

**Comments on the Montgomery County Draft Climate Action Plan
Climate, Energy and Air Quality Advisory Committee
[March 4, 2021]**

On December 14, 2021, County Executive Marc Elrich released the Draft Climate Action Plan for public review. The Climate Action Plan is Montgomery County Maryland's strategic plan to cut greenhouse gas (GHG) emissions 80% by 2027 and 100% by 2035, in line with the County Council's Emergency Climate Mobilization Resolution (Resolution 18-974). The Climate Action Plan attempts to detail the effects of a changing climate on Montgomery County with strategies to reduce GHG emissions and climate-related risks to all County residents, businesses, and the built and natural environment.

The Climate, Energy and Air Quality Advisory Committee (CEAQAC), an existing Montgomery County Advisory Committee with expertise in the areas of Climate, Energy, and Air Quality has read the Draft Climate Action Plan, shared ideas between committee members, discussed committee member and public comments, as well as met monthly to formalize thoughts, views and draft comments of CEAQAC members' individual reads and perspectives. The Summary and Comments below reflect a general consensus of CEAQAC members (as well as members of the public who attended the CEAQAC monthly meetings). It is the intention of the document below to provide constructive suggestions, additional improvements and further perspectives on the Draft Climate Action Plan in order to assist Montgomery County in achieving the aggressive but fundamentally needed goals of Montgomery County's Climate Action resolution. CEAQAC is committed to assisting the County Executive and Montgomery County in achieving these defined goals. The Committee stands ready to assist and will make itself available to answer questions, elaborate on our thoughts and to further aid the County to achieve these goals in order to thwart the cataclysmic changes that are predicted if remedial changes are not implemented in the very near future.

Overall General Comments

The "Montgomery County Climate Action Plan" (CAP) is a thorough and well-prepared planning document. Because of funding limitations, it is admittedly short on specifics that would render it a full implementation plan. This is unfortunate, given the short time to make significant inroads by the interim target of 2027 and full achievement by 2035. We offer these comments with the hope that more specificity can be included in the final CAP document.

The biggest strength of the draft CAP is the report's in-depth analysis of other considerations beyond adopting policies that reduce greenhouse gas emissions. The detailed focus and analysis on racial equity and social justice, and Montgomery County climate conditions and impacts, provide excellent context. It is clear that the County's objective is that the CAP benefits all residents and that its actions are well-coordinated with other County policies and initiatives.

Nevertheless, while CEAQAC fully supports addressing these important considerations, we highly recommend that the CAP prioritize policies that will produce meaningful reductions in greenhouse gas emissions, in line with the County Council's Emergency Climate Mobilization Resolution. As the CAP report correctly states, "Given the large scale and quickly approaching deadline of the County's reduction goals, it is important for the County to first focus time and resources on implementing actions with the largest GHG emissions reduction potential." (p, 73) That this statement is not made until page 73 demonstrates that the draft CAP is not explicit enough about the ultimate purpose of the CAP, namely, to achieve net zero GHG emissions by 2035. We suggest that the CAP clearly articulate this aim throughout the document and provide a clearer strategy for achieving the County's emission reduction goals.

In the same vein, the current draft implies but does not clearly state (at least until p. 73) that implementation of all actions will be necessary to achieve its goals. We recognize that significant political will and effort are required to accomplish all of these actions, and most of the actions identified for reducing GHG emissions will be expensive and difficult to implement. Consequently, the final CAP should include a detailed, proposed roadmap for implementation that is both doable and can be made clear to the County's residents. In addition, the CAP should at least provide recommendations on how to balance key actions and considerations, identifying near- and longer-term strategies and actions, suggestions on how to prioritize actions and policies, and suggested benchmarks that can be used to help guide implementation.

With regards to specific actions, CEAQAC is concerned that the plan is too reliant on actions outside of its control, e.g., E-1 (Community Choice Energy) and T-3 (Private Vehicle Electrification Incentives and Disincentives). Accomplishment of these actions is largely dependent on actions that are not within the County's control. Since these actions comprise a large part of the estimated GHG emissions reductions, the report needs to analyze the likelihood of these actions or provide a Plan B if the state or federal government does not act.

Noticeably absent from the draft report is an emphasis on conservation of energy and other resources. The Executive Summary, the Vision section and the 87 main climate actions have a heavy emphasis on technological solutions and energy efficiency measures, and mostly lack the major approach of conservation, which lies more in the realm of behavioral and lifestyle change. Conservation is critically important because it reduces not only GHG emissions but also other environmental impacts like unsustainable use of raw materials, habitat and biodiversity loss, water overuse, toxic pollution, and plastic and e-waste. Specific comments addressing this are provided below in the relevant sections of the draft report.

CEAQAC also recommends the following high-level comments and suggestions to improve the structure of the CAP report:

- The introductions to each of the action categories in the draft CAP are too short and limited. Readability and usability of the report would be greatly improved if the introductions could better summarize the actions. Currently, the only introduction to

the individual actions are the action tables. We recommend that the introductions to each of the action categories starting on p. 89 should briefly summarize the actions contained, and then identify the highest-priority actions.

- Several important figures and tables in the draft need greater exposition and explanation. As currently presented, it is difficult for readers of the report to understand their importance of the ranking or information provided, and how they can be used. A good example is Figure 28. The only text or description in the report of what is being displayed is a very brief summary on p. 75 of what the figure displays. Given the importance of this figure, CEAQAC recommends that the report should spend much more time explaining how a reader should interpret and synthesize the information provided in this and other summary figures.
- The report does an admirable job focusing on Racial Equity and Social Justice. However, the report is too vague on how the County will rectify or accommodate these important issues while achieving the GHG emission reductions. For example, in the Executive Summary, the report states "during further development and implementation of the actions in this plan, these equity considerations should be discussed and addressed in collaboration with the community." Continuing dialogue is important, but the report should also recommend specific policies.
- The descriptions of the actions are too cursory. We understand the challenge of presenting the material in a meaningful, non-technical, but not exhaustive manner. Nevertheless, many of the action descriptions do not provide sufficient content to assess their viability, scope, effort required, or challenges that may be faced. We recommend that the action descriptions be enhanced to provide the target audiences with some clearer tools to actually undertake the action described.
- The report needs to be more transparent about the models and the assumptions used, and provide the numerical estimates used to develop cost and GHG emission impacts. We recommend adding this information to the Appendix.

