



**MEMORANDUM**

**TO:** TPB Technical Committee  
**FROM:** Daivamani Sivasailam, Principal Transportation Engineer  
**SUBJECT:** Potential Transportation Strategy Action Ideas Proposed for Addition to the Climate, Energy, and Environmental Policy Committee's (CEEPC) 2017-2020 Action Plan  
**DATE:** October 7, 2016

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This memorandum describes the request for technical review and comments on the Climate, Energy, and Environmental Policy Committee's (CEEPC) 2017-2020 Climate and Energy Action Plan from Department of Environmental Program (DEP) staff. Background information is also provided.

**REQUEST FOR TECHNICAL REVIEW**

At its September 28, 2016 meeting, CEEPC reviewed a comprehensive list of potential voluntary actions the region's local jurisdictions could take to reduce emissions of greenhouse gases (GHG) in the region. The list was compiled by DEP staff and is derived from a scan of best practices among other regions and agencies, a literature review, and suggestions from practitioners and advocates in the energy and environment sectors. The list also draws from the technical analysis done for COG's Multi Sector Working Group (MSWG).

CEEPC is currently engaged in the triennial update of its Action Plan. The Action Plan is a list of voluntary actions the local jurisdictions and state agencies in the region could take to help reduce GHG and advance the region towards the GHG reductions goals. As part of the current update, CEEPC is undertaking a comprehensive review of the voluntary action items in its current Action Plan and considering adding new action items to the Plan.

COG's DEP staff will be assisted by the Built Environment and Energy Advisory Committee (CEEPC's technical committee) in the review of the potential new action items for inclusion in the updated Action Plan. DEP staff is requesting the assistance of the TPB's Technical Committee in the review of the voluntary transportation action items that would be included in the updated Action Plan. While DEP held working sessions in previous years to obtain input on transportation items, this is the first time that the Technical Committee would be providing such assistance.

**BACKGROUND**

CEEPC is a Committee of the COG Board that works on Climate, Energy and Environmental policy items. One of the primary activities of CEEPC is to assist the region's jurisdictions and state agencies in their voluntary actions, including enacting polices, to reduce GHG emissions. These voluntary actions are intended to assist the region in realizing its GHG reductions goals adopted by the COG Board in 2008. The GHG reduction goals are to reduce the amount of GHG in the region: (1) by 10 percent below 2005 levels by 2012; (2) by 20 percent below 2005 levels by 2020; and (3) by 80 percent below 2005 levels by 2050.

CEEPC first developed a list of voluntary actions the regional jurisdictions and state agencies could take in the Energy, Build Environment, Land Use and Transportation sectors in 2010 in the form of an Action Plan. COG DEP staff conducts an annual survey of the action items in the Action Plan and reports to CEEPC and COG. The 2010 Action Plan was updated in 2013 and may be found at ["Action Plan Report"](#) . The latest annual Progress Report may be found at ["2015 Progress Report"](#) .

At the September 28, 2016 CEEPC meeting, DEP staff presented a framework for updating the Regional Climate and Energy Action Plan for 2017-2020. The framework documents include a list of new potential action items to add to the Action Plan and a dashboard to report progress. The staff-compiled list of potential new strategies and action items that are in the current Plan and the dashboard are attached.

The draft menu of actions includes a section titled "Advance Sustainable Regional Mobility". The action items in this section are largely geared towards the transportation sector. The development of the 2017-2020 Action Plan includes a review of these potential action items in the attached list. A limited number of actions items will be identified that could be in a state of implementation readiness in the next three-year period. CEEPC is scheduled to meet in November 2016 and again in January 2017, when the updated 2017-2020 Action Plan is expected to be finalized.

Since the TPB's Technical Committee membership is comprised of all of the local jurisdictions in the region and state and regional transportation agencies, DEP staff has requested that the Technical Committee review and recommend potential action items for inclusion in CEEPC's 2017-2020 GHG Reduction Action Plan

The dashboard tracks region-wide progress towards the 2020 GHG emissions reductions goals as well as tracks additional key indicators towards climate and energy progress. Within the transportation sector, the dash board shows the progress in regional emissions, hybrid and electric vehicle ownership in the region and installation of electric vehicle (EV) recharging stations.

## **DISCUSSION**

TPB staff is proposing to dedicate a portion of the Technical Committee's agenda during its November or December meeting to help facilitate a review of the potential transportation actions for inclusion in CEEPC's Action Plan. DEP staff will facilitate the discussions which will include the provision of additional details of the assumed outcomes from the proposed actions. The attached list of strategies is being provided at this time to assist the Technical Committee members in their review of the proposed items ahead of the discussions in the next month or two. Members are encouraged to share the information with other relevant agencies or departments within their jurisdictions who would be able to indicate the jurisdictions readiness to take voluntary actions on any of the items in the 2017-2020 period.

The list of potential action items in the attached list includes strategies developed by the MSWG and is now under consideration before the MSWG Policy Task Force. It is expected that the MSWG Policy Task Force will, during late fall 2016, review and recommend specific GHG reduction strategies for consideration by the various policy committees, including CEEPC, and that these selected strategies would be part of the 2017-2020 Action Plan.

Attachments

**DRAFT MENU OF POTENTIAL ACTION IDEAS:  
BEST AND INNOVATIVE PRACTICE OPTIONS**

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**REDUCE ENERGY CONSUMPTION**

**Increase Efficiency of Public Facilities and Operations<sup>1,2</sup>**

<b>1</b>	<p>TRACK</p> <ul style="list-style-type: none"> <li>a) Complete baseline and updated greenhouse gas (GHG) inventories for government operations.<sup>1</sup></li> <li>b) Regularly track and benchmark energy performance at all government facilities.<sup>1</sup></li> <li>c) Publically disclose energy performance of all government buildings.<sup>1</sup></li> </ul>
<b>2</b>	<p>PLAN</p> <ul style="list-style-type: none"> <li>a) Prepare a GHG emission reduction plan for government operations.<sup>1</sup></li> <li>b) Prepare an energy plan for local government facilities and operations.<sup>1</sup></li> </ul>
<b>3</b>	<p>INVEST</p> <ul style="list-style-type: none"> <li>a) Perform commissioning and walk-through energy audits of local government facilities.<sup>1,4</sup></li> <li>b) Implement energy audit recommendations and upgrade energy equipment and technology used at public facilities.<sup>1,2</sup></li> <li>c) Require high efficiency rated equipment and appliances (e.g. ENERGY STAR, EPEAT, etc.) in purchasing policies.<sup>4</sup></li> <li>d) Deploy combined heat and power, district energy, and microgrid systems.<sup>1,2</sup></li> <li>e) Switch to energy efficient or lower-emitting non-road equipment (back-up generators, construction, lawn and garden, agriculture, etc.) used for government operations.<sup>2</sup></li> </ul>
<b>4</b>	<p>ENGAGE</p> <ul style="list-style-type: none"> <li>a) Implement employee challenges and education programs on energy and sustainability policies and practices at work and home.<sup>1</sup></li> <li>b) Showcase government energy efficiency initiatives to the public to inspire community action and encourage continued community support for energy efficient government operations.<sup>2,4</sup></li> </ul>

