



**We Are Columbia**

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**COLUMBIA ENVIRONMENT AND INFRASTRUCTURE COMMITTEE MEETING  
AGENDA  
TUESDAY, OCTOBER 1, 2019**

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**The Columbia Environment and Infrastructure Committee will conduct a meeting on Tuesday, October 1, 2019 at 12:00 p.m. in the Mayor's Conference Room at City Hall, 1737 Main Street, 2nd Floor, Columbia, SC 29201.**

*Prior to entering the meeting please turn all electronic communication devices to the silent, vibrate or off position. All presenters are asked to speak directly into the microphone for recording purposes.*

**CALL TO ORDER**

**COMMITTEE DISCUSSION**

1. Climate Protection Action Plan Update - Ms. Mary Pat Baldauf, Sustainability Administrator

**ADJOURNMENT**



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We Are Columbia

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**MEETING DATE:** October 1, 2019

**DEPARTMENT:** City Clerk

**FROM:** *Erika Moore, City Clerk*

**SUBJECT:** **Climate Protection Action Plan Update - Ms. Mary Pat Baldauf, Sustainability Administrator**

**FUNDING SOURCE & ORIGINAL BUDGET:**

**FOCUS AREAS:** **Innovative & High Quality Municipal Services**

**ATTACHMENTS:**

- Action Plan for EI\_Oct\_2019 (PDF)
- CPAC Webpage



The Climate Protection Action Plan provides measures to reduce emission levels of the City of Columbia **consistent with the commitment made by the U.S. in the Paris Agreement: 28% reduction by 2025**. The City's baseline emissions will serve as the threshold for measuring the success of these efforts.



Item #	Action Items	Primary Depts Action	Secondary/Support Depts	Action Required	Status
<b>Energy Efficiency</b>					
1	Conduct an energy audit of municipal facilities and implement the recommendations.	General Services (Support Services)	All Depts	Obtain Approval to Proceed with Consultant, Execute Contract, Begin Work	Audit completed by Ameresco in 2007. City Council decided against performance contract financing. Implemented lighting upgrades with ARRA/EECBG funding.
2	Implement an energy tracking and management system.	General Services (Support Services)	Finance (Accounting)		Recommended as part of energy audit, but not implemented. Funding unavailable. Investigating possibilities.
3	Develop plan to install digital thermostats in city facilities. Adjust thermostats based on the industry standards to reduce consumption.	General Services (Support Services) / Finance (Purchasing)	All Depts		Installing as replacements needed. No mass replacement due to funding limitations. Now installed in approximately 95% of City facilities.
4	Develop a plan to install energy efficient exit sign lightings in all city facilities over a defined period of time.	General Services (Support Services) / Finance (Purchasing)	All Depts	Develop Implementation Plan	Complete.
5	Develop a plan to perform energy-efficient lighting retrofits in all city facilities over a period of time.	General Services (Support Services) / Finance (Purchasing)	All Depts	Develop Policy and Implement Citywide	Complete.
6	Institute a lights out policy in all city facilities when not in use.	General Services (Support Services)	All Depts	Develop Policy and Communicate to all Dept / Employees	Complete.
7	Require city employees to turn off computer monitors each evening and turn off the computer over the weekend.	Information Technology	All Depts Abide by Policy	Develop Policy and Communicate to all Dept / Computer Users	Complete.