Finally, per the recently revised duties of CEAQAC, our Committee is ready and available to provide whatever assistance the County Executive and the County Council needs to make the implementation of the Climate Action Plan a success. In line with CEAQAC's charge in P-7, we stand ready to provide advice and guidance on policy, programs and metrics, and to accomplish the other actions described in this action.

Comments on Specific Sections

Executive Summary

In general, the Executive Summary is well constructed and informative. However, as discussed above, the Executive Summary is the appropriate place to clearly state that meeting the County's GHG emission reductions goals will require implementation of all of the identified actions, and not wait until p. 73 to make this clear. In addition, the Executive Summary should clearly state that achieving the GHG emission reduction goals will require significant investments, changes in business operations, building design, development practices, and

behavior change. Achieving 100 percent reductions in GHG will require significant work and commitment from the County and its residents, resulting in benefits such as long-term cost savings and drastic reductions in the GHG emissions. As indicated above, the Executive Summary should include conservation measures, which have large co-benefits.

Racial Equity and Social Justice

This section provides an excellent summary of how the County's historical actions have disenfranchised certain communities, and how the effects of policies implemented decades ago still exist and must be addressed in the development and implementation of this CAP. This is an important element to highlight and we agree with the prominence it is given.

However, the impact of the section may be counter-intuitively hurt by its length and degree of detail. Although it is important to recognize and understand the historical context, and the entire section could be useful in other contexts, its inclusion here seem to blur the most important issues because they are buried in parts that are important in general but less relevant to this report. Again, this is not to diminish this issue but to ensure that it is presented in a manner that is appropriately impactful. We suggest improving this section with crisper/tighter editing, careful fact-checking including relevance to Montgomery County in whole and in part, and drawing more explicit connections between historical issues, current needs, and current and proposed solutions (in some cases this was done exceedingly well; in other cases, less so).

We have the following comments on specific subsections:

Inequity in Housing and Homeownership, and Inequity in Access to Transportation

- These sections are extremely important and relevant, but overly long, yet still fails to draw important ties, resulting in the obfuscation of important conclusions. The entire Housing section should be shortened (for instance, points made on p.17 have already been made on p. 16, and most of the maps could be deleted without harm). The Tobytown history is instructive but could be shortened to a sentence, and yet it still fails to include current inequity (see below); implying that the situation has been adequately addressed simply incorrect. And conversely to the above, a map would be instructive in the Transportation section to show areas of highest traffic vs. neighborhoods of poor and of BIPOC (Black, Indigenous, and People of Color) populations. In the spirit of inclusivity, and should this section be retained in its complexity, it would be appropriate to acknowledge past and present discrimination against all racial minorities, including Latinos and Asian Americans.
- The conclusions should be significantly strengthened in these subsections, and possibly made into a separate new subsection (possibly called "Implications"), that are directly relevant to this plan. For instance:

- For renters, it is not just that they cannot choose to improve resilience or adaptation, but that there may also be significant cost implications to their rent if landlords are forced to make improvements.
- For homeowners, it is not just that they may not be able to participate in energy efficiency programs, but that those energy efficiency programs may have much higher than average costs due to past deferred maintenance, presence of lead-based paint, and more.
- For potential homeowners who have been unable to build wealth due to past inequities, housing with the fullest array of energy-saving measures and located in areas least likely to suffer effects of climate change may be unavailable to them due to increased costs as the market responds to climate pressures.
- Improving bus service means particular attention must be paid to areas similar to and including Tobytown, which to this day has bus service only once every 1.5 hours and is a 40 minute ride to the Metro station.
- There are clear economic implications and disparities in electrifying 100% of cars. This affects car purchase itself as well as pricing and availability issues with gasoline during the transition. Also, lower-income populations may be more likely to be essential users of cars (Uber drivers, delivery staff, etc.).

Socio-economic Profile

Although there is a wealth of good information in this subsection, we suggest it be reorganized:

- The demographic information could largely be moved to an appendix.
- The housing, energy and transportation information would be clearer and more impactful if it were grouped with the earlier historical information because of the relevance of history to current issues.
- The water section should either be deleted or strengthened and made relevant.
- The health section, which is very important here, should be expanded to include specific social determinants of health related to climate change, as well as a discussion of how that connects to income and other factors (e.g., ability to take sick days, etc.).

Improving Community Engagement

This section is both important and very well done. We believe that implementing it well will improve the content of the plan and also its acceptability. It will be important to coordinate this effort with the actions described in the Public Engagement, Partnerships and Education chapter.

Montgomery County Climate Conditions

CEAQAC commends the County for a very in-depth review of current and possible climate conditions. This section will help provide residents with a real understanding of the

likely consequences of climate change. However, the section could be improved. The discussion in this section overwhelms the reader with maps and tables, without enough explanation and exposition that will assist the lay reader to understand their importance.

