

## Draft Regional Action Plan – Potential local-level ozone reduction measures for the MWCOG region

MEASURE	OPPORTUNITIES
<b>POINT SOURCE</b>	
<b>Green Power Purchasing</b>	
<p>Purchasing green or renewable power reduces NOx emissions from upwind power plants by shifting demand to low or zero-emissions generation sources. Local governments, private residents, and businesses can purchase green power from their electricity provider or in the form of Renewable Energy Credits (RECs). Maryland included local government wind energy purchases in the 2004 Ozone SIP. Almost half of COG member jurisdictions are EPA Green Power Communities, and over 300 businesses in the region participate as Green Power Partners. The District purchases 100 percent renewable energy; Montgomery County will purchase 100 percent renewable energy by 2016.</p>	<p>Local governments that do not currently purchase green power can begin to do so, and/or can install on-site renewable energy generation.</p>
<p><a href="http://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/page_content/attachments/SDC%20Final%20Plan.pdf">http://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/page_content/attachments/SDC%20Final%20Plan.pdf</a>  <a href="http://origin.library.constantcontact.com/download/get/file/1102603838255-387/Earth+Day+Legislation+Summary+---+FINAL.pdf">http://origin.library.constantcontact.com/download/get/file/1102603838255-387/Earth+Day+Legislation+Summary+---+FINAL.pdf</a></p>	
<b>High Performance Buildings</b>	
<p>Building energy performance can be improved through building codes, disclosure of energy consumption (energy benchmarking), other local regulation, or through voluntary programs. DC and Maryland have adopted the energy performance standards of the 2012 International Green Construction Code. 64 percent of COG member jurisdictions have, or are in the process of developing, a green building policy, and 95 percent track energy use of public facilities. Arlington’s Green Building Incentive Program is a successful model of a voluntary approach to improve commercial building energy performance. The Sustainable DC plan aims for new construction in the District to be net-zero energy use by 2032.</p>	<p>Jurisdictions can adopt more rigorous energy codes or establish voluntary programs to improve building efficiency and encourage on-site renewable energy generation.</p>
<p><a href="http://www.mwcog.org/uploads/pub-documents/ol5cW1o20131101154514.pdf">http://www.mwcog.org/uploads/pub-documents/ol5cW1o20131101154514.pdf</a></p>	
<b>District Energy Systems and Microgrids</b>	
<p>District energy systems produce steam, hot water or chilled water at a central plant for use by a network of buildings, which creates energy and fuel use efficiencies. Microgrids are small-scale electricity distribution systems that link generation resources to one or more users and can “island” from the main grid. District energy systems and microgrids can be combined to provide heat, cooling, hot water and electricity to users on the system. Combined heat and power (CHP) or co-generation systems produce both electricity and usable thermal energy captured from electricity generation. CHP is often used in district energy and microgrid systems, and can increase fuel efficiencies from 45 percent to 80 percent while increasing reliability and resilience.</p>	<p>Local governments can encourage high-efficiency district energy and microgrid systems in public and commercial facilities to reduce building energy use at a significant scale.</p>
<p><a href="http://www.districtenergy.org/blog/2014/10/29/think-microgrid-the-local-energy-revolution/">http://www.districtenergy.org/blog/2014/10/29/think-microgrid-the-local-energy-revolution/</a></p>	
<b>Urban Heat Island Mitigation</b>	
<p>In urban areas, pavement, buildings and rooftops absorb the sun’s energy and re-radiate heat, while appliances, engines and equipment also produce excess heat. This urban heat island (UHI) effect causes air temperatures to be 9-16 °F warmer in urban areas, especially during the summer. UHI contributes to poor air quality directly, because ozone forms in the presence of sunlight and heat, and indirectly, due to increased emissions from energy demand for cooling. UHI can be mitigated using “cool” roofs and pavement, and by expanding tree cover. Cool roofs and pavement reflect sunlight and heat, staying 50-60 °F cooler than conventional materials. Trees provide shade, helping to keep urban areas cool, and directly remove pollutants from the air through deposition and absorption.</p>	<p>Local governments can expand programs to incentivize or encourage cool or green roofs, cool pavements, and urban tree cover.</p>
<p><a href="http://www.epa.gov/heatislands/impacts/index.htm">http://www.epa.gov/heatislands/impacts/index.htm</a></p>	

