduction plan.

Examples:

- ❑ Charles County Energy Action Plan for County Facilities identifies program goals; immediate, short term, and long term conservation measures; employee awareness; and measurement and verification steps.
- ❑ City of Bowie's Energy Efficiency and Conservation Strategy is a comprehensive energy and sustainability strategy that was prepared in 2010 as part of the Energy Efficiency and Conservation Block Grant (EECBG). The strategy outlines managing energy use, promoting energy efficiency, reducing greenhouse gas emissions, increasing renewable energy, and reducing material consumption.

Resources:

- ❑ EPA State and Local Climate and Energy Program Energy Efficiency in Government Operations and Facilities webpage and the Energy Efficiency in Local Government Operations Guide
- ❑ ENERGY STAR Building Upgrade Manual

9) 50% of jurisdictions perform walk-through energy audits of local government facilities.

Description: Energy audits provide a snapshot of building energy performance and the potential for improved energy performance and cost savings. The audit is an important step to making informed decisions on effective energy improvements for each particular building. Energy audits typically involve:

- Collecting and analyzing energy consumption (twelve months of energy use, costs, and utility rates)
- Interview of onsite facility manager and/or operational staff
- Review of building information, characteristics and systems (such as building type, use, age, occupancy, fuel type, metering, insulation, etc)
- Walk-through inspection of the building
- Energy savings and cost analysis (may include behavioral changes, operational improvements, and/or infrastructure improvements and pay-back period; final recommendations typically are solutions that are low to no cost and have a reasonable payback period)

Audits may be completed internally or externally through hiring a professional firm, such as an energy services companies (ESCOs). Often ESCOs can be hired to conduct audits and implement recommendations at little or no upfront costs through energy performance contracts.

Examples:

- ❑ Montgomery County Department of General Services has conducted ASHRAE Level I audits for most large County buildings.
- ❑ In 2003, Rockville entered into an Energy Performance Contract and energy upgrades were completed in May 2005. Two years of measurement resulted in an estimate of $365,000 in avoided energy costs over the 2 year period. The City continues to monitor energy use at each building.

Resources:

- ❑ American Society of Heating Air Conditioning and Refrigeration Engineers (ASHRAE) Procedures for Commercial Building Energy Audits (available for purchase)
- ❑ Washington State University Energy Audit Workbook
- ❑ Sustainable Maryland Conduct a Municipal Energy Audit Guidance
- ❑ EPA State and Local Climate and Energy Program Energy Efficiency in Government Operations and Facilities webpage and the Energy Efficiency in Local Government Operations Guide
- ❑ National Association of Counties County Buildings: Energy Efficiency and Performance Contracting
- ❑ ENERGY STAR Building Upgrade Manual and Financial Evaluation Calculators

10) 50% of jurisdictions participate in US DOE Better Buildings Challenge which includes pledging to reduce 20% energy use in building(s).

Description: The U.S. Department of Energy Better Buildings Challenge is a commitment to reduce portfolio-wide building energy use 20% by 2020 and to showcase solutions and results. The Challenge is for U.S. companies, universities, school districts, and state and local governments. Local government partners can commit to reducing energy use in public buildings only or can also incorporate the broader community.

Examples:

- ❑ The Arlington County Better Buildings Challenge Partnership commits 1.9 million square feet to meet the goals of the Challenge through continuing energy management practices such as cost effective upgrades, effective operations and maintenance, building energy report cards and encouraging commercial participation in the Challenge.
- ❑ The District of Columbia Better Buildings Challenge Partnership commits to 90 million square feet of public and privately held buildings in downtown core. Implementation actions include energy efficiency improvements in City buildings, commercial building energy benchmarking and performance requirements, and establishment of the Sustainable Energy Utility.

Resources:

- ❑ U.S. Department of Energy Better Buildings Challenge
- ❑ EPA State and Local Climate and Energy Program Energy Efficiency in Government Operations and Facilities webpage and the Energy Efficiency in Local Government Operations Guide
- ❑ ENERGY STAR Building Upgrade Manual

11) 50% of jurisdictions develop a policy or ordinance to increase the energy efficiency of outdoor lighting in appropriate areas such as streets, parking lots, parks and/or signage.

Description: Jurisdictions have an outdoor lighting policy or ordinance for public and private areas that achieves energy reductions through quality outdoor lighting. Well-designed outdoor lighting reduces energy waste, glare, and light trespass through use of appropriate design illumination levels (usually an average 1 foot-candle or less is sufficient), use of cut-off luminaries to down-cast lighting, use of whiter light sources, and controls that only turn on lights or signage when needed (such as timers, motion detectors, etc). The policy could require or incentivize efficient outdoor lighting and/or signage.

Examples:

- ❑ Arlington County Street Light Policy and Planning Guide discussing illumination levels, dark sky compliance, and LED lights.

Resources:

- ❑ International Dark Sky Association's Light Pollution and Energy Brochure and Model Lighting Ordinance and Outdoor Lighting Resources (including lists of lighting ordinances nationwide)
- ❑ U.S. DOE Solid State Lighting Program Outdoor Lighting Resources offers specifications, fact sheets, case studies, and a financial analysis tool to help municipalities evaluate LED street lighting products.
- ❑ U.S. DOE Municipal Solid-State Street Lighting Consortium

12) At least 6 jurisdictions implement integrated community energy planning initiatives, including active consideration of deploying combined heat and power (CHP), district energy, and/or microgrid systems.

Description: Integrated community energy systems (ICES) emphasize the synergy between multiple sectors, including energy supply and distribution, housing and buildings, transportation, industry, water, wastewater and solid waste management. They supply community energy requirements from renewable energy or high-efficiency sources. Integrated Energy Master Plans, Community Energy Plans and Community Energy Strategic Plans are variants on this terminology. ICES may include district energy, combined heat and power, and/or microgrid systems.

Examples:

- ❑ Arlington Community Energy Plan sets goals for district energy, renewable energy, and more.

Resources:

- MWCOG commissioned a series of reports on ICES. The Task 1 Report provides an overview of key terms and technologies, and recommends ways to integrate energy considerations into local regulations. The Task 2 Report provides a business case for ICES.
- Natural Resources Canada Community Energy Planning Guide identified step-by-step procedure to developing a long-term plan.
- EPA Combined Heat and Power Partnership offers information on CHP basics and tools on CHP technology, policies and incentives, project development, and more.
- EPA Local Government Climate and Energy Action Strategy Series Combined Heat and Power Guide
- International District Energy Association has information on district energy, CHP, case studies, and resource guides.
- The Galvin Electricity Initiative's Microgrid Hub provides FAQs, resources, and project examples for microgrid applications.

13) 2% of households region-wide participate in Home Performance with ENERGY STAR Program (home energy assessments and retrofits).

Description: Through the Home Performance with ENERGY STAR Program (HpwES), participating contractors evaluate homes and recommend comprehensive improvements to improve efficiency and comfort of homes. The US DOE and US EPA administer the HpwES Program nationally in partnership with over 50 local entities from across the country. Local partners in the National Capital Region include the District of Columbia Sustainable Energy Utility (DC SEU), the State of Maryland, and the Local Energy Alliance Program (LEAP) for northern Virginia. Local jurisdictions can assist the region in meeting the goal to have 2% of households participate in the HPwES Program by promoting to residents the local HPwES Program operating in their jurisdiction.

Examples:

- DC SEU Home Energy Audit offers comprehensive energy audits with a certified Home Performance with ENERGY STAR contractor and incentives to implement recommended measures.
- The City of Rockville promotes State, County and Pepco incentives that rely on the Home Performance with ENERGY STAR Program via the City's website, newsletters, etc.

Resources:

- Home Performance with ENERGY STAR National Program
- The national program is facilitated through local programs. The local programs in the National Capital Region include: DC SEU's Home Energy Audit, Maryland Home Performance with ENERGY STAR Program, and LEAP Home Performance with ENERGY STAR Program for northern Virginia.

Energy Financing Implementation Action

14) 50% of jurisdictions develop or participate in financing programs to support sustainable building retrofit programs for energy efficiency or renewable energy in the residential and/or commercial sectors.

Description: One of the biggest barriers to improving residential and commercial building energy efficiency is the limited availability of appropriate finance mechanisms to offset high up-front costs. Local governments can offer a variety of programs such as weatherization assistance, efficiency retrofit grants, appliance rebates, or energy loans that help improve efficiency in the residential and commercial sector.

Establishing programs for home and/or business energy loans through scalable finance mechanisms can greatly increase the impact of government funding and in some cases provide a revenue stream for parties involved. Two ways in which local governments can expand the scope and impact of finance programs include a) working independently, with states, or through public-private partnerships to establish new programs that provide low-interest and/or long-term loans for energy efficiency improvements or renewable energy installations; and b) utilizing existing state finance vehicles and/or bonding authority.

Examples:

- ❑ The Maryland Clean Energy Center's Maryland Clean Energy Capital (MCAP) utilizes state bonding authority along with private capital to provide energy financing for institutions such as universities. Maryland Home Energy Loan program (MHELP) is a partnership with DOE to develop energy efficiency financing for Maryland property owners, using private capital.
- ❑ Arlington County has partnered with the Local Energy Alliance Program of Virginia (LEAP-VA) to help homeowners learn how to improve the energy efficiency of their homes, and secure low-interest loans through the Arlington Community Federal Credit Union.
- ❑ Alexandria's Energy$aver Loan Program with CommonWealth One Credit Union supports eligible homeowners in energy efficiency retrofits in support of Northern Virginia Home Performance with Energy Star Program.
- ❑ The District of Columbia has a Commercial Property Assessed Clean Energy (PACE) program that allows qualified property owners to opt-in to receive project financing for energy efficiency improvements that is repaid through an assessment on their property taxes.