CEAQAC offers the following suggestions on how to improve the readability and understanding of the information contained in this chapter:

- **Further explanation of RCP 4.5 vs RCP 8.5.** On p. 33, we suggest a bit more explanation for choosing RCP 8.5. RCP 8.5 used to be considered an outlier high emission scenario, and there is conflicting opinions about how to use it vs other GHG pathways.¹ That the CAP text says RCP 8.5 “shows a business-as-usual or worst case scenario” is a consequentially strong message that needs more context to help the reader understand its importance.
- **Missing Climate Hazards.** There are additional climate hazards that are not mentioned anywhere in the CAP (except in the text of the Emergency Resolution) and could have significant impacts on the County, such as the spread of mosquito- and other vector-borne diseases and ecological impacts like shifts in species ranges and extinctions. These additional impacts should be at least discussed in the text in this section if it's not feasible to include them fully in the analysis.
- **Excessive Focus on 95° days.** The focus on 95° days in the Extreme Heat section may give readers the impression that only the daily maximum temperature matters for health impacts, whereas in reality, excessively high minimum temperatures can also contribute to heat stress during heat waves since people and animals may not be given a chance to recover from the heat at night. We understand that the 95° threshold is being used as an indicator of overall heat levels, but we recommend that the text provide a bit of background and explanation of these assumptions.
- **Impact of Potential Increases in Humidity Missing.** Along similar lines, potential increases in atmospheric humidity (dewpoint temperature) under climate change could exacerbate the impact of higher temperatures through increased heat indices ('feels-like temperature'). Although the changes may be difficult to project, we think it would strengthen the section to at least point out this impact in the text.
- **Improve the Design of Figure 7.** We believe that the design of Figure 7 (numbers of days of extreme heat) could be improved in a couple of ways. First, the existing calendar format can be misleading, since it may suggest that the extreme heat days would all occur consecutively, whereas in reality, those days would be scattered over the warm season. Second, it's somewhat misleading and confusing to label the Baseline days '4.5' in the first calendar. We recommend changing the label to 'Baseline,' and change 'Baseline' in the heading to '1950-2005.'
- **Improve the Design of Figure 10.** The spatial variations seen in this figure are likely just random (noise), so please either just show county-average values or add a caveat.
- **Discussion of Extreme Rain Events Confusing.** The discussion about extreme rain events is very confusing, especially Table 3. We recommend that:

¹ <https://www.nature.com/articles/d41586-020-00177-3>

- Common language be added to make this important section more understandable. For example, what does it mean for the County to be subject to a 100 vs 115 year storm? The point should be that extreme weather precipitation events will overwhelm the ability of our pavements and stormwater systems to absorb the water, leading to flooding of our roads and buildings. Much of this is explained on p.46, but it would help to add a sentence here to aid the reader in connecting this data to impacts.
- Alternatively, presentation of these results might be easier to understand if the analysis instead determined how much more frequently a current 1/2/10/100-year storm would occur in the future.
- Please note also that while Ellicott City is an extreme example of what can happen, there was still considerable mold damage last Fall that came with greater than expected rainfall in the County. This greater rainfall put a strain on HVAC systems and led to huge expenses for residential and commercial buildings for mold remediation, health impacts (led to a death) and remote living stays (ex. UMD dorm students). We recommend that this and other such impacts, which may not be as widely documented, be also recognized, especially since this remediation produced large expenses that were not necessarily captured by media or scientists.
- **Improve the Design of Figure 12.** We do not find this map very useful. First, as stated earlier, the spatial pattern of extreme precipitation change here is basically meaningless. Second, frequently flooded roads and areas with high social vulnerability are two separate issues, so we don't think they logically belong together on the same map. Third, the information here is very broad-brush, as not all socially vulnerable people will be affected by damage from extreme precipitation and not all especially vulnerable people live within the hatched areas (and similarly, not all people in the hatched areas are especially socially vulnerable). We suggest omitting this map, as it may give the false idea that the County can appropriately address equity issues by focusing its resilience efforts on people within particular spatial areas rather than on highly vulnerable people anywhere in the County.
- **Box on Heat Waves.** We suggest deleting the second sentence in the photo caption ("Extreme hot weather is set to continue across much of the U.S. over the weekend"). This sentence reads as if it is part of a weather forecast at the time of the heat wave.
- **Delete Paragraph on P. 46, 1st column.** We recommend deletion of this paragraph. This whole paragraph repeats what was presented earlier in this section (pages 33-42). Alternatively, the information in Figure 14 could be discussed with more specificity here.
- **Impact Value Assigned to High Winds Seems Arbitrary.** The impact value assigned to High Winds seems arbitrary and likely an underestimate. When extreme high wind events do occur (such as in a derecho or hurricane), they can do extensive damage to the built environment and trees, cause deaths, and shut down society for days or longer. In order to better address the climate risk from high winds that may be higher than assumed in this draft, Figure 15 and the Climate Adaptation Actions section of the

CAP may need to be revised. For example, there is currently no climate action related to increasing the resilience of aboveground power lines to high winds. A-8 (Harden Emergency Shelters and Install Resilience Hubs) is one of the few actions that currently relates to wind risk, but only “Extreme Heat” is specified for the type of climate risk reduction; High Winds could be listed alongside Extreme Heat and given more prominence in the description paragraphs for the action as well.

- **Add a Description of Figure 15.** As indicated earlier, this figure is another example of a graphic that is not discussed or explained well in the text. Fundamentally, this figure is confusing and could send the wrong message to the reader. While it is appropriate to focus on climate adaptation actions in this section, in reality, many of these adaptation actions may produce little GHG reduction potential, as shown by the “interaction score” that only applies to 2 actions. For example, the last four actions show no impacts, yet are important mitigation actions. If they have no adaptation impacts, maybe it would be best to remove them from this table. We recommend that the dynamics between adaptation actions and GHG emission reduction actions be better explained. Please see related comments in the next section regarding Figures 15 and 23.

