On December 14, 2020, County Executive Marc Elrich released the Draft Climate Action Plan for public review. The Climate Action Plan is intended to be Montgomery County's strategic plan to cut greenhouse gas (GHG) emissions 80% by 2027 and 100% by 2035. The Climate Action Plan, or "CAP," details the effects of a changing climate on Montgomery County and includes proposed actions to reduce GHG emissions. The Sierra Club Montgomery County Group is pleased to provide our comments on this plan.

Introduction

First, we commend Montgomery County for preparing the CAP. Addressing climate change is of critical importance, and Montgomery County should play an important part in this endeavor. A thoughtful and comprehensive plan can be the foundation for effective action.

Second, we are pleased that some key contributors to climate change have been recognized and included in the analysis and proposed actions. These include energy, transportation, and solid waste.

Our primary concern, however, is that the CAP:

- is not a true plan of action;
- does not build upon appropriate and consistent impact and cost measures;
- does not draw upon lessons learned from past experience;
- overemphasizes process and underemphasizes the impact;
- has significant omissions;
- is inattentive to some critical actions;
- lacks sufficient specificity; and
- may fail to fully include Black, indigenous and people of color communities (BIPOC), labor and youth as active partners and decision-makers in the climate implementation plan. These groups must be at the table to help identify and design climate actions that also address key issues such as jobs, housing, transit, health, energy poverty, and food access. They must also have a voice in evaluating how potential co-benefits and 'equity enhancing measures' described in the plan will be realized.

In short, a well-honed and articulate CAP can be an important guide for the County's future actions for addressing climate change. But substantial modification of the current draft CAP will be needed if it is going to be a blueprint for the array of critical actions required to achieve major results.

The CAP Is Not a True Plan of Action

The CAP contains substantial information and high-level analysis but falls short of being a true plan of action. A key deficiency is the massive list of undifferentiated "actions" that are proposed – the CAP gives some high-level criteria for prioritizing this list of actions, but the report leaves a substantial amount of additional analysis for County staff and others to do before real decisions can be made about where to invest the County's resources most effectively.

The CAP Needs Impact Measures and Cost Measures That Are Appropriate and Consistent

The ideal climate action plan for the County would assess an array of possible actions in two ways:

- **Impacts** - Impacts would be measured in terms of million metric tons of CO_2 emissions avoided, and
- **Costs** - Costs would be measured in terms of the dollars (both upfront costs and ongoing costs) needed to achieve those impacts.

This approach would enable a useful action plan to be developed – one that would maximize impacts within a known budget.

Unfortunately, the CAP does not measure impacts and costs in an appropriate and consistent manner. Some of the specific problems and limitations of the CAP's current approach are delineated in the next paragraphs.

Greenhouse gas reduction impacts: On page 63, the CAP offers a comparison of various interventions on a "Greenhouse Gas Reduction Score," which is somewhat useful. Adding the "scores" of all the interventions listed totals approximately 210 points, but what does that mean in terms of the only meaningful measure of greenhouse gas reduction, i.e., million metric tons of CO_2 emission avoided?

Without such an objective and meaningful measure, basic questions remain unanswered: If the County did all these things, would it be enough to meet its goals? Conversely, is it possible to meet its goals with implementation of only a subset of all these interventions, or possibly including partial implementation of some (for example, using Community Choice Energy contracts to provide energy to the low- and moderate-income subset of the County's population). Without consistent, quantitative assessments of potential greenhouse gas impacts, fundamental questions about prioritization and the best way to meet goals are not answerable.

Costs: For each of the many interventions in all sections, the CAP provides cost range estimates for both the public and private sectors:

- $: < $100,000 public; < $10 million private;
- $$: $100,00 to $1 million public; $10 to $100 million private;
- $$$: > $1 million public; > $100 million private.

The report does not answer the question, if you add all the $ + $$ + $$$ categories together, what is the total cost of all the interventions listed? Are they affordable for the County or its actual or potential private sector partners? Even if so – which seems unlikely – a real quantitative cost-benefit plus feasibility analysis will be required to prioritize and make a real plan, since launching into many things that use up all the available resources without moving us to the needed impact would be the definition of bad planning.

Another critical aspect of "cost" is whether it means only one-time or limited time "development" or "investment" costs, or whether it also includes longer term, ongoing, "recurrent" costs. On page 75, the CAP indicates (under "Feasibility Criteria") that it is considering only "initial upfront costs." However, many interventions listed, for example, "incentives" for expanded PV solar development or for the "aggregation" brokerage and management costs of energy contracts under a Community Choice Energy program, will entail significant ongoing recurrent costs. Failure to consider this aspect of cost is an important limitation of the CAP's usefulness in prioritization and actual planning.

The CAP Needs to Build Upon Lessons Learned

The CAP's analysis also fails to take advantage of existing County experience that helps explain actual progress that has been made in greenhouse gas reduction in various sectors and what that indicates about the possibilities for further progress in those sectors. On page 67, in a different context, the CAP cites data showing that there have been significant reductions between 2005 and 2015 in actual greenhouse gas emissions (millions of metric tons of CO_2 emitted) in the residential energy (22% reduction) and commercial energy (24% reduction) sectors, but much less progress in transportation emissions (6% reduction).

