

# Appendix F Implementation Plan

## E.1: Acquire Clean Electricity Sources for the County

<b>Action Title</b>	E.1: Acquire Clean Electricity Sources for the County
<b>Action Description</b>	Form an opt-out municipal aggregation program to acquire 100% clean electricity for a portion of the community. A municipal aggregation program, also known as community choice aggregation (CCA), allows a municipality to negotiate for 100% clean or renewable electricity for all the electricity customers within their jurisdiction. Through a CCA, a municipality can purchase and manage their community's electric power supply from a preferred mix of energy sources while the utility continues to provide distribution, billing services, and outage management. In PWC, a CCA could only be formed with Dominion customers (NOVEC cannot participate in a CCA). If PWC develops an opt-out program, Dominion customers would automatically be enrolled in 100% clean electricity but can opt-out to revert to their traditional service and electricity energy source mix.
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Source 100% of PWC's county-wide electricity from renewable sources by 2035</li> <li>• Achieve 100% renewable electricity in PWC Government operations by 2030</li> <li>• Achieve 100% carbon neutrality in PWC Government operations by 2050</li> </ul>
<b>Climate Action Topic</b>	Electricity
<b>GHG Reduction Potential</b>	Very High
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Office of Sustainability</li> </ul>
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Facilities and Fleet Management</li> <li>• Finance</li> <li>• Management and Budget</li> <li>• Economic Development</li> </ul>
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Release request for information (RFI) which will include: <ul style="list-style-type: none"> <li>○ Study on electric grid capacity/feasibility to provide 100% clean electricity for the entire community</li> <li>○ Study on potential conflicts or complications of forming a CCA with Dominion but not NOVEC (note: NOVEC cannot partake in a CCA)</li> </ul> </li> <li>• Develop a CCA feasibility study</li> <li>• Release a request for proposals (RFP)</li> <li>• Hire an expert on CCA to manage contract under Office of Sustainability</li> <li>• Assess conflicts with County government electricity purchasing contracts</li> </ul>
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: \$4M-\$5M</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring new <b>staff</b> member: \$200k</li> <li>○ Developing feasibility study: \$1M</li> </ul> </li> <li>• Other Cost Considerations: <ul style="list-style-type: none"> <li>○ Start-up costs (\$3.7M – referenced from Loudoun County feasibility study)</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ New staff salaries</li> <li>○ Changes in County government electricity costs (could increase or decrease electricity costs)</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % participation rate in program</li> <li>• % clean or renewable kWh provided to community</li> <li>• Cost of electricity (\$/kWh)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• CCA electricity emissions factor</li> <li>• Community-wide electricity emissions</li> </ul>

## E.2: Promote Renewable Energy Incentive Programs and Develop Additional Solar Incentives

<b>Action Title</b>	E.2: Promote Renewable Energy Incentive Programs and Develop Additional Solar Incentives
<b>Action Description</b>	Provide outreach and education on programs and incentives for residents and businesses to install renewable energy systems, such as solar tax credits, community solar programs, net metering, the multifamily shared solar program, solar renewable energy certificates and Solarize NOVA. Develop additional local renewable energy incentives, such as streamlined solar permitting, in partnership with stakeholders such as the Residential Solar Task Force and local utilities. This would include providing a centralized tool for residents and businesses to reference relevant federal, state, County, and utility incentives and programs.
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Source 100% of PWC’s county-wide electricity from renewable sources by 2035</li> </ul>
<b>Climate Action Topic</b>	Electricity
<b>GHG Reduction Potential</b>	Medium
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Development Services - Building Development Division</li> <li>• Development Services - Land Development Division</li> <li>• Real Estate Assessments</li> <li>• Office of Sustainability</li> </ul>
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Economic Development</li> <li>• Residential Solar Task Force</li> <li>• NOVEC and Dominion</li> </ul>
<b>Implementation Steps</b>	<p><b>Promote Existing Incentives:</b></p> <ul style="list-style-type: none"> <li>• Develop a centralized webpage or tool on County website for residents and businesses to reference relevant federal, state, County, and utility incentives and programs (PACE, tax credits, multifamily shared solar program, net metering, community solar, solar renewable energy certificates (SRECs), Solarize NOVA))</li> <li>• Integrate Development Services’ residential solar local incentives webpage information into tool and ensure tool is periodically updated</li> <li>• Coordinate webpage or tool development with Action B.4: “Promote Energy Efficiency and Electrification Incentives”</li> <li>• Work with Solarize NOVA to promote their services (a community-based outreach initiative sponsored by the Northern Virginia Regional Commission (NVRC) that facilitates the deployment of solar energy to homes and businesses in Northern Virginia, through bulk purchasing and free solar site assessments)</li> <li>• Provide education/outreach to commercial business networks and include incentive information in County presentations to new businesses or businesses considering locating to PWC</li> </ul> <p><b>Develop Additional Incentives:</b></p> <ul style="list-style-type: none"> <li>• Work with Residential Solar Task Force to develop new solar incentives</li> <li>• Engage with SolSmart Virginia to help make commercial solar permitting faster, easier, and more affordable for businesses</li> </ul>