Montgomery County GHG Emissions

This section is a good succinct summary of the County’s GHG emissions and expectations for the future. However, there are some areas where improvements are needed:

- Make consistent the categories and associated color schemes used in Figures 18, 19, and 21. Emissions associated with the electric grid are lumped in with the Scope 1 building emissions (pink) and transportation emissions (orange) in Figures 18 and 19 while the electric grid emissions are separated out into their own category (blue) in Figure 21. And in Figures 18 and 19, blue represents something different--the fugitive emissions related to energy. The document needs to make the differences clear, by either using a different color scheme in the first two figures or adding a note(s) in the text.
- Provide a better description and explanation of the connection between the uptake goals in Tables 6 to 10 and the colored wedges in Figure 21. For example, it is difficult to tell that the slope of the lines between 2027 and 2035 are different for each of the key reduction pathways.
- Clearly specify the timing of the reduction pathways. The percentages in the tables are not sufficient and informative.
- Incorporate the uptake goal percentages listed in Tables 6 to 10 into the action descriptions. Separation of these uptake goal percentages from the action descriptions unlinks timing of the individual actions from their descriptions.
- Better describe how overlapping emissions reductions were analyzed and prepared. In addition, more detail should be provided on how the County should bundle overlapping actions.
- Problem with Figures 23 (and 15 in the previous section): Figure 23 supposedly shows the climate actions with the highest emissions reduction potential (top 30, to be precise). However, assuming the rest of the 87 actions all have scores of zero, as with

the last 8 actions shown in the figure, it is technically incorrect to include the last 8 actions among those with highest potential since they're tied with the lowest ones. And similarly with Figure 15, the last 4 actions shown have scores of zero, so they are among the actions with lowest risk reduction potential, not highest.

- “Remaining Emissions”: It might not be prudent for the County to rely too heavily on carbon sequestration as a way to compensate for residual GHG emissions, given that natural disturbances to forests and trees, such as windstorms, severe drought, wildfires, insect attacks, and diseases, may increase in the future and thereby limit the effectiveness of sequestration activities. Forest protection, reforestation, and urban tree planting are of course important for many reasons in addition to carbon sequestration, but the point is that the CAP needs to properly address the uncertainties associated with sequestration approaches. Granted, some of the CAP actions (e.g., S-1, S-3) do mention disturbances and discuss how management, including supplemental plantings, is necessary to maintain forests. But the CAP does not discuss what impact disturbances may have on the magnitude of sequestration's contribution to GHG goals.
- In “Remaining Emissions,” there is an inconsistency as off-road vehicles and equipment are mentioned here but they are also addressed in one of the Transportation actions, T-11.
- Although fugitive natural gas emissions are considered to be part of the “Remaining Emissions,” they are not mentioned in the text until nearly the end of the CAP in “Remaining Emission Sources and Potential Reduction Strategies.” We suggest introducing fugitive emissions in this earlier section and referring readers to the later section for reduction strategies.
- In “Carbon Sequestration in the County” (pp. 67-69), there is no mention of whether and how the estimates of carbon uptake by ecosystems and trees account for disturbances such as blowdown from windstorms and insect-related tree mortality, which have had a significant impact in recent years. If they are not accurately accounted for, this should be noted and the implications discussed in the text.
- Table 11: There are some math errors in this Table. The 2005 value for Total (Net) GHG Removals should be –208,485 and the 2015 value should be –499,758.
- Figure 25: The horizontal green lines in the two panels are placed incorrectly--they should be drawn across the tops of the last orange bars.
- In “Consumption Emissions and Embodied Emissions,” food could be explicitly mentioned, in addition to goods and materials.

Climate Action Introduction

We understand that this report is limited in how it can account for costs and benefits in investing in climate actions. Still, we believe that it makes a clearer case to provide some discussion about the upfront costs of actions versus the cost savings over time. This provides a more holistic, true accounting of the financial impacts and may help assuage political and social reluctance. The important Figures (26-28) are critical to the

CAPs purpose, and CEAQAC has the following specific comments to improve the usefulness of these Figures:

- We suggest reversing the crucial Figures 26-28. Emphasizing GHG reductions should come first (Figure 28), followed by either Figures 26 or 27. Also, Figure 28 is arguably the most important one in the report, but is very confusing in how it is laid out and in the explanation. For example, using “primary benefits” does not make it clear that the benefits indicated are GHG reductions. It would be even better if Figure 28 contents could be shown in a bubble chart or other format that emphasizes GHG reductions but still shows co-benefits.
- Figure 27: It would help to add explanation about why only upfront costs are shown, and that savings are not included. Also, some of the ratings here do not seem to make sense. For example, why is there relatively little cost associated with A-1, Water Infrastructure Resilience? Why is there a high cost for B-6, Ban Natural Gas in New Construction? Electric HVAC systems and appliances do not necessarily cost more to install than gas ones.
- p. 85: This largely repeats the material on the previous page, so it could be mostly omitted to save space.

Clean Energy Actions

The section listing Clean Energy Actions properly identifies the key policy actions that can be taken to move toward a 100 percent reduction in GHG emissions. However, as was highlighted above, the section relies too heavily on policies that can only be implemented at the state level. Not enough time is spent on what the County can do if the state does not pass Community Choice Energy (CCE) or 100% Renewable Portfolio Standards (RPS). Since the CCE is the action with the highest GHG emission reduction capability of any action, inability to pass this legislation or possible delay in its implementation will have a significant impact on the County reaching its goals. Similarly, the recommendation to revise net metering rules in E-3 is a state action, not a County action. In addition, the action descriptions tend to be too vague and do not provide any guidance on the steps needed to implement and possible challenges.

CEAQAC offers the following suggestions on how to improve the readability and understanding of the information contained in this section:

- **Discussion of Agricultural Reserve Issue Too Long.** The discussion of the Agricultural Reserve is interesting, but it is too long, especially when it is not linked directly to any of the policies in the section. Furthermore, a solution has been adopted by the County Council [cite?]. It provides a good example of the type of trade-offs that the county will face, but it should be reduced in size.
- **Better Describe Implications of Operating a CCE on County Budget and Staff Needs.** The discussion of E-1 is a good description of the Community Choice Energy policy. However, given the importance of this action to achieving the County’s GHG emission reduction goals, the CAP needs to at least highlight that becoming a CCE will entail significant effort for the County, e.g., staff (and perhaps a whole branch) will be needed, credit facilities will need to be obtained, etc.