**Facilitate Increased Efficiency in the Community<sup>1,2</sup>**

<b>5</b>	<p>TRACK</p> <ul style="list-style-type: none"> <li>a) Complete baseline and updated community-wide greenhouse gas (GHG) inventories.<sup>1</sup></li> <li>b) Track community energy use through utility data.<sup>3</sup></li> <li>c) Maintain database of current energy projects in your community (via ENERGY STAR, energy atlas or map, etc.).<sup>3,4</sup></li> </ul>
<b>6</b>	<p>PLAN</p> <ul style="list-style-type: none"> <li>a) Adopt a community-wide GHG emission reduction plan (could also be framed as a climate action plan, energy plan, sustainability plan, etc.).<sup>1</sup></li> <li>b) Incorporate community energy infrastructure needs, goals, and strategies in master plans, comprehensive land use plans, and small area plans.<sup>4</sup></li> <li>c) Identify impacts of energy projects and programs to underserved communities. Approve projects and programs that maximize positive impacts and minimize negative impacts.<sup>4</sup></li> </ul>
<b>7</b>	<p>INVEST</p> <ul style="list-style-type: none"> <li>a) Expand low-income housing retrofits for energy and water savings.<sup>1,2</sup></li> <li>b) Develop/ join a green bank or offer other innovation financing solutions (such as loan loss reserves).<sup>4</sup></li> <li>c) Expand urban heat island mitigation programs.<sup>3</sup></li> <li>d) Implement innovative pilot initiatives and partnerships to advance implementation of technologies that lead to deep energy reductions.<sup>3,4</sup></li> </ul>
<b>8</b>	<p>REQUIRE</p> <ul style="list-style-type: none"> <li>a) Increase level of compliance for existing energy building codes.<sup>2,3</sup></li> <li>b) Increase efficiency standards in energy codes (only feasible where local jurisdiction has authority).<sup>2,3</sup></li> <li>c) Implement mandatory energy benchmarking requirements.<sup>1,2</sup></li> <li>d) Develop minimum efficiency standards or benchmarks for affordable housing.<sup>4</sup></li> <li>e) Require new buildings in targeted communities to be district energy/microgrid-ready.<sup>3</sup></li> <li>f) Adopt an energy efficient outdoor lighting ordinance (for streets, parking lots, parks, or signage).<sup>1</sup></li> </ul>

## DRAFT MENU OF POTENTIAL ACTION IDEAS: BEST AND INNOVATIVE PRACTICE OPTIONS

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<b>9</b>	<p><b>INCENTIVIZE</b></p> <ul style="list-style-type: none"> <li>a) Provide local energy efficiency incentives to residents and businesses or promote federal, state, and utility incentives.<sup>1</sup></li> <li>b) Provide or promote incentives for cool roofs.<sup>3</sup></li> <li>c) Provide or promote incentives for the public to switch to energy efficient or low-emitting non-road equipment (back-up generators, construction, lawn and garden, agriculture, etc.).<sup>2</sup></li> </ul>
<b>10</b>	<p><b>ENGAGE</b></p> <ul style="list-style-type: none"> <li>a) Provide or promote commercial and residential Property Assessed Clean Energy (PACE) financing programs.<sup>4</sup></li> <li>b) Promote voluntary energy benchmarking and provide training or technical assistance.<sup>1</sup></li> <li>c) Implement green business challenges or other engagement programs to encourage deep energy retrofits in businesses and commercial properties.<sup>1</sup></li> <li>d) Implement residential energy/sustainability challenges or other engagement programs to encourage deep energy retrofits in homes.<sup>1,4</sup></li> <li>e) Promote participation in Home Performance with ENERGY STAR Program (home energy assessments and retrofits).<sup>1</sup></li> <li>f) Expand outreach promoting weatherization assistance program opportunities.<sup>4</sup></li> <li>g) Encourage water conservation through efficient appliances, rainwater harvesting, behavior change, etc.<sup>4</sup></li> <li>h) Establish an energy/sustainability advising center or online portal as a one-stop shop for the public to receive free advice and resources.<sup>4</sup></li> <li>i) Encourage green or “energy-aligned” lease terms and requirements in contract agreements for leased spaces or facilities. Provide green lease training to businesses.<sup>1,4</sup></li> <li>j) Encourage greening of data centers and optimized cooling standards.<sup>4</sup></li> </ul>
<b>11</b>	<p><b>SUPPORT</b></p> <ul style="list-style-type: none"> <li>a) Support expanded energy efficiency incentives and financing mechanisms at utility, state, and national levels.<sup>2,3,4</sup></li> <li>b) Support increased efficiency in energy codes at state and national levels.<sup>2,3</sup></li> <li>c) Support state implementation of initiatives to reduce power sector emissions (e.g. Clean Power Plan).<sup>2</sup></li> <li>d) Support investment in cost recovery of natural gas pipeline and leak reduction upgrades.<sup>2</sup></li> <li>e) Support implementation of efficiency and alternative energy measures at drinking water and wastewater facilities.<sup>1</sup></li> <li>f) Support implementation of programs to reduce pipeline leaks in water distribution and wastewater collection systems.<sup>2</sup></li> <li>g) Support investigation of waste heat recovery potential from industrial processes, data centers, sewer lines, etc.<sup>4</sup></li> <li>h) Support time-of-sale energy label disclosure and green MLS initiatives.<sup>4</sup></li> </ul>
<b>INCREASE RENEWABLES</b>	
<b>12</b>	<p><b>TRACK</b></p> <ul style="list-style-type: none"> <li>a) Track percent generation from renewables for government operations and community-wide.<sup>2,3</sup></li> <li>b) Track renewable energy projects community-wide (e.g. via grid-connected renewables utility data, community solar map, etc.).<sup>3,4</sup></li> </ul>
<b>13</b>	<p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>a) Conduct feasibility studies to evaluate renewable energy potential at public facilities or community-wide.<sup>3</sup></li> <li>b) Adopt a net zero energy plan or policies.<sup>4</sup></li> </ul>
<b>14</b>	<p><b>INVEST</b></p> <ul style="list-style-type: none"> <li>a) Install renewable energy systems on local government property.<sup>1</sup></li> <li>b) Achieve and maintain EPA Green Power Partnership for government operations (minimum percentage standards for renewables that can be met through both on-site generation and green power purchasing).<sup>1</sup></li> <li>c) Implement innovative pilot initiatives and partnerships to advance new renewable technologies, including deployment and testing of energy storage and recovery technologies.<sup>3,4</sup></li> <li>d) Deploy clean, local power sources for off-road equipment use.<sup>2</sup></li> </ul>
<b>15</b>	<p><b>REQUIRE</b></p> <ul style="list-style-type: none"> <li>a) Adopt solar access ordinances and similar regulations to provide a more stable investment environment.<sup>2,3</sup></li> <li>b) Require new buildings to be solar-ready.<sup>3</sup></li> </ul>
<b>16</b>	<p><b>INCENTIVIZE</b></p> <ul style="list-style-type: none"> <li>a) Provide or promote incentives for building-level renewable technologies and energy storage systems (e.g. local sales, property, or business tax exemptions; streamlined permitting, etc.).<sup>2</sup></li> <li>b) Implement programs that support implementation of onsite renewables and energy storage systems in underserved</li> </ul>

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	communities. <sup>4</sup>
<b>17</b>	<p><b>ENGAGE</b></p> <ul style="list-style-type: none"> <li>a) Work with the community to achieve and maintain EPA Green Power Community Partnership (community-wide minimum percentage standards for renewables that can be met through both on-site generation and green power purchasing).<sup>1</sup></li> <li>b) Facilitate and support establishment of cooperative community renewable systems and cooperative renewable energy purchasing.<sup>2,3</sup></li> <li>c) Increase public education and outreach on renewable technologies.<sup>2</sup></li> <li>d) Showcase government renewable energy initiatives to the public to inspire community action and encourage continued community support for implementing renewable technologies.<sup>4</sup></li> <li>e) Promote construction of carport canopies used for renewable energy generation and shading.<sup>4</sup></li> </ul>
<b>18</b>	<p><b>SUPPORT</b></p> <ul style="list-style-type: none"> <li>a) Continue to support strong state-level renewable portfolio standards.<sup>2</sup></li> <li>b) Support expanded renewable energy incentives and financing mechanisms at utility, state, and national incentives levels.<sup>2,3,4</sup></li> <li>c) Support installation of on-site renewables for power water, energy, and transportation infrastructures.<sup>2</sup></li> <li>d) Facilitate partnerships to install renewables at affordable housing developments.<sup>4</sup></li> </ul>

