

Climate Action Plan

Revised Proposal

Prepared for:
Prince William County, VA

April 15, 2022

Prepared for:

Prince William County, VA

Prepared by:

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April 15, 2022

Giulia Manno
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Prince William County Climate Action Plan – Revised Proposal

Dear Ms. Manno,

We are excited to submit this updated proposal to support Prince William County in its climate action and planning journey. You have committed to some of the most aggressive climate action goals in the country. AECOM will leverage our experience and expertise developing climate action plans for similar municipalities to produce an integrated Climate Action Plan that will serve as the County's roadmap to carbon neutrality and strategic guide to adapting to a changing climate.

Our team brings a breadth and depth of local, national, and international climate action and adaptation planning experience, including:

- Experience developing Climate Action and Adaptation Plans for municipalities just like Prince William County
- Experience Applying Social/Racial Equity Principles to Urban Planning and Climate Action
- Technical experts with experience developing climate adaptation processes and tools

We look forward to the opportunity of working with you and your team to help you achieve your goals. Please don't hesitate to reach out via the contact information below with any questions or to discuss any aspect of this proposal further.

Yours sincerely,

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Introduction

In the fall of 2021, the Prince William Board of County Supervisors (BOCS) endorsed the Metropolitan Washington Council of Governments (MWCOG) goals to reduce greenhouse gas emissions by 50% by 2030, sourcing 100% of Prince William County's electricity from renewable sources by 2035, for Prince William County Government operations to achieve 100% renewable energy by 2030 and carbon neutrality by 2050.

AECOM is excited to support the newly established Office of Sustainability and the Sustainability Commission with the development of a Climate Action Plan to meet these goals.

Proposed Scope of Work

Task 1: Meetings and Project Management

1A. Project Kickoff

Upon Notice to Proceed, AECOM will arrange a kickoff meeting with County climate planning staff to discuss and confirm scope, budget, deliverables, and time frame of the project tasks. The Project Manager (PM), Project Director (PD) and key Subject Matter Experts (SMEs) will participate.

1B. Ongoing Meetings and Reports

AECOM will hold bi-weekly meetings with the County CAP project leadership team to facilitate project goal alignment, stakeholder engagement coordination, and timely data transfers. We will also prepare and submit monthly status reports including a summary of work accomplished during the reporting period; a description of milestones; deliverables, including percent complete; a description of any issues or problems affecting project progress and their proposed resolution; and a schedule of activities planned for the next reporting period. The monthly status report will also summarize meetings held and any decisions made regarding the tasks and action items. If desired, AECOM will prepare weekly email updates to facilitate communication of critical path items during the expedited project timeline.

Assumptions

- Majority of meetings will be virtual

Deliverables

- Monthly project status reports

Task 2: Review Baseline Policy Conditions

2A. Review Existing Climate Planning Efforts

AECOM will work with County staff to identify relevant planning documents, policies, and programs for review that contribute to GHG emissions reductions and/or climate risk reduction. This existing policy analysis will help us to understand what steps the County has already taken and where actions might need additional enhancement or implementation support. We will develop an Excel-based tracking document for County staff to populate with information that is organized topically (e.g., renewable energy, building codes and retrofits, flood mitigation, etc.) and can serve to summarize the County's relevant actions. This resource will be instructive in later phases when we begin to develop draft CAP actions and can support a policy gap analysis to identify where new actions are needed or where existing actions should be enhanced to better align with the County's climate planning goals. The existing actions document is not intended to be an exhaustive list of all County policies and plans, but rather highlight the most important and impactful items that relate to the primary emissions sources and climate hazards.

2B. Identify Data Needs and Gaps

Based on the results of the GHG reduction scenario analysis and vulnerability assessment described in subsequent tasks, we will complete an action gap analysis that builds upon the existing actions template developed in Task 2A. AECOM will incorporate observations of new policy or program opportunities within the existing actions template, which can serve as the starting point for draft action development to be further analyzed in the following tasks. AECOM will review the identified policy gaps with County staff to learn if these potential ideas have previously been discussed within the community, if similar analysis is currently underway, or if any ideas have been flagged as non-starters in the past.

Assumptions

- AECOM will provide an existing actions template to be completed by County staff, including providing relevant PDFs or links for information referenced in the template

Deliverables

- Existing actions template (Excel)
- Existing actions framework with gap analysis observations (Excel)

Task 3: Stakeholder Engagement

3A. Meet with Sustainability Commission

Our team will prepare and deliver presentations to the Sustainability Commission at key points of plan development to share initial analysis results, provide project updates, and seek direction or confirmation on certain approaches to the planning process. AECOM will develop draft technical presentations based on the content of each meeting and review the presentations with the County's core team in advance of the meetings, editing and finalizing the presentations, as needed. Our team will also be available during the meetings to answer the Sustainability Commission's questions about the content in our presentation and the CAP development process in general.

We will discuss with the County's core team its preferences for meeting attendance timing and topics to ensure we are providing adequate technical support during the decision-making process. Based on similar projects, meeting topics could include presenting results from vulnerability assessment; presenting the County's GHG emissions context, forecasts, and reduction scenario options; presenting draft CAP actions under consideration; and presenting the public review draft plan to solicit comments from elected officials.