- **Scope of a CCE Needs to be Clarified.** The scope of the clean energy procurement that might occur within a CEE is not clear in the CAP. On the one hand, it mentions joining into offshore wind procurements, while on the other hand, the report seems to advocate for in-county renewable generation. Left unclear is a statement of policy and prioritization of in-county versus state or grid-level electric generation sources. The report needs to provide more clarity on this issue.
- **Discuss Implementation Challenges of Requiring Solar PV.** The discussion in E-2 needs to discuss implementation challenges of requiring solar PV in greater depth. For example, if solar-ready means that certain homes or buildings with mature trees are unable to install solar and will have to participate in community solar to meet this requirement, this scenario should be mentioned in this section.
- **A Coherent Strategy for Greater County Deployment of PV is Needed.** The discussion in E-3 essentially lists a number of ideas for promoting greater PV development in the County -- everything from incentives for residential homeowners to discussion of the Ag Reserve to advocacy for expanding net metering. It is hard to discern a coherent strategy in this action. The report needs to provide clarity that all of these approaches will be undertaken at the same time, or specify which approach will be the dominant policy.

Building Actions

Buildings constitute the largest source of GHG emissions in Montgomery County, so our County needs a climate plan that sets forth the key steps to reducing aggressively emissions from buildings. The draft CAP recognizes the two underlying goals necessary to achieve zero building emissions: major improvements in building energy efficiency and electrification of all buildings. But to be most useful, the CAP needs to present a clear picture of which specific policies will lead to dramatic gains in energy efficiency and electrification and explain clearly how much each policy would contribute toward achieving the goals. Our detailed comments follow.

- **Begin with and emphasize energy efficiency.** The Buildings chapter should begin by outlining steps toward energy efficiency, because, as the draft recognizes, energy efficiency is a prerequisite to electrification or other energy source changes.
- **Highlight residential energy efficient policies.** The CAP should include a separate section on residential energy efficiency, as there is on commercial energy efficiency (B-3), rather than merely mentioning policy recommendations for residential energy efficiency in B-2 and B-4, which focus on electrification. Both of these sections refer to energy audits. Do we know the degree to which energy audits are likely to reduce emissions, given that they provide baseline information only and do not necessarily result in follow-up actions? Section B-2 suggests Portland, OR-style legislation requiring Home Energy Scores as part of selling a house, but the draft does not provide information on how effective such policies have been or likely would be, and it seems unlikely that such policies, by themselves, would dramatically improve residential energy efficiency.

- **Provide guidance on how much efficiency gains to aim for.** As noted, the draft CAP rightly states that energy efficiency improvements are a prerequisite to electrification, because energy not used reduces demand for fossil fuels in the interim and new sources of renewable energy in the longer run. But the CAP needs to make clear the size of the contribution that energy efficiency should make in helping to achieve the County's overall zero GHG emission goals for both residential and commercial buildings.
- **Clarify the benefits of an amended benchmarking law (to promote non-residential energy efficiency).** Section B-3 on energy efficiency in commercial and multifamily buildings suggests that a new benchmarking law "could" be amended to require energy and water performance ratings to be displayed on buildings. Is there information that informs whether one should adopt such performance ratings? How effective have they been? A better description of the relative efficacy of these policies should be added.
- **Highlight ways to address energy efficiency in multifamily buildings.** As part of the CAP's review of energy efficiency policies, it should include policies specific to multifamily buildings that are relevant to historically disenfranchised communities. This would include participating in the Realize (or Energiesprong) platform, if feasible, to implement mass-produced (not customized) net-zero carbon retrofits.
- **Clarify how to achieve 100% residential electrification by 2035.** Section B-2 does not describe clearly how the County will achieve 100% residential electrification. It urges requiring electrification at certain triggering events, like sale or lease of the property or major renovations. But there is no data or discussion to establish how rapidly these events would transform the housing sector. Assuming 100% housing turnover or renovations in 14 years seems dubious. If housing turnover and renovations were modeled, the assumptions and results should be explained. In addition, section B-2 states that the County cannot simply require residents to electrify their homes. Is this a statement of law or political feasibility? If the latter, it should state as much, so County officials can make a determination of whether to set a schedule for electrification.
- **Clarify the value of a retrofit accelerator-type resource.** Section B-4 has a quick reference to a retrofit accelerator that could provide individual guidance to existing building management on how to switch to electrification. This kind of resource has been used not just for electrification renovations but also for efficiency retrofits. Many multifamily buildings and likely other commercial buildings are wary of retrofitting, because they have neither the technical nor financial expertise to evaluate the long-term costs and benefits of retrofitting, including changing energy sources. The section should clarify the value of such a public resource, including whether it should cover energy efficiency and electrification, commercial and residential properties, and individual building advice.
- **Clarify the timeline for all-electric new construction.** Section B-5 states that the County needs to require all-electric new construction by 2022. The CAP is not likely to be finalized until midway through 2021. The pre-construction phases for new buildings and permitting extend for years, so this timeline appears infeasible at the outset. Given pre-construction phases, what is the earliest time by which buildings not yet constructed could be made fully electric?

- **Clarify the timeline for net zero new buildings.** Section B-7 states that all newly constructed buildings should be required to be net zero energy by 2030. Obviously the earlier the requirement is imposed, the more emissions over the lifespan of new buildings are avoided. Is 2030 the earliest year that net zero buildings could reasonably be required? DC has targeted 2026 for net zero commercial buildings. Schools and other buildings have already been built to net zero standards for several years, at the same or only slightly higher capital costs, and with major operational cost savings. Is a general earlier timeline feasible or are there some categories of buildings that should be built as net zero on an accelerated timeline?
- **GHG reductions seem overestimated for B-5, B-6, B-7.** The reduction ratings for these actions related to new construction are ‘High,’ but could the reductions really be of that magnitude if new buildings make up only 1.2% of the total reduction pathway from the buildings sector?