**ADVANCE SUSTAINABLE REGIONAL MOBILITY**

**Increase Efficiency of Public Sector Fleets<sup>1,2</sup>**

<b>19</b>	<p><b>TRACK</b></p> <ul style="list-style-type: none"> <li>a) Track the effects of using electric vehicles (EVs) and alternative fuel vehicles (AFVs) in public fleets.<sup>3,4</sup></li> </ul>
<b>20</b>	<p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>a) Prepare a fleet management plan aimed at reducing emissions of greenhouse gases and other pollutants.<sup>4</sup></li> <li>b) Use advanced mapping (e.g. telemetrics, geographical information systems, etc.) to determine most efficient routes for public services and work travel.<sup>4</sup></li> </ul>
<b>21</b>	<p><b>INVEST</b></p> <ul style="list-style-type: none"> <li>a) Increase share of EVs and AFVs in light-duty public sector fleets.<sup>2</sup></li> <li>b) Implement fleet procurement policies that consider feasibility of downsizing the fleet, right-sizing the vehicle, and purchasing the most energy efficient vehicle to meet the operational needs.<sup>1,4</sup></li> <li>c) Fund purchases of alternative fuel and zero emission transit fleet buses.<sup>2</sup></li> <li>d) Add alternative fuel and charging equipment (e.g. natural gas, biofuel, electric, hydrogen) to public fueling facilities. Retrofit garages and refueling facilities, as needed.<sup>1,2</sup></li> <li>e) Retrofit vehicles to provide for increased efficiency.<sup>2</sup></li> <li>f) Offer car sharing and bike sharing programs for employees as an alternative to expanding fleet.<sup>1,4</sup></li> <li>g) Implement innovative pilot initiatives to advance new technologies (e.g. vehicle-to-grid, solar powered charging stations, fuel cell vehicles, etc.).<sup>4</sup></li> </ul>
<b>22</b>	<p><b>REQUIRE</b></p> <ul style="list-style-type: none"> <li>a) Adopt anti-idling policies for public fleets and off-road equipment.<sup>1,2,3</sup></li> <li>b) Adopt a green fleet policy.<sup>1</sup></li> <li>c) Set targets for low and zero emission vehicle deployment in public fleets.<sup>4</sup></li> <li>d) Establish a fuel consumption budget for public fleet.<sup>4</sup></li> </ul>
<b>23</b>	<p><b>ENGAGE</b></p> <ul style="list-style-type: none"> <li>a) Provide staff training for efficient use of and maintenance on all vehicle types in the fleet with a particular focus on alternative fuel vehicles.<sup>2</sup></li> <li>b) Provide employee training on eco-driving practices.<sup>2</sup></li> </ul>

**Improve Local Fuel Economy<sup>1,2</sup>**

<b>24</b>	<p><b>TRACK</b></p> <ul style="list-style-type: none"> <li>a) Track transportation sector GHG emissions.<sup>3,4</sup></li> <li>b) Track EV and hybrid ownership community-wide.<sup>3</sup></li> <li>c) Track or map publically accessible EV charging infrastructure community-wide.<sup>3,4</sup></li> </ul>
<b>25</b>	<p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>a) Update comprehensive plans and small area plans to guide EV and other AFV infrastructure development.<sup>2,3</sup></li> </ul>

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26	INVEST a) Invest in a system of publically accessible EV charging stations and other AFV fueling stations. <sup>2</sup>
27	REQUIRE a) Adopt community-wide anti-idling regulations and actively promote and enforce. <sup>1</sup> b) Require new buildings to install EV charging stations or require them to be EV-Ready. <sup>3</sup> c) Require space for bicycle and car sharing in development plans. <sup>4</sup>
28	INCENTIVIZE a) Provide or promote incentives to private sector for installing EV charging stations. <sup>2</sup> b) Provide or promote incentives for EVs (e.g. tax benefits for vehicle purchase, HOV access, priority parking, etc.). <sup>2,3</sup> c) Provide or promote incentives for the early replacement of older vehicles that have poor fuel economy (e.g. Cash for Clunkers). <sup>2</sup> d) Provide disincentives for purchases of fuel inefficient vehicles (e.g. gas guzzler tax/registration fees). <sup>2</sup>
29	ENGAGE a) Provide outreach and education on the benefits and availability of EVs. <sup>2</sup> b) Promote Car Free and Bike to Work Days. <sup>3</sup> c) Promote car and bike sharing parking in new developments. <sup>4</sup> d) Expand bike and pedestrian education programs (Safe Routes to School, Street Smart Safety Campaign, cycling proficiency trainings, etc.). <sup>3,4</sup> e) Host a transportation challenge to reduce encourage less driving and more transit use, biking, and walking. <sup>4</sup> f) Promote a public eco-driving campaign. <sup>2</sup>
30	SUPPORT a) Support expansion of bike sharing programs, including electric bike capacity. <sup>3,4</sup> b) Support truck stop electrification initiatives. <sup>2</sup> c) Support speeding enforcement on highways. <sup>2</sup> d) Support adoption of CA Low-Emission Vehicle (LEV) Phase II Program. <sup>2</sup> e) Support the development of a low-carbon fuel standard. <sup>2</sup> f) Support state and national incentives for low-emitting, efficient vehicles, infrastructure, and technology. <sup>3,4</sup>
<b>Mobility Management<sup>1,2</sup></b>	
31	TRACK a) Track trip share trends (single passenger trips v. carpool, transit, walk, and bike trips). <sup>3</sup>
32	PLAN a) Adopt a bicycle and pedestrian plan. <sup>1</sup> b) Conduct feasibility and cost-benefit studies of various parking management options for urban areas to help inform decision making to reduce congestion and motorized trips. <sup>3</sup> c) Identify impacts of transportation projects to underserved communities. Approve projects that maximize positive impacts and minimize negative impacts. <sup>4</sup>
33	INVEST a) Expand park and ride facilities to meet anticipated increase in rideshare and transit demand. <sup>2</sup> b) Implement transit enhancements to increase capacity and improve services (e.g. enhanced commuter bus service, real-time bus schedule information, bus rapid transit, etc.). Place emphasis on increasing accessibility and expanded transit options to underserved communities. <sup>2</sup> c) Implement initiatives that enhance intermodal transport options (e.g. from a train station there is access to a bus, car share, bike share, etc.). <sup>3,4</sup> d) Enhance system operational performance of roadways (e.g. signal retiming, intersection efficiency improvements, etc.). <sup>2</sup> e) Implement innovative pilot initiatives and partnerships to advance new technologies, such as deployment and testing of connected/autonomous vehicles. <sup>2,4</sup> f) Invest in bike lane infrastructure (e.g. build-out of new paved lanes, striping existing roadways, increased signage, etc.). <sup>3</sup> g) Achieve Bike Friendly or Walk Friendly Community Designations. <sup>4</sup>
34	REQUIRE a) Adopt a complete streets policy. <sup>1</sup> b) Require assessing availability of transit options for workers as part of the development review process. <sup>4</sup>
35	INCENTIVIZE a) Offer a commute options program for government employees (telework, flex-time, alternative work schedule, car pool, van

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	<ul style="list-style-type: none"> <li>pool, guaranteed ride home, bike/pedestrian, or financial incentive).<sup>1</sup></li> <li>b) Implement transit fare reductions to targeted audiences.<sup>2,4</sup></li> </ul>
36	<p><b>ENGAGE</b></p> <ul style="list-style-type: none"> <li>a) Promote travel demand management programs (e.g. Commuter Connections) to encourage citizens to take alternative commute options and to help employers offer alternative commute options to their employees.<sup>1,2</sup></li> <li>b) Engage businesses to expand use of alternative commuter options and incentives.<sup>2</sup></li> </ul>