	<ul style="list-style-type: none"> <li>• Engage the development community to understand new areas of opportunity in the Zoning code</li> <li>• Reduce property taxes as incentive to install solar</li> <li>• Evaluate mechanisms to reduce or exempt taxes on solar panels</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$10M-100M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Developing new incentives</li> </ul> </li> <li>• Ongoing Cost Consideration: <ul style="list-style-type: none"> <li>○ Developing new incentives</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• Number of County solar installation permits with system size (kW) information</li> <li>• Number of ground-mounted versus roof solar systems</li> <li>• Track number of participants throughout county using Solarize NOVA data</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Residential grid electricity use</li> <li>• Residential building emissions</li> <li>• Commercial grid electricity use</li> <li>• Commercial building emissions</li> </ul>

### E.3: Incentivize Renewable Energy Use in Energy-Intensive Commercial Buildings

<b>Action Title</b>	E.3: Incentivize Renewable Energy Use in Energy-Intensive Commercial Buildings
<b>Action Description</b>	Incentivize the use of renewable energy in energy-intensive commercial buildings through a voluntary reporting program, real estate tax reductions, expedited permitting, height bonuses, or a reduction in proffers. As commercial building electricity use is forecast to generate roughly 28% of county-wide emissions by 2030, incentivizing emissions reductions in this sector is crucial towards meeting the 2030 GHG reduction target.
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Source 100% of PWC’s county-wide electricity from renewable sources by 2035</li> </ul>
<b>Climate Action Topic</b>	Electricity
<b>GHG Reduction Potential</b>	High
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Development Services</li> <li>• Planning Office</li> <li>• Economic Development</li> </ul>
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Businesses and Data Centers</li> </ul>
<b>Implementation Steps</b>	<p><b>Reporting and Transparency</b></p> <ul style="list-style-type: none"> <li>• Collaborate with data center companies/developers to discuss the following: <ul style="list-style-type: none"> <li>○ How local government can help data centers reduce emissions, transition to clean energy sources, and reduce energy use</li> <li>○ Request disclosure of clean energy generation/purchasing, emissions and offset information, and progress towards any clean energy or emissions goals <ul style="list-style-type: none"> <li>▪ NOTE: Data centers are under NDAs and cannot be required to disclose energy use or equipment information</li> </ul> </li> </ul> </li> <li>• Develop a voluntary reporting program to communicate data center clean energy development/usage and emissions reduction progress to the public while emphasizing the amount of new clean energy sources added to grid</li> </ul> <p><b>Other Incentives</b></p> <ul style="list-style-type: none"> <li>• Determine the qualifications for buildings to apply to renewable energy incentive program (e.g., incentive only applies to commercial buildings with a minimum energy use intensity, building must procure a minimum % of renewable energy to attain incentive, etc.)</li> <li>• Review the legality of offering incentives to specific commercial building types and excluding other types</li> <li>• Evaluate the current number and projected new development of the qualified buildings in the county</li> <li>• Develop County goals on the percent of qualified developments that will use the incentive</li> <li>• Use County goals to determine the incentive type/amount and number of new staff needed to implement incentives</li> </ul>