These reductions should offer critically important lessons. What interventions were most associated with these reductions? Were there some interventions that worked well, and others that were less successful or failed? Have we gotten all the progress possible from those that worked, meaning that we need new interventions? Or is there more that can be accomplished by pushing those successful interventions further?

Beyond looking for lessons learned from Montgomery County experience, the CAP would also benefit from an examination of lessons learned from other jurisdictions. What has worked elsewhere and why?[1] And, equally important, what potential "good ideas" have failed (or not worked out very well) in terms of impacts and costs?

These are the sorts of questions and analysis that can really guide planning. The CAP glosses over such meaningful analysis and remains at the level of generality.

The CAP Should Focus on Impact Rather Than Process

Unfortunately, the CAP section on "County Climate Progress" focuses on process, not impact: all the "progress" described is limited to governmental actions, such as resolutions, formation of administrative units and activities, and regulations or programs passed. The CAP does not evaluate either the potential or real impact of the actions taken. For example, since 2015, the County has participated in the Commercial Property Assessed Clean Energy Program (C-PACE), a potentially powerful way to support buy-in of energy efficiency and renewable energy projects. C-PACE is especially important because it draws only on private sector capital, with no use of County resources. But to date, C-PACE in the County has had extremely limited buy-in, and mostly only for energy efficiency improvement, with only a single project that includes a photovoltaic solar component. Simply noting the program as "progress" without recognizing its limited implementation and the causes of that is a real failure to do the sort of meaningful analysis that should inform future planning.

The CAP Needs Recommended Actions on Land Use to Reduce GHG Emissions

Where we live and work has a huge impact on our GHG emissions. A main feature of Montgomery County's landscape, which is largely single-family neighborhood sprawl, forces most residents to drive everywhere. In contrast, high density, mixed-use, mixed-income, walkable and bikeable, transit-served neighborhoods enable residents to get to many of the places they need to go without driving. The County's land use policies should help steer new development to the locations that will enable more people to live near where they work, and conveniently walk, bike, and use transit to get where they want to go.

The CAP, however, is silent on how land use policies can be better harnessed to reduce GHG emissions more effectively. Sierra Club notes that THRIVE 2050, the new County

[1]As an example, as part of its "Aiming for Zero Waste," efforts, the County's consultant, HDR, provided a benchmarking and best practices study of five jurisdictions of comparable size (King County, Washington, Austin, Minneapolis, Toronto) to help it develop waste reduction programs.

general plan currently under development, recognizes the importance of good land use policies in the County's efforts to address climate change.

The County has a severe shortage of housing; therefore, many of our workers live outside the County. The shortage is especially onerous for lower income households. Unfortunately, the CAP is silent on expanding the supply of housing. Forcing many workers to commute from other counties is not only detrimental to the family lives of these workers, but the longer commutes they entail contribute more GHG emissions.

The CAP Should Promote Installation of More Solar Panels

The CAP recognizes that moving the County sharply toward clean energy is an important part of the equation. But we note that the plan fails to include one critical action in this realm. Namely, the County should be aggressively promoting the installation of more solar on the Agriculture Reserve with appropriate restrictions. This is a glaring omission.

The CAP Needs More Specificity in Key Places

Some overall statements in the CAP are very encouraging. For instance, the plan correctly recognizes that transportation is a major contributor to climate change. And the plan makes several good general commitments, such as expanding "public transit service, pedestrian and bicycle infrastructure." But specific actions needed for such worthy expansion are mostly missing. And what is provided is worrisome.

For instance, again in the transportation realm, the CAP touts the County's "near-term climate initiatives" which include "launching the FLASH bus service on US 29." Such bragging is not yet warranted. To bring appropriate public transit to Route 29, what is needed is a real Bus Rapid Transit (BRT) running in dedicated lanes for the entire route. FLASH bus service running in mixed slow traffic is not the sort of bold step needed to encourage ridership and help address climate change. And we note that the Route 29 BRT will set the tone for the planned county-wide network of ten BRT routes.

The CAP needs to be aggressive and specific in spelling out a variety of actions to expand transit and pedestrian and bicycle infrastructure.

Comments on Building and Construction Actions

The CAP needs to:

- Promote adaptive reuse of buildings to reduce construction waste, the consumption of raw materials, and the carbon producing construction activities that can be avoided by saving portions of buildings.

- Promote the reduction of public school site sizes and school building footprints, and the adaptive reuse of buildings that can be converted into schools. The CAP should further promote the reduction of on-site parking requirements and parent drop off loops. These goals will help limit land use, reduce land disturbance, and create more efficient use of construction materials.

- Promote smart growth development in building and land planning to increase density and reduce sprawl. It should especially promote development in proximity to public transit. Studies have shown that urban development has a lower carbon footprint than suburban development.

- Eliminate or reduce exclusionary zoning in single-family communities in the County so that diverse, appropriately-scaled housing types may be permitted by right, i.e.,"Missing Middle" housing. Greater density in our residential neighborhoods reduces their carbon footprint.