**INCREASE SUSTAINABLE URBAN DEVELOPMENT**

**Facilitate Sustainable Development Patterns<sup>1,2,3</sup>**

37	<p><b>TRACK</b></p> <ul style="list-style-type: none"> <li>a) Track percent of population, household and job growth occurring in activity centers.<sup>2,3</sup></li> </ul>
38	<p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>a) Update comprehensive and small area land use plans to include energy and transportation efficiencies as a factor in project siting decisions.<sup>2</sup></li> <li>b) Update comprehensive and small area land use plans to allow for greater concentration of growth in activity centers with high capacity transit (e.g. around rail stations) and other activity centers.<sup>1,2</sup></li> <li>c) Develop neighborhood stabilization strategies to preserve neighborhood identify in underserved communities.<sup>4</sup></li> <li>d) Identify impacts of land use decisions on underserved communities. Approve plans and projects that maximize positive impacts and minimize negative impacts.<sup>4</sup></li> </ul>
39	<p><b>INVEST</b></p> <ul style="list-style-type: none"> <li>a) Implement pedestrian, bicycle, and transit improvements to accommodate growth around rail stations and other activity centers.<sup>2</sup></li> <li>b) Implement strategies to provide residents’ daily needs within a convenient walk. Place emphasis on increasing connectivity in underserved communities.<sup>4</sup></li> <li>c) Locate one or more government facilities at a former vacant, underutilized, or brownfield site.<sup>1</sup></li> </ul>
40	<p><b>REQUIRE</b></p> <ul style="list-style-type: none"> <li>a) Update zoning and permitting guidelines to include energy and transportation efficiencies as a factor in public siting decisions.<sup>2</sup></li> <li>b) Update zoning and urban design guidelines to provide for greater concentration of growth in activity centers with high capacity transit (e.g. around rail stations) and other activity centers.<sup>2,3</sup></li> <li>c) Update zoning to provide for mixed income housing and increased accessibility opportunities for low income residents.<sup>2</sup></li> <li>d) Adopt a healthy design ordinance to promote physical activity, walkability and accessibility.<sup>4</sup></li> </ul>
41	<p><b>INCENTIVIZE</b></p> <ul style="list-style-type: none"> <li>a) Incentivize walkable, higher density, mixed use, mixed income, and transit oriented development in activity centers.<sup>1</sup></li> <li>b) Identify, promote, and incentivize the redevelopment of or innovative uses for vacant, underutilized, or brownfield sites.<sup>1</sup></li> </ul>

**Increase Number of High Performance Buildings<sup>1,2,3</sup>**

42	<p><b>TRACK</b></p> <ul style="list-style-type: none"> <li>a) Track high performance building growth.<sup>3</sup></li> </ul>
43	<p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>a) Adopt a zero energy plan or policies.<sup>4</sup></li> <li>b) Incorporate high performance building goals and strategies in master plans, comprehensive land use plans, and small area plans.<sup>4</sup></li> </ul>
44	<p><b>INVEST</b></p> <ul style="list-style-type: none"> <li>a) Implement an affordable housing green rehabilitation program.<sup>1,2</sup></li> <li>b) Implement strategies to achieve ENERGY STAR certification in public facilities.<sup>3</sup></li> <li>c) Identify a pilot project for a government facility to achieve a new or high level green construction standard (e.g. LEED Platinum, Net Zero, Living Building Challenge, WELL Standard, etc.).<sup>4</sup></li> </ul>
45	<p><b>REQUIRE</b></p> <ul style="list-style-type: none"> <li>a) Enhance green building policies to require higher level of green construction standards (e.g. LEED Gold instead of LEED</li> </ul>



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	Silver). <sup>1,4</sup>
46	<p>INCENTIVIZE</p> <p>a) Offer incentives for commercial and residential buildings certified by a high efficiency building/green rating system (LEED, ENERGY STAR, Passive House, EarthCraft, Living Building Challenge, Net Zero, Well Standard, etc.).<sup>1,2</sup></p>
47	<p>ENGAGE</p> <p>a) Provide education and training on new and advanced green construction standards (Living Building, Net Zero, WELL Standard, etc.).<sup>2,4</sup></p> <p>b) Showcase high performance buildings to the public to inspire community action and encourage continued community support for development of cutting-edge green and healthy buildings in the community.<sup>2,4</sup></p>
48	<p>SUPPORT</p> <p>a) Provide support for community energy districts, eco-districts, and innovation districts.<sup>4</sup></p>
<b>Reduce Loss and Fragmentation of Resource Lands, Canopy, and Vegetation from Development<sup>1,2</sup></b>	
49	<p>TRACK</p> <p>a) Evaluate tree canopy or conduct tree inventories.<sup>3,4</sup></p>
50	<p>PLAN</p> <p>a) Adopt a tree canopy/forest cover goal.<sup>1</sup></p> <p>b) Implement plan(s) to preserve and enhance ecologically valuable green spaces (such as forests, wetlands, stream buffers) in urban, suburban and rural areas (e.g. green infrastructure plan, natural resource management plan, or green space plan).<sup>1</sup></p> <p>c) Adopt green streets plan or policies.<sup>1,4</sup></p> <p>d) Adopt a comprehensive green roof strategy or policy.<sup>4</sup></p> <p>e) Include shading and green infrastructure as part of the comprehensive parking plan.<sup>4</sup></p> <p>f) Conduct an urban heat island mapping analysis to identify “hot spots” that could most benefit from green infrastructure deployment.<sup>4</sup></p>
51	<p>INVEST</p> <p>a) Obtain and maintain Tree City USA designation. Designation requirements include having a tree board or department, tree care ordinance, an Arbor Day observance or proclamation, and a \$2 per capita budget for public tree plantings and care.<sup>1,2</sup></p> <p>b) Increase native tree planting on public property.<sup>2</sup></p> <p>c) Expand implementation of green infrastructure projects. Focus implementation in “hot spots” of low-income, vulnerable communities.<sup>4</sup></p> <p>d) Integrating green infrastructure into transportation projects.<sup>1,4</sup></p> <p>e) Install green roof(s) on government property.<sup>1</sup></p> <p>f) Implement district stormwater management and reuse systems.<sup>4</sup></p> <p>g) Where possible, convert paved surfaces to green infrastructure. Where paved surfaces are necessary, consider use of cool pavement technologies<sup>4</sup></p> <p>h) Provide public land for urban agriculture (e.g. edible landscaping, school and community gardens, urban farming).<sup>1,4</sup></p> <p>i) Implement tools and initiatives to preserve working farmland.<sup>1</sup></p> <p>j) Invest in mitigation or removal of invasive species.<sup>4</sup></p>
52	<p>REQUIRE</p> <p>a) Require green infrastructure and tree canopy for new development and retrofits, including for parking lots, as part of the development review process.<sup>2,4</sup></p> <p>b) Use zoning as a tool to help increase access to greenspaces for underserved communities.<sup>4</sup></p> <p>c) Expand the responsibility of developers to plant or maintain trees over an extended period of time.<sup>2</sup></p> <p>d) Establish a tree mitigation banking program.<sup>2</sup></p> <p>e) Use low-impact design or environmental site design standards.<sup>3</sup></p> <p>f) Adopt zoning, development, and permitting regulations that support local food production, processing, and distribution in urban, suburban, and rural communities (i.e. farmers’ markets, community gardens, on-farm processing, agri-tourism, etc.).<sup>4</sup></p>
53	<p>INCENTIVIZE</p> <p>a) Provide or promote incentives to encourage tree planting on private property.<sup>2</sup></p> <p>b) Provide or promote green roof incentives.<sup>4</sup></p> <p>c) Provide or promote incentives for paved surface reduction.<sup>4</sup></p> <p>d) Provide stormwater fee credits for green infrastructure.<sup>4</sup></p> <p>e) Provide incentives for urban agriculture (e.g. tax incentives, providing access to water, etc.).<sup>4</sup></p>



## DRAFT MENU OF POTENTIAL ACTION IDEAS: BEST AND INNOVATIVE PRACTICE OPTIONS

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<b>54</b>	<b>ENGAGE</b> a) Promote planting, care of trees, and engage the community on tree planting. <sup>2</sup> b) Encourage use of native species. <sup>4</sup> c) Increase support and space for urban agriculture. <sup>4</sup>
<b>55</b>	<b>SUPPORT</b> a) Provide support for silvicultural districts. <sup>2</sup>