Transportation Actions

Transportation is a key part of this report – to meet the county’s climate goals, 100% of vehicles must be electrified (under a clean grid). The need for carbon-free transportation – and specifically 100% transition away from internal combustion engines - should be included in the overall description of this section and its goals, not included only in the targets. Most importantly, the Transportation Actions sections needs to be more ambitious and expansive in its recommended actions, especially related to private vehicles. We recommend the final CAP describe a more detailed plan, with timelines and interim milestones. Our detailed comments follow.

- **T-2 (Expand Active Transportation and Shared Micromobility Network).** This section holds significant promise but is quite short, even compared to other actions in this group. We recommend expanding this item by adding 1) the necessary infrastructure and other design adjustments to make this workable (for example, set-aside lanes for slower-than-car micro-mobility traffic, sidewalk curb-cuts for mobility scooters, etc.) and 2) possible county roles in championing micro-vehicles (“golf carts”, three-wheelers, etc.).
- **T-3 (Private Vehicle Electrification Incentives and Disincentives).** We recommend the discussion on this action be significantly strengthened with the incentives and disincentives developed by the county’s transportation technical workgroup, which can be found in Appendix B and is otherwise in the County’s possession. We are very concerned that Item T-3 contains no definitive commitments and, even more importantly, no apparent conviction to pursue any of these ideas to the extent necessary to achieve 100% electrification, which other parts of the report clearly state is necessary to achieve the county’s climate goals. We suggest the county start with the commitment to get rid of all gasoline-powered vehicles by 2027 since that is an obvious step in reaching zero carbon, and then rewrite this section in the entirety to reflect what would need to be done to accomplish that. (As an example of a clearly-written goal is in T-5: “Montgomery County will need to stop all purchases of non-electric buses by 2022 and electrify 100% of the transit buses and Montgomery County Public Schools

(MCPS) school buses by 2027 to meet its emissions reduction targets".) We understand that is extremely difficult for the County to attain given that this addresses privately-owned vehicles (particularly in the absence of similarly urgent state and national action) and might entail extraordinary measures. We also understand that the county may not be able to implement all such measures. Nonetheless, we believe the report should describe what is necessary to achieve it, so that policy-makers might understand specific options and their implications. But without that description, the report lacks the degree of urgency and the connection of extent of action needed to the goal.

- **T-5 (Electrify Public Buses and School Buses).** This action discussion has clear goals and is excellent; going even further, we especially commend the County for its recent exceptional work in placing the largest order for electric buses in the U.S. to date. However, this section should be expanded in three ways. First, please include other forms of transportation related to the bus network, such as vans and other forms of last-mile transit. Second, please include the need to pressure WMATA, city fleets, circulators, etc. to electrify their buses to continue to operate in the county. Third, either here or in a separate section, please include incentives or disincentives (or requirements) leading to the electrification of buses and similar transport modes owned by other entities, such as churches, camps, private schools, etc.- Also, the term "turn-key" could be defined (p. 125).
- **T-10 (Electric Vehicle Car Share Program for Low-Income Communities).** Car sharing is a good example of a conservation-related action as it reduces the number of new cars that have to be manufactured and the associated emissions. So why not broaden this proposed action to encourage car sharing among people of all income levels? The estimated GHG reduction potential shown in Figure 23 would thereby be increased. To keep the costs to the government manageable, the program does not have to be fully funded by the government, as fees can be charged to those who can afford them, and there can be private-public partnerships.
- **Cash for Clunkers.** Another nice conservation-related idea is a "Cash for Clunkers" program in which people can trade in older gas vehicles for not only zero emissions vehicles but also transit and car/bike sharing vouchers. It is currently buried in the description for action T-3 (Private Vehicle Electrification); why not give it more emphasis in the CAP by, for example, also including it in the action descriptions related to transit, car sharing, and bike sharing?

Climate Governance

If Montgomery County is to meet its climate greenhouse gas reduction objectives, a whole-of-government approach will be necessary. This involves buy-in at all levels, from elected official to staff level, a coordinated approach with participation from all departments, and cooperation with other levels of government – state and federal. Establishing and implementing effective governance structures is the cornerstone that will allow the rest of this plan to be implemented successfully.

While there was a lot of valuable ground covered in this section of the report, the recommendations are disjointed and do not offer a clear, cohesive plan. Further, many of the recommendations are presented at a high-level, which raises questions about how they may be effectively implemented. Also, we note there is no mention of the current climate coordinator role (occupied currently by Adrianna Hochberg), and it would be good to get an idea where that position would fall in this section. We offer the following recommendations to address these shortcomings:

- **Build Awareness Throughout the County Government.** This plan appropriately recommends building awareness among all departments and staff, realigning departmental missions to address climate impacts and ensuring that staff understand climate change and their responsibilities to address it through their work. While this is appropriate, a first step should be for the County to do a review of each department's climate impacts and opportunities for each department to mitigate climate change. How do authority and reporting structures flow? Only once these are determined can the appropriate department-level solutions be identified. In order to build staff buy-in, consider adding a performance element to every County employee's performance plan that is supportive of the goals of this climate plan.
- **Cohesive Governance Approach is Needed.** The individual components described in this section are good, but for this plan to be effective, a cohesive governance approach is needed. It would be helpful for those connections to be made in this section to see how authority, funding, and accountability flow across all of the roles and responsibilities described. For example, how do the departmental climate ambassadors differ from or work with the Climate Leadership Team? The plan will not be a success if it is overcomplicated or implemented disjointedly.
- **Clear Communication from County Leadership will be Needed.** Clear communication from county leadership will be needed to ensure that designated departmental climate ambassadors have both the guidance and authority to shift organization focus toward climate mitigation and implement any needed actions, including those that may otherwise get pushback from skeptical or long-time county staff. It appears as if the climate ambassadors are voluntary positions and not appointed. While important to build support within each organization, this is not enough authority to have impact on budgets and actions.
- **Address County Budgeting Early in this Process.** Early in this process, the County Council will need to address how county budgeting will evolve to account for the new staff that may need to be hired and any expanding scope that may be needed for departments to implement the measures needed to mitigate climate change. Will departmental budgets be increased to allow for new roles, training or staff time diverted to implement the climate plan? Or will those costs come from existing operating budgets? If the latter, departments will have a disincentive to comply. Leaving aside questions of funding (discussed later in these comments), how that funding is allocated to allow the county to shift its governance ethos is a critical near-term question.
- **G-8 could be broadened beyond government activities.** G-8 contains some commendable ideas including green procurement policies, specifications for low