- Indicate a stronger reference in the CAP to coordinate with the conclusions of the Thrive Montgomery 2050 master plan, especially the planning recommendations to reduce the carbon footprint in land use and promote environmental stewardship.

Comments on Transportation Actions

- The electrification of vehicles reduces emissions but does not reduce traffic congestion.
- Electric vehicles are more costly and therefore less accessible and less equitable for lower- and some middle-income households.
- We agree that our public transit sector should be made clean, efficient and reliable.
- We agree that public transit and Montgomery County Public Schools vehicles should be electric vehicles (EVs).

- "Active Transportation" only works if there is something nearby to which people want to walk or bike. This calls for more "community density" -- mixed use commercial/residential and infill development.
- For "Active Transportation," fully build out the County's Bicycle Master Plan.
- Micromobility (e.g., RideOn FLEX) is a solution that can work for some communities. It serves as a public sector "Uber," getting people from their homes to nearby Metro stations.
- Due to lack of housing options (high price, low inventory), many people who work in the County are forced to live outside the County. Land use is a core solution to the goal of having people drive less, thereby reducing emissions. We need much more housing, and adding "Missing Middle" housing near transit stations and along transit corridors can reduce automobile use.
- We agree that public transit should be expanded and made fast and reliable. At a minimum, Bus-Only lanes should be built on all the major BRT corridors, and preferably along other major roadways, such as Georgia Avenue. The County should emulate Washington, D.C., and paint the Bus-Only lanes red.
- Automated traffic monitoring enforcement devices to enforce Bus-Only lanes should be installed.
- Bus-Only lanes also benefit low-income communities that depend on transit.
- A one-year pilot program for dedicated bus-only lanes should be put into effect.
- While "congestion pricing" may limit cars in urban areas, parking can also be limited in urban areas. Parking lanes could be turned into bike lanes.
- Telework. The County and state should actively promote telework and encourage all employers to consider teleworking where possible. Telework has already proven its capacity to reduce greenhouse gas emissions without any infrastructure investment at all. It will work even better once schools are back in session. Also, evaluate Transportation Demand Management success by surveying employers annually and posting the (improved) results.
- Interstates 270 and 495 should not be expanded and should not be equipped with toll lanes.
- We must stop building highways; specifically the M-83 should be taken off the Master Plan of Highways.
- Transit hubs should be installed in specific locations to transport non-resident workers to targeted destinations within the County.

Comments on Carbon Sequestration and Climate Adaptation

Many of the climate actions identified will require significant changes in policy to overcome barriers to implementation. These barriers, and the specific policy changes

that could address them, should, we believe, be more clearly identified, drawing on lessons learned from other jurisdictions. More specific plans would also enable site-specific analysis of co-benefits, which is critical to targeting, building public support for, and identifying potential funding sources.

Of the Carbon Sequestration Actions, we believe that Action S-6,"Whole System Carbon Management and Planning," is a critical tool that should be used to support more granular planning as well as implementation of nature-based solutions that protect critical natural infrastructure.

As shown in the CAP (Table 16), forest restoration, increase of tree canopy and retention of existing forests are among the actions with the greatest cumulative co-benefits which include reduction of climate risk. In addition to the benefit of carbon sequestration, forests are the first line of defense against stormwater runoff, flooding, and contamination of drinking water supplies. They also mitigate the Urban Heat Island ("UHI") effect.

Strengthening the Forest Conservation Law to achieve "No Net Loss" of forests, as has been done in Frederick County, is a key first step towards not only retaining but increasing forested areas.

Several more specific actions, which are outlined in the report of the Sequestration workgroup, should also be implemented. These include establishment of carbon sequestration zones in water source areas, and prioritizing protection of the highest quality watersheds and floodplains, which are apparently expanding.

"Adaptation Action A-15, Water Supply Protection," should include forest conservation and restoration among the protective measures, as these are the first line of defense; they both filter water and increase storage and flow during dry periods.

We strongly support "Action A-13," which recommends revising the building code to ban granting waivers from stormwater management practices, a critical tool for reducing nuisance flooding and the UHI in more densely developed areas as well as for protecting water quality. Enforcement of existing policies is also critical. In light of more intense rainfall over impervious surfaces in urban areas, a watershed approach is needed to better understand and mitigate risks from both nuisance and catastrophic flooding.
Enforcement of existing policies needs to specifically include adherence to the master plans for Ten Mile Creek and the Agricultural Reserve. These provide a foundation for

building on the County's legacy of innovative land use policies, which have not only conserved land but have also reduced sprawl, and thus vehicle miles traveled, and have encouraged more compact and transit-oriented development.

As local food supplies become vital to residents as a result of Covid, we strongly support "Action A-18, Expanded Community Gardens." We specifically support identifying barriers and solutions to setting up additional community garden sites, urban farming opportunities, supporting local food hubs and incorporating solutions into the CAP and other County-wide planning processes.