8	Install motion detectors and/or timers that will turn lights off if room is unoccupied for a certain length of time.	General Services (Support Services)	Depts help fund and implement plan as feasible	Develop Policy and Implementation Plan	Installed in some areas - focusing on conference rooms. Installed where possible during lighting upgrades.
9	Develop plan to perform heating, cooling and ventilation system retrofits (e.g., chillers, boilers, fans, pumps, belts) based on the energy audit. Consider alternative energy resources.	General Services (Support Services)	Depts help fund and implement plan	Develop Implementation Plan and Implement as Feasible	(Ongoing.) As replacements are made, energy efficient units will be used. Currently in use at 1225 Laurel, Washington Sq, Municipal Ct, Fleet Services, Eau Claire, Animal Shelter, West Beltline.
10	Develop a plan to install ENERGY STAR appliances in all city facilities as deemed appropriate and feasible.	General Services (Support Services) / Finance (Purchasing)	All Depts	Develop Implementation Plan and Implement as Feasible	Underway as appliances are replaced
11	Develop a plan to install green or reflective roofing on city facilities.	General Services (Support Services)	All Depts	Develop Implementation Plan and Implement as Feasible	Using reflective roofing as roofing is replaced. Used at City Hall, Washington Square, Station 12. West Beltline has a green roof.
12	Develop a plan to improve water pumping energy efficiency.	U&E Develop a Plan	U&E Implement Plan	Develop Implementation Plan and Implement as Feasible / Study Pumping Cycles	U&E constantly aware of need to operate system in most efficient manner possible due to meeting system demand (ongoing)
13	Replace hot water heater units with hot water on demand systems if they are more energy efficient.	General Services (Support Services) / Finance (Purchasing)	All Depts	Develop Implementation Plan and Implement as Feasible	Unable to do on demand.
14	Encourage Commission of the Blind to install energy-efficient vending machines in all city facilities that currently utilize vending machines.	General Services (Support Services) / Finance (Purchasing)	All Depts		Exploring options as feasible.
15	Require that all new construction and renovations of municipal buildings follow LEED Certified guidelines.	General Services (Support Services)	All Depts	Develop Guidelines to Use for all Municipal Construction and Renovation Projects	Parks and Rec Building followed LEED guidelines, but was not certified. West Beltline Building is certified LEED Gold.
<b>Outdoor Lighting</b>					
16	Continue to install energy-efficient traffic lights and replace all incandescent traffic signals with LED signals.	Public Works (Traffic)		Develop Implementation Plan and Implement as Feasible	95% of traffic signals have been converted.
17	Develop ordinance requiring all street lighting inside City limits to be energy-efficient street lights (e.g., high pressure sodium) – plan will accommodate normal replacement schedule of existing lights.	Public Works (Traffic)	Construction Management	Develop Lighting Ordinance	City leases the majority of street lights, and those are HPS. All City-owned lights are either HPS or led. Working with Dominion Energy SC to consider all options.
18	Evaluate street lighting to determine if the average daily time streetlights are on can be reduced without compromising public safety. City will work with SCE&G on this initiative.	Public Works (Traffic)		Evaluate Lighting Usage and Identify Potential Changes to Improve Efficiency	Using improved photocells to reduce day-burning of lights.

