Regional Action Plan: *Local-level ozone reduction measures for the MWCOG region*

MEASURE	OPPORTUNITIES
POINT SOURCE	
Green Power Purchasing	
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.	Local governments that do not currently purchase green power can begin to do so, and/or can install on-site renewable energy generation.
http://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/page_content/attachments/SDC%20Final%20Plan.pdf http://origin.library.constantcontact.com/download/get/file/1102603838255-387/Earth+Day+Legislation+Summary+--+FINAL.pdf	
High Performance Buildings	
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 pf 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.	Jurisdictions can adopt more rigorous energy codes or establish voluntary programs to improve building efficiency and encourage on-site renewable energy generation.
http://www.mwcog.org/uploads/pub-documents/ol5cW1o20131101154514.pdf	
District Energy Systems and Microgrids	
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.	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.
http://www.districtenergy.org/blog/2014/10/29/think-microgrid-the-local-energy-revolution/	
Urban Heat Island Mitigation	
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.	Local governments can expand programs to incentivize or encourage cool or green roofs, cool pavements, and urban tree cover.
http://www.epa.gov/heatislands/impacts/index.htm	

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/tdm/tdm28.htm	

LEGEND	
NOx	Nitrogen Oxides
VOC	Volatile Organic Compounds

MWAQC REGIONAL ACTION PLAN PROGRESS

2016 Local Government Survey Responses Summary

Tuesday, June 14, 2016

Local Government Actions	Goal	Implemented + In Progress
POINT SOURCE		
Green Power Purchasing		
Renewable energy system(s) on local government property	100%	**86%**
EPA Green Power Partner	75%	**50%**
EPA Green Power Community Partner	25%	**23%**
High Performance Buildings (Energy Efficiency)		
Adopt green building policy	100%	**68%**
Affordable housing green rehab program	50%	**41%**
Green building incentives	35%	**41%**
Green or "energy-aligned" lease terms	35%	**18%**
Track or benchmark government building energy performance	100%	**95%**
Disclose government building energy performance	75%	**55%**
Energy plan for government facilities	75%	**77%**
Conduct walk-through energy audits of government facilities	75%	**91%**
Participate in DOE Better Buildings Challenge	50%	**14%**
Encourage participation in Home Performance with Energy Star Program	-	**59%**
Develop or participate in residential or commercial energy efficiency or renewable energy (EERE) financing programs	50%	**55%**
Promote federal, state, utility, or local EERE incentive programs	75%	**68%**
Citizen green challenge/pledges	50%	**64%**
Green business challenges	50%	**64%**
Encourage commerical energy performance benchmark	35%	**27%**
Employee energy/sustainability education program	50%	**73%**
District Energy Systems and Microgrids		
Community energy planning initiative(s)	27%	**23%**
Urban Heat Island Mitigation		
Cool roof on government property	-	**36%**
Green roof on government property	75%	**41%**
Adopt a tree canopy/forest cover goal	75%	**82%**
Tree City USA	100%	**73%**
Plan(s) for ecologically valuable green spaces	75%	**82%**
Promote or incentivize heat island mitigation (e.g. green roofs, cool roofs, cool pavements, urban tree cover)	-	**45%**
Adopt a green streets policy	50%	**36%**
Encourage urban agriculture in zoning code	50%	**45%**

Local Government Actions	Goal	Implemented + In Progress
MOBILE SOURCE		
Eco-Driving		
Eco-driving initiatives (e.g. public awareness campaigns, incentive programs, education or requirements for public fleets and contractors)	-	**32%**
Idling and Emission Enforcement		
Idling regulations	100%	**73%**
Anti-idling and maintenance awareness programs	-	**32%**
Commute option program for local government workers	75%	**77%**
Regional employer-based and general public commute option program in all jurisdictions	100%	**100%**
Bicycle and Pedestrian Programs		
Bicycle/pedestrian plan	75%	**86%**
Complete streets policy	75%	**50%**
Electric and Alternative Fuel Vehicles		
Adopt a green fleet policy	75%	**68%**
Alternative fuel vehicle infrastructure project(s)	75%	**64%**
Parking Management		
Parking management feasibility/cost-benefit studies to identify options to reduce congestion or motorized trips	-	**18%**
Parking policies that reduce vehicle miles traveled	-	**27%**