### MOVE TOWARD ZERO WASTE

<b>56</b>	<b>TRACK</b> a) Provide for community-wide waste, recycling, and composting data collection and reporting. <sup>4</sup> b) Map and optimize curbside collection routes to reduce vehicle miles traveled. <sup>4</sup>
<b>57</b>	<b>PLAN</b> a) Adopt a zero waste strategy. <sup>2,4</sup> b) Develop framework for organics collections at residential and commercial sites. <sup>1,3,4</sup> c) Identify solutions for disposal of household hazardous waste and pharmaceuticals. <sup>4</sup> d) Identify impacts of solid waste and recycling plans and programs to underserved communities. Approve plans and programs that maximize positive impacts and minimize negative impacts. <sup>4</sup>
<b>58</b>	<b>INVEST</b> a) Expand diversion solutions in public spaces (such as installing solar compactors for landfill waste and recycling, and displaying signage with proper waste disposal techniques). <sup>4</sup> b) Implement and expand food composting and recovery initiatives. <sup>3,4</sup> c) Determine needed upgrades of Material Recovery Facilities (MRF) and collection systems to optimize operating efficiency. <sup>4</sup> d) Utilize emergent technology for more efficient waste conversion (e.g. gasification, anaerobic digestion, integrated MRF systems, etc.). <sup>4</sup> e) Optimize performance of waste-to-energy-projects. <sup>2</sup>
<b>59</b>	<b>REQUIRE</b> a) Adopt and enforce recycling requirements for businesses. <sup>4</sup> b) Adopt a construction and demolition recycling policy. <sup>4</sup> c) Require no plastic bags in curbside collection for grass and leaf waste (e.g. collected in paper bags or loose only). <sup>1</sup> d) Implement bans on single-use products which are not readily recyclable, such as plastic shopping bags and polystyrene containers. <sup>3,4</sup> e) Adopt paperless systems for government records, customer billing systems, and meetings. <sup>4</sup>
<b>60</b>	<b>INCENTIVIZE</b> a) Implement pay-as-you-throw pricing structure for waste collection services. <sup>4</sup> b) Provide incentives for residential on-site composting. <sup>4</sup>
<b>61</b>	<b>ENGAGE</b> a) Expand community events for hard to recycle items (e.g. electronics, batteries, tires, mattresses, etc.). <sup>4</sup> b) Host volunteer cleanup events to guide litter removal. <sup>4</sup> c) Expand education and outreach initiatives to encourage sustainable consumption, increased recycling, and composting (e.g. recycling challenges, zero waste public events, etc.). <sup>4</sup> d) Engage and assist schools (primary, secondary, and higher education), businesses, and other organizations in the community with development of zero waste strategies. <sup>4</sup> e) Implement outreach initiatives to support increased reuse of construction and demolition waste. <sup>2</sup>
<b>62</b>	<b>SUPPORT</b> a) Support initiatives that divert healthy food that might otherwise be wasted to charitable organizations. <sup>4</sup> b) Support siting of renewables at landfills. <sup>4</sup> c) Grow and attract green businesses that upcycle materials (re-use materials by taking them out of the waste stream). <sup>4</sup>

### RESILIENCE

<b>63</b>	<b>TRACK</b> a) Assess community vulnerability (social, environmental, and economic) to the impacts of climate change. Track implementation and monitor success (e.g. percent of populations and ecosystems in vulnerable areas protected/prepared, damage costs)
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	<p>avoided, etc.).<sup>1,4</sup></p> <p>b) Assess vulnerability of critical infrastructure for transportation, communication, energy utility, water and wastewater utility systems assets. Track implementation and monitor success (e.g. percent of vulnerable facilities hardened, percent of facilities in state-of-good-repair, etc.).<sup>1,4</sup></p> <p>c) Periodically monitor regional projections for temperature, precipitation, severe weather events, sea level, and flooding.<sup>3,4</sup></p>
64	<p>PLAN</p> <p>a) Prepare a climate adaptation/resiliency plan.<sup>1,4</sup></p> <p>b) Update comprehensive plans to direct development outside of areas that are vulnerable to flooding, sea-level rise, and other climate impacts.<sup>3,4</sup></p> <p>c) Update hazard mitigation, emergency response, recovery, and continuity of operations plans to incorporate climate impacts and preparedness.<sup>3,4</sup></p> <p>d) Update public health plans and programs to address climate impacts. Direct related public health programs to benefit vulnerable and underserved populations.<sup>4</sup></p> <p>e) Incorporate climate resilience strategies into capital improvement plans and projects.<sup>4</sup></p>
65	<p>INVEST</p> <p>a) Implement local government energy assurance planning initiatives.<sup>1</sup></p> <p>b) Pilot innovative solutions for climate preparedness in vulnerable and underserved communities.<sup>4</sup></p> <p>c) Design new public buildings to be more resilient to climate impacts (extreme heat, severe storms, flooding, etc.). Incorporate passive survivability design features that allow facilities to continue operations during extended power outages.<sup>3,4</sup></p> <p>d) Implement site-scale flood and heat protection measures at vulnerable critical facilities and infrastructure sites.<sup>3,4</sup></p> <p>e) Harden existing infrastructure and accelerate rate of aging infrastructure replacement to increase resilience.<sup>4</sup></p> <p>f) Build redundancies into infrastructure systems to increase resiliency.<sup>3,4</sup></p> <p>g) Ensure backup power generation for critical facilities and infrastructure during power outages. Implement advanced, clean backup energy systems (e.g. off grid renewables, microgrids, etc.).<sup>3,4</sup></p> <p>h) Restore and manage natural ecosystem functions to increase capacity to adapt to a changing climate.<sup>3,4</sup></p>
66	<p>REQUIRE</p> <p>a) Update zoning, building codes, ordinances, and the development review process to ensure new development is more resilient to local climate impacts (extreme heat, severe storms, flooding, sea-level rise, etc.).<sup>4</sup></p> <p>b) Revise infrastructure design standards to be more resilient to heat, flooding, and other climate impacts.<sup>3,4</sup></p> <p>c) Require backup solar powered street lights and signals be integrated along evacuation routes and high traffic areas.<sup>4</sup></p>
67	<p>INCENTIVIZE</p> <p>a) Direct financial and technical assistance to vulnerable and underserved communities.<sup>4</sup></p>
68	<p>ENGAGE</p> <p>a) Implement public education campaign on preparedness for both citizens and commercial property owners.<sup>3,4</sup></p> <p>b) Communicate and coordinate with vulnerable populations and communities to prepare for and respond to climate impacts.<sup>3,4</sup></p> <p>c) Locate cooling centers near most vulnerable populations and coordinate with community leaders to communicate heat and health advisories and cooling center locations.<sup>3,4</sup></p> <p>d) Work with small businesses to address preparedness and business continuity plans.<sup>4</sup></p> <p>e) Showcase resiliency projects to the public to inspire community action and encourage continued community support for implementing resiliency initiatives.<sup>4</sup></p>
69	<p>SUPPORT</p> <p>a) Support local and regional infrastructure agencies in preparing for climate hazards, including assessing vulnerability of critical infrastructure for transportation, communication, energy utility, water and wastewater utility systems assets and maintaining facilities in a state of good repair.</p>

**GREEN AND CLEAN ECONOMY**

70	<p>TRACK</p> <p>a) Track green and clean tech job growth.<sup>4</sup></p> <p>b) Maintain an entrepreneur eco-system map and database.<sup>4</sup></p>
71	<p>PLAN</p> <p>a) Update economic development plan to incorporate strategies to support emerging green or clean tech industries.<sup>4</sup></p> <p>b) Conduct needs assessment of green job demand. Link needs identified to existing youth employment and job training programs.<sup>4</sup></p>