3B. Meet with Community/Community Organizations

Developing community buy-in for the CAP's goals and actions will be essential for long-term plan implementation success. We propose a series of virtual workshops during plan development to share current information, solicit input on action ideas and evaluation criteria selection, discuss implementation challenges and opportunities, etc. These meetings would be a mix of internal and external stakeholder or focus group meetings and general public workshops.

As part of the project kickoff phase, we will discuss options for how best to utilize AECOM support at five meetings with community organizations and the public. For example, we could facilitate discussions about the same topic in a series of separate meetings with different community organizations, or we could facilitate individual meetings at different stages of plan development to collect input at multiple points of the process. This latter approach could include an introductory general community workshop to discuss project objectives and process and solicit initial thoughts on important action evaluation criteria to consider; followed by three working group meetings to brainstorm draft action development and discuss implementation

challenges and opportunities for the draft actions; and a final community workshop to review results of the action prioritization process (see Task 6).

Our team has recently used the Mural online collaboration platform successfully in several climate action planning projects to facilitate internal and external stakeholder engagement and we propose using it to support this task. Mural functions like a virtual whiteboard where multiple participants can post notes, leave comments, and vote for favorite ideas simultaneously during a facilitated discussion. The workboards can also be visited after the official meeting time if participants want to go back to review others' ideas or leave additional comments. AECOM would design an interactive workspace for each meeting based on the topic(s) to be discussed. We would then review the workspace with County staff and discuss facilitation prompts to keep the conversation flowing and ensure important meeting topics get discussed. AECOM staff would be available to support each meeting, as either breakout group facilitators, notetakers, or both, while the County team will provide additional staff to support the workshops, as needed.

We would then collect discussion notes from each breakout group and extract comments posted to the Mural workspace and develop a meeting summary memo that synthesizes the input into overarching themes, topics for follow-on discussion, and key takeaways to guide future CAP development steps. We are happy to provide a Mural demonstration to help the County determine if this approach would achieve their CAP engagement objectives.

3C. Present Draft CAP in Townhall Meetings

Following development of the public review draft CAP (Task 7), AECOM will support the County in presenting the plan to the public through a series of townhall meetings. We anticipate our support would include development and delivery of a presentation that describes the CAP development process, key takeaways from the vulnerability assessment and GHG emissions analysis, overview of the action evaluation and prioritization process, final set of prioritized CAP actions, and next steps for plan implementation. AECOM team members would attend each townhall meeting to deliver the presentation and answer public questions on the technical analysis and CAP development process.

The AECOM team will work with the County on logistics including locations and times of these meetings to allow reach of the widest and most diverse audience of Prince William County residents as possible. To aid in capturing feedback from residents without the discretionary time or mobility to attend, we will work with the County to consider offering virtual participation and feedback options, such as a simple feedback survey, livestreaming the townhalls via social media, and/or posting recordings online following the meetings.

3D. Develop Press Releases and Supporting Materials

In support of the public review draft CAP release, AECOM will provide a draft press release to be prepared by the County communications team that the County can then post to its website and other digital media platforms and distribute to stakeholder organizations. The press release will explain the objective of the CAP and its primary findings in a simplified way and direct people to where they can review the public review draft plan and how to provide comments. The public review draft CAP will also be accompanied by an infographic sheet and graphically rich PowerPoint presentation to communicate the plan results succinctly and compellingly at a high level. The County can publish these materials on its website.

3E. Support CAP Adoption

Up to two AECOM team members will attend Sustainability Commission meetings and Board of Supervisor hearings in support of CAP adoption. For both groups, we will attend one working session to discuss the Draft CAP and solicit feedback. We will then present the Final CAP to the Sustainability Commission to seek a recommendation for Board of Supervisor approval, and

present to the Board of Supervisors to seek plan adoption. We will develop and deliver a presentation to support the working sessions, along with some discussion prompts to facilitate the conversations. Comments received during the working sessions will be added to the list of community input collected on the Draft CAP, and County staff will direct the AECOM team on which comments should be incorporated into the Final CAP. We will also develop a presentation on the Final CAP that highlights community input received and the corresponding changes made to the Draft CAP.