Attachment: Action Plan for EI\_Oct\_2019 (5453 : Climate Protection Action Plan Update)

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19	Develop energy efficient lighting programs for city parks including the greenways, and city parking garages.	Public Works (Traffic), Parks and Rec, Parking Services		Develop Implementation Plan and Implement as Feasible	All parking garages have been unfitted to high efficiency linear fluorescent.
20	Develop and implement lighting standard to be used citywide to include specifications regarding spacing and lighting levels.	Public Works (Traffic)	U&E, Construction Management, Parks and Rec, Development Services	Develop Implementation Plan and Implement as Feasible	City has standards that are being followed.
<b>Renewable Energy</b>					
21	Encourage SCE&G to produce/provide Green Energy.	City Management / City Council		Initiate Conversations regarding Green Energy	Conversations have taken place with SCE&G officials regarding energy efficiency.
22	Purchase green electricity from solar, geothermal, wind, landfill or hydroelectric sources if made available.	TBD			From 2015-17, the City purchased Green Power offsets for all City Council meetings, the first City in SC to do so. Purchase was made through Pace, a non-profit that funded green power for the major utilities. Pace ended in 2017, and there is no replacement
23	Purchase green tags / renewable energy certificates if made available.	TBD			No action to date.
24	Use alternative energy sources in municipal facilities when possible.	General Services (Support Services)	All Depts		Using fuel cell battery backup at multiple generator sites. Using solar flashers @ new pedestrian crossings. Looking at solar grant opportunities.
<b>Transportation: Vehicle Fuel Efficiency</b>					
25	Continue to monitor use of take home vehicles and ensure proper justification is in place for all approved.	General Services (Fleet), Public Works	All Depts	Enforce Existing Policy and Monitor Vehicle Usage	Ongoing
26	Enforce policy to trailer equipment to job sites.	General Services (Fleet), Public Works	Public Works, U&E, Park and Rec	Enforce Existing Fleet Policy	Policy written and communicated.
27	Retire old and under-used vehicles and equipment.	City Management, Finance, Budget, General Services (Fleet Services)	All Depts	Develop Plan and Update as Needed	Implementing as resources allow
28	Purchase fuel efficient or electric (e.g., hybrid) and/or smaller fleet vehicles.	General Services (Fleet), Public Works	All Depts	Evaluate Feasibility of Alternative Fuel/Fuel Efficient Vehicles for all Purchases	Departments are encouraged to budget for such; limited by funding availability. Of 1069 licensed vehicles, the City owns 33 hybrids, nine electric and 419 flex-fuel vehicles.
<b>Alternative Fuels</b>					
29	Evaluate option of using alternative fuel in City vehicles.	General Services (Fleet), Public Works	All Depts	Evaluate Benefits and Make Recommendation	Purchasing vehicles capable of using alternative fuels. Currently using B5 biofuel and E10 gasoline in entire fleet.
30	Evaluate option of running bio-diesel in municipal fleet.	General Services (Fleet), Public Works	All Depts	Evaluate Feasibility of Bio-Diesel based on '07 Emission Requirements	Complete. All diesel vehicles use biofuel.
31	Utilize electric vehicles in municipal fleet.	General Services (Fleet)	All Depts	Evaluate Feasibility of Electric Vehicles and Utilize where feasible	Implementing as funding allows. CPD using electric golf carts, si Segways.
32	Develop and place sticker on municipal vehicles that are using alternative fuels.	General Services (Fleet)	All Depts	Continue to Evaluate options Available, Purchase when Appropriate	Complete. All diesel vehicles use biofuel.
33	Educate employees regarding use of alternative fuels and encourage use in personal vehicles.	General Services, Public Works, Public Information	All Depts	Develop Education Program, Utilize Resources Available (newsletter, email, Channel 2, etc.)	Featuring information in Green@Works city employee newslette
<b>Trip Reduction / Transportation Demand Management</b>					
34	Encourage car-pooling or vanpooling by municipal employees.	City Management, General Services (Fleet), Public Works	All Depts	Develop Policy and Implement Citywide	Encouraging use of employee carpooling. Green Team piloted Take a Break from Exhaust online tracking. Waiting for program revision to implement further.
35	Evaluate option of telecommuting by municipal employee.	Public Works		Research other municipalities and determine feasibility of telecommunicating	No action to date
36	Evaluate use of alternate work schedules by municipal employees so arrival and departure times are staggered.	Public Works		Research other municipalities and determine feasibility of telecommunicating	Alternate Work Scheduled implemented in Public Works and some other areas of the City.
37	Encourage use of mass-transit by municipal employees. Work with RTA to allow city employees to ride for free or reduced rate on mass transit.	City Management / Public Works		Develop Communication with RTA to	City promotes The Comet and free Soda Cap Connector. Works w/The Comet on special events such as Dump the Pump Day.

