

## Sustainability Commission Inquiries for AECOM

9.15.22

1. **GHG Base year.** How does AECOM intend to establish a GHG baseline, given that we have both a 2018 inventory and a 2020 inventory? The 2020 conditions reflect an atypical, covid-influenced setting, but they also (presumably) reflect continued growth in the commercial building sector. To what extent will AECOM use a blended approach to give us the most accurate base year conditions?

**AECOM Response:** The MWCOG-prepared 2018 inventory will be used as the base year from which GHG forecasts will be developed; the MWCOG-prepared 2020 inventory will be referenced anecdotally, but plan analysis will not be based on those results. The 2018 inventory will be the starting point for GHG forecasts to avoid forecasting that is artificially low based on the 2020 pandemic inventory results.

2. **Projection for business-as-usual GHG case through 2030 and 2050.** What are AECOM's proposed assumptions on population growth, economic development, comprehensive plan measures, changes to the electric grid due to the VCEA and the Federal IRA, changes to transportation infrastructure, and other key parameters that will have a strong influence on the "business-as-usual" (i.e., without CESMP) GHG case? To what degree does AECOM plan to seek input from the SC and other key stakeholders on the BAU case?

**AECOM Response:** Our original scope includes a light lift effort for GHG forecasting to extrapolate MWCOG's existing GHG forecasts, which currently extend through 2030; we would extrapolate through 2050 to align with the County's GHG target year. We are working with County staff to collect forecasts for households, commercial development square footage, and vehicle miles traveled from the Planning Department, which is consistent with the current comp plan update process; this will allow us to refine the GHG forecast based on locally-specific assumptions. We will extrapolate all other GHG subsectors (i.e., those excluding stationary energy and on-road vehicles) from MWCOG's current forecasting model. We intend to develop BAU forecasts that describe how emissions could grow from 2018 levels if no further action is taken to curtail their growth; GHG reductions associated with electric grid decarbonization, transportation infrastructure, etc. will be modeled at a high-level as part of the CESMP action evaluation process. AECOM will seek input on the GHG forecasting and reduction scenario modeling from the Environmental and Energy Sustainability Office and designated CESMP County Core Team.

3. **Projection for business-as-usual climate resilience case through 2030 and 2050.** Similarly, what are AECOM's proposed assumptions on key parameters that will have a strong influence on the "business-as-usual" (i.e., without CESMP) resilience case? To what degree does AECOM plan to seek input from the SC and other key stakeholders on the BAU case?

**AECOM Response:** AECOM's proposed assumptions are currently being developed and are not fully known at this time. AECOM will seek input on the resiliency modeling from the Environmental and Energy Sustainability Officer and designated CESMP County Core Team.

4. **Modeling the interaction between land use, mobility, and housing.** The TPB's Climate Change Mitigation Study clearly indicates the importance of accurately modeling the interaction between vehicle technology and fuels measures; mode shift and transportation behavior measures; and transportation systems management and operations measures. How will AECOM do this modeling, and how much granularity will there be in their simulation?

**AECOM Response:** Detailed modeling of land use, mobility, and housing interactions is not part of AECOM's current scope; however, high-level GHG reduction estimates from strategies including travel mode shifts (e.g., cars to public transit) and vehicle fuel switching (e.g., gas vehicles to electric vehicles) will be quantified as part of the GHG reduction scenario evaluation process to demonstrate what it will take to achieve the County's GHG targets.

5. **Carbon intensity of electricity in commercial buildings.** One of the key drivers of growth in PWC's emissions is growth in the commercial building electricity use. Much of the growth is attributable to data centers. How will AECOM get the best information available on the carbon intensity of electricity used by data centers, both in the base year and in the BAU case?

**AECOM Response:** AECOM's GHG forecasting and reduction analysis is based on the MWCOG-prepared GHG inventories and the granularity of detail included therein. Typically, it is not possible to collect energy use data for individual buildings or industries during GHG inventory development due to utility company confidentiality rules; therefore, stationary energy data is often represented in aggregate as residential and non-residential total consumption values. An independent analysis on the current and forecast electricity use case of data centers is not currently part of our scope. However, the plan can still include actions designed to address future GHG emissions from these kinds of land uses.

6. **Forest carbon analysis.** MWCOG's inventory (at least through 2018) does not include forest carbon. But given PWC's large proportion of area covered by forest canopy, it's quite possible, even likely, that we have net carbon flux into our forests. This could be a game changer in our current and projected emission targets. How will AECOM accurately estimate forest carbon flux?

**AECOM Response:** Our current scope assumed GHG analysis based on the MWCOG-prepared GHG inventory and forecasts, which currently do not include a forest carbon sector (though they do include several sub-sectors of agricultural land use emissions). If forest carbon analysis for PWC is provided for 2018 and/or future years, we can review the information available to see how it might be incorporated into the plan analysis, but our scope does not include an independent analysis of this topic. However, as with the data centers question, the plan can still include actions aimed at forest management and/or reforestation to provide myriad co-benefits, including carbon sequestration potential; typically, these types of actions are minor contributors to long-term GHG target achievement once all other decarbonization strategies have been maximized.

7. Could AECOM share some fast-track options that the SC should consider.

**AECOM Response:** Below is a list of a few final actions that were found in previous climate action plans AECOM prepared. AECOM will continue through the process described in the proposed technical scope of work for Prince William County to develop a tailored CESMP geared specifically for the County.

- 100% zero-emission vehicle fleet (includes electric, hydrogen, etc.)
- Commercial AND residential clean energy program
- 100% renewable electricity options county-wide (e.g. community choice aggregation district, establish a municipal electric utility)
- Net zero energy new construction (incentivized or mandatory)
- Organic waste collection program (e.g. household/business food scraps and landscape waste to be diverted away from landfills, usually to industrial composting facilities)