embodied carbon building materials, and requirements of GHG inventories for contractors that account for Scope 3 emissions. Why not help the public to implement similar actions too? For example, the County could publicize the criteria or lists that it uses for its own green procurement and try to encourage and incentivize use of them by the public.

- **Expand Responsibilities under Climate Leadership Team (G-12)** We applaud the draft CAP for recognizing that a county-wide workgroup with representation from all major departments should be established to provide input into climate governance structures, measures, and metrics. While the county's climate leadership should have the final say on these items, to the extent possible, the Climate Team should have authority to ensure policies, programs, budgets and timelines are aligned and implemented faithfully to ensure success.
- **Consider installing a Climate Ombudsman office with the power to engage other County offices to represent residents as they adjust to new County directives.** The lead Ombudsman should be experienced in both County and climate issues, and be empowered to engage with senior managers at County offices to ensure rapid response. This office could be institutionally connected with G-4 (p.184) and the Climate (County Office) Ambassadors through G-6 (p.185) and perhaps installed as office overseeing G-11 and is part of the Climate Team (G-12). An Ombudsman office may be especially needed as the monthly climate public meetings may end or not be connected to this effort. This office could also help identify areas within the County needing more oversight or performance improvement to ensure smooth and effective public engagement.
- **Effect of G-14 on Overall Emission Reductions is Unclear.** The action description states that the carbon fund would be used for local mitigation and sequestration to offset emissions from MCG air travel. However, it is unclear whether the local emission reductions and sequestration would be additional to those that are covered in the other CAP actions. If the fund is simply used to pay for some of those other actions, there would not be actual offsetting of the air travel emissions. The description needs to be clear about this, and maybe the CAP authors could come up with a way to ensure that the carbon fund produces additional mitigation/sequestration.

Carbon Sequestration

Beyond the comments made under Montgomery County GHG Emissions, we have no substantive comments for this section.

Climate Adaptation

In general, the Climate Adaptation section is well-written and well thought-out. The organization of information makes it fairly direct and easy to understand, and reveals some interesting and useful ideas of how these efforts can be applied to County work.

However, one overall gap in this section is the lack of interconnectivity between the various adaptation actions. Individual adaptation efforts are often highly interconnected to other efforts, and success in one can empower success in others (and vice versa). Making those connections more explicit would help define the scope of who is responsible, where coordination is needed, and where sharing costs burdens are required. It will also help identify who the Council should hold accountable for working together to get projects done.

Specific changes that we recommend include:

- **Include Food Distribution Centers.** In section A-8, food distribution centers could be included. Centers like this are important in their own right for many reasons, but additionally, co-locating them with shelters and other supply and storage needs can help increase their efficacy and ensure distribution to our community's most needy residents.
- **Address Credit Trading Inequities.** Like virtually all credit trading programs, Action A-12 creates a potential for adverse environmental justice impacts. For instance, if it is more cost-efficient to install a few large and beautiful rain gardens than it is to build many smaller ones, one might foresee that flooding in poorer neighborhoods is not addressed, while showier neighborhoods and business districts get the new installations. This section could be connected more explicitly with other environmental justice efforts noted in the report.

Public Engagement, Partnership and Education Actions

CEAQAC commends the CAP for recognizing how critical public engagement and communication are to meeting the County's GHG emission reduction goals. To help improve these proposed actions, CEAQAC recommends the following:

- **Group the Actions into Categories.** It would be helpful to group the 19 actions into three categories, such as: public outreach and engagement; coordination across local jurisdictions and key employers; and engagement with MCPS to ensure kids, families and teachers are educated and informed about the range of issues. This will mirror other chapters and make it easier to organize and track actions.
- **Accelerate Public Engagement.** Public engagement needs to accelerate as soon as possible and regardless of which CAP actions are taken. A timeline for many of these actions, especially those that have not been started, should be added.
- **Include the Elderly in Diversity Priorities.** Considering adding "other" to the first bullet (p. 192) of this section to be more inclusive, especially regarding the elderly. While important to point a lens on racial disparities, this section talks to those "most vulnerable" to the impacts of climate change. The elderly should be included in this category, which is not necessarily captured by this bullet or this section. Senior citizens, regardless of ethnicity, are a large and growing percentage of Montgomery County's population, and will be not only impacted by climate change, they likely will have difficulty adjusting to new mandates and behavior changes. This bullet would then read, "Create authentic and inclusive community engagement, particularly with Black,

Indigenous, and People of Color and **other** communities most vulnerable to the impacts of climate change.”