	<ul style="list-style-type: none"> <li>• Evaluate the feasibility and effectiveness of different incentives for renewable energy use for commercial developments, such as: <ul style="list-style-type: none"> <li>○ Height bonuses where permissible and with proper study on potential community impacts such as viewsheds or noise <ul style="list-style-type: none"> <li>▪ If a height bonus is granted, require a minimum distance from residential communities</li> <li>▪ Consider offering a height bonus if the developer proffers renewable electricity</li> </ul> </li> <li>○ Streamlined/expedited permitting <ul style="list-style-type: none"> <li>▪ Office of Sustainability could provide funding to Building Services to expand permitting team, or new funding could be allocated to Building Services team through increased permit fees elsewhere</li> <li>▪ NOTE: Data centers are already granted expedited plan reviews/inspections by County as they are targeted industry/priority development</li> </ul> </li> <li>○ Reduction on businesses taxes (e.g., real estate, BTP, BPOL taxes) to increase on-site renewable energy <ul style="list-style-type: none"> <li>▪ NOTE: Financial incentives might be ineffective at influencing data centers</li> </ul> </li> <li>○ Reduction in proffers if a development was to proffer to a percent of renewable electricity use</li> </ul> </li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$1M-\$10M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests <ul style="list-style-type: none"> <li>○ No additional first year costs (internal staff time)</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Costs dependent on incentive pursued and if new staff are needed</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % of data centers disclosing energy or emissions information</li> <li>• % of qualified developments using incentive (either square footage or # of developments)</li> <li>• kWh of renewable energy purchased due to incentive</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Commercial energy use</li> <li>• Commercial emissions</li> </ul>

#### E.4: Promote Existing Green Power Products

<b>Action Title</b>	E.4: Promote Existing Green Power Products	
<b>Action Description</b>	Promote purchasing utility green power options within the community. Green power products allow customers to purchase renewable or clean electricity on a month-to-month basis through an added fee on their utility bill. Both Dominion and NOVEC offer 100% renewable electricity options.	
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions County-wide to 50% below baseline 2005 levels by 2030</li> <li>• Source 100% of County-wide electricity from renewable sources by 2035</li> <li>• Achieve 100% renewable electricity in County Government operations by 2030</li> <li>• Achieve 100% carbon neutrality in County Government operations by 2050</li> </ul>	
<b>Climate Action Topic</b>	Electricity	
<b>GHG Reduction Potential</b>	High	
<b>Lead Department</b>	Office of Sustainability	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Communications</li> <li>• Public Works</li> <li>• Dominion and NOVEC</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Hire a new communications staff member through Office of Sustainability</li> <li>• Evaluate cost of purchasing green power from Dominion and NOVEC (both offer 100% renewable options) compared to regular utility costs</li> <li>• Work with Dominion and NOVEC to develop education and outreach program to promote green power product purchasing</li> <li>• Work with Dominion and NOVEC to understand their capacity to provide 100% renewable electricity to PWC customers</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: ~\$1M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring staff member: \$200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ New staff salary: \$200k/year</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• Customer participation rate</li> <li>• # or % of kWh from renewable or clean electricity sources for participating customers</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Emissions avoided through green power purchasing</li> </ul>