Resources:

- ❑ EPA provides a Financing Program Decision Tool to help state and local governments evaluate various policy approaches.
- ❑ Think tanks, advocacy organizations, and universities have developed a number of resources analyzing energy efficiency finance mechanisms: What Have We Learned from Energy Efficiency Financing Programs?, On-Bill Financing for Energy Efficiency Improvements, Financing Energy Efficiency Improvements Policy Summary, Guide to Energy Efficiency and Renewable Energy Financing Districts for Local Governments, Energy Efficiency Financing – Models and Strategies.

- ❑ For renewable energy finance resources, see NREL's Renewable Energy Project Finance page and the U.S. Partnership for Renewable Energy Finance.
- ❑ The International Energy Agency (IEA) has produced a guide to Joint Public-Private Approaches to Energy Efficiency Finance.

High Performance/Green Building Implementation Actions

15) 100% of jurisdictions adopt a green building policy.

Description: Green buildings increase building performance and reduce the negative impact of buildings on the environment. Green buildings use less energy, water, and solid waste as well as generate fewer air pollutants and provide healthier indoor environments. Local jurisdictions' policies typically follow green building certification guidelines, such as LEED (Leadership in Energy and Environmental Design), ENERGY STAR for Buildings and New Homes, EarthCraft, and Green Globes.

Examples:

- ❑ In 2006, Montgomery County passed a bill requiring all new commercial and multi-family projects over 10,000 square feet to achieve LEED-Certified, and all public projects to achieve LEED-Silver or equivalent.
- ❑ The District of Columbia Green Building Act requires that all public non-residential buildings achieve LEED Silver, and residential buildings meet the Green Communities standard. In the private sector, new non-residential construction or major renovations over 50,000 square feet will be required to achieve LEED Certified level beginning in 2012.

Resources:

- ❑ COG Greening the Metropolitan Washington Region's Built Environment Summary Report
- ❑ USGBC Roadmap to Green Government Buildings
- ❑ USGBC State and Local Government Toolkit on developing green building policies
- ❑ USGBC LEED Green Building Rating Systems

16) 50% of jurisdictions implement an affordable housing green rehabilitation program.

Description: U.S. Department of Housing and Urban Development (HUD) states: "The generally accepted definition of affordability is for a household to pay no more than 30% of its annual income on housing" (Source). Jurisdictions' green building policies and incentives for new construction may also apply to projects that incorporate affordable dwelling units. This measure calls for local governments to incorporate energy and sustainability goals and practices into existing and/or new programs and initiatives that address improving subsidized affordable housing properties/dwelling units.

Examples:

- ❑ Prince George's County and Montgomery County, Maryland, conducted pilot projects to improve energy efficiency in affordable housing through a joint project initiated by the Maryland Energy Administration (MEA) and the Maryland Department of Housing and Community

Development (DHCD). DHCD used a $250,000 grant from MEA to provide financial incentives for affordable homes that qualify for the ENERGY STAR label (MEA, 2007).

- ❑ Arlington County Goals and Targets for Affordable Housing includes energy targets such as reduce total energy use by an average of 15% in affordable housing multi-family properties. In addition, the County supports Arlingtonians for a Clean Environment (ACE)'s Energy Masters who help perform easy energy and water efficiency improvements in affordable housing apartment buildings.
- ❑ The City of Bowie operates a Senior Green Housing Rehabilitation Program using Federal funds to provide energy audits and grant assistance to qualifying property owners. Assistance may include replacing HVAC systems, insulation improvements, correcting leaking and poorly installed ducts, replacing inefficient windows and doors, ENERGY STAR appliances, and/or solar energy technologies. Demand is so great that there is a waiting list; no new applications are being accepted at this time.
- ❑ The City of Falls Church has received a HUD Economic Development Initiative Grant that is being sub-contracted to the Falls Church Housing Corporation to make enhancements to the Winter Hill apartment property and grounds. Enhancements include implementing rainwater management practices and improvements that will facilitate savings for water, electric and gas utilities.

Resources:

- ❑ EPA Local Government Climate and Energy Strategy Series Energy Efficiency in Affordable Housing
- ❑ USGBC Affordable Green Neighborhoods Grant
- ❑ ENERGY STAR Affordable Housing Success Stories, Tools, and Resources
- ❑ EarthCraft Affordable Housing Information and Resources
- ❑ LEED or EarthCraft affordable housing developments in Virginia are eligible for funding from the Virginia Housing Development Authority (VHDA) Low-Income Housing Tax Credits (LIHTC) Qualified Allocation Plan (QAP)
- ❑ Enterprise Green Communities (policy support, financing tools, retrofit toolkits for subsidized multifamily housing)

17) 35% of jurisdictions offer incentives for commercial and residential buildings certified by a high efficiency building green rating system.

Description: Jurisdictions offer incentives for commercial and residential buildings certified by a high efficiency building green rating system (e.g. LEED, ENERGY STAR, EarthCraft, Green Globes, etc), such as expediting development review process, offering reduced/waivers of development fees, density bonuses, and/or tax credits.

Examples:

- ❑ Arlington County's green building density bonus program for new development projects completed with a minimum level of energy savings and LEED green building certification qualify.

- ❑ In 2012, City of Rockville's Mayor and Council adopted a High Performance Building Tax Credit for existing commercial buildings that achieve LEED-Existing Buildings: Operations & Maintenance silver certification or higher.

Resources:

- ❑ USGBC LEED Green Building Incentive Strategies
- ❑ National Association of Industrial and Office Properties Report: Green Building Incentives That Work
- ❑ ENERGY STAR Certification for Buildings and New Homes
- ❑ EarthCraft is a green building standard serving the southeast U.S. (including Virginia). EarthCraft provides standards for homes, multi-family, light commercial, renovations, and communities.
- ❑ Green Globes is an assessment and rating system used in the U.S. and Canada. Assessment tools are available for new buildings and large renovations, management and operations, energy management, building intelligence, and Fit-Up (sustainability principles).

18) 35% of jurisdictions outline a policy to implement green or "energy-aligned" lease terms and requirements in contract agreements for leased public spaces and/or facilities.

Description: Green leases include requirements to improve a building's energy efficiency and environmental performance. The purpose of a green lease is to formalize how building owners and tenants will work together to conserve resources, ensure efficient operation of the building, and to save money. Green leases may also be referred to as energy-aligned leases, high performance leases, or energy efficiency leases. Green leases may be applicable to local jurisdictions that lease space from the private sector and/or lease out space to tenants. Local jurisdictions can set an example by requiring green leases for all government leases.

There are a variety of approaches to green leases, such as:

- Require ENERGY STAR certification for leased buildings.
- Require LEED certification for leased building of new construction, major renovations, and/or for commercial interiors.
- Lay out an energy cost savings strategy that benefits both tenants and owners for energy efficiency improvements to the building. There may be a lack of motivation for energy improvements if the tenant's energy costs are based on square footage instead of use and the owner passes through operating expenses to the tenants and, therefore; wouldn't benefit from energy cost savings.
- Set other performance targets/benchmarks for owner and tenant and set incentives for when those targets have been met, such as decreased rent.

Examples:

- ❑ State of Washington adopted a law effective in 2010 for all properties lease by the state that requires ENERGY STAR performance scores of at least 75 for all new leases and lease renewals. If the buildings score is less than 75, efficiency measures must be implemented within the first two years of the lease.

- ❑ Plan NYC Energy Aligned Lease Clause provides an overview of lease language that can financially benefit building owners and tenants with base-building retrofit. It that can be applicable to commercial buildings and properties leased by the City. The language states that the landlord covers 100% of the upfront costs and provides ratios for energy cost savings for the tenant and landlord.
- ❑ GSA Green Lease Policies and Procedures includes language for various types of leases and locations including requiring ENERGY STAR certification for leasing buildings over 10,000 square feet, LEED Silver certification for leasing new construction and major renovation projects over 10,000 square feet, and optional language for LEED for Commercial Interiors certification.

Resources:

- ❑ The Green Lease Library provides guidance, best practices, and toolkits on green leases.
- ❑ US DOE Fact Sheet: High-Performance Leasing for State and Local Governments
- ❑ Institute for Market Transformation Green Leasing Model Legislation and Policy Development Guide
- ❑ Seattle's Tenant Improvement Quick Guide on Green Leasing

Water Resources Implementation Actions

19) 75% of potable water and wastewater entities (i.e. local government or utilities) in the COG region implement energy efficiency measures, alternative energy and/or renewable energy generation at their facilities.

Description: The utility has implemented at least one energy efficiency measure, utilizes alternative energy sources, and/or has installed alternative/renewable energy generation at their facilities. Energy efficiency measures apply to lighting, HVAC, processes, or operations, for example. Biosolids and combined heat and power projects are examples of alternative energy generation. Hydro, solar, and wind projects are examples of renewable energy generation.

Examples:

- ❑ Alexandria Renew Enterprises has implemented a wide variety of energy-related measures including building/facility measures such as HVAC control improvements, lighting enhancements, replacement of boilers with energy efficient units, and demonstration solar panels. Process improvements include measures such as automatic controls for wastewater conveyance and aeration, enhanced digester feed and mixing systems for increased digester gas production, new dual-fuel steam boilers for digester gas utilization, absorption chiller to take advantage of excess steam capacity during summer months, and actions to reduce peak aeration requirements.
- ❑ The Washington Aqueduct is in the process of implementing an Energy Savings Performance Contract (ESPC) to identify energy savings opportunities and infrastructure improvements. A facility wide energy audit was completed in 2010 and Washington Aqueduct is working on construction and implementation of recommended energy conservation measures.

Resources:

- ❑ EPA Energy Efficiency for Water and Wastewater Utilities webpage contains links to resources for determining energy usage, cutting energy usage and costs, and renewable energy options.
- ❑ The Water Environment Research Foundation has conducted research in the area of energy and operations optimization for water and wastewater plants. Reports on best practices and tools, such as CHEAPeT (Carbon Heat Energy Assessment Plant Evaluation Tool) are available to members.

20) 50% of local governments and /or wastewater utilities implement a water reuse project.