Assumptions:

- Given remaining uncertainties regarding public gatherings, we assume all stakeholder engagement will be virtual using digital platforms, such as Zoom, Microsoft Teams, and/or Mural
- Up to 3 AECOM team members would attend meetings with the Sustainability Commission (4 total)
- Up to 2 AECOM team members would attend working group meetings (3 total);
- Up to 2 AECOM team members would attend each townhall meeting (3 total) to present the Draft CAP;
- Up to 2 AECOM team members would attend meetings with the Board of Supervisors working sessions and adoption hearings (2 total)
- Meetings are up to 2-hours each for County official meetings, community & community organization meetings, townhall meetings, workgroup sessions, and adoption hearings
- County will determine which community organizations should be invited to meetings, and will be responsible for sending invitations/advertising community & community organization meetings
- County will prepare notes from each meeting and use the public input to develop a consolidated set of comments to guide AECOM in preparing the final CAP document.
- County will distribute press release through its communication network

Deliverables:

- 4 County Official meeting presentations, draft and final (PPT)
- 5 community/community organization meeting summary memos (PDF)
- 1 townhall meeting presentation, draft and final (PPT)
- 1 press release for digital distribution
- Infographic of CAP highlights, draft and final (PDF)
- CAP highlights presentation, draft and final (PPT)
- 1 Sustainability Commission and Board of Supervisors working session presentation, draft and final (PPT)
- 1 Sustainability Commission and Board of Supervisors Final CAP presentation, draft and final (PPT)

Task 4: Analyze Priority Climate Mitigation Actions

4A. Review GHG Emissions Forecasts

AECOM will review the existing 2030 GHG emissions forecasts developed for Prince William County by MWCOG and identify any revisions if necessary. During our work on the Montgomery County CAP, we identified certain growth calculations that were incorrectly applied within some emissions sub-sectors, and we will do a high-level QA/QC for these same issues in the Prince William County forecasts provided. Following that QA/QC process, we will extrapolate the MWCOG 2030 forecasts through 2050 to align with the County's long-term GHG reduction target year. The revised forecasts will be used in the CURB tool for GHG reduction scenario planning (Task 4B).

4B. Analyze Target Achievement Scenarios

To understand the GHG reductions needed to achieve the County's GHG targets, we will use the CURB tool to analyze different packages of GHG strategies. CURB is a climate action

analysis tool jointly developed by AECOM, the World Bank, C40, and the Global Covenant of Mayors, which estimates GHG reduction potential of dozens of strategies in building energy, renewable energy development, transportation, solid waste, and water and wastewater systems. CURB is compatible with the primary areas of the ICLEI U.S. Community Protocol – residential energy, commercial energy, water and wastewater, solid waste, and transportation and mobile sources – the same protocol used to develop Prince William County’s GHG inventory.

In CURB, GHG reductions are quantified at the technology level (e.g., switch from incandescent to LED lighting) as opposed to specific policy ideas (e.g., provide a density bonus to new construction that avoids natural gas equipment/appliances). This analysis will be the foundation to selecting the right CAP actions and implementation goals (e.g., participation rates needed to achieve the emissions reductions).

We will develop a draft list of data inputs needed to support this analysis, such as non-residential building area by type (e.g., office, retail), which County staff will be responsible for collecting. In instances where county-specific data is unavailable, we will use proxy assumptions included within the CURB tool. We will then load the background data, base year GHG inventory, and emissions forecasting assumptions into a version of CURB for use in GHG reduction scenario development.

Prior to GHG scenario modeling, AECOM will meet with County staff to show examples of this analysis and suggest three potential scenarios for review. For example, we could develop one scenario that focuses on transportation and electric vehicle use to achieve the 2030 target, another that focuses on building energy efficiency and renewable energy, and a third that is a mix of the first two. Following this meeting, County staff will confirm the three scenario types to be developed.

AECOM will develop the three scenarios to show what technological transformations will be required to achieve the 2030 target. This collection of strategies and its underlying implementation rates might be different than what is politically/publicly feasible. The purpose of this analysis is to show different options for how the County could achieve its established 2030 target. This analysis will produce the graphic wedge charts that show reductions by sector and can be used to illustrate this concept to County staff, decision-makers, and/or stakeholders during CAP development.

AECOM will facilitate a meeting with the County team to review the scenario analysis results and discuss selecting the preferred scenario for further revision. County staff will provide comments that either select a preferred scenario from the three initial options or direct changes for AECOM to develop the final GHG reduction scenario to be described in the CAP. The focus of scenario development will be on the 2030 target year. Once the final GHG reduction scenario and its supporting actions (see Task 4C) have been developed, AECOM will develop two 2050 GHG reduction scenarios. In one scenario, the final set of CAP actions will be used, assuming their implementation continues unchanged from 2030 through 2050. In the second scenario, the final set of actions will be modified to show the increased GHG reduction potential that could occur if previously voluntary/incentive-based actions become mandatory in 2030 and continue implementation through 2050. The likely result is that both scenarios will show remaining emissions in 2050, which AECOM will characterize at a high-level by describing the source of remaining emissions (e.g., off-road vehicles/equipment) and providing bullet-level ideas for new action the County might want to consider in future CAP updates to address those remaining emissions.

4C. Define Potential Mitigation Actions

Once the final 2030 GHG scenario from CURB has been selected, we will define an initial list of mitigation actions that, when implemented, will support the selected 2030 target achievement scenario. As part of this process, we will need to define the implementation assumptions for each CAP action to show how they can support the GHG reductions needed as estimated in CURB. This process will help identify what specific actions can be implemented to contribute to the 2030 GHG reductions outlined in CURB.