Comments on Clean Energy Actions

The CAP appropriately recognizes decarbonizing the energy sector as the most important area of action for achieving the County's greenhouse gas reduction goals. It is critical to recognize that this will involve moving to clean renewable energy sources for all the energy consumed by the County's government, residents, and businesses – not just the energy generated in the County itself – since both the County and Maryland itself are and will continue to be net importers of energy. The importance of greening the electricity we consume is further increased by the fact that important greenhouse gas reduction actions in other major sectors – transportation and buildings – involve shifting those sectors from fossil fuel energy to electrification, thus increasing the requirement for clean energy.

To achieve both greenhouse gas reduction and the potential economic benefits of this clean renewable energy transition, the County will need to wisely balance obtaining clean energy from out-of-county and even out-of-state sources, with promoting in-county clean energy development that will support local jobs and businesses.

These considerations underlie the following discussion of specific actions considered under the draft CAP.

Community Choice Energy

Implementing Community Choice Energy will allow the County to contract for electricity for a large portion of its residents from sources meeting its priority criteria, of which being fossil-fuel-free is the most significant. As the CAP notes, this action will likely require energy from outside the County.

Local, distributed clean energy has many advantages. It can support jobs, business development and other economic benefits of local clean energy expansion. Local distributed clean energy sources also are less subject to our outdated distribution grid.

The CAP does note that there will be some opportunities for contracts with large scale in-county clean energy facilities, like the proposed solar array at the Dickerson power plant site. However, that site is proposed to have just 42.5 megawatts of solar generation capacity, plus a large battery storage unit, so that it will fulfill only a small part of the County's total energy requirements. Not many other large sites are available for generating renewable energy in the County. The trade-offs between encouraging the economic and other benefits of local clean energy development with contracting for large amounts of outside energy will be an important consideration in planning.

The CAP Should Promote Private Solar Photovoltaic Systems

Adopting code requirements for solar photovoltaic (PV) projects on private buildings is a logical exercise of the County's authority; however, it will not be straight-forward. A "net-zero" code would be the most comprehensive approach. However, cost and complexity will invite resistance from builders in a time of high housing demand. It is also certain that the extra cost will be passed on to buyers, which will only add to the difficulties posed by the County's already high residential and commercial property prices. The County will have to weigh these factors, which the CAP identifies but does not further analyze.

We agree that "to drastically increase the amount of solar PV use, the County will need to promote the adoption of solar PV on private buildings." We support the expansion of "fast-track" permitting for solar to include multi-family and commercial properties, and to reinstitute the local property tax credit for PV solar.

However, the CAP puts substantial reliance on "incentives" to accelerate residential and commercial solar development. This ignores the question of why, after at least a decade of solar availability, the County now has only 110 megawatts of residential and commercial solar installed despite the existence of the following very substantial incentives:

- A 26% (until 2019, 30%) dollar-for-dollar federal tax credit;
- For agricultural businesses, the federally-funded and managed Rural Energy for America Program (REAP), which provides grants for 25% of a solar project cost, and an additional 50% in low-cost loans;
- For businesses, low-cost loans through the federal Commercial Property Assessed Clean Energy (PACE) program;
- Maryland Energy Administration grants for parking-lot solar canopies;
- Net metering and virtual net metering;
- Ownership of and reimbursement for valuable state Solar Renewable Energy Credits; and
- State sales tax and property tax exemptions.

The critical question for expanding solar energy, therefore, becomes, "*What more can County resources provide as 'incentives' that will be effective in accomplishing what existing incentives have failed to accomplish?*"

The CAP Should Increase Capitalization of the Montgomery County Green Bank

The CAP mentions some promising actions by the Montgomery County Green Bank (MCGB) that support private sector investment in solar development in the County. The CAP should go beyond simply noting these MCGB programs: Green Banks have proven to be highly effective in leveraging private sector investment. In other states, Green Banks have a documented ratio of ten dollars of private capital invested for each dollar of bank funds provided.[2] Therefore, increased capitalization of the MCGB would likely prove to be a powerful, but relatively low cost, use of public money. Alternatively, the County could promote private investment in Green Bank capitalization.

The CAP Should Promote Expanded Community Solar

The CAP notes that, "*Community solar systems provide the opportunity for those who cannot install solar on their own property due to site constraints, or those who do not own property, to take advantage of the benefits of solar*." This program also provides access for low- and moderate-income residents to solar power, from which they have generally been shut out. The program allows projects of up to 2 megawatts (MW) of capacity - small by solar standards, but each able to serve several hundred households with locally generated low-cost solar power. However, a 2 MW solar project requires about 12 to 15 acres of open land; in Montgomery County almost all open land that doesn't have the County's huge price tag of commercial or industrial land (hundreds of thousands to millions of dollars per acre) exists in the Agricultural Reserve. However, recent County Council actions placing severe restrictions on use of land in the reserve for community solar have effectively shut down the development of these small Community Solar projects in the County. These actions effectively exclude this important program as a major potential contributor to the County's greenhouse gas reduction goals.

Thus, we support the CAP's recommendation that "*At a minimum, the County should collaborate with the agricultural community and research institutions to establish demonstration agrivoltaic projects that explore the viability of co-location and examine*

[2]Maryland Clean Energy Center, *Growing the Maryland Clean Energy Economy: Green Bank Study Final Report*, December 1, 2015, https://coalitionforgreencapital.com/wp-content/uploads/2020/05/Maryland-Green-Bank-Study.pdf

other related issues such as equity and the economic impact on farmers currently leasing land."