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	<ul style="list-style-type: none"> <li>c) Develop a green workforce strategy that supports the local green/cleantech industry. Identify green job demand and linking needs with existing job training, job placement, and youth employment programs.<sup>4</sup></li> <li>d) Develop a green/cleantech branding and marketing strategy.<sup>4</sup></li> <li>e) Explore the viability of establishing a land use “overlay zone” for green/clean tech companies.<sup>4</sup></li> </ul>
72	<p><b>INVEST</b></p> <ul style="list-style-type: none"> <li>a) Adopt environmentally preferable purchasing policies that facilitates government procurement of goods and services that reduce impact on human health and environment.<sup>4</sup></li> <li>b) Commit to divest in fossil fuels over the long-term.<sup>4</sup></li> <li>c) Increase government spend on environmentally-friendly products and services.<sup>4</sup></li> <li>d) Participate in cooperative public sector procurements of environmentally-friendly products and services.<sup>3,4</sup></li> <li>e) Provide shared spaces for green/clean tech entrepreneurs, small businesses, and incubators.<sup>4</sup></li> </ul>
73	<p><b>INCENTIVIZE</b></p> <ul style="list-style-type: none"> <li>a) Facilitate community investment in local climate action by providing and promoting incentives.<sup>4</sup></li> <li>b) Develop incentives for green/clean tech businesses to locate within the jurisdiction.<sup>4</sup></li> </ul>
74	<p><b>ENGAGE</b></p> <ul style="list-style-type: none"> <li>a) Promote the economic benefits of climate and energy initiatives.<sup>4</sup></li> <li>b) Implement marketing strategies to attract green and clean tech businesses.<sup>4</sup></li> <li>c) Promote buy local campaigns and initiatives.<sup>4</sup></li> <li>d) Expand opportunities for minority and women owned businesses to participate in green and clean economy initiatives.<sup>4</sup></li> <li>e) Provide guidance and training for local businesses to develop sustainability plans.<sup>4</sup></li> <li>f) Create a local green job corps to employ residents in sustainable community projects.<sup>4</sup></li> <li>g) Offer green tech training in correctional facilities.<sup>4</sup></li> <li>h) Encourage government vendors and businesses in the community to minimize the carbon intensity of their supply chain.<sup>4</sup></li> </ul>
75	<p><b>SUPPORT</b></p> <ul style="list-style-type: none"> <li>a) Support formation of a local green/clean tech cluster.<sup>4</sup></li> <li>b) Support innovation districts to promote and leverage green technology projects.<sup>4</sup></li> <li>c) Support living labs to test new technologies in specified districts of the community or for specific sectors.<sup>4</sup></li> <li>d) Encourage employment of local residents in clean energy projects.<sup>4</sup></li> <li>e) Advocate for state incentive programs for green and clean tech activities.<sup>4</sup></li> <li>f) Support initiatives that provide opportunities for researchers, start-ups, federal labs, corporations, and venture capitalists to connect.<sup>4</sup></li> <li>g) Support matchmaking services for small businesses that allows them to be paired with sustainability services.<sup>4</sup></li> </ul>

**EQUITY AND HEALTH**

76	<p><b>TRACK</b></p> <ul style="list-style-type: none"> <li>a) Identify/map underserved communities.<sup>3</sup></li> <li>b) Identify the community’s priorities for equitable environmental improvements. Provide data and resources to support decision-making of priorities.<sup>3,4</sup></li> </ul>
77	<p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>a) Conduct cumulative environmental and health impact assessments in underserved communities.<sup>3,4</sup></li> <li>b) Integrate equity and health considerations and strategies into all local government policies, plans, and programs. Identify impacts of policies and programs to underserved populations and communities and how to maximize positive impacts and minimize negative impacts.<sup>4</sup></li> <li>c) Develop a community health improvement plan to strengthen the delivery of health services and improve community health.<sup>4</sup></li> <li>d) Develop a Healthy Food Access or Food Security Plan.<sup>4</sup></li> </ul>
78	<p><b>INVEST</b></p> <ul style="list-style-type: none"> <li>a) Improve equitable access and proximity to community facilities, services, and infrastructure.<sup>4</sup></li> </ul>
79	<p><b>REQUIRE</b></p> <ul style="list-style-type: none"> <li>a) Adopt an equity or social justice policy that establishes a clear commitment to equity in local government decision-making, activities, and investments.<sup>4</sup></li> <li>b) Adopt a precautionary principle as the underlying policy standard when it comes to reducing environmental hazards and risks.<sup>4</sup></li> <li>c) Incorporate environmental justice criteria and priorities into zoning and permitting of development projects.<sup>4</sup></li> </ul>

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<b>80</b>	<p><b>INCENTIVIZE</b></p> <p>a. Direct environmental incentives towards underserved populations and communities.<sup>4</sup></p>
<b>81</b>	<p><b>ENGAGE</b></p> <p>a) Provide training to local government staff on successful public engagement techniques, equity and diversity.<sup>4</sup></p> <p>b) Provide meaningful engagement forums for underserved communities. Encourage diversity in local government appointments to advisory boards and commissions.<sup>3,4</sup></p> <p>c) Support community environmental monitoring programs to increase community participation in gathering and accessing community data (e.g. Citizen Science).<sup>3</sup></p> <p>d) Provide community leadership development to enhance citizen’s knowledge on the local environmental planning process, how to influence environmental decision-making, and how to access data, technical assistance, and resources.<sup>3</sup></p> <p>e) Expand healthy housing outreach programs.<sup>4</sup></p> <p>f) Establish and support local food policy councils.<sup>4</sup></p>
<b>82</b>	<p><b>SUPPORT</b></p> <p>a) Support local and organic food distribution network.<sup>4</sup></p> <p>b) Support expanded acceptance of federal nutrition benefits like SNAP and WIC at farmers’ markets and other points of sale for local food.<sup>4</sup></p>

<sup>1</sup> Existing action from 2016 Regional Climate and Energy Action Plan.

<sup>2</sup> Indicates an action idea under consideration by the Multi-Sector Work Group Project.

<sup>3</sup> Indicates an action idea based on other COG plans or initiatives.

<sup>4</sup> Indicates new action idea based on research of leading local, national, and international plans and practices, including:

- o Arlington County, Virginia [Community Energy Plan](#)
- o Atlanta Regional Commission [Green Communities Program](#) and [Impact of Community Design on Greenhouse Gas Emissions Report](#)
- o City of Alexandria, Virginia [Energy and Climate Change Action Plan](#), [Environmental Action Plan](#), [Eisenhower West Small Area Plan](#)
- o City of Atlanta, Georgia [Climate Action Plan](#) and [Power to Change Sustainability Plan](#)
- o City of Austin, Texas [Climate Change Program](#), [Sustainability Performance Tracking](#), and [Resource Recovery Master Plan](#)
- o City of Baltimore, Maryland [Climate Action Plan](#), [Disaster Preparedness Plan](#), and [Sustainability Plan](#)
- o City of Berkeley, California [Climate Action Plan](#)
- o City of Boston, Massachusetts [Greenovate Boston Climate Action Plan Update](#)
- o City of Bowie, Maryland [Climate Action Plan](#)
- o City of Cambridge, Massachusetts [Net Zero Action Plan](#) and [Vulnerability Assessment](#)
- o City of Chicago, Illinois [Climate Action Plan and Progress Report](#) and [Technology Plan](#)
- o City of Dallas, Texas [Sustainability Plan and Progress Report](#)
- o City and County of Denver, Colorado [Climate Action Plan](#) and [2020 Sustainability Goals](#)
- o City of Gaithersburg, Maryland [Master Plan Sustainability and Environment Element](#)
- o City of Greenbelt, Maryland [Sustainability Plan Framework](#)
- o City of Hamburg, Germany [Climate Action Plan](#)
- o City of Los Angeles, California [Sustainable City pLAN](#)
- o City of Louisville, Kentucky [Sustainable City Plan and Progress Reports](#)
- o City of Manassas, Virginia Comprehensive Plan [Environmental Sustainability Section](#)
- o City of Miami, Florida [MiPlan: Climate Action Plan](#)
- o City of Minneapolis, Minnesota [Climate Action Plan](#) and [Vulnerability Assessment](#)
- o City of Newark, New Jersey [Sustainability Action Plan](#)
- o City of Philadelphia, Pennsylvania [Growing Stronger: Toward a Climate-Ready Philadelphia](#), [Greenworks Vision and Progress Reports](#), and [Deep Carbon Emission Reductions Report 80x50](#)
- o City of Pittsburgh, Pennsylvania [Clean Technology Program](#) and [Climate Action Plan](#)
- o City of Portland and Multnomah County, Oregon [Climate Action Plan](#)
- o City of Raleigh, North Carolina [Sustainable Raleigh](#)
- o City of Rockville, Maryland [Energy Action Plan](#) and [Strategy for a Sustainable Rockville](#)
- o City of San Diego, California [Climate Action Plan](#), Clean Tech Leadership Strategy, and [Cleantech San Diego](#)