Since GHG reductions will be calculated in CURB at the technology level, we will also provide high-level estimates for the reductions that each individual action might contribute, which will be based on the CURB analysis results. We will develop an Excel table that connects the CURB strategies to the relevant draft CAP actions, lists action implementation assumptions, and estimates the percent contribution of GHG reductions for each action. This is an imprecise science, and we will review our assumptions with the County team to confirm or make revisions.

For example, the CURB analysis may show reductions for 100,000 MT CO₂e from switching gasoline passenger vehicles to electric vehicles. A potentially relevant CAP action might be to require EV charging infrastructure in new construction, and we might estimate that this action is responsible for 10% of the related CURB GHG reductions; other actions would be responsible for additional shares of GHG reductions, such as variable utility rates for EV charging, financial incentives for EV purchases, etc. There is very little data or research available to support precise allocations of GHG reductions to specific actions, so the estimates developed will be based on professional judgment and project team agreement following a review of the estimates. AECOM will facilitate a meeting with County staff to review this initial mitigation action table and the corresponding GHG reduction allocations. We will make one set of revisions based on consolidated County comments to produce the draft mitigation action list for further impact analysis and prioritization in Task 6.

We understand the County has also set GHG reduction objectives related to municipal operations and would like to incorporate those within the CAP. We propose that each GHG inventory sector include at least one 'lead by example' action that would help to decarbonize County operations. For example, this can include an action to generate or procure 100% zero carbon electricity by some future date or develop a fleet decarbonization strategy to convert County vehicles. The MWCOG GHG inventory does not include County operations-specific emissions or activity data, so AECOM will develop a brief data request file for information that will allow us to estimate GHG reductions from these 'lead by example' actions. These actions will be integrated throughout the CAP.

Assumptions:

- AECOM will use linear interpolation of the MWCOG 2030 emissions forecasts to develop the 2050 forecasts
- CAP will evaluate 2030 and 2050 GHG target years, consistent with MWCOG's established targets; greater emphasis will be placed on defining actions that can achieve the 2030 target, while a high-level outline for target achievement will be provided for the long-term 2050 target year
- AECOM will use CURB tool to outline high-level target achievement scenarios; up to 3 2030 target scenarios will be modeled for initial review with County staff; 1 final revised 2030 scenario will be developed following County staff input; following the final action selection process, AECOM will develop 2 2050 target scenarios for illustrative purposes to show (1) the impact of continued implementation with no change to the final action list and (2) the potential impact from changing some actions to a mandatory implementation approach

- County will provide data inputs requested or authorize AECOM to use proxy information/assumptions included within the CURB tool
- County operation actions will be distributed through the CAP within their corresponding GHG inventory sectors (e.g., building energy, transportation)
- One meeting to review and finalize the participation / implementation assumptions for the actions
- AECOM will define 25-40 draft mitigation actions for impact evaluation and prioritization
- County and AECOM will select 12-15 mitigation actions through prioritization process for further development in the CAP

Deliverables:

- Revised GHG emissions forecast Excel file
- Data collection sheet for information to support CURB analysis
- Data collection sheet for information to support GHG reduction quantification of County operation actions
- Meeting with County staff to select three 2030 GHG scenarios for analysis, including final PowerPoint
- Meeting with County staff to review 2030 GHG scenario results and select preferred option or identify revisions to one scenario, including final PowerPoint
- Two versions of CURB used to analyze final GHG scenarios (1 CURB version for each 2040 scenario; the final 2030 scenario will be reflected in both files)
- Initial draft list of mitigation actions
- Revised draft list of mitigation actions
- Table that links CURB GHG strategies to draft CAP actions with estimates for contribution to GHG reduction per action, one draft and one final

Task 5: Develop Climate Vulnerability Assessment for Prince William County

5A. Utilize Down-Scaled Climate Modeling to Identify Potential Impacts of a Changing Climate on the County

A clear understanding and incorporation of local climate conditions and scientific climate projections is fundamental to the success of the CAP. The scientific community's climate data products help planners at a variety of spatial scales – local, regional, national, continental, and global – but are often too complex and costly for high-level planning. As a solution, AECOM developed the Forecasting Local Extremes (FLEx) tool to efficiently condense complicated global climate models into a few key statistics to guide local climate projection analysis. Combined with the expertise of AECOM planners and engineers, FLEx has proven to be a cost-effective yet powerful means of facilitating comprehensive local and regional climate planning initiatives, and has been applied to city/county-wide analyses such as the City of Berkeley's Future Flood Study (as part of the Rockefeller Foundation 100 Resilient Cities Initiative), regional studies such as the San Antonio River Authority Future Precipitation Study (Figure 1), and at a federal level as part of a Federal Emergency Management Agency (FEMA) future conditions pilot study of the Anacostia Watershed in the Washington, DC area.