## MOBILE SOURCE

### Eco-Driving

Eco-driving uses a number of methods to increase fuel efficiency, such as accelerating smoothly and braking softly, eliminating excess weight, reducing heating and cooling use, checking tires often, and performing regular maintenance. Road tests demonstrate that eco-driving improves fuel economy by about 24 percent. COG participated in the I-95 Corridor Coalition's Eco-driving Campaign and provides resources on eco-driving. COG's 2011 *What Would It Take* report found that eco-driving had the largest emissions reduction potential of all the measures analyzed, and one of the lowest costs per ton.

Eco-driving could be expanded through public awareness campaigns, incentive programs, incorporation into driver's education, and/or requirements for public fleets and contractors.

<http://www.mwcog.org/uploads/pub-documents/qF5eXVw20110617114503.pdf>

### Idling and Emissions Enforcement

Most harmful NOx and particulate matter emissions occur when operating at low speeds, such as when idling. Idling also uses unnecessary fuel and can lead to engine damage, so reducing idling saves drivers money on fuel and maintenance. Routine maintenance is also important to ensure that engines and pollution controls are functioning properly. Local jurisdictions are covered by state inspection and maintenance (I/M) programs, which help reduce NOx emissions and improve fuel economy. Many localities in the region have also adopted rules or ordinances to limit vehicle idling, but these standards are difficult to enforce.

Targeted anti-idling and maintenance awareness programs may be an effective way to improve idling and maintenance compliance.

<http://ddoe.dc.gov/service/engine-anti-idling-law>

### Bicycle and Pedestrian Programs

The TPB Vision, Region Forward, and Regional Transportation Priorities plans call for increased walking and bicycling, and more convenient and safer bicycle and pedestrian access around the region. Non-motorized transportation options like walking and cycling help reduce congestion and VMT. Educational, awareness and commuter benefit programs can improve road safety while encouraging non-motorized travel options. Local governments and transit agencies are making significant progress toward these goals, with walking and cycling comprising a growing share of trips in the region, but still only comprising nine percent of all trips.

Local governments can implement the 2015 Bicycle and Pedestrian Plan recommendations, especially the short list of unfunded priority projects.

<http://www.mwcog.org/uploads/committee-documents/bV1XWl1f20150115095731.pdf>

### Electric and Alternative Fuel Vehicles

Electric and hydrogen-powered vehicles produce no direct tailpipe emissions and can greatly reduce ground level ozone from the mobile sector. Alternative fuel vehicles can reduce tailpipe emissions by up to 80%. AFV and fueling infrastructure programs or incentives are available in all three states. DC and Maryland have zero-emission vehicle goals, and 73 percent of COG member governments have or are planning to implement a green fleet policy. Numerous incentives and financing opportunities exist, including business models that enable localities to convert light-duty fleets to EVs at little to no cost, such as through an energy savings performance contract.

EVs, AFVs and fueling infrastructure could be deployed at scale through a regional program or cooperative purchase coordinated by COG and the Clean Cities Coalition.

<http://www1.eere.energy.gov/cleancities/>; <http://www.virginiaev.org/>  
<http://mde.maryland.gov/programs/Air/MobileSources/CleanCars/Pages/index.aspx>

### Parking Management

Free or inexpensive street parking encourages people to drive, and to occupy spots for long periods of time. Both these factors reduce the number of free spots for those looking to park, increasing the number of people searching for a spot and the amount of time it

Feasibility and cost-benefit studies of various parking management

takes to park. Studies show that circling for a parking spot is responsible for 30-50 percent of inner-city traffic congestion, contributing to poor air quality and using a significant amount of fuel. Increasing parking enforcement or raising street parking fees may encourage the use of alternate transport options, disincentivize long-term street parking, and reduce congestion due to circling vehicles.

options for urban areas can help inform decision making and may reduce both congestion and motorized trips.

<http://www.vtpi.org/tm/tm28.htm>

## LEGEND

<b>NOx</b>	Nitrogen Oxides
<b>VOC</b>	Volatile Organic Compounds