- **Consider Taking Advantage of Substantial, Available Expertise of County Residents, including Retired Professionals, Scientists and Scholars.** Given the close proximity to the seat of our National Government, Montgomery County has a deep reservoir of residents with climate-related expertise, including many retirees. These individuals could be used as volunteer ambassadors, similar to the youth Ambassadors program. They could be deployed to help educate a range of cohorts, going beyond the racial lens discussed in this report. This also could be incorporated under P-1 (for noted expertise), P-3 and/or P-9 actions, and connected with G-7.
- **Apply best practices from other countries (related to P-11).** This section includes a variety of ways to involve the public, but never mentions a Climate Public Assembly or Jury, as has been done in France, England, and other places. This topic was also discussed at the Public Engagement Working Group. Policies like T-4 on congestion pricing and limiting cars in urban areas would likely meet tremendous resistance. The Climate Jury gives the public the opportunity and burden of making the trade-offs that are necessary for climate progress. Given that there are many suggestions in the plan that are costly in one or more ways and thus politically challenging, this could be a way to make progress on education, engagement, and political support. Here is a description of how it was done in Leeds, England. [Leeds Climate Change Citizens' Jury | Leeds | Can-do Cities](#)
- **Recognize multiple public engagement impacts that can result from special attention to early grades (P-13; P-15; P-19).** Given the close involvement of family members with students in early grades (K-2nd grade), there are opportunities to build in climate change education and engagement by offering age-appropriate and interesting climate change content in books, reading materials and specialized programs (P-19) in language arts and other non-STEM subjects. While P-15 recognizes enhancing climate change teacher training, additional opportunities exist to expand beyond the typical math and science subjects. Adding interesting and age-appropriate materials, books and programs in language arts can serve as catalysts for reading groups and writing assignments, which comprise a large share of the curricula for these grades. Lending out enticing climate change-related books to share at home, especially as parents are encouraged to read-aloud with their young children, offers an opportunity to educate the whole family. (P-13).
- **One aspect of P-2 could be more prescriptive.** The description states that “The County, in collaboration with diverse community-based organizations, should identify the top three to five most impactful climate actions that individuals and institutions can take...” Why not just identify those top actions here? It seems that the County has already done sufficient work to gather input from the community and consultants.

What Can I Do?

This section provides a lot of excellent tips for people to voluntarily reduce their emissions from all scopes—1, 2, and 3. As noted above in the high-level comments, the CAP could be even

stronger if the energy and resource conservation approaches that are prevalent in this section could be recommended more widely throughout the CAP. Below are some specific comments.

- Under Step 2: Calculate Your Carbon Footprint, the bullet on Transportation mentions “purchasing a car with higher gas mileage.” The CAP should not be encouraging any more purchases of gasoline-powered cars, so we suggest replacing with or adding to that item “switching to an electric or other zero-emissions car.”
- All of the items under Actions for Renters are applicable to homeowners as well, so please consider including a note about that under Actions for Homeowners. (The first item under the latter does repeat the first item under the former, so it could be deleted.)
- Under Actions for Business Owners, the fourth item could go beyond recommending ENERGY STAR appliances and urge business owners to choose electric appliances if possible.
- The first item under Actions That Everyone Can Take could also point out the personal health benefits of diets high in plants and low in animal products, thus providing even more incentive for people to change.
- The third item under Actions That Everyone Can Take is a very important point. We suggest that it be further fleshed out with additional examples, like second-hand and thrift stores, yard sales, Craigslist, Freecycle, bartering, rentals, traditional libraries and Little Free Libraries, etc.
- The fourth item under Actions That Everyone Can Take could specify that onsite composting is preferable to offsite to avoid emissions from transport of waste and the finished product. It could also provide a bit of explanation on what compost is and how one can make it.

Remaining Emission Sources and Potential Reduction Strategies

CEAQAC reads this section as a thought-piece, and not as a critical component of the report. It currently does not provide significant value to the overall document. However, we do not recommend deleting it. Instead, we would urge even more information be shared in the CAP. For example, the words “battery storage” or “distributed generation” do not appear at all, despite discussion of a more resilient electric grid. While there is good information present, it needs to be built out more fully, and we strongly urge the authors to ask themselves what this section seeks to accomplish and restructure the writing around that.

Paying for Climate Action Implementation

Achieving the objectives set forth in this plan will require new sources of capital, innovative financing, and a shift in the county’s approach to budgeting. Nearly every recommendation in this report will require some level of added up-front expense – whether capital or operational – and funding is arguably one of the biggest challenges that could hinder success, yet this section feels both buried and insufficient. At a minimum, this section should be expanded to address the range of available funding and financing sources, including (but not limited to):

- Utility demand-side management programs
- State grant programs, such as weatherization assistance or others offered by the Maryland Energy Administration
- Federal programs, including the State Energy Program (MEA would need to be a conduit), FEMA resilience grants, and more
- Energy performance contracts for county facilities
- Philanthropic foundations

To be truly effective, questions about “paying for climate action implementation” should be addressed throughout the report as the appropriate source of capital will vary depending on the action. As it stands, this is critical gap that will need to be addressed early in the county’s planning and implementation.

Looking Forward

This one-page section provides a description of several Next Steps related to the completion of the Climate Action Plan and several ongoing FY21 climate change initiatives. However, looking forward should not just cover next steps in the current fiscal year. As noted in the Closing Remarks on Page 228 “...developing the climate plan is just the beginning of the work... Rather, this plan is a springboard for climate action in the months and years ahead.” Thus, we recommend that the Looking Forward section be expanded to summarize proposed next steps in FY22. The CAP needs to demonstrate to County residents that it has already begun thinking ahead on the bold steps needed to move forward aggressively to make progress in achieving the County’s GHG emissions reduction targets.

As we stated earlier in our overall comments, the final CAP should include a detailed recommended roadmap for implementation that is both doable and can be made clear to the County’s residents. We recommend that the CAP summarize in this section the next steps for implementing the roadmap during FY22.

We ask that you include information in this section on proposed FY22 next steps for climate actions that will be initiated within 60 days after the CAP is finalized, including:

- Proposed Council legislation for approval during FY22
- Planned executive actions on County climate change policies and programs
- Regional and state initiatives needed to implement proposed climate actions
- Workgroup on funding strategies that will ensure a dedicated funding source to finance climate actions
- Memorandums of understanding (MOUs) on climate action with MCPS, MCC, MNC-PPC, and other organizations, as needed

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