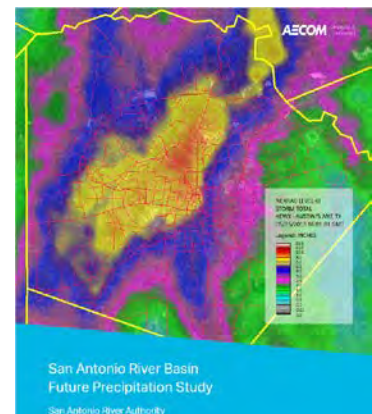


Figure 1. AECOM-developed FLEx Tool quickly and cost-effectively condenses global climate data into down-scaled

The FLEx tool is very versatile and can be customized for use with different data sources, statistics, climate variables, and time horizons to best suit a community's short- and long-term planning needs. It was engineered to handle large amounts of data quickly and efficiently, which saves communities time and money better spent on building adaptation strategies and

implementing solutions. FLEx provides measures of the spread between different model projections to help comprehensive planning initiatives document and acknowledge uncertainty, and the tool can also be applied to different greenhouse gas scenarios to provide a range of outputs from “best case” to “worst case” future conditions. FLEx uses freely available global circulation model (GCM) output that has been “down-scaled” by researchers to achieve higher spatial resolutions. AECOM designed the tool’s outputs with mapping in mind, such that key results can be easily displayed using standard mapping applications like ArcGIS or QGIS. AECOM will apply the FLEx tool to provide an assessment of Prince William County’s changing climate conditions include (1) precipitation changes, (2) extreme temperature changes, and (3) drought potential. The output data will be incorporated into GIS for use in the Task 5B vulnerability assessment. Climate predictions are not available for changes to wind patterns resulting in increased or decreased frequency of tornados, derechos, or other high winds, so this hazard will not be analyzed using the FLEx tool.

5B. Develop A Vulnerability Assessment for the County

AECOM’s climate engineers, planners, scientists, and economists have worked collaboratively on vulnerability assessments for a range of locations and clients, from small communities such as Somerset County, Maryland to government agencies with multiple sites such as the Department of Veteran’s Affairs Medical Facilities. AECOM will assess Prince William County’s climate vulnerability using our four-part methodology to assess exposure to natural hazards, sensitivity to impact of people and critical infrastructure given hazard exposure and estimating adaptive capacity of people and the built environment in light of exposure and sensitivity to climate change.

1. Asset Definition

A key first step in the vulnerability assessment process is to define the asset categories that will be included. AECOM will work closely with Prince William County to define the asset categories and specific data sources (such as the Prince William County GIS Data Portal) to obtain GIS locations of the assets.

2. Exposure

AECOM will use the geospatial data developed in Task 5A as the basis for analyzing Prince William County’s exposure to severe natural hazards, including extreme temperatures, precipitation changes, and drought. Our team will also review additional natural hazard datasets such as United States Geological Survey (USGS) earthquake data and tornado frequency, although future conditions predictions will not be available for all datasets. The team will import all data into GIS for mapping and visualization with asset datasets.

3. Sensitivity

To assess infrastructure sensitivity (e.g., sensitivity to flooding impact of house built at-grade in floodplain versus elevated house), AECOM will work with Prince William County to determine sensitivity ratings for various categories of assets. In addition to infrastructure-type assets, AECOM will assess the sensitivity of vulnerable populations (e.g., sensitivity to extreme heat of populations that have asthma or of people who do not have an airconditioned living space). AECOM will use the Center for Disease Control’s Social Vulnerability Index (SVI), which synthesizes four main domains: socioeconomic status, household composition and disability, minority status and language, and housing and transportation into a census tract level analysis. The data will be used to determine which areas in Prince William County may be more sensitive to climate change impacts.

4. Adaptive Capacity

In this step, AECOM will evaluate the ability for people and the built environment to make changes. This step will be informed by the Climate Adaptation Workgroup’s adaptation

recommendations and results, and will help assess which assets (i.e., people and places) may have a harder time adjusting to the changing climate.

AECOM will incorporate the data from the previous steps into GIS and use it to determine the vulnerability of people and infrastructure throughout Prince William County. AECOM will then use the results to create a vulnerability index to help better understand the County's resiliency to climate change and natural hazards. The identification of vulnerable assets will inform further analysis of the priority adaptation actions.

5C. Define Potential Adaptation Actions

Based on the results of the vulnerability assessment (Task 5B) and the existing policy gap analysis (Task 2B), AECOM will develop a list of 25-40 adaptation actions that address the County's climate risks. We will review the initial list with County staff and provide a revised draft list based on a consolidated set of County comments. The revised draft list of adaptation actions will then be evaluated for action impact and feasibility through the action prioritization process described in Task 6.

Assumptions:

- AECOM and County staff will meet to define assets to be evaluated prior to starting vulnerability assessment
- All asset data will be provided by Prince William County in a GIS-based format; AECOM staff can help to digitize non-GIS based data following a scope and budget amendment
- AECOM will define 25-40 draft adaptation actions for impact evaluation and prioritization
- County and AECOM will select 12-15 adaptation actions through prioritization process for further development in the CAP

Deliverables:

- Vulnerability assessment report, draft and final
- Initial draft list of adaptation actions
- Revised draft list of adaptation actions
-

Task 6: Analyze Action Impacts and Prioritize Actions

6A. Evaluation Criteria Selection

Once the draft list of CAP actions has been defined, we will facilitate an action prioritization process to help the County understand action co-benefits, feasibility, and priorities for early action. We will evaluate action co-benefits and feasibility using the Action Prioritization and Selection (ASAP) tool that AECOM developed for C40 Cities (available free for public use [here](#)). This analysis can provide a more holistic understanding of each potential action's value to the community and support implementation prioritization efforts, understanding that the County will have limited financial and staff resources to implement the CAP making a phased approach a likelier option.