Description: Projects can include rainwater reuse (otherwise known as rainwater harvesting), greywater reuse, and water recycling/reclaimed water. Rainwater can be captured via rain barrels or cisterns for irrigation or other outdoor uses. Greywater reuse refers to water from bathroom sinks, showers, bathtubs and clothes washers being stored and used for outdoor watering or toilet flushing. Water recycling uses treated wastewater for uses such as irrigation of landscapes, public parks, etc; dust control; construction activities; and toilet flushing. Benefits may include reducing potable water use and saving energy, diverting water from sensitive ecosystems, decreasing wastewater discharges, and pollution prevention and reduction.

Examples:

- ❑ Loudoun County rainwater capture/ reuse projects include (1) Loudoun Water's water reuse program where reclaimed, highly treated wastewater from its Broad Run Water Reclamation Facility is available for irrigation and other specific non-potable uses; (2) rainwater cisterns at some Fire and Rescue buildings capture roof and site runoff and is piped into the apparatus bays for filling tanker trucks and washing vehicles, and is then recaptured at aprons, filtered, and brought back into the cisterns; and (3) two rain barrels at the Youth Shelter are planned to be used for watering vegetables grown by the youth on site.
- ❑ The District of Columbia has several rainwater capture/reuse projects on government property including several schools that reuse stormwater for toilet flushing and an innovative project at Canal Park where stormwater from the street is used for an ice rink and water features.

Resources:

- ❑ EPA 2012 Guidelines for Water Reuse
- ❑ EPA Rainwater Harvesting benefits, facts sheets, examples and useful websites.
- ❑ EPA Water Recycling and Reuse description, benefits and resources.

RENEWABLE ENERGY GOAL

To increase renewable energy production in line with state Renewable Portfolio Standards, meeting 10% of regional electricity consumption with power from renewable sources by 2016.[i]

Renewable Energy Implementation Actions

21) 5,000 residential, commercial or government buildings to have renewable energy systems installed.

Description: The goal is that 5,000 grid-connected renewable energy systems will be installed and operating in the National Capital Region (NCR) by 2016. This goal is being tracked by COG staff via annual surveys of energy utilities in the NCR and includes solar and wind energy. As of 2011, the total grid-collected systems in the NCR are 1,623 systems with a total capacity of 16,766 kWh. Local governments can support this goal through setting an example for the community by installing a renewable energy system on government property and encouraging and incentivizing residents and businesses to install renewable energy systems (see implementation actions 25 – 28 and 60).

Resources:

- ❑ NC State University Database for State Incentives for Renewables and Efficiency (DSIRE)
- ❑ U.S. DOE Solar Powering Your Community: A Guide for Local Governments includes information on residential and commercial incentives in Section 2.

22) 100% of jurisdictions have a renewable energy system on local government property.

Description: Each jurisdiction owns and operates at least one renewable energy system on local government property. This may include solar, wind, geothermal or hydropower.

Examples:

- ❑ The City of Takoma Park has installed 94 kilowatts of solar panels on city facilities, including the community center and public works facility.
- ❑ The City of Greenbelt Public Works Facility has a geothermal heating and cooling system.
- ❑ Fairfax County's Noman M. Cole, Jr. Pollution Control Plant replaced four standard 25 horsepower mixers with a solar mixer that is saving about $40,000 a year in energy costs.
- ❑ A wind turbine has been installed at the Charles County's Welcome Center. The land is owned by the State of Maryland, but the facility is operated by Charles County.

Resources:

- ❑ The EPA Local Government Climate and Energy Strategy Series section on Onsite Renewable Energy Generation highlights local government benefits, planning, implementation and resources for onsite renewable energy generation.
- ❑ National Association of Counties fact sheets: Solar Energy for County Facilities, Geothermal Energy in County Facilities, and Wind Energy for County Commissioners

- ❑ The U.S. DOE SunShot Initiative's Solar Energy Resource Center provides the ability to search for resources (fact sheets, case studies, webinars, technical reports, etc) on completing installations on government facilities.
- ❑ National Renewable Energy Laboratory (NREL) Cost of Renewable Energy Spreadsheet Tool (CREST)

23) 75% of jurisdictions become an EPA Green Power Partner.

Description: The US EPA Green Power Partnership is a voluntary program with over 1,300 partners reducing their impact on the environment through the use of green power. Partners commit to using green power at least the minimum partner level requirements. Commitments can be made organization-wide or at the facility level (or for a logical aggregation of facilities). . Partners that meet a higher level of purchase requirements can be recognized at the Leadership Club level. Minimum requirements are based on annual electricity use:

Annual Electricity Use in Kilowatt-hours	Minimum % of Annual Use Purchase Requirements	
	Partner Level	Leadership Club
≥ 100,000,001	3%	30%
10,000,001 – 100,000,000	5%	50%
1,000,001 – 10,000,000	10%	100%
≤ 1,000,000	20%	N/A

Examples:

- ❑ The City of Falls Church, VA is a Green Power Partner purchasing 5% of its total organization-wide annual electricity use as renewable energy, offsetting over 541,000 kilowatt hours. The City has also been named the first Green Power Community in Virginia.
- ❑ The City of Greenbelt is a Green Power Partner in the Leadership Club for purchasing 100% of its total organization-wide annual electricity use as renewable energy.

Resources:

- ❑ U.S. EPA Green Power Partnership
- ❑ U.S. DOE Guide to Purchasing Green Power and Quick Guide: Renewable Energy Credits
- ❑ Green-e provides certification and verification of renewable energy products
- ❑ EPA Local Climate and Energy Strategy Series section on Green Power Procurement discusses benefits, products, participants, mechanisms for implementation, implementation considerations, cost and funding opportunities, funding opportunities, and resources.
- ❑ Virginia Energy Purchasing Governmental Association's Dominion Green Power Program

24) 25% of jurisdictions become an EPA Green Power Community Partner.

Description: A Green Power Community (GPC) is a town, city, or county where local governments, residents, and businesses collectively meet the minimum green power requirements of the EPA Green Power Community Program. In order to become a GPC, the local government must become a Green Power Partner, work with the power provider to determine community-wide energy use and

initiate a community-wide campaign to encourage residential and business participation. Once minimum requirements are met, the locality can sign the GPC Partnership Agreement. Minimum requirements are as follows:

Community Annual Electricity Usage (kWh)	Minimum Purchase Requirements
≥ 100,000,001	3%
10,000,001 – 100,000,000	5%
1,000,001 – 10,000,000	10%
≤ 1,000,000	20%

Examples:

- ❑ The City of College Park is a Green Power Community Partner. Green power purchases made by the City, University of Maryland, homeowners, and businesses equal 3% of the total community's annual energy use, which is more than 1.5 million kilowatt hours.
- ❑ Washington D.C. is the largest Green Power Community Partner in the nation. More than one billion kilowatt hours of green power (more than 11% of the community-wide annual energy use) are purchased by government entities, businesses, residents, and institutions.

Resources:

- ❑ U.S. EPA Green Power Communities
- ❑ U.S. DOE Guide to Purchasing Green Power and Quick Guide: Renewable Energy Credits
- ❑ Green-e provides certification and verification of renewable energy products
- ❑ EPA Local Climate and Energy Strategy Series section on Green Power Procurement discusses benefits, products, participants, mechanisms for implementation, implementation considerations, cost and funding opportunities, funding opportunities, and resources.

25) Implement two regional pilot projects promoting a renewable energy park.

Description: Renewable energy "parks" are demonstrations sites for energy technologies and implementation strategies, and can serve as education resources for the community. They can be located at industrial sites, brownfield sites, waste management facilities, military bases, or other government or private land.

Examples:

- ❑ Prince William County is developing an Eco Park Complex at the County landfill, employing waste-to-energy technology and evaluating options for solar and wind.
- ❑ The Lancaster County, Pennsylvania Solid Waste Management Authority worked with a renewable energy company and a large local business to create a renewable energy park that features a landfill gas plant, wind project, welcome center, and energy pavilion.
- ❑ The city of Ellensburg, Washington, created a 36-kW solar energy park that was financed through community sources.

Resources:

- ❑ The Department of Energy has developed a Renewable Energy Project Development tool for communities.
- ❑ EPA has provided guidance on Siting Solar Voltaics on Municipal Solid Waste Landfills.

TRANSPORTATION AND LAND USE GOAL

To minimize the greenhouse gas impact of our transportation system, which contributes one third of regional emissions, by reducing vehicle miles travelled and increasing the use of alternative fuel and high efficiency vehicles.

Transportation Implementation Actions

26) 100% of jurisdictions have idling regulations and promote them, as reflected through review of citations and/or education/outreach.

Description: Anti-idling policies help to reduce greenhouse gas emissions, improve air quality, and decrease fuel use. This action refers to the local government having an adopted idle reduction policy or ordinance for, at a minimum, local government fleet vehicles. However, policies can apply to all mobile sources. Anti-idling policies may have a 3-5 minute idling time limit and include exemptions such as emergency vehicles, temperatures below freezing, traffic conditions, repairs, etc. Policy should involve education and outreach and may include citations and fines.

Examples:

- ❑ Frederick County, MD has an idling policy for its own vehicles and an outreach campaign was used with internal staff that required signatures from all county drivers.
- ❑ Fairfax County, VA Code on Air Pollution Control for Mobile Sources (Section 103-3-10) has a 3 minute time limit on idling for any mobile source once the source has completed its work or function.
- ❑ The City of Newark, DE Anti-Idling Campaign promotes the 5 minute limit anti-idling law by educating the public on the pounds of air pollution they can personally save in a month and money they can save by not idling.
- ❑ Clean Air Council (PA) website IdleFreePhilly.org is an online reporting for citizens to report illegal idling and allows city officials to target idling "hotspots" for enforcement.