The CAP also overestimates rooftop solar capacity. It takes the Google "Project Sunroof" figure of >75% of rooftops being "viable" for solar as a reality. The gold standard estimate of rooftop solar capacity, however, comes from the National Renewable Energy Laboratory's LIDAR-based direct measurement, which accounts for azimuth, tilt, and shading of roofs.[3] In 2016, the National Renewable Energy Laboratory (NREL) estimated the "Technical Potential Rooftop Capacity" for photovoltaic solar in each state, and in 2018, the Maryland Public Services Commission used the NREL data to get an aggregate estimate for each utility's service area.

Montgomery County has 53% of the Pepco region's population, making the County's estimate of "technical" rooftop potential 2,350 MW. Because of factors including cost, regulations such as setback requirements, structural issues, and actual roof conditions and obstacles, "Actual Rooftop Potential" is estimated at 25-50% of "Technical Potential." Therefore, the estimated actual rooftop solar potential for Montgomery County is 588-1,175 MW – at best, less than half of the 2,500 MW of solar we need. Building all the potential rooftop solar will take well over a decade: because a solar array's lifetime is 20-25 years, the cost of taking a solar array down and then reassembly if a roof needs to be replaced sooner means that it's only cost-effective to build solar on roofs that have been recently built or replaced. (This limitation doesn't apply to ground-based solar.)

Given the complexities of distinguishing "potentially viable" from "actually viable" rooftops, the CAP's suggestion for an "*in-depth analysis [that] could provide a ranking system to categorize sites based on economic, environmental, and social considerations*" in order to "*target outreach to properties with high potential for successful solar deployment*" sounds simpler and probably more feasible than its actual meaningful realization would be.

The CAP Should Promote Leveraging Private Access to Tax Credits to Install More Solar on County Facilities

The County's visible example of projects to solarize schools, buildings, parking lots, and other facilities can play an important role in shifting public opinion and behavior. The County has done a good job of exercising leadership in this way, and should continue to do so.

[3] P. Gagnon, *et. al.*, *Rooftop Solar Photovoltaic Technical Potential in the United States: A Detailed Assessment*, U.S. Department of Energy, National Renewable Energy Laboratory, January, 2016.

As a government, the County cannot take advantage of the federal and other tax credits available for solar development. So what the County has learned to do is to allow a private sector entity, which can take advantage of those valuable incentives, to build solar arrays on its properties. These contracts with the private sector provide the County with low-cost solar energy reflecting those financial advantages. This makes it a win-win approach that lowers energy costs for the County and provides opportunities for the job and business development aspects of solar.

Advocate for a 100% Truly Clean Renewable Portfolio Standard by 2030

We agree that a 100% renewable energy standard by 2030 is a sound recommendation. However, the CAP makes an important error in equating the County's achievement of "clean" electricity with meeting the "renewable energy" component of the state's Renewable Energy Portfolio Standard (RPS). Several energy sources that Maryland lists as "renewable" are not in fact clean; they are major sources of greenhouse gases. The state's RPS includes energy from the burning of black liquor (a toxic by-product of paper manufacture), municipal solid waste incineration (as at Dickerson), biomass burning, and burning of landfill methane made up "renewable" energy sources. The County must independently examine the sources of its energy to encourage truly clean, renewable projects, not simply accept the State's definition of "renewable." We encourage the County to continue to play an active role in legislation before the General Assembly to remove dirty fuel sources from the RPS.

The CAP Should Adopt Actions to Fund and Implement Energy Efficiency and Weatherization Programs

Low-income households, as well as Black, Hispanic, and Native American households, pay a much larger share of their income on energy bills, straining budgets and putting them at heightened risk of utility shutoffs during the COVID-19 pandemic. Home weatherization programs could reduce low-income household energy burdens by about 25%.

Recommended actions in the CAP should include funding and implementing energy efficiency and weatherization programs, separately or in conjunction with the state's EmPOWER program and federal programs. Energy efficiency programs should include collaborative and effective community engagement to create programs tailored to the needs of specific communities and target highly burdened households. Energy efficiency programs should also integrate home energy efficiency improvements with other health interventions, leveraging health-related funding streams.

Comments on Solid Waste Reduction

The CAP Strategy Should Be Expanded to Include More Waste Reduction Strategies

The draft CAP recognizes that "[w]hile solid waste accounted for only 2 percent of Montgomery County's greenhouse gas emissions in 2018, it is an important area for continued improvement in both emissions reduction and environmental stewardship." (CAP, p. 215). We applaud the County for recognizing that solid waste should be addressed in climate planning.

The CAP, however, falls short by including only one strategy for reducing emissions from solid waste management by 2027: "no paper waste is sent to landfills and no plastic waste is incinerated." (See Table 8.)

The CAP also should include plastics and organics reduction strategies.