The primary purpose of the CAP is to reduce the community's GHG emissions and climate risks. Therefore, we would consider actions' GHG and risk reduction potential and primary benefits that are considered independent of other evaluation criteria. Other evaluation criteria can be organized into the categories of co-benefits and feasibility (which is the structure used in the ASAP tool). Among these other categories, we recommend that the County select a maximum of 8 evaluation criteria, which should be broadly applicable across various action types (i.e., not limited to only one action type, like transportation actions). We will provide a draft list of evaluation criteria for County review.

The evaluation criteria selection process can also be designed in a way to identify community priorities that can then inform criteria weighting (e.g., air quality is more important to the community than water conservation, and therefore should be weighted more highly during action evaluation). We will facilitate a meeting with the County team to select the final set of evaluation criteria and discuss which (if any) should be weighted.

We recognize the importance of reflecting social equity outcomes in action design and assessment so the CAP can achieve positive, widespread impact. In the context of climate change and resiliency planning, equity can be understood as the fair, equal and just distribution of and access to services, infrastructure, information, and technology. However, certain vulnerable groups experience barriers to access or benefit from mitigation actions, due to inherent social, health, economic and/or political disparities. It is therefore essential that inclusion and social equity are factored into the action prioritization and implementation process, as climate change issues disproportionately impact the health, settlement, and livelihoods of vulnerable groups. Based on the results of the action evaluation process, we propose that any actions receiving a negative social equity rating would be paired with equity-enhancing measures in the CAP action write ups to define what mitigating action the County will take to mitigate negative equity outcomes.

6B. Qualitative Action Rating

Once the evaluation criteria have been selected, we will facilitate an action evaluation process. This can happen through a series of working group meetings with a mix of internal County staff and external stakeholders. Prior to evaluating the actions, we will have a meeting with the County team to discuss how to consistently apply criteria ratings. We will walk through example action ratings to identify the likely areas for rating interpretation differences and establish a framework for consistent evaluation. For example, the ASAP tool evaluates action co-benefits on a qualitative scale that includes Very Significant and Significant as rating options. Through this meeting, we will develop simple rules that allow all action evaluators to consistently choose when an action has a Very Significant versus Significant benefit.

Following evaluation of all actions, AECOM will consolidate results into the action prioritization tool to populate the results graphics that inform the last step in the prioritization process. This task is considered to be more participatory, with different County departments or other stakeholder groups included. AECOM assumes up to 3 working group meetings under this task. For example, a working group on transit and active mobility might evaluate only the subset of draft actions related to their topic area rather than all draft actions. This approach helps to leverage expert input in a qualitative evaluation process but does require additional resources and time to facilitate.

6C. Final Action Prioritization

The previous steps provide a qualitative evaluation of potential actions, which can be presented as numeric scores within the evaluation categories (e.g., primary benefits, co-benefits, feasibility). The action prioritization step involves interpreting those evaluation scores to select the plan's priority actions, which can have a range of score results, including those with:

- high benefit and high feasibility scores,
- high benefits but low feasibility scores,
- low benefits but high feasibility scores, and
- low benefits and low feasibility scores.

When plotted on matrices within the ASAP tool, these results can help to think about one consideration for prioritization. We can also consider how the highest scoring actions align with the County's emissions sources and climate hazards to ensure that actions are prioritized to produce the desired GHG and risk reductions. We can also consider the actions' specific co-benefits and prioritize based on those with high scores in areas that are most important to the community and the County. We will facilitate a meeting with County staff to review the action analysis results in ASAP and define how the draft actions should be prioritized within the CAP into high, medium, and low priorities.

Assumptions:

- No more than 75 actions will be evaluated (including a mix of mitigation and adaptation actions), and we will use the ASAP tool
- Up to 8 evaluation criteria will be selected with a mix of co-benefits and feasibility criteria
- Up to 3 working group meetings to execute the action evaluation process
- Prioritization result will be ranked into high-, medium-, and low-priority actions, with approximately 25 actions in each category, through discussion with County staff; high-priority actions will be described further in the CAP and implementation roadmap, while medium- and low-priority actions will simply be listed in the plan as additional ideas for future consideration

Deliverables:

- Draft list of evaluation criteria
- 1 meeting to select final evaluation criteria and weights (if weighting is desired)
- 1 meeting to establish evaluation rating rules/framework
- Up to 4 meetings to co-evaluate actions with County staff
- 1 meeting to review action evaluation results and prioritize actions for the CAP
- Final ASAP tool for County records

Task 7: Deliver a Climate Action Plan (CAP)

7A. Prepare a Draft CAP

AECOM will prepare a Draft CAP for County staff and stakeholder review. The document will be easily navigable, with automatic links in the PDF version between the table of contents and different sections, and will make use of infographics, typography, and photographs for clarity. The language will include a level of detail that can be understood by the general public, while still retaining its utility as a planning tool by County staff. Where appropriate, technical details will be included in an appendix or appendices.