Resources:

- ❑ Turn Off Your Engine Campaign promotes idle reduction in the National Capital Region
- ❑ U.S. DOE Alternative Fuels Data Center Idle Reduction Resources
- ❑ Argonne National Laboratory Idle Reduction Savings Worksheet
- ❑ American Transportation Research Institute Compendium of Idling Regulations
- ❑ Model Idling Control Program for Municipal Fleets by the Toronto Clean Air Partnership
- ❑ IdleFreePA Facts Sheets on the health effects, economic costs, and environmental effects of diesel

27) 75% of jurisdictions offer a commute options program for their workers (telework, alternative work schedule, car pool, van pool, guaranteed ride home, bike/pedestrian, and/or financial incentive).

Description: The goal of the commute options program for local government workers is for local governments to support alternatives to driving along and during peak hours to help reduce traffic congestion, air pollution and crowding. Commute option programs for local government workers may include:

- Teleworking: use of technology and telecommunications to work at home or closer to home at a local telework center.
- Alternative work schedule: can include flextime or compressed work schedules. Flextime is when employees can adjust their arrival and departure times at non-peak travel times. Compressed work schedules can eliminate commuting one day a week for employees with a four-day 40-hour work week.
- Carpools and vanpools: local governments can encourage participation in carpools and vanpools, offer preferred parking, offer reduced parking fees, and/or offer pre- or post-tax subsidies for carpool and vanpool participants.
- Bicycling: local governments can support biking to work by appointing a bike coordinator, providing safe bike parking (lockers, racks, shelters, etc), showers for employees, and/or incentives.
- Guaranteed Ride Home Program: provides a free ride home to regular commuters in the event of an emergency. Local governments can promote employee participation in the program.
- Financial incentives: in additional to financial incentives mentioned above, local governments can offer pre- or post-tax subsidies for transit passes and walking to work.

Examples:

- ❑ Over 20% of Loudoun County employees are currently teleworking.
- ❑ The City of College Park allows pre-tax purchase of Metrocheck and has a bicycle for staff use for short trips during the course of the business day.

Resources:

- ❑ Commuter Connections offers alternative commuting option resources in the metropolitan Washington region, including employer services.
- ❑ The Ridesharing Program through Commuter Connections helps commuters find carpool and vanpool options near where you live and work and with commuters with similar work schedules.

28) A regional employer-based and general public commute option program (telework, alternative work schedule, car pool, van pool, guaranteed ride home, bike/pedestrian, and/or financial incentives) continues operating in all jurisdictions.

Description: Commuter Connections is a regional commuter options program for residents and businesses in the Washington metropolitan region. It is a regional network of transportation

organizations coordinated by the Metropolitan Washington Council of Governments' National Capital Region Transportation Planning Board that provides commuters information about their commuting options and assists employers in establishing commuting benefits and assistance programs. This goal recognizes the importance of this program and the need for local governments to continue to support and promote Commuter Connections and local programs. A few local programs in the regional network are highlighted under Examples below.

Examples:

- City of Alexandria Local Motion offers Carshare Alexandria as well as promotes Capital Bike Share in Alexandria, Commuter Connection Pool Rewards, and a Commuter Challenge event.
- As part of the Montgomery County Commuter Services Better Ways to Work Program, saving benefits for employers and employees are promoted, such as pre-tax transit benefits and the Maryland Commuter Tax Credit.

Resources:

- The Ridesharing Program through Commuter Connections helps commuters find carpool and vanpool options near where you live and work and with commuters with similar work schedules as well as the closest transit stop, park and ride lot, and Telework center to their home. Information is also available on teleworking and bicycling options.
- The Guaranteed Ride Home Program through Commuter Connections provides a free ride home to regular commuters in the event of an unexpected emergency or unscheduled overtime.
- Pool Rewards is an incentive program through Commuter Connections in the metropolitan Washington region that encourages drive alone commuters to start ridesharing.

29) 75% of jurisdictions adopt and implement a bicycle/pedestrian plan.

Description: The local jurisdiction has adopted a bicycle and pedestrian plan or has incorporated policies and planning into a transportation plan. Plans include policies, standards, and projects that will enhance bicycle network connectivity and pedestrian safety and access to transit. Jurisdictions with existing or planned Metrorail access should invest in bicycle and pedestrian facilities that increase access to existing stations.

Examples:

- The Montgomery Countywide Bikeways Functional Master Plan establishes the countywide network plan for utilitarian bicycle transportation compliments the Countywide Park Trails Plan and recommends nearly 200 bikeways, totaling more than 500 miles.
- Loudoun County Pedestrian and Bicycle Mobility Plan recommends a countywide network to connect citizens to parks, schools, jobs, shopping areas and rural open space without relying on automobiles.

Resources:

- 2010 Bicycle and Pedestrian Plan for the National Capital Region and online database of bike and pedestrian projects in the National Capital Region

- ❑ Virginia Department of Transportation Biking and Walking Implementation Guidance Documents for Localities
- ❑ The Bicycle Friendly Community designation provides a roadmap and recognition for communities to improve conditions for bicycling.
- ❑ Walk Friendly Communities encourages and recognizes communities for commitment to and improvement of safer walking environments.
- ❑ American Association of State Highway and Transportation Officials Guide for the Development of Bicycle Facilities (available for purchase)
- ❑ The National Center for Bicycling and Walking Resources on accommodating and planning for bicycles and pedestrians
- ❑ The Pedestrian and Bicycle Information Center offers information on bike and pedestrian planning resources, model programs, plans, and more.

30) 75% of jurisdictions adopt a complete streets policy.

Description: The local jurisdiction has adopted a complete streets policy or ordinance. Complete streets safely and adequately accommodate all users and all modes. This includes pedestrians, bicyclists, motorists, freight vehicles, emergency vehicles, and transit riders of all ages and abilities. Complete streets policies applies to both new and retrofit projects for the entire right-of-way, encourages street connectivity, and use of the latest and best design criteria. .

Examples:

- ❑ Prince George's County, MD Complete and Green Streets Policy was adopted to create more livable communities and places; make it easier for people to walk, bike and use public transportation; and manage stormwater in an environmentally friendly way.
- ❑ The Arlington County Master Transportation Plan's Goals and Policies include a general policy to support to design and operation of complete streets and the Streets Element further describes the complete streets framework.

Resources:

- ❑ COG Transportation Planning Board's Complete Streets Policy for the National Capital Region
- ❑ National Complete Streets Coalition's Policy Elements, Complete Streets Local Policy Workbook and Complete Streets Policy Analysis

31) 75% of jurisdictions adopt a green fleet policy.

Description: The local government has adopted a green fleet policy that gives preference to alternative fuel and/or advanced fuel vehicles. Alternative and advanced fuel vehicles include biodiesel, electricity (includes hybrids), ethanol, hydrogen, natural gas, and propane. Green fleet policies can also include goals for alternative and/or advanced fuel vehicles or goals for fleet emission reductions; statements about purchasing the most energy efficient vehicle that will meet the operational needs; and maintaining and operating vehicles for optimal energy efficiency and emission reduction (engine tuning, tire inflation, efficient driving practices)

Examples:

- ❑ The City Manassas has a goal of 10% of fleet to be clean alternative or clean fuel vehicles.
- ❑ In 2009, Montgomery County won second place for the Government Green Fleet Award from the 100 Best Fleets Program.

Resources:

- ❑ ICLEI Green Your Fleet Brochure
- ❑ FuelEconomy.gov provides a tool to research and compare the fuel economy and greenhouse gas ratings and smog ratings of vehicles on the market, information on advanced vehicles and fuel, cost calculators and more.
- ❑ Clean Cities 2014 Vehicle Buyer's Guide
- ❑ U.S. DOE Alternative Fuels Data Center provides resources on fuels and vehicles, conserving fuel, station location, and laws and incentives. Use the Petroleum Reduction Planning Tool to create a comprehensive plan for your fleet.
- ❑ The 100 Best Fleets Government Greet Fleet Award is open to all Federal, State, and Local Government Fleets in North America. It is a comprehensive set of criteria specifically tailored around the challenges and requirements of the government fleet manager.
- ❑ The American Council for an Energy-Efficient Economy (ACEEE) Green Book provides green ratings for every vehicle on the market.
- ❑ Metropolitan Washington Eco Driving Information and Resources

32) 75% of jurisdictions implement alternative fuel vehicle infrastructure projects (e.g., natural gas, biofuel, electric, hydrogen).

Description: The local government has at least one alternative or advanced fuel station. The station can be for the local government fleet only or open to the public. Alternative and advanced fuels include biodiesel, electricity, ethanol, hydrogen, natural gas, and propane. Electric charging stations must at least provide Level II charging.

Examples:

- ❑ Loudoun County completed installation of five electric vehicle charging stations at Scott Jenkins Memorial Park in July 2011.
- ❑ Arlington has alternative fuel stations for Arlington Transit and government fleet vehicles. The County use alternative fuels or partial battery power for 61% of its fleet. (source: AIRE)

Resources:

- ❑ FuelEconomy.gov provides a tool to research and compare the fuel economy and greenhouse gas ratings and smog ratings of vehicles on the market, information on advanced vehicles and fuel, cost calculators and more.
- ❑ U.S. DOE Alternative Fuels Data Center provides resources on fuels and vehicles, conserving fuel, station location, and laws and incentives.

- ❑ The Federal Highway Administration Congestion Mitigation and Air Quality (CMAQ) Improvement Program funds transportation projects, such as publicly-owned alternative fueling stations, which will contribute to attainment or maintenance of the national ambient air quality standards (NAAQS).
- ❑ The Electric Vehicles in Metropolitan Washington report discusses policy options for local government facilitation of electric vehicle infrastructure deployment.

33) 25% of jurisdictions participate in car-sharing programs, such as Zip Car, as an alternative to expanding fleet.

Description: The jurisdiction pays for membership in a car-sharing program for city/county employees. If car-sharing vehicles are not currently located near city/county offices, jurisdictions may need to work with the car-sharing company to locate vehicles where it will be most convenient for staff.

Examples:

- ❑ Arlington County provides a Zip Car membership for its employees.
- ❑ Philadelphia replaced its vehicle fleet with car-sharing to save money by reducing the City's fleet. In 2005, more than 300 vehicles had been taken out of the fleet and calculations showed the City would save more than $9 million over five years.