The CAP Strategy Must Include Closing the Incinerator – The County's Largest Stationary Emitter of Greenhouse Gases and Other Pollution

While the County's stated goals of reducing paper and plastic waste from landfills or incineration are critically important, the County should reach higher by addressing the outdated and polluting main waste disposal method in place since the early 1990s: waste incineration at the Covanta Resource Recovery Facility (RRF).

Realistically, plastic will not be eliminated from the waste stream by 2027; unrecyclable plastic packaging abounds in virtually every product sector. Therefore, the County's goal to end plastic incineration by 2027 implies that the County will terminate use of the Dickerson incinerator no later than 2027.

Rather than implying this goal, the County should state clearly in the CAP that incineration will be terminated as soon as the County can enter into contracts to haul remaining trash to a landfill. At a minimum, the County should end sending trash to the RFF by no later than April 2026, when the current contract with Covanta expires. Closing the incinerator will eliminate the County's largest stationery source of carbon and toxic emissions.

The CAP Strategy Must Divert Organic Waste from Landfill

By focusing solely on removing paper and plastics from landfill as its key solid waste climate reduction strategy, the County will miss a critical opportunity to tackle an even greater greenhouse gas problem, the methane emissions from food waste and other organics.

The solid waste climate reduction pathway should target diverting most organic material, including not only paper, but also food scraps, wood and textiles, from the waste stream by 2027. The CAP should include a specific time frame for implementing organics diversion programs, similar to, but more accelerated than, the time frame set out in the County's Aiming for Zero Waste recommendations.[4]

In particular, no later than 2025, the County should implement a unit-based waste collection program known as "Pay As You Throw" (PAYT) combined with single-family residential pickup of food scraps for composting. In order to achieve the behavioral changes that PAYT has induced in many other jurisdictions, the County should revamp the solid waste disposal payment structure to incorporate PAYT for single-family households concurrent with implementing curbside pick-up of food waste. We believe these programs should be rolled out in conjunction with the closing of the Dickerson incinerator, when its contract expires in 2026 to avoid the added problem of what to do with methane-generating food scraps that would otherwise be sent to landfill.

In addition, the County should implement a food scraps diversion program for the multi-family sector. This diversion program would be structured differently than that for single-family households because waste management for multi-family housing is currently handled privately. Providing residents of multi-family housing with the same opportunity as their single-family neighbors to participate fully in an organics waste diversion program, however, is critical for environmental justice goals. Finally, the County should enact a mandatory food waste diversion program for all commercial and institutional food service providers by 2025.

The County should continue to implement the "Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion," ("Strategic Plan to Advance Composting") which has specific recommendations for a diversified system for managing food scraps and food waste. All levels of composting —backyard, on-farm, on-site, and collection of

[4] Montgomery County Maryland, Aiming for Zero Waste: Task 9 – Develop Options for Collection and Disposal of "What's Left," Final Technical Memorandum #5.
https://www.montgomerycountymd.gov/SWS/master-plan.html

food scraps for the government, commercial and residential sector—need to be implemented.

Compost use should be integrated into County programs and promoted to improve the health of our soils and to aid in carbon sequestration. The Strategic Plan to Advance Compositing should also be coordinated with the Food Security Plan which provides direction to divert food that can be consumed and used by food insecure residents.

Removing organics from the waste sent to landfill would minimize methane emissions from landfills. Delaying source separation of food waste and a PAYT program for single family residential properties beyond 2025 will result in unnecessary levels of organics in the waste stream sent to landfill. The schedule for implementing both policies throughout the County must be accelerated.

The CAP Strategy Must Stress Reduction of Wasteful Consumption – The Most Efficient Way to Reduce GHG Emissions

Reducing wasteful consumption will meaningfully reduce GHG emissions. Only by participating in the movement to minimize the extraction, refining and processing of hydrocarbons will the County achieve a more sustainable economy. GHG emissions reductions must start at the top rungs of the Zero Waste Hierarchy. The County should coordinate with state leaders to pressure manufacturers to redesign their products to reduce wasteful consumption of resources, and encourage local businesses and consumers to eliminate wasteful consumption.[5] These concepts are incorporated in certain aspects of the CAP, but are not adequately addressed in its solid waste pathway.

Prime candidates for reducing wasteful consumption are minimizing the purchase of plastic products and packaging, reducing the consumption of single-use disposable items made from any material, and salvaging and reusing those building materials containing the greatest amount of embodied hydrocarbons, including concrete, steel and aluminum.

[5]Sierra Club Zero Waste Policy, December 2019.
https://www.sierraclub.org/sites/www.sierraclub.org/files/Sierra%20Club%20Zero%20Waste%20Policy%20December%202019.pdf

Comments on Reducing Purchase and Consumption of Plastics and Construction Waste

Recycling Is Not the Solution for Plastic Waste

For years the County has invested in collecting and recycling plastics. It is now in the process of upgrading and modernizing the Materials Recovery Facility (MRF). *Recycling plastic, however, is not the solution and never has been.* Indeed, *only 18 percent of potentially recyclable plastic containers are actually recycled in the County*.[6] Additionally, the County produced 47,000 tons of plastic film and bags, only 1.1 percent of which was recycled.[7]

The oil and gas industry and the chemical companies knew that mechanical recycling of plastic was a bankrupt solution and that making products from recycled plastics was more expensive than using virgin plastic resin. The best way to protect their businesses, they calculated, was to invest significant funds in marketing the idea that plastics could be effectively recycled and kept out of landfills. If only communities invested in expensive recycling facilities and redoubled their efforts to increase recycling rates through education, industry told us, the plastics problem could be solved. But it couldn't. Recycling plastics is just a myth and a treadmill that places the onus for dealing with the problem of plastic waste on local governments, taxpayers and consumers.