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- City of San Francisco, California [Climate Action Strategy](#) and [Reaching 80x50: Technology Pathways to a Sustainable Future](#)
- City of Santa Monica, California [15x15 Climate Action Plan](#), [Sustainable City Plan](#), and [Sustainability City Report Card](#)
- City of Seattle, Washington [Climate Action Plan](#), [Implementation Strategy](#), [Race and Social Equity Initiative](#), and [Waste Prevention Goals](#)
- City of Takoma Park, Maryland [Sustainable Energy Action Plan](#) and [Local Action Plan for Reducing Greenhouse Gas Emissions](#)
- City of Toronto, Ontario [Zero Waste Toronto](#)
- City of Vancouver, British Columbia [Greenest City 2020 Action Plan](#)
- City of Washington DC [Sustainable DC](#), [DRAFT Climate Ready DC Plan](#), and [DRAFT Comprehensive Energy Plan](#)
- CDP State and Regional Climate Action Platform [2015 Climate Data Reported](#)
- [Compact of Mayors](#)
- [European Green Capital](#)
- Fairfax County, Virginia [Solid Waste Management Plan Update 2015](#) and the Environmental Quality Advisory Council's [Annual Report on the Environment](#)
- Frederick County, Maryland [Sustainable Action Plan for County Operations](#)
- Loudoun County, Virginia [Energy Strategy](#)
- Los Angeles County, California [Community Climate Action Plan](#)
- Maryland [Climate Change Program](#) and [Zero Waste Plan](#)
- Massachusetts [2010-2020 Solid Waste Master Plan](#)
- Metro Atlanta Chamber [Metro Atlanta Clean Tech Ecosystem Report](#)
- Metropolitan (Boston) Area Planning Commission [Regional Climate Change Strategy](#)
- Miami-Dade County, Florida [Climate Change Action Plan](#)
- Montgomery County, Maryland [Climate Protection Plan](#), [Annual Report on Sustainability](#), and [Bethesda Downtown Plan](#)
- New York City, New York Climate [Change Program Assessment and Action Plan](#) and [OneNYC](#)
- [Post Carbon Cities of Tomorrow](#)
- Prince George's County, Maryland [Petroleum Reduction Consumption Plan and Renewable Energy Action Plan](#), [Comprehensive Ten-Year Solid Waste Management Plan](#), and [Comprehensive Plan](#)
- Prince William County, Virginia [Green Guiding Principles](#) and Comprehensive Plan [Environment Section](#)
- San Diego Association of Governments (SANDAG) [Climate Action Strategy](#)
- San Joaquin Valley, California [Sustainable Energy Roadmap](#)
- [Southeast Florida Regional Climate Change Compact](#)
- STAR Communities [Rating System](#)
- [Sustainable Jersey Certified](#)
- The White House [The President's Climate Action Plan](#)
- University of Maryland Environmental Finance Center [Sustainable Maryland Certified](#)
- United Nations Human Settlements Programme (UN HABITAT) [Guiding Principles for City Climate Action](#)
- Urban Land Institute [A Guide for Assessing Climate Change Risk](#)
- Virginia Municipal League [Go Green Virginia](#)
- Virginia [State Energy Plan](#)
- Western Australian [Waste Strategy](#)
- YSEALI Professional Fellows Program [Research Project: Replicable Best Practices for Metropolitan Washington](#)



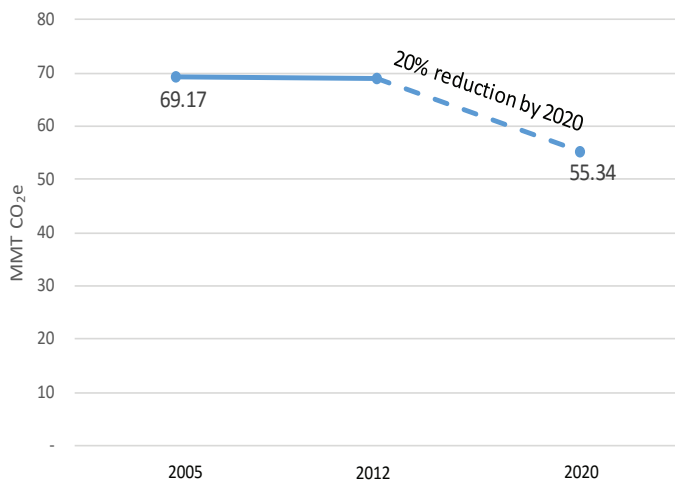
## DRAFT CLIMATE AND ENERGY ACTION REGIONAL PROGRESS DASHBOARD

In 2008, the Metropolitan Washington Council of Governments (COG) and local governments across the metropolitan Washington D.C. area collaboratively established the regional greenhouse gas (GHG) emission reduction goals of: 10% below business as usual projections by 2012 (back down to 2005 levels); 20% below 2005 levels by 2020; and 80% below 2005 levels by 2050.

COG and its member jurisdictions are working toward these goals, and the region as a whole was able to meet the 2012 target, demonstrating that GHG reductions are possible even as the region's population and economy grows. This dashboard is a mechanism to track region-wide progress towards the 2020 GHG emission reduction goal as well as additional key indicators toward climate and energy progress. Estimated progress to-date is reflected as well as potential outcomes through 2020.

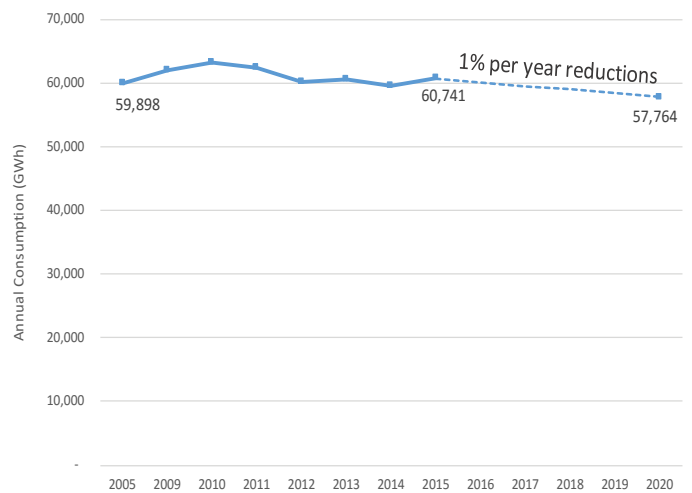
### TOTAL GHG EMISSIONS\*

- Met 2012 goal of 10% below business as usual projections (back down to 2005)
- Per capita decreased 10.3%, 2005-2012



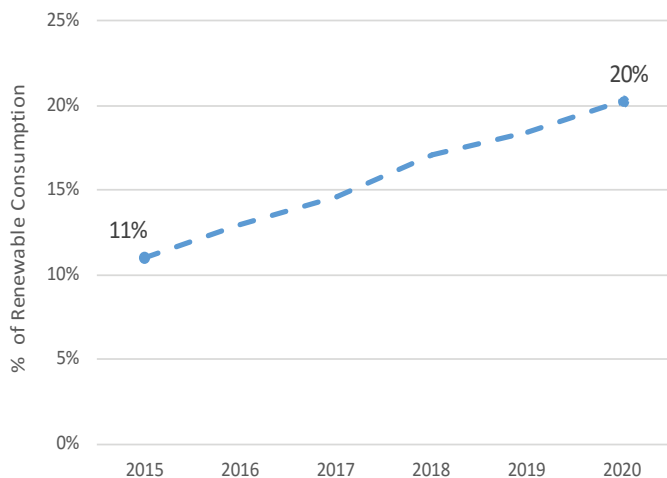
### ENERGY CONSUMPTION\*\*

- Total electricity consumption is up 1% since 2005
- Per capita decreased 12%, 2005-2015



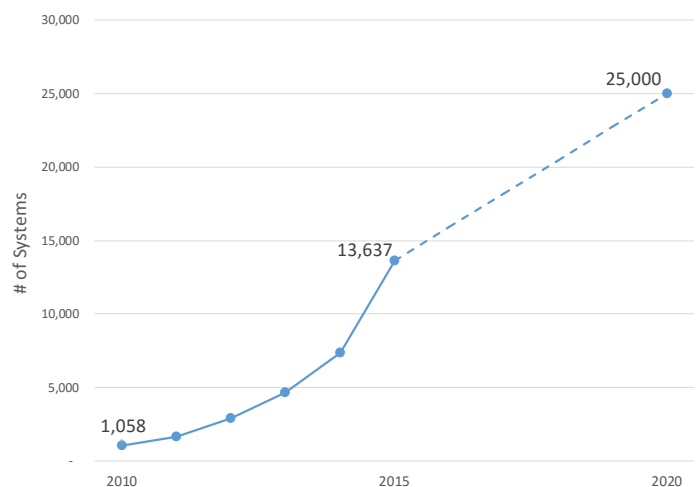
### RENEWABLE GENERATION\*\*

- 11% of total electricity generation came from renewables in 2015, surpassed 2016 goal of 10%