Resources:

- ❑ Transit Cooperative Research Program Report Car-Sharing: Where and How it Succeeds includes a section on local government that discusses goals and benefits, partners, memberships, and more for employee and community-wide programs.
- ❑ Zip Car for Businesses (202-737-4900)
- ❑ Enterprise Car Share Program for Government

Land Use Implementation Actions

34) 100% of jurisdictions with land use authority adopt land use plans that allow for and incentivize walkable, higher density, mixed use, mixed income and/or transit oriented development in activity centers.

Description: The principles of smart growth include mixing land uses, compact building design, walkable communities, directing development toward existing communities, providing a range of housing choices, and a range of transportation choices. This measure calls for local governments to incorporate these smart growth principles into land use plans as well as provide incentives to further facilitate implementation.

Examples:

- ❑ A key area of focus in Arlington County's General Land Use Plan is mixed use, transit oriented, and pedestrian-friendly development in the county's growth centers. Financial and other incentives are identified for development in higher density areas.

Resources:

- ❑ Smart Growth Network Getting to Smart Growth: 100 Policies to Implementation Volumes I and II
- ❑ EPA Smart Growth information, publications, resources, and grants
- ❑ EPA Green Communities Land Use Action Plan Resources
- ❑ EPA Local Government Climate and Energy Strategy Series Smart Growth

35) 75% of jurisdictions identify, promote and incentivize the redevelopment of greyfield and/or brownfield sites.

Description: A brownfield is a site that has hazard substances, pollutants or contaminants that may complicate redevelopment. A greyfield site does not have the contamination of a brownfield but is an underutilized developed site that can be reused, revitalized, or redeveloped. Local jurisdictions can develop a list of brownfield and greyfield sites in the community and target key areas by promoting and incentivizing sites to developers. Prioritizing greyfield reuse/redevelopment near transit is also recommended.

Examples:

- ❑ Fairfax County Comprehensive Plan policy supports redevelopment efforts, particularly in mixed use, transit oriented projects in growth centers. The county has also designated five Commercial Revitalization Districts (overlay districts within the Zoning Ordinance) that provide regulatory incentives to encourage development in these areas and two Commercial Revitalization Areas within which redevelopment is also promoted.

Resources:

- ❑ EPA Brownfields Program
- ❑ Atlanta Regional Commission Greyfield Redevelopment Toolkit (located down under the Commercial Development header)
- ❑ National Association of Counties publications: Redevelopment of Vacant Sites and Protecting Public Health and The Politics of Redeveloping Brownfields and Abandoned Property

36) 75% of jurisdictions have one or more of its facilities at a former greyfield and/or brownfield site(s).

Description: One or more of a local jurisdiction's existing facilities was formerly a brownfield and/or greyfield site. A brownfield is a site that has hazard substances, pollutants or contaminants that may complicate redevelopment. A greyfield site does not have the contamination of a brownfield but is an underutilized developed site that can be reused, revitalized, or redeveloped.

Examples:

- ❑ Long Bridge Park in Arlington County is a recently opened facility with sports fields and recreation space on formerly industrial land.

- ❑ Fairfax County is redeveloping the former Lorton prison site as residential, retail, and artist space.

Resources:

- ❑ EPA Brownfields Program
- ❑ Atlanta Regional Commission Greyfield Redevelopment Toolkit (located down under the Commercial Development header)
- ❑ National Association of Counties publications: Redevelopment of Vacant Sites and Protecting Public Health and The Politics of Redeveloping Brownfields and Abandoned Property

SUSTAINABILITY AND RESILIENCY GOAL

To increase the resiliency and sustainability of the region's infrastructure, economy, and environment.

Climate Resiliency – Adaptation and Energy Security Implementation Actions

37) 40% of jurisdictions assess their community's vulnerability to the impacts of climate change.

Description: Climate change mitigation refers to implementing cost effective strategies to reduce emissions. Regardless of near-term emission reductions, some degree of climate change effects will continue to occur for a time due to lifespan of greenhouse gases in the atmosphere. Therefore, it is necessary for communities to prepare for the unavoidable impacts of climate change (i.e. adaptation planning). The first step is to identify climate change trends and anticipated climate changes. Generally, impacts anticipated in the metropolitan Washington region include an increase in average annual temperature (milder winters and hotter summers), slight increase in average annual precipitation, more frequent heavy downpours, as well as increased flooding, sea level rise and storm surge. The next step is to conduct an assessment of the community's vulnerabilities. In order to provide focus to the assessment a community may want to consider what existing community problems/concerns may be exacerbated by climate change.

Examples:

- ❑ Miami-Dade County Vulnerability Assessment used the National Oceanic and Atmospheric Administration's (NOAA) Roadmap for Adapting to Coastal Risk process to map and assess priority hazard areas and community assets in those areas.
- ❑ In New York City, every department that works on any type of infrastructure in the City participates on an infrastructure committee. Climate impacts are being evaluated and incorporated into infrastructure planning.
- ❑ In the City of Flagstaff, AZ a cross-section staff team representing every department worked together to conduct a risk assessment and focused on identifying how climate impacts will impact the City's ability to deliver the services it provides the community. A list of potential climate impacts was identified by city operation type (emergency services, transportation services, public health, etc).

- ❑ The Northern Virginia Regional Commission Sustainable Shorelines Project developed maps for communities in northern Virginia showing risk areas to sea level rise and storm surge and quantified elements quantified vulnerable built and natural environment elements (such as buildings, roads, critical infrastructure, tidal wetlands, etc).
- ❑ Due to repeated and increasingly frequent flooding events the City of Alexandria is reviewing their stormwater design criteria as part of a Storm Sewer Capacity Analysis Study and is factoring in the potential impact of climate change to precipitation patterns and tide levels. The study will include a cost-benefit evaluation of the climate risk associated with new projections and possible adoption of new design criteria.

Resources:

- ❑ NOAA's Roadmap to Adapting to Coastal Risks provides an overview of the roadmap's approach, available trainings, resources, and example community assessment and strategies.
- ❑ Chicago Area Climate Change Quick Guide discusses a risk assessment methodology and adaptation tactics for municipalities.
- ❑ ICLEI Climate Adaptation Guidebook for reviews a process, risk assessment methodology, and how to develop a preparedness plan for local, regional and state governments.
- ❑ Georgetown Climate Center Adaptation Clearinghouse was developed to assist communities in adapting to climate change and features a variety of public sector vulnerability assessments and adaptation plans.
- ❑ COG Climate Change Impacts and Adaptation webpage includes contains information on relevant events including presentations and resources.

38) 40% of jurisdictions develop and adopt strategies to adapt to the impacts of climate change/increase the community's resiliency to climate impacts.

Description: Communities implement climate adaptation/resiliency strategies that are unique to their community's profile, priorities, and climate impacts. Generally, impacts anticipated in the metropolitan Washington region include an increase in average annual temperature (milder winters and hotter summers), slight increase in average annual precipitation, more frequent heavy downpours, as well as increased flooding, sea level rise and storm surge. Jurisdictions should focus on strategies that address how climate change will exacerbate existing community problems. Jurisdictions may want to consider strategies in the areas of operations and management, infrastructure planning, and/or policy. Implementation of strategies may be most successful by incorporating community resiliency best management practices into existing planning processes (such as comprehensive plans, transportation plans, emergency management plans, etc).

In order to gain public support, it may be helpful to focus public communications on conveying the direct local impacts, instead of long-term projected impacts. In addition, focus messaging on preparedness to weather events, protecting community well-being (socio-economics, public health, natural resources, etc), and/or personalizing the message to other community values. Terms like "adaptation" may be too vague or confusing to use in public communications.

Examples:

- ❑ The City of Alexandria's Energy and Climate Change Action Plan includes a section on Climate Adaptation and Preparedness that identifies five key anticipated climate impacts to people and property and for each impact identifies goals and implementation actions.
- ❑ Instead of adopting an adaptation plan, the City of Flagstaff, AZ adopted a brief Resiliency and Preparedness Policy statement with a list of goals as identified in the City's Resiliency and Preparedness Study. Resiliency strategies are being incorporated into existing plans and so far have been incorporated into the City's Comprehensive Plan and Emergency Response Plan.
- ❑ Many of Arlington's existing programs increase the community's resilience to climate impacts. Examples include storm sewer system upgrades; a StormwaterWise Landscapes Program that provides grants to County residents and businesses to install small-scale practices to reduce stormwater runoff; and the Community Energy Plan where one of the main goals is to increase energy security (including addressing weaknesses caused by changing climate and extreme storms).

Resources:

- ❑ NOAA's Roadmap to Adapting to Coastal Risks provides an overview of the roadmap's approach, available trainings, resources, and example community assessment and strategies.
- ❑ Chicago Area Climate Change Quick Guide discusses a risk assessment methodology and adaptation tactics for municipalities.
- ❑ ICLEI Climate Adaptation Guidebook for reviews a process, risk assessment methodology, and how to develop a preparedness plan for local, regional and state governments.
- ❑ Georgetown Climate Center Adaptation Clearinghouse was developed to assist communities in adapting to climate change and features a variety of public sector vulnerability assessments and adaptation plans.
- ❑ COG Climate Change Impacts and Adaptation webpage includes contains information on relevant events including presentations and resources.

39) State, regional and local agencies responsible for transportation and utility infrastructure assess vulnerability of critical assets.

Description: Climate change mitigation refers to implementing cost effective strategies to reduce emissions. Regardless of near-term emission reductions, some degree of climate change effects will continue to occur for a time due to lifespan of greenhouse gases in the atmosphere. Therefore, it is necessary for communities to prepare for the unavoidable impacts of climate change (i.e. adaptation planning). The first step is to identify anticipated climate changes. Generally, impacts anticipated in the metropolitan Washington region include an increase in average annual temperature (milder winters and hotter summers), slight increase in average annual precipitation, more frequent heavy downpours, as well as increased flooding, sea level rise and storm surge. The next step is to conduct an assessment of the community's vulnerabilities, including vulnerabilities to infrastructure. Transportation, water, and other infrastructure vulnerability assessments might

include mapping of infrastructure in flood-prone or erosion-prone areas, assessing emergency preparedness to shorten or prevent service disruptions, and inventorying back-up power capability.