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38	Evaluate police use of motorcycles and bicycles to determine suitable locations and implement accordingly.	Police Dept	General Services (Fleet Services)	Evaluate Feasibility of Motorcycle and Bicycle use and Identify Parameters for such use	No action to date
39	Expand community bicycle infrastructure (e.g., dedicated bicycle lanes, additional bicycle parking spaces).	Staff of the Bicycle Friendly Community Committee	Public Works (Traffic Engineering)		City designated Bronze Level Bike and Walk Friendly Community Complete Street resolution approved by City Council. BPAC master plan in progress. Bike corrals installed in business districts. Public-private partnership underway to install specially-designed bicycle racks. Bike Share program established 10/2011; growing as demand increases.
40	Institute a "safe routes to school" program.	Staff of the Safe routes to School Committee	Public Works (Traffic Engineering)		City has worked with Rosewood and Lyon Street Elementary Schools to secure funding for Safe Routes to School programs.
<b>Other Transportation-Related Measures</b>					
41	Develop and Enforce policy to limit idling of municipal vehicles. Explore anti-idling software for older vehicles.	General Service (Fleet Services), Public Works	All Depts	Develop Policy and Implement Citywide	Complete.
42	Continue studies to determine if further measures can be taken to improve traffic signal synchronization.	Public Works (Traffic Engineering)			Signals are synchronized. Staff evaluates frequently as requests are received.
43	Secure stable funding for Midlands Regional Transit Authority The Comet.	City Management / City Council		Work with Counties on Issue	Complete with passage of Richland County penny sales tax referendum, November 2012; collection of which started May 2013.
<b>Recycling &amp; Waste Reduction</b>					
44	Enhance recycling programs in municipal facilities by offering incentives for departments/divisions and for solid waste customers.	Public Works (Solid Waste), General Services	All Depts	Identify locations and depts work together to implement	Ongoing. Recycling bins placed in facilities as available. Employees educated via Green Team. Green@Work newsletter and other internal publications.
45	Conduct a public relations campaign to inform the public of the details of recycling programs and encourage recycling.	Public Works (Solid Waste), Public Information		Channel 2, newspaper	Ongoing. Extensive PR with launch of new recycling roll carts, summer 2015. Outreach includes app, website, social media, presentations and other forms of outreach. Also participate in partnerships as available.
46	Conduct a public relations campaign to inform citizens of the City's composting operation and encourage its use.	Public Works (Solid Waste), Public Information		Channel 2, newspaper	Included as part of CPAC initiatives and public outreach efforts
47	Utilize city compost material as much as possible.	Public Works (SW, Street, F&B) U&E (WM, WWM)	Parks and Rec	Channel 2, newspaper	Ongoing.
48	Evaluate use of compost material as stabilization material for embankments.	Public Works (Solid Waste and Street Div)	Parks and Rec	Identify measures needed to make material more suitable for use by city staff	Not STA approved for this use. Other options being considered and evaluated for material use.
49	Establish internal system for reuse or recycling of construction and demolition materials.	Public Works (Solid Waste, Street), Utilities and Engineering	All Depts	Research Possibilities and Develop Plan	Options considered as feasible.
50	Implement solid waste reduction programs. Reduce use of paper through copying on both sides, minimize printing when information can be read on the Internet and require grant applicants to use both sides of the paper.	All Depts		Research Possibilities and Develop Plan	Ongoing. Educating employees via Green Team, Green@Work newsletter and other internal communications.
51	Evaluate on-line grant applications for the city's grant programs (community promotions, accommodations, hospitality, community development block grant, etc.)	Community Development, OBO,	All Depts		Underway. Also implemented online payment options for various City services.
52	Evaluate establishing methane recovery in local wastewater treatment plant and landfills.	Public Works, U&E			Project identified for recovery of Methane Gas generated at MWWTP
53	Implement Electronic Waste Recycling Program for Residential Customers (State Law limits the city's ability to provide electronic-waste services to commercial customers).	Public Works		Complete	Implemented. Collect and recycle approximately 85 tons of e-waste annually.
54	Utilize recycled items when possible.	All Depts / Finance (Purchasing)			Continuous Effort Citywide
55	Provide advice and information to commercial businesses and the public on recycling hazardous substances.	Public Works, Public Information		Develop Policy	Ongoing. The City also provides free (grant-funded containers) commercial recycling for 130 workplaces.
Added	Co-founded Lose the Baggage, an initiative that seeks to reduce the number of plastic bags used by Midlands residents by at least seven million bags a year.				
56	Educate public about the requirements of the landscape ordinance	Development Services, Zoning, Public Works, Public Information			Ongoing
57	Modify landscape ordinance to allow planted green rooftops as an option to meet the landscape ordinance tree density factor requirement.	Development Services, Zoning, Public Works			Consideration of options being identified.
58	Review and modify planning and zoning codes to discourage sprawl and promote green space through such practices as infill development, traditional neighborhood development and mixed use neighborhood development	Development Services, Zoning			Consideration of options being identified.
59	Promote Forever Forest and Treasured Trees Programs	Public Works, Zoning, Development Services, Public Information			Included as part of CPAC initiatives and public outreach efforts