AECOM will develop a draft annotated plan outline for County review, which could include the following chapter content: climate planning principles and background context, Prince William County climate conditions and GHG emissions context, climate actions, what can I do?, and looking forward/next steps. Within the climate actions chapter, we propose that actions are presented through approximately one-page write ups, which identify the relevant primary benefits (e.g., GHG reductions or risk reduction), co-benefit results from the action evaluation process, the County's authority to implement, current development stage (e.g., in progress, planned), lead department for implementation, and primary partners outside of County departments, if applicable. We will finalize the draft plan outline based on one set of County comments that is informed by Task 3 Stakeholder Engagement.

Following completion of the preceding tasks, we will prepare a draft CAP for internal County review. We will meet with County staff to discuss their comments for draft revisions and incorporate one consolidated set of comments into a public review draft CAP that can be posted online for community input.

During plan development, our graphics team will provide example graphic layouts of different chapter sections for County review and input. We propose that the full public review draft CAP be provided in a simple Word format converted into a PDF, and that the final CAP would be developed in a graphically designed document. AECOM has ADA-compliant certified staff members who can help develop the Draft CAP for broader accessibility, as requested.

7B. Prepare an Implementation Roadmap

Using the set of high priority actions defined in Task 6, AECOM will prepare an implementation roadmap that can guide County staff in the implementation process. For each prioritized action, the roadmap will identify the County department to lead implementation, major milestones, initial

funding needed to kickstart implementation, and high-level performance indicators. AECOM will facilitate a short series of virtual workshops with County department staff to collect input on what it will take to achieve each action. The workshops will be organized into the various lead departments and will discuss the CAP actions assigned to each group. Following the workshops, AECOM will develop a draft implementation roadmap for County review. We will incorporate one consolidated set of comments into the final implementation roadmap, which can be included as a CAP chapter, an appendix, or a companion document, based on the County's direction.

During development of the implementation roadmap, AECOM will make recommendations on action performance indicators – both output and outcome based – that the County could consider tracking to understand progress toward GHG reduction and how effective the adaptation portion of the plan is proving to reduce vulnerability. For mitigation, indicators could include increase in miles of improved bicycle infrastructure (output) and increase in bicycle mode share (outcome). For adaptation, indicators could include number of green infrastructure measures installed (output), and reduction in instances of urban flooding (outcome); or increase in number of cooling centers available (output), and reduction in number of elderly citizens submitted to hospital with heat-related illnesses (outcome). This will allow the County to course-correct over time as the climate, economy, and demographics of Prince William County change. Each quantitative metric selected should be feasible for the County to track, measure, or estimate.

7C. Complete and Deliver the Final CAP

As stated in Task 3D, AECOM will develop a press release announcing the public review draft CAP and how stakeholders can review and comment on the plan. County staff will collect and consolidate all comments submitted and identify a sub-set of those comments that require further discussion with AECOM. We will review the comments requiring our assistance in advance and have a working meeting with the County team to discuss possible solutions that can be integrated into the final CAP or help to develop brief comment responses for those items where County staff believe follow-up will be necessary.

Following this meeting, AECOM will update and finalize the CAP. We will provide a track changes and clean version of the revised public review draft for County review and approval prior to moving the plan content into the graphic layout. We will provide a final CAP PDF for the County to publish online, along with the native design files for future updates by County staff.

Assumptions:

- CAP document will be up to 75 pages in length;
- County team will provide high-quality images for graphic layout of Final CAP
- County will prepare a consolidated list of revisions requested between the draft and final CAP
- CAP will reference the County operational GHG reduction objectives and will incorporate municipal operation actions within relevant action sections;
- CAP will not include a separate municipal operations GHG inventory, forecasts, or target achievement discussion
- We have assumed up to 75 hours for design of graphic layout template and formatting Final CAP
- Additional iterations of graphic revisions can be provided on a time-and-materials basis, as needed
- Up to 4 meetings to discuss action implementation
- Approximately 25 actions will be described within the implementation roadmap
- County staff will provide initial implementation cost estimates based on feedback collected from departmental meetings regarding what it will take to kickstart each action.