Examples:

- ❑ Philadelphia's transit service, SEPTA, was awarded a grant from the Federal Transit Administration to serve as a pilot for FTA's climate adaptation initiative. The story on the extreme weather the agency faces and the pilot project is described here, and a PowerPoint presenting their impacts assessment and response strategies is found here.
- ❑ The District Department of Transportation Sustainability Plan outlines climate change adaptation as one of its top 8 priorities and in 2013 published its Climate Change Adaptation Plan. The Plan follows adaptation planning frameworks developed by the National Cooperative Highway Research Program and the Federal Highway Administration.
- ❑ The City of Alexandria commissioned a study by CH2M Hill to evaluate the size of stormwater pipes with respect to their ability to handle projected precipitation changes due to climate change.

Resources:

- ❑ The US Department of Transportation's Federal Highway Administration's Climate Change Vulnerability Assessment Pilots program webpage lists a number of vulnerability assessment resources and case studies.
- ❑ The US Department of Transportation Federal Transit Administration's Climate Change Adaptation Initiative webpage contains links to climate impacts assessment.
- ❑ The US Environmental Protection Agency's Climate Ready Water Utilities program has a variety of tools, trainings and resources to assess water infrastructure vulnerability to climate change, such as the Adaptation Strategies Guide for Water Utilities and a spreadsheet-based tool called Climate Resilience Evaluation and Awareness Tool (CREAT).
- ❑ The Water Environment Research Foundation (WERF)'s Climate Change program evaluates the likely effects of climate change on wastewater services, and assessing processes and technologies to cost-effectively mitigate and adapt to the potential impacts.
- ❑ COG staff conducted a preliminary vulnerability assessment for the transportation and water sectors, which are posted along with other COG workshop proceedings and resources on the Climate Change Impacts and Adaptation webpage.

40) 50% of jurisdictions apply the energy assurance planning framework to assess strategies for enhancing community resiliency and energy security.

Description: Local Energy Assurance Plans (EAPs) identify key actions to take during an energy emergency to ensure that critical facilities continue to function. Strategies may include integrated energy planning, energy efficiency, distributed generation, grid modernization, and alternative power systems, including renewable energy. Plans may be based on state EAPs or formulated independently. EAPs can be stand-alone plans, or can be integrated into community energy or emergency management plans.

Examples:

- ❑ Bowie's local energy assurance planning initiatives includes the installation of generators at key City facilities and cooling and warming centers provided during severe weather events.
- ❑ The District Department of the Environment's Energy Assurance Plan (EAP) addresses: the types of energy emergencies that can occur in the District; who responds to an energy emergency; the plan of action when an energy emergency occurs; and development related to critical infrastructure and promoting policies and programs that enhance the resiliency of District energy systems.
- ❑ The City of Virginia Beach was among the first communities in the mid-Atlantic region to formulate a local energy assurance plan. Their presentation to COG's Energy Advisory Committee about the planning process is available here.

Resources:

- ❑ The Public Technology Institute (PTI) created resources for local governments to complete Energy Assurance Plans through a DOE grant. Numerous free resources are available at their website. In January 2013, PTI made a presentation on this topic to the Energy Advisory Committee.
- ❑ The Local Government Energy Assurance Planning and California Local Energy Assurance Planning websites were created to assist local governments in the energy assurance planning process.
- ❑ US DOE Energy Assurance Resources

Green Infrastructure Implementation Actions

41) 75% of jurisdictions implement a plan to preserve and enhance ecologically valuable green spaces (such as forests, wetlands, stream buffers) in urban, suburban and rural areas, such as a green infrastructure plan, natural resource management plan, or green space plan.

Description: Green infrastructure is defined as an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other important natural areas. An interconnected system of natural areas protects biodiversity, enhances natural community resiliency, and buffers the impacts of development—all while providing multiple public benefits. Natural Resource Management plans more often apply to public lands, with the purpose of protecting, restoring, and enhancing natural areas that often have multiple purposes such as recreation, trails, aesthetic resources, cultural resources, groundwater recharge, and pollution mitigation. Green space plans tend to focus on park and open space resources.

In some contexts the term green infrastructure refers to low impact development and stormwater management, renewable energy infrastructure such as solar panels, or recreational trail networks. For the purposes of this measure, green infrastructure relates to land cover and waterways.

Examples:

- ❑ Prince George's County - The Countywide Green Infrastructure Plan was adopted in June 2005 and the Green Infrastructure Plan identifies existing green infrastructure elements throughout

the county and proposes conservation mechanisms to preserve, protect, and enhance these elements.

- ❑ Fairfax County Natural Resource Management Plan to meet the challenges of minimizing the impacts of surrounding development, storm water run-off, water and air pollution, invasive plants, wildlife conflicts and encroachments by adjoining property owners.
- ❑ City of Portland's Grey to Green Initiative is expanding Portland's green infrastructure to sustainably manage stormwater runoff, control invasive plants, restore native vegetation, protect sensitive natural areas, and replace culverts that impede fish passage. Grey to Green investments improves water quality, air quality, wildlife habitat and neighborhood livability. The initiative also helps us adapt to a changing climate.

Resources:

- ❑ Portland's Green Infrastructure: Quantifying the Health, Energy, and Community Livability Benefits includes green streets best management practices, benefits, and more.
- ❑ The Conservation Fund webpage contains descriptions of funded projects in US cities such as Houston-Galveston and Chicago. Their report, Advancing Strategic Conservation in the Commonwealth of Virginia (a green infrastructure scoping study), is a basic green infrastructure primer.
- ❑ Virginia Department of Conservation and Recreation Green Infrastructure Resources and Advisory Workgroup
- ❑ The Green Infrastructure Center, based in Charlottesville, Virginia, publishes this 'recipe' for green infrastructure planning. Their webpage describes several projects in Virginia and a list of a dozen presentations and reports relating to green infrastructure.
- ❑ The University of Georgia's Natural Resources Spatial Analysis Lab webpage outlines 7 Basic Principles and the Planning Process for green infrastructure, among other resources.

42) 100% of jurisdictions in the region are a Tree City USA.

Description: The four standards to receive the Arbor Day Foundation's Tree City USA designation include establishing a Tree Board or department, adopt a tree care ordinance, have a community forestry program with at least $2 per capita annual budget, and have an Arbor Day observation and proclamation.

Examples:

- ❑ Jurisdictions in the metropolitan Washington region that have received the Tree City USA designation include:
  - Washington D.C.
  - In Maryland, the cities of Bowie, College Park, Frederick, Gaithersburg, Greenbelt, Rockville and Takoma Park and the counties of Montgomery and Prince George's.
  - In Virginia, the cities of Alexandria, Fairfax, Falls Church, and Manassas and counties of Arlington and Fairfax.

Resources:

- ❑ Tree City USA

43) 75% of jurisdictions adopt a tree canopy/forest cover goal.

Description: Urban tree canopy (UTC) is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above. A first step prior to setting a tree canopy goal is to assess the present UTC condition, which can be accomplished through an aerial assessment or by collecting field data on tree species. It's also constructive to assess how much UTC is possible. This may include identifying opportunities to increase tree canopy in your community as well as tree loss from tree mortality and zoning build-out. Local jurisdictions should formally adopt UTC goal based on the assessment of current UTC. Expectations and goals may be different for urban, suburban, and rural areas. Most communities will likely need to set a goal with a net gain (higher than their existing UTC). If a community has a robust UTC it may consider a no net loss of trees goal to maintain its UTC. It's helpful if UTC goals complement open space, air quality and stormwater goals.

Examples:

- ❑ The District of Columbia has a 40% tree canopy goal and released a Draft Urban Tree Canopy Plan to achieve the goal by 2032.
- ❑ A Report on the City of Bowie's Existing and Possible Tree Canopy found that 46% of all land in the City is covered by trees. The City Council adopted a 45% tree canopy goal to maintain its tree canopy and implements urban forest projects as part of its Environmental Infrastructure Action Strategy Plan.

Resources:

- ❑ Proceedings from the Chesapeake Bay Scientific and Technical Advisory Committee's Urban Tree Canopy Workshop discuss how to assess urban tree canopy, set urban tree canopy goals, and implementation.
- ❑ Maryland Department of Natural Resources Urban Canopy Fact Sheet
- ❑ National Association of State Foresters Assessing Urban Forest Canopy Cover
- ❑ US Department of Agriculture (USDA) Forest Service i-Tree is a free software suite of tools to analyze urban forestry and assess benefits. Also, the website includes a variety of resources such as workbooks, reports, and training.
- ❑ USDA Forest Service Climate Change Tree Atlas models the potential habitat change due to climate change between 2000 and 2100 for 134 of common tree species in the eastern U.S.
- ❑ The University of Georgia's Natural Resources Spatial Analysis Lab webpage describes the benefits of trees and forest in a few simple tables.

44) 75% of jurisdictions have a green roof located on government property.

Description: A green roof is a vegetative roof surface that helps to reduce energy use in the building, enhance stormwater management, and provide aesthetic value and habitat. Green roof types include extensive or intensive. Extensive green roofs are lighter in weight and typically incorporate

hardy groundcover plants such as sedum. They can be implemented on roofs with up to a 30% slope. Intensive green roofs are heavier and may need more structural support since they can incorporate shrubs and trees. Both types may cover the entire roof surface or carve out areas for usable space (walking paths, benches, tables).

Examples:

- ❑ The City of Takoma Park, MD has implemented a green roof at Community Center that's over 4,000 sq. ft.
- ❑ The Rockville Police Headquarters opened in 2012 and features a green roof.