Now that more of the public understands there is no market for their carefully source-separated plastics and that the vast majority of these items are still headed for incineration or landfill, the oil, gas and chemical companies are trying to sell the public on the mirage of endless reuse of plastic resins through "advanced" or "chemical" recycling, without mentioning both the economic and environmental costs of this ostensible solution.

But the oil, gas and chemical companies are in the business of extracting, refining and marketing hydrocarbons and they have squandered their credibility by selling local governments and the public on the lie that mechanical recycling of plastic was a viable solution.

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[6] Montgomery County Maryland, Department of Environmental Protection, *"Comprehensive Solid Waste Management Plan, 2020-2029," Final Draft*, April 2020, Table 4.2 – Waste Recycling by Material Type: Achievement and Opportunity, p. 4-11.
[7] *Ibid*.

The CAP Must Include Goals to Reduce the Use of Plastic Products and Packaging

The CAP should clearly and unequivocally reject the plastic recycling myth. If the County is to reduce its carbon emissions, it must educate the public that reducing the consumption of plastic is a critical part of a credible carbon emission reduction program. The County must aggressively enact ordinances banning or regulating the use of plastic products and packaging such as through extended producer responsibility requirements, and ask Montgomery County legislators to advocate for similar statewide restrictions in the General Assembly. The CAP must include concrete goals to reduce the use of plastic products and packaging. The absence of this type of strategy in the draft CAP is a glaring omission.

Laudably, the County is already making progress in developing ordinances to ban or regulate certain single-use disposable plastics. It has also identified other strategies to reduce wasteful consumption of plastics. But more is possible and more must be accomplished quickly.

In addition to banning and regulating plastic straws, the County should regulate single-use plastic condiment packets and stirrers. It should support at the state level not just bottle deposit bills as a short-term solution, but regulations to encourage return of both glass and plastic bottles to distributors for sterilization and reuse as was done with glass milk and soft drink bottles in this County in the past.

The CAP Should Include a Ban on Plastic Bags Throughout Grocery Stores

The County should also ban plastic bags not only at checkout but throughout produce and bulk food aisles, requiring stores to put a price on paper bags offered in these aisles and encouraging stores to offer for sale reusable produce bags.

The County should encourage stores, perhaps through pricing mechanisms, to:

- Include taring scales in bulk food aisles to enable customers to bring their own reusable containers for purchasing bulk foods;
- Offer alternatives to common personal and household products frequently packaged in plastic bottles, such as shampoo and laundry detergent, that are offered in paper or other reusable packaging;
- Reduce or eliminate produce pre-selected and pre-packaged in plastic wrap and containers.

These measures would help give consumers the freedom to select the quantity and quality of produce and other products they purchase. And the County should eliminate some of the current exceptions for the use of solid polystyrene for packaging meat and poultry.

The CAP Should Reduce Wasteful Purchases of New Items through Facilitating Reuse, Repair and Sharing

Reducing purchases of new items conserves the resources, including hydrocarbons, needed to produce and transport these items to the County. The Zero Waste Task Force established by the County in 2018 to help guide solid waste management programs, identified several strategies to reduce wasteful consumption and encourage residents to consider borrowing, reusing and repairing items rather than replacing discarded items with new purchases.

These strategies include:

- Setting up sharing libraries to facilitate sharing of common household tools and small appliances;
- Establishing fix-it/repair clinics;
- Establishing curbside pickup of textiles to increase reuse of clothes, shoes and other textiles; and
- Sponsoring community events to facilitate reuse of good quality items.

None of these are highlighted in the CAP or its summary of the Zero Waste Task Force. They should be included.

The CAP Should Reduce Construction and Demolition Waste Through the Building Code

Laudibly, the CAP identifies several changes that could be made to County building codes to increase extreme weather energy efficiency, energy performance for existing and new construction and electrification of all building energy demands. Missing from the CAP, however, are recommendations for incentivizing the building code, perhaps through accelerated processing of permits or reduced permitting fees, to reduce waste in the first place.

Source reduction strategies include, for example:

- Flexible building design that allows for periodic modification of space to extend building life, and
- Prefabricating materials to fit site specifications, thereby reducing delivery of excess materials to the work site and saving on-site construction time which lowers construction costs.

Also missing from the CAP are strategies to use building codes to encourage deconstruction, salvage and reuse of construction materials from existing buildings. Certain construction materials in particular, such as concrete, steel, aluminum and glass, require large amounts of energy to produce and transport. In some cases these materials can be salvaged and reused. Many high value materials, such as doors, cabinets, windows, architectural items, lumber, and marble, also can sometimes be salvaged and reused.