AECOM's economics team could support or develop these estimates following a scope and budget amendment

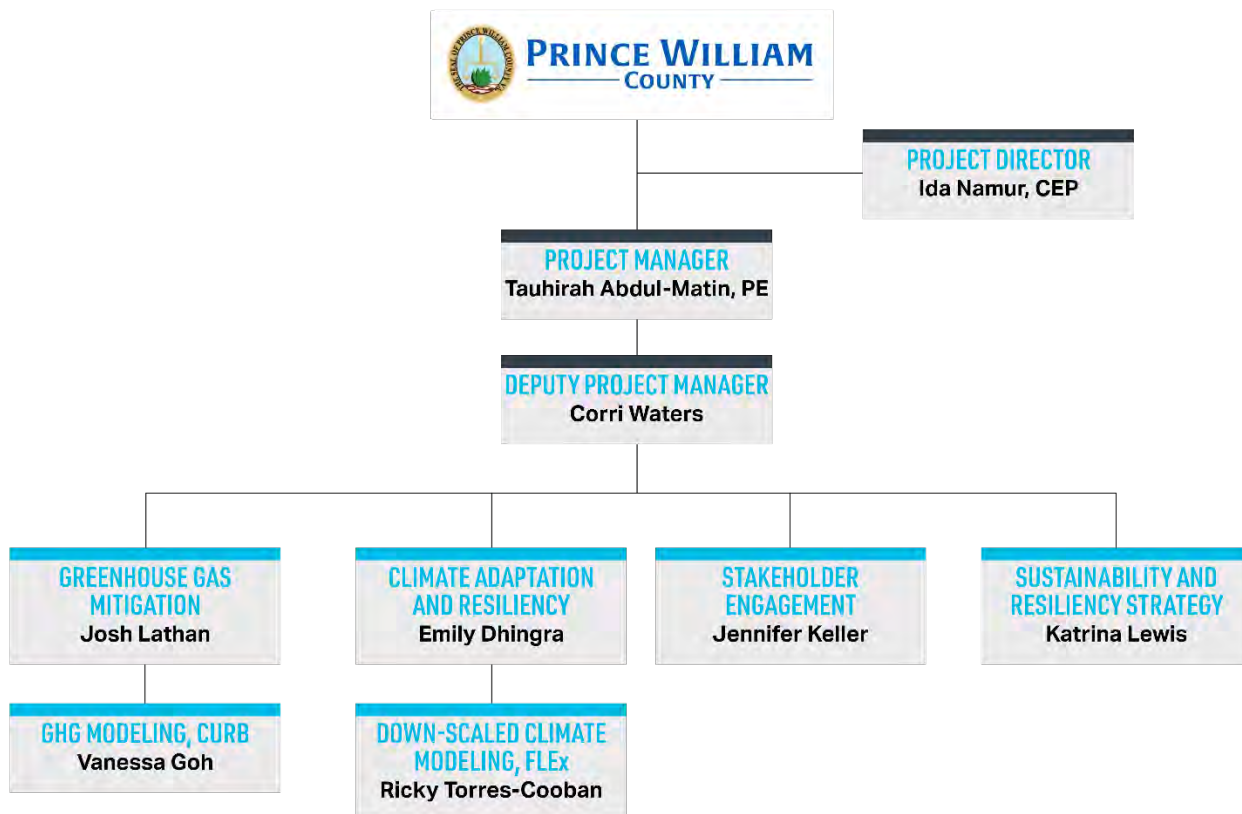
- Public review draft CAP will not be provided in graphic layout

Deliverables:

- Annotated CAP outline, draft and final
- Internal draft CAP and Public Review Draft CAP (simple Word/PDF)
- Final CAP (in graphic layout, PDF)
- Implementation roadmap, draft and final

Project Team

AECOM brings experience and a comprehensive understanding of the goals and objectives of this project. Tauhirah Abdul-Matin will serve as the project manager and will be responsible for the day-to-day project activities. She will lead the team, allocate adequate resources, and monitor the project budget, schedule, and work scope on an ongoing basis. The proposed organization chart is included in the figure below.



Proposed Schedule

The proposed schedule below will be reviewed during the kickoff meeting to ensure alignment with the County team:

		2022					2023						
		May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Task 1	Project Management												
Task 2	Review Baseline Policy Conditions												
Task 3	Stakeholder Engagement												
	County Officials												
	Community/Community Organizations												
	Draft Plan Townhalls												
	Sustainability Commission / BOS Working Sessions												
	Sustainability Commission / BOS Adoption Hearings												
Task 4	Analyze Priority Climate Mitigation Actions												
Task 5	Develop Climate Vulnerability Assessment for Prince William County												
Task 6	Analyze Action Impacts and Prioritize Actions												
Task 7	Develop Climate Action Plan (Estimate)												

Budget and Billing

AECOM proposes to complete the proposed scope of work on a lump sum basis not to exceed \$449,000. We will submit invoices on a percent complete basis, in alignment with the proposed tasks below:

Task	
Task 1	Meetings and Project Management
Task 2	Review Baseline Policy Conditions
Task 3	Stakeholder Engagement
Task 4	Analyze Priority Climate Mitigation Actions
Task 5	Develop Climate Vulnerability Assessment for Prince William County
Task 6	Analyze Action Impacts and Prioritize Actions
Task 7	Develop Climate Action Plan (CAP)

Terms and Conditions

AECOM will complete the proposed scope of work in accordance with the Planning Services Contract Number 5044426 between Prince William County and AECOM Technical Services, Inc. as amended on April 12, 2021. Any additional requested services outside of the scope of work presented herein will be subject to a change order in accordance with the existing Planning Services Contract.

AECOM
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