Resources:

- ❑ EPA Heat Island Effect and Green Roofs
- ❑ Greenroofs.com includes GreenRoofs101 (green roofs concepts, advantages, components, etc), a Greenroof and Greenwall Directory (greenroof professionals), an International Greenroof and Greenwall Projects Database, and a Greenroof Depot (green materials).

45) 50% of jurisdictions adopt a green streets policy.

Description: Green streets are a vegetated area in the transportation public right-of-way that manage stormwater, increase tree canopy, reduce urban heating, improve local air quality, beautify neighborhoods, calm traffic, decrease maintenance costs, and increase property value. Features of green streets may include bioretention (vegetated) curb extensions, vegetated swales, rain gardens, sidewalk planters, street trees, permeable pavement, and narrower street widths. Green streets policies can encourage joint planning for roads and stormwater, provides guidance for where green streets are and are not appropriate, and encourage private investment in green streets and roads.

Examples:

- ❑ Prince George's County, MD Complete and Green Streets Policy was adopted to create more livable communities and places; manage stormwater in an environmentally friendly way, and increase tree canopy.
- ❑ Arlington County Green Streets initiative helps the County meet requirements of their Municipal Separate Storm Sewer Permit (MS4 Permit) and the Chesapeake Bay Total Maximum Daily Load (TMDL). Their green streets website features a fact sheet, FAQs, plant choices, and more.

Resources:

- ❑ National Complete Streets Coalition Green Streets Information and Resources
- ❑ US EPA Conceptual Guide to Green Streets, Municipal Handbook to Green Streets, Green Streets Initiatives Around the US
- ❑ Portland's Green Infrastructure: Quantifying the Health, Energy, and Community Livability Benefits includes green streets best management practices, benefits, and more.
- ❑ The Portland Green Streets web page includes green street master plans, specifications, case studies, virtual tours, videos, technical reports, and more.

- ❑ Anacostia Watershed Partnership presentation on Green Street's Potential Benefits to the Metropolitan Washington Region

Green and Local Economies Implementation Actions

46) 75% of local governments to adopt green purchasing policies.

Description: A green purchasing policy helps facilitate the purchase goods and services that reduce impact on human health and environment. The policy could address topics such as greenhouse gases, source reduction, recycled content, energy and water efficiency, pollution prevention, forest conservation, life-cycle assessment, etc.

Examples:

- ❑ City of Portland, OR Sustainable Procurement Policy addresses recycled materials and products, environmentally preferable paper, recycled oils, retreaded tires, energy efficient products, and paints.
- ❑ Fairfax County, VA Environmentally Preferred Purchasing Policy is a broad, discretionary policy. Successful implementation of the policy and greening of high impact contracts has been achieved by creating a partnership between environmental staff (energy manager, sustainability manager, etc) and procurement staff.

Resources:

- ❑ Stopwaste.org Model Environmental Purchasing Policy and Implementation Guidance
- ❑ Responsible Purchasing Network (RPN) Ten Steps to Starting an Sustainable Purchasing Program
- ❑ National Association of County's Green Purchasing Toolkit
- ❑ New Jersey Department of Environmental Protection's Green Purchasing: A Guide for Local Governments on how to establish and implement an EPP Program
- ❑ California Sustainability Alliance Local Government Green Procurement Guide
- ❑ US GSA Green Procurement Compilation

47) 75% of jurisdictions provide public land and/or support for community gardens.

Description: Community gardens are where residents can grow food for their own use or share with others. It may be a communal garden or a garden where residents can sign up for their own individual plots. Local jurisdictions can provide support for community gardens in a variety of ways such as providing public land, infrastructure, staff support, and/or water for irrigation. Community gardens can be established through a municipal program or in partnership with a non-profit. Other types of support include language in the jurisdiction's comprehensive plan and allowing community gardens in the zoning code.

Examples:

- ❑ The City of Frederick provides land for community gardens and helps with maintenance by pruning trees on the edges and collecting trash.

- ❑ Fairfax County Park Authority's Community Garden Plot Program offers more than 650 garden plots in nine County parks that are rented on an annual basis.

Resources:

- ❑ Cultivating Community Gardens: The Role of Local Government in Creating Healthy, Livable Neighborhoods
- ❑ University of Missouri Community Garden Toolkit
- ❑ American Community Garden Association 10 Steps to Starting a Community Garden and Community Garden Management Tools for sample agreements, contracts, rules, registration, how-to manuals and much more.
- ❑ US Department of Agriculture (USDA) Alternative Farming Systems Information Center Community Farming Resources

48) 50% of jurisdictions allow for and encourage urban agriculture in zoning codes, where appropriate.

Description: Urban farms may be non-profit entities or for-profit entities, but the intention is that food is grown to be sold. Establishing urban agriculture in zoning codes can ensure there are locations in the community for urban farms. Urban farms can improve vacant properties, improve community access to health foods, provide economic benefits to the community, and increase a community's livability. Incorporating urban agriculture into zoning codes involves defining urban agriculture in the code, recognizing urban agriculture as principal and/or accessory uses, and clarifying parameters in each zoning district. It may also include clarifying fencing requirements, parking requirements, if rooftop urban farms are allowed, if beekeeping is allowed, if chickens and roosters are allowed, and may not allow for the use of mechanical equipment in residential zones.

Examples:

- ❑ San Francisco, CA planning code amendments for urban agriculture defines neighborhood agriculture and large-scale urban agriculture. Neighborhood agriculture is gardens less than 1 acre in size and is permitted in all zones. Large-scale urban agriculture is permitted in commercial; industrial; and production, distribution, and repair districts and is conditional in other zones. Gardeners are allowed to sell what is grown onsite in all zones.
- ❑ The City of Seattle zoning code has been amended for urban agriculture. Definitions have been added and/or clarified for horticulture, aquaculture, animal husbandry, community gardens, and urban farms. Urban farms are allowed in commercial and industrial zones as a principal or accessory use with size limitations varying from 10,000 square feet to no limit, depending on the zone. Urban farms are allowed in residential zones as an accessory use without a permit up to 4,000 square feet. Rooftop greenhouses are allowed and the number of chickens allowed on residential property has increased from three to eight.

Resources:

- ❑ EPA Urban Agriculture and Improving Local, Sustainable Food Systems features handbooks, success stories, resources links, webinars, presentations, and more related to urban agriculture.
- ❑ US Department of Agriculture (USDA) Alternative Farming Systems Information Center Urban Agriculture Resources

49) Jurisdictions adopt policies/implement tools that preserve working farmland, where appropriate.

Description: Local agriculture plays an important role in helping to maintain regional air and water quality, provides jobs and contributes to the regional economy. Transfer of development rights and employment of agricultural land preservation funds for the purchase of permanent easements are two examples of tools that can help preserve working farmland. TDR's are a zoning statute that permits the owner of a property that is zoned for low density development, agriculture or conservation to sell and transfer his or her development rights to another property owner located in a designated higher density receiving area. An easement is a deed restriction designed to protect a specific purpose or use.

Examples:

- ❑ Montgomery County's landmark 1980 "Preservation of Agriculture and Open Space" master plan which originally designated an 89,000 acre agricultural reserve in the western part of the county. The Agricultural Reserve now encompasses 93,000 acres (approximately one-third of the county), and 71,622 acres of farmland has been protected.

Resources:

- ❑ COG Regional Agricultural Workgroup's 2012 report What Our Region Grows- A look at Agricultural Production and Demand in the Washington Area Foodshed.
- ❑ Maryland Agricultural Land Preservation Foundation (MALPF)
- ❑ Virginia Office of Farmland Preservation (OFP)
- ❑ Piedmont Environmental Council (PEC)
- ❑ Maryland Rural Legacy Program

Waste Reduction and Recycling Implementation Actions

50) Divert 50% of solid waste in the region from disposal.

Description: Each jurisdiction tracks how much solid waste is diverted from disposal by reuse or recycling. The goal is to have a regional average across all COG jurisdictions of 50% diversion.

Examples:

- ❑ Montgomery County has announced a 70% recycling goal by the year 2020.
- ❑ Prince George's County has announced that it will be converting its Western Branch composting facility to accept food beginning in the next year with the goal accepting food from commercial sources and, eventually, some residential sources.

Resources:

- ❑ The EPA Tools for Local Government Recycling Programs page provides tools for maintaining and expanding residential recycling programs.
- ❑ California's New Goal: 75% Recycling explains how California plans to achieve its 75% recycling goal.

51) Where applicable, jurisdictions provide recycling educational, technical, and logistical support to public schools to ensure that it is successful.

Description: School recycling has been a challenge to implement fully in some areas. School systems frequently operate as separate entities from the local government and effecting change has been difficult for government recycling staff.

Examples:

- ❑ The District of Columbia Healthy Schools Act of 2011 established an Environmental Programs Office within the Office of Public Education Facilities Modernization, which will run recycling programs in DC Schools.
- ❑ Montgomery County Schools has established a School Energy and Recycling Team (SERT). SERT provides opportunities for all schools to participate and receive incentives and recognition for their energy conservation and recycling efforts.

Resources:

- ❑ U.S. Department of Education Green Ribbon Schools site offers solutions to creating environmentally-friendly school environments.
- ❑ Montgomery County SERT Site presents recycling and energy program tools for schools.

52) 100% of jurisdictions no longer collect grass and leaf waste curbside in plastic bags – will be collected loose or in paper bags.

Description: Most local governments currently collect grass and leaves from residents at curbside for composting. Often, the primary, recommended set-out method is transparent plastic bags. Composting facilities, though they have developed several solutions, still have difficulty removing plastic bag pieces completely from the finished compost product and have problems with blowing plastic waste. These problems lead to increased processing costs, lower quality compost products, and litter.

Examples:

- ❑ Several localities like the City of Falls Church and Montgomery County only allow compostable paper bags or reusable cans for organics set out.
- ❑ Prince George's County banned the use of plastic bags for set-out on January 1, 2014.
- ❑ Arlington County has announced its intention to ban the use of plastic bags and to provide a dedicated green organics wheeled cart to each residence. These changes will go into effect in the near future.