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60	Perform Tree Survey and develop Five Year Plan for Maintenance and Replacements	Public Works			Got as far as preparing RFP; unable to go further due to funding limitations. Looking at internal resource options.
61	Institute programs to preserve open space	Development Services, Zoning	Public Works		Consideration given when applicable.
62	Continue to fund efforts to perform landscape maintenance and planting of shade trees	City Management, Public Works			Ongoing.
63	Encourage planting of new trees and shrubs strategically to shelter buildings and reduce fuel consumption needed to cool buildings.	Development Services, Zoning, Public Works (F&B)			Ongoing.
64	Review existing parking lot ordinance and consider incentives for retrofitting existing parking lots. Encourage use of pervious paving and best practices to reduce runoff.	Development Services, Zoning, Public Works (F&B), U&E (Engr)			Staff evaluating possibilities, tied to Stormwater Permit.
65	Create a reward system for development projects that go beyond the tree protection requirements or in other ways demonstrate environmentally sensitive design.	Development Services, Zoning, Public Works (F&B)			Columbia Choice Awards currently available through City/Columbia Green partnership.
<b>Additions</b>					
Added	Transition community power supply to 100% renewables by 2036, per Ready for 100.				City Council set a goal to convert to 100% renewable power community-wide by 2036. Mayor assigned committee including staff and council member to manage; committee has not yet met. Sierra Club hired SC Ready for 100 organizer who participates in CPAC. Working with UMich project to assist cities with implementation; kickoff 11/2019.
Added	Achieve STAR Communities sustainability rating; become STAR Certified.	Public Works			Certified Three STAR Community in 2017. Goal: Renew in 2021 as a FOUR-STAR community. 2018: STAR Communities acquired by US Green Building, merged with LEED for Cities to create LEED for Cities and Communities. Currently monitoring LEED for Cities/Communities to determine City's participation.
Added	Received \$20,000 grant from Healthy Babies, Bright Futures to become Bright Cities member.	Public Works			Staff met with organization to plan projects to help reduce maternal, infant exposure to toxins. Projects planned for Columbia Water, Forestry & Beautification, Food Policy Council, Community Development, Parks/Rec. Grant closes December, 2019,.
Added	Engage businesses and workplaces in Climate Action efforts via membership, special outreach opportunities.				In 2009, CPAC created a City Green Business membership to engage workplaces in climate action activities. In 2016, City joined Lexington, Richland counties to create regional membership, assisted by KMB. City staff recognize, promote MGB members w/in City limits. MGB partners host quarterly membership outreach meetings, cost split between Lexington and Richland Counties; staff requested KMB pay for City's meeting from financial contract funds.
Added	Modernize water network, improve customer service of Columbia Water by installing smart water meters.	Columbia Water			Some 140,000 analogue water meters will be replaced with smart automatic meter infrastructure. Replacements scheduled 6000 per month through 2020. AMI will provide more accurate billing, allow customers to better monitor usage and take water vehicles used in meter reading off the road, thus reducing GHG emissions.
Added	Investigate proposal to transform staff energy consumption behavior and habits.				Considering proposal from Cenergistic to detect and correct anomalies in energy usage. Paid out of savings achieved. Staff submitted program pros and cons list to new ACM for evaluation.
Added	Investigate proposal to audit energy expenditures for accuracy.				Considering proposal from Utility Management Services Inc. to provide risk-free audit of electric bills for errors and overcharges. Paid out of the savings obtained.
Added	Investigate possibility of banning single use plastic bags.	Public Works			Encouraged by citizen request, current efforts to ban plastic bags throughout SC, Councilwoman Devine convened an 8/2017 meeting to discuss plastic bag ban option. Staff researched programs, created white paper for City Manager. Staff now monitoring progress of Richland County's proposed ban.

Attachment: Action Plan for EI\_Oct\_2019 (5453 : Climate Protection Action Plan Update)

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Added	Investigate opportunities for solar farm installation at the Waste Water Treatment Plant.	Columbia Water			Until the October 2015 flood, talks were underway with SCE&G to locate a solar farm at the WWTP. Those talks ended with the flood, but staff moved forward, researching option researched similar installations. After issuing an RFQ/P for the project, the City selected Consolidated Edison, Inc.(Con Ed) to proceed with feasibility study, and if deemed appropriate, to start the process.
STAR	Prepare communitywide risk assessment.				Information is largely available via Richland County. City specific report required for STAR points; with move to LEED for Cities. Is now a moot point.
STAR	Become solar ready community.				Participating in a cohort to become SolSmart certified. Going for the Bronze certification,
STAR	Conduct industrial and commercial water conservation workshop series	Columbia Water			Ongoing via Columbia Water.
STAR	Expedite LEED permits.				No formal policy in place.
STAR	Investigate adding a sustainability component to Development and Design Review Committee.				
STAR	Implement environmentally responsible product preference policy.				
STAR	Implement diversity training and workshops for City employees.				
STAR	Obtain Age Friendly City certification from World Health Organization				AARP is working with Mayor's Office to achieve this. Various staff serving on Advisory Committee.