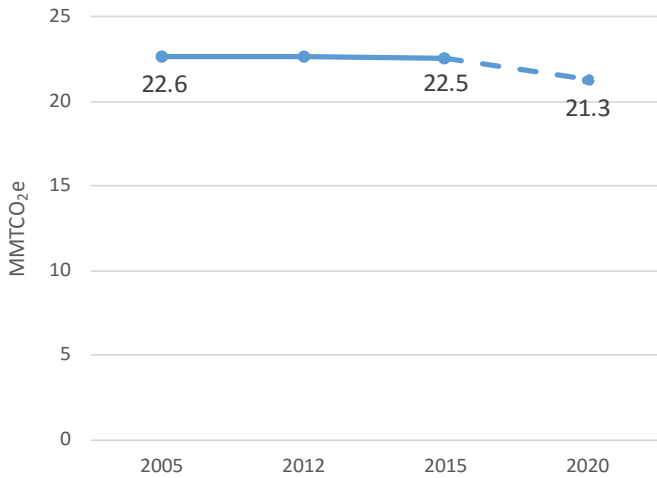
### GRID-CONNECTED RENEWABLES\*\*

- 13,637 grid-connected renewables with 132.2 megawatts of capacity in 2015



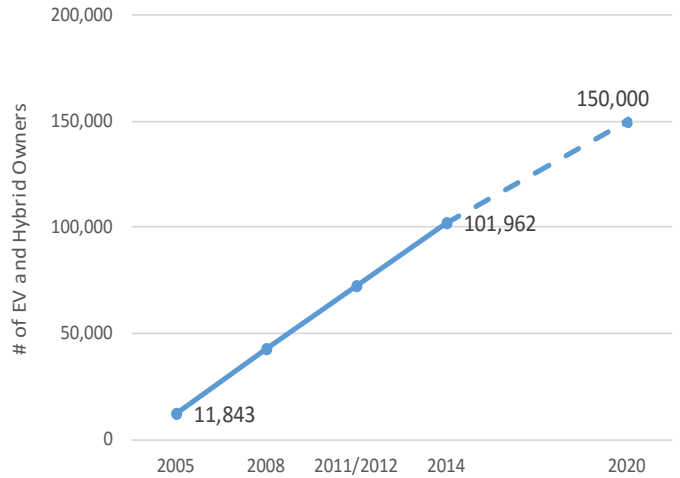
### TRANSPORTATION GHG EMISSIONS\*\*\*

- Although total has remained relatively flat, per capita decreased 13%, 2005-2015



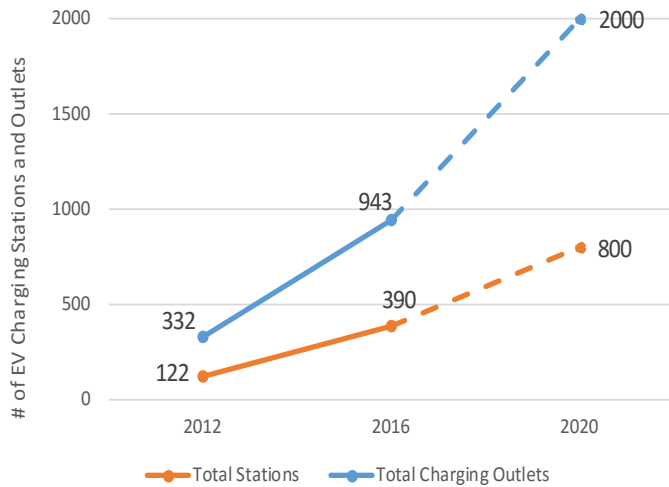
### HYBRID AND ELECTRIC VEHICLE OWNERS\*\*

- A total of 101,962 electric vehicle and hybrid vehicle owners in 2014



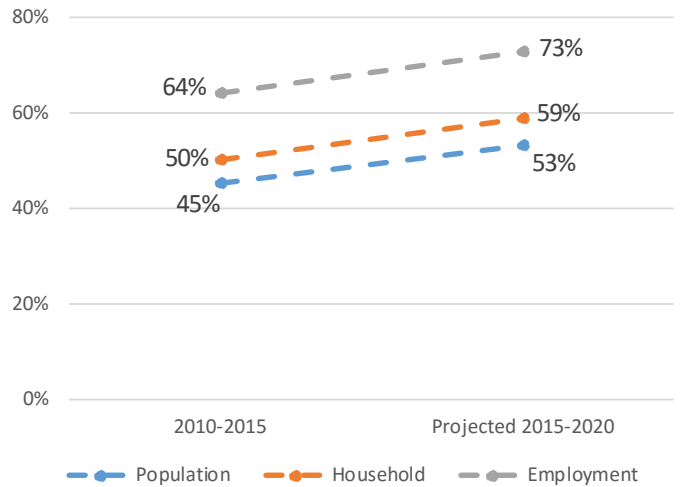
### EV CHARGING STATIONS

- Number of EV charging stations tripled to 390 stations and 943 outlets between 2012 - 2016



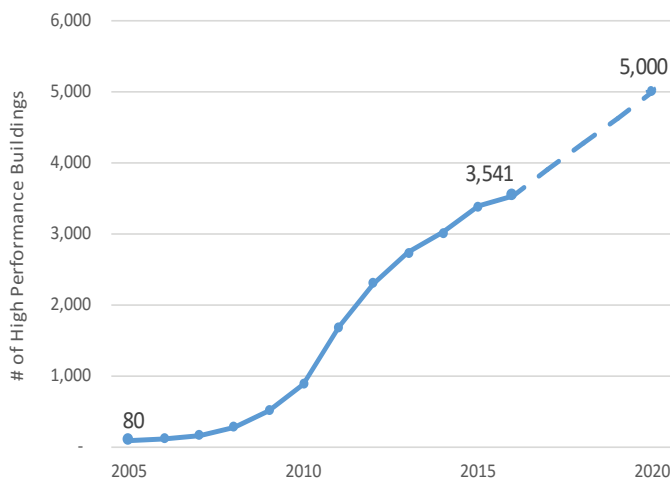
### SUSTAINABLE DEVELOPMENT PATTERNS\*\*\*

- 45% of population, 50% of household, 64% of job growth occurred in Activity Centers, 2010-2015<sup>1</sup>



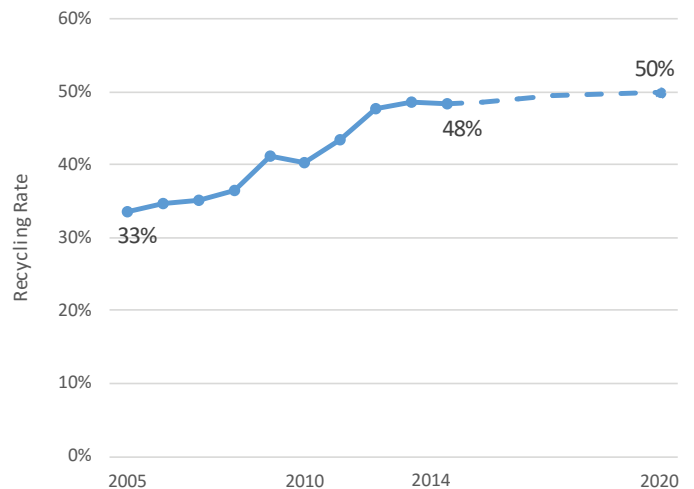
### HIGH PERFORMANCE BUILDINGS\*\*

- 3,541 high performance buildings in 2016 (LEED, ENERGY STAR, EarthCraft, Passive House, etc.)



### ZERO WASTE\*

- 48% recycling rate in 2014



<sup>1</sup>DRAFT Cooperative Forecasts 9.0