- ❑ The City of San Francisco supplies its residents with green wheeled carts to collect organics, which include food waste.

Resources:

- ❑ City of South Bend, IN, rationale for switching to paper bags.
- ❑ Prince George's County Yard Waste Collection Instructions

53) Jurisdictions support establishment of sufficient public or private regional capacity for organics (grass, leaf, and food) composting.

Description: Most local governments currently collect grass and leaves from residents at curbside for composting. Composting facilities in the region are at or near capacity for processing all of this material with several additional localities looking to add curbside service soon. Additionally, there is strong interest from the government and the private sector in composting food waste from commercial, and in some cases residential, sources as a way to expand recycling services and rates. Existing local facilities do not have the capacity or the capability to handle food waste. Suitable nearby land for food composting facilities is limited.

Examples:

- ❑ Prince George's County conducted a pilot at its Western Branch composting facility to accept food in in 2013-2014 and its now converting the entire facility to accept food from commercial sources and, eventually, some residential sources.
- ❑ Peninsula Composting has announced plans to open a food composting facility in Prince George's County in 2015.
- ❑ Prince William County has conducted a pilot food composting service at its Balls Ford Road grass/leave composting facility. The county is in the process of awarding a contract to operate expanded organics composting services, including food, at the site.

Resources:

- ❑ Organics Task Force presentation to CEEPC November 2012 - Organics Composting in the Washington Region: Opportunities and Challenges.
- ❑ Food Recovery Presentations at the COG Recycling Committee meeting September 19, 2013.

OUTREACH GOAL

To improve public understanding of climate change and promote positive change in individual and institutional behaviors to reduce energy use and greenhouse gas emissions and increase use of renewable energy.

Outreach Implementation Actions

54) 75% of jurisdictions promote federal, state, utility, and/or local energy efficiency and renewable energy incentive programs.

Description: This goal calls for local jurisdictions to offer incentives for residents for energy efficiency and renewable energy projects. If a jurisdiction does not offer local incentives, it should promote state, federal, utility, and/or other incentives to the community.

Examples:

- ❑ In 2009, the Prince George's County Council enacted the Energy Conservation Real Property Tax Credit for solar energy and geothermal. The tax credit is for 50% of the cost of the system, up to $5,000 for heating and cooling systems and $1,500 for water heating systems.
- ❑ The City of Rockville publicizes on the City's website commercial and residential energy financial incentives offered by the federal government, State of Maryland, and local utilities.
- ❑ The District of Columbia provided 1,811 rebates with $338,636.41 of the American Recovery and Reinvestment Act (ARRA) funds.

Resources:

- ❑ NC State University Database for State Incentives for Renewables and Efficiency (DSIRE)
- ❑ U.S. DOE Solar Powering Your Community: A Guide for Local Governments includes information on residential and commercial incentives in Section 2.
- ❑ U.S. DOE Green Power Network includes information about options for purchasing green power by state, renewable energy certificates, and much more.
- ❑ U.S. DOE Consumer's Guide: Get Your Power From the Sun and Consumer's Guide: Heat Your Water From the Sun
- ❑ Federal Energy Management Program Energy and Cost Saving Calculators for Energy Efficient Products

55) 50% of jurisdictions implement challenge or pledge programs for energy and sustainability aimed at the community and citizens.

Description: The goal of establishing an energy and sustainability challenge is to encourage residents to reduce their impact on the environment in areas such as greenhouse gas emissions, energy efficiency, transportation, water resources, waste reduction, pollution prevention and/or environmental purchasing. When developing a green business challenge local jurisdictions will need to consider what the participation criteria, marketing, support mechanisms, incentives, and recognition for residents.

Examples:

- ❑ The Frederick County Green Homes Challenge helps residents take action through 3 challenges including the Power Saver Challenge, Green Leader Challenge, and Renewable ENERGY STAR Challenge. More than 600 homes have participated in the program.
- ❑ Arlington Green Living Challenge was launched as a friendly competition between neighborhood associations and residents to take a Green Living Pledge. The Pledge includes voluntary commitments in areas such as conserving energy, reducing auto dependence, shopping responsibly and greening the community.

Resources:

- ❑ ENERGY STAR Home Improvement Toolbox
- ❑ U.S. DOE Energy Savers Guide
- ❑ U.S. DOE Home Energy Saver Calculator
- ❑ Powerhouse features energy efficient and sustainable home living videos and articles

56) 50% of jurisdictions implement green business challenges/certifications/initiatives for businesses and employees.

Description:

The goal of establishing a green business challenge is to encourage local businesses to reduce their impact on the environment in areas such as greenhouse gas emissions, energy efficiency, transportation, water resources, waste reduction, pollution prevention and/or environmental purchasing. When developing a green business challenge local jurisdictions will need to consider what the participation criteria, marketing, support mechanisms, incentives, and recognition for businesses.

Examples:

- ❑ Arlington County Green Games began in 2011 with more than 100 buildings and offices participating in a year-long competition to reduce waste, energy and water use and set other environmental goals. Green Games participants realized a collective savings of $2 million and prevented the release of 10,000 tons of CO_2.
- ❑ In 2011, the Loudoun County Green Business Challenge had over 60 businesses participate and winners were recognized at a Green Gala in the fall. Scorecards are available for home-based, leased/rented space, and commercial property businesses. Each scorecard is divided into five categories including education and outreach, energy, transportation, waste and water.
- ❑ The Montgomery County Green Business Certification has certified more than 30 businesses. Separate certification checklists are offered for owners and tenants and addresses areas such as organizational commitment, waste reduction, environmental purchasing, energy efficiency and renewable energy, runoff and water use, pollution prevention, and transportation.

Resources:

- ❑ ICLEI Green Business Challenge

57) 35% of jurisdictions encourage private commercial building owners to benchmark energy performance.

Description: According to the National Capital Region Climate Change Report, commercial (non-governmental) buildings accounts for over 40% of building energy use in the region. Therefore, in order to reduce energy use and greenhouse gas in the region it is important for private commercial building managers to understand and benchmark their energy use. Local jurisdictions promote benchmarking energy use to the commercial sector and connect them with resources to assist them.

Examples:

- ❑ District of Columbia requires energy benchmarking for owners of private buildings over 50,000 gross square feet to also measure and annually report the energy performance of their buildings using EPA Portfolio Manager.

Resources:

- ❑ Through the U.S. Green Building Council's Building Performance Partnership, LEED certified projects can monitor, understand, and improve energy use through use of EPA Portfolio Manager for commercial projects or WegoWise for multi-family residential projects. Data is compiled into a green building performance database.
- ❑ OPOWER provides energy information software to gas and energy utilities that engages, educates and motivates customers to reduce energy use.

58) 50% of jurisdictions develop an employee education program on energy/sustainability policies and practices at work and home.

Description: The local jurisdiction educates employees on a continuous basis on how to be more energy efficient and sustainable at work and at home. There are a variety of ways that a local jurisdiction can educate and engage their employees. Some examples include:

- Developing an internal green team with representatives from each department to develop initiatives and educate staff
- Sustainability information and employee expectations during new employee orientation
- Sustainability training, workshops or lunch-and-learns for all employees
- Sustainability tips and initiatives in employee newsletters, intranet, and/or via email
- Signage/flyers in common areas, such as recycling information at recycling bins/stations
- Develop an employee guide to sustainability at work and share with all employees
- Offer incentives and/or awards, such as contests with small prizes, pizza parties, etc
- City/County policy(ies) signed and agreed to by employees, such as lights out/power down policies, anti-idling policies, etc

Examples:

- ❑ The City of Bowie created an Energy Ambassador Program to decentralize the education process throughout the City's organization.

- ❑ "Fairfax Employees for Environmental Excellence" initiative Strives to simultaneously direct, motivate and shape employee work environments. The County built a well-designed internal website and blog to disseminate the information and solicit innovative green ideas from staff. They host an award program called Fairfax Sustainability Champions that highlights individuals and their stories and hosts lunch and learn events like a stream restoration tour and a green roof tour. Periodically, action campaigns are run like the friendly competition "Take the Stairs Week."

Resources:

- ❑ National Environmental Education Foundation Creating a More Sustainable Company Through Employee Engagement and The Business Case for Environmental and Sustainability Employee Education

Advocacy Implementation Actions

59) Jurisdictions help support, where appropriate, state and federal legislation that reduces barriers to renewable energy and energy efficiency, and supports local governments in climate change mitigation and adaption efforts.

Description: Local elected leaders and agency staff can "put a face" on important issues and help lawmakers understand the local impacts of proposed legislation by providing letters of support and/or testimony. COG staff can provide assistance on crafting support letters and/or talking points, and providing contact information for legislators and committees.

Resources:

- ❑ A legislative update is provided online for CEEPC meetings on an as needed basis.
- ❑ Links to state lawmaking bodies and key Congressional committees for legislative tracking:
  - DC Council
  - Maryland General Assembly
  - Virginia General Assembly
- ❑ Several organizations provide valuable information on legislative activities of interest to CEEPC members:
  - Maryland Clean Energy Center
  - National Association of Counties
  - Virginia Association of Counties
  - Maryland Association of Counties
  - Virginia Municipal League
  - Maryland Municipal League
  - Northern Virginia Regional Commission

[i] 10% represents the weighted average of renewable portfolio standards impacting the COG region: mandatory standards in MD and DC, and a voluntary standard in VA. The goals are weighted according to relative share of regional electricity consumption by jurisdictions in each state.

Metropolitan Washington Council of Governments
777 North Capitol Street, NE, Suite 300
Washington, DC 20002
(202) 962-3200
www.mwcog.org

Editor: Maia A. Davis

Contributing Editors: Joan Rohlfs, Jeff King, Leah Boggs, Julia Allman, Amanda Campbell, John Snarr, Brian LeCouteur, John Galli

The following programs/publications deserve special thanks for helping inform the CEEPC Resource Guide:

Go Green Virginia Green Government Challenge
Sustainable Maryland Actions for Certification
Atlanta Regional Commission Green Communities Program Manual