The CAP should include strategies to increase both supply of and demand for salvaged building materials and support the growth of private sector salvage and reuse markets. Developing robust salvage and reuse markets often requires a combination of regulatory requirements and supportive services. These supportive services could include:

- Low-cost, flexible workforce development programs to develop a deconstruction and salvage workforce,
- Websites that host real-time information on the supply, demand and location of specific salvaged materials;
- Efforts to promote awareness by homeowners and smaller construction industry companies of non-profit reuse entities and for-profit salvage and reuse markets;
- Low-cost space for a local construction and demolition eco-park.

Building codes should continuously be amended to substantially increase the percentage of materials that must be diverted from landfill. C&D materials separated at the source can achieve reuse and recycling rates as high as 75-97%.[8]

[8] https://www.epa.gov/smm/sustainable-management-construction-and-demolition-materials#America; According to the "Sustainable Waste Management by Design: Designing Buildings to Optimize Environmental Performance During Construction and During Occupancy," Waste Management webinar at http: www.wm.com/octwebinar.pdf, the Terrence Donnelly Center for Cellular and Biomolecular Research at the University of Toronto diverted 75% of its C&D waste during construction and the Bill and Melinda

The CAP Should Include Amending the Building Code to Increase Diversion of Building Materials

The CAP should include a recommendation to amend the building code to increase the 50% diversion rate included in the 2012 International Green Construction Code starting in 2021 and increasing in the next few years to diversion rates as high as 75% or 80%.

Comments on Synthetic Turf

Reducing the use of synthetic turf on athletic and playing fields throughout Montgomery County would provide another opportunity to reduce greenhouse gases that was overlooked in the CAP. The CAP should account for both the climate impacts of synthetic turf, including the direct and embodied greenhouse emissions from the production of plastic carpeting, and the opportunity costs of reducing open spaces that could otherwise be used for green infrastructure.

The CAP Should Advocate Banning Synthetic Turf

The CAP actions should include specific strategies for (1) retaining natural vegetated surfaces instead of replacing them with synthetic turf and (2) eliminating existing synthetic turf and replacing it with green infrastructure for which benefits are well documented in the Draft CAP (Actions A-6 and A-10).

A conservative estimate, based on a County inventory and more recent County information, suggests that the area of synthetic turf in Montgomery County covers more than 25 fields, exceeds 50 acres and continues to expand.[9] Synthetic turf as a ground cover increases climate risk because it replaces cooling, oxygenating grass with plastic carpeting that is hotter than asphalt and exacerbates the Urban Heat Island (UHI) effect.

Synthetic turf also adds to the enormous amount of impervious surfaces already existing in the County, thereby increasing stormwater runoff that is already overwhelming our stormwater management infrastructure. This infrastructure, which is

Gates Foundation Campus achieved a 97% diversion rate of C&D waste. This webinar provides excellent information on strategies used effectively by other communities and government entities.

[9] Staff Work Group of Montgomery County Public Schools, Montgomery County Department of Parks, Montgomery County Council, Montgomery County Department of Environmental Protection, Montgomery County Department of Health and Human Services, *A Review of Benefits and Issues Associated with Natural Grass and Artificial Turf Rectangular Stadium Fields, Final Report Appendices A through M,* September 15, 2011, Attachment A. https://www.montgomeryschoolsmd.org/uploadedFiles/departments/facilities/construction/studies/Appendices%20A-M.pdf.

not designed to treat chemicals and fine synthetic particulates, also carries infill and degraded carpet materials that contain toxic chemicals to waterways.

Because synthetic turf systems act as solid waste which, when broken down or heated, release pollutants into the air, soil and water, they are essentially another point source of pollution. Plastics in water as well as on land have been shown to release the greenhouse gases methane and ethylene.[10]

Furthermore, any material captured as part of a stormwater Best Management Practices plan as required by the federal Clean Water Act also represents new synthetic waste to be disposed of by the County in a landfill, incurring additional costs to the County.

Any decision to purchase and install synthetic turf is a decision to increase climate change in the County because the manufacture of the material itself emits greenhouse gases. Synthetic turf fields are replaced on average, every 8 years, sending approximately 40,000 pounds of plastic carpeting and 350,000 pounds of rubber, plastic or other granulated material per field to landfills or unregulated, unmonitored dumpsites.

Synthetic turf has an opportunity cost in that it displaces grass and soil, reducing spaces available for green infrastructure in urban areas where it is most needed. Green infrastructure has a cooling effect, reduces runoff by absorbing more rainfall, and sequesters carbon. The County needs more information about the distribution of synthetic turf fields to determine where they may disproportionately impact more vulnerable communities which, because of their urban location already have fewer trees and greater amounts of impervious surfaces than more suburban areas and are more impacted by the UHI and flooding.

Thank you for your consideration of our feedback.

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[10] Sarah-Jane Royer, S. Ferrón, S.T. Wilson,, & D.M. Karl, *Production of Methane and Ethylene from Plastic in the Environment, PLOS ONE*, *13*(8), August 1, 2018. https://doi.org/10.1371/journal.pone.0200574