## E.5: Install Solar on County Government Facilities

<b>Action Title</b>	E.5: Install Solar on County Government Facilities	
<b>Action Description</b>	Develop solar projects on County government facilities through direct ownership or third-party ownership models such as Power Purchase Agreements (PPAs).	
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Source 100% of PWC’s county-wide electricity from renewable sources by 2035</li> <li>• Achieve 100% renewable electricity in PWC Government operations by 2030</li> <li>• Achieve 100% carbon neutrality in PWC Government operations by 2050</li> </ul>	
<b>Climate Action Topic</b>	Electricity	
<b>GHG Reduction Potential</b>	Low	
<b>Lead Department</b>	Fleets and Facilities Management	
<b>Supporting Departments/Partners</b>	Departments with facilities not managed by Facilities and Fleet: <ul style="list-style-type: none"> <li>• Community Services</li> <li>• Housing and Community Development</li> <li>• Fire &amp; Rescue</li> <li>• Parks, Recreation &amp; Tourism</li> <li>• Public Works</li> <li>• Adult Detention Center</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Complete solar feasibility study to identify ideal solar locations on County buildings (County already conducted a high-level feasibility study for roughly 65 facilities and identified 10 buildings that it is currently conducting a detailed solar feasibility study on)</li> <li>• Identify funding source for solar installations</li> <li>• Install solar on priority facilities identified through feasibility study</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: ~\$9M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests:               <ul style="list-style-type: none"> <li>○ Solar feasibility study already paid for and underway</li> </ul> </li> <li>• Ongoing Cost Considerations:               <ul style="list-style-type: none"> <li>○ Installing solar on top 10 buildings (including construction costs): \$9M</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• Size (kW) of solar installed on County facilities</li> <li>• Electricity (kWh) produced by government solar systems</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Government utility electricity use</li> <li>• Electricity emissions avoided through use of solar</li> <li>• Government building emissions</li> </ul>

### B.1: Incentivize Energy Efficiency and Electrification Retrofits

<b>Action Title</b>	B.1: Incentivize Energy Efficiency and Electrification Retrofits	
<b>Action Description</b>	Incentivize existing building energy efficiency and electrification retrofits through actions such as streamlined permitting or reducing real estate taxes.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Buildings	
<b>GHG Reduction Potential</b>	Medium	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>Real Estate Assessments</li> <li>Development Services – Building Department</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>None identified</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>Determine the qualifications for buildings to apply to incentive program, such as a list of acceptable retrofits</li> <li>Develop County goals on the percent of qualified buildings that will use the incentive</li> <li>Use County goals to structure incentive type/amount and determine the number of new staff needed to implement incentive program</li> <li>Evaluate potential incentives for building upgrades or high energy performance, including: <ul style="list-style-type: none"> <li>Reduction on real estate taxes</li> <li>Streamline/expedited permitting <ul style="list-style-type: none"> <li>NOTE: Single family residential equipment replacements typically have same day permitting review, but commercial equipment replacement do not</li> </ul> </li> </ul> </li> <li>Office of Sustainability could provide funding to Building Services to expand permitting team, or new funding could be allocated to Building Services team through increased permit fees</li> <li>Consider prioritizing or offering larger incentives to low-income residents or building owners that rent to low-income families</li> <li>Provide education/outreach on energy cost savings from energy efficiency/electrification retrofits</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: &gt;\$5M</b> <ul style="list-style-type: none"> <li>First Year Budget Requests: <ul style="list-style-type: none"> <li>Hiring staff member to coordinate/develop incentives: \$200k</li> </ul> </li> <li>Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>New staff salary</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>Building permit data describing equipment replacement and fuel switching</li> <li># of applications to real estate assessments</li> <li>Average permit time</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>Community electricity use</li> <li>Community natural gas use</li> </ul>

## B.2: Propose Green Zoning Regulations

<b>Action Title</b>	B.2: Propose Green Zoning Regulations	
<b>Action Description</b>	Propose green zoning regulations to incentivize energy- and water-efficient buildings, multifamily and mixed-use areas, and transit-oriented developments. Green zoning involves revising zoning policies to require or incentivize developers to abide by certain sustainable development practices. This could include density bonuses, by-right zoning, or zoning overlays. Denser developments and multifamily housing units typically use less energy than other, more dispersed building types. Additionally, mixed-used and transit-oriented areas significantly reduce the need for vehicle travel, which would also reduce transportation emissions.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Buildings, Transportation	
<b>GHG Reduction Potential</b>	Medium	
<b>Lead Department</b>	Planning Office	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Housing</li> <li>• Watershed</li> <li>• Parks and Recreation</li> <li>• Economic Development/Community Development</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Study what incentives will best promote green developments: density bonuses, height bonuses, by-right zoning, zoning overlays, etc.</li> <li>• Coordinate local policy revisions to zoning and plans to allow people to live closer to jobs</li> <li>• Set environmental goals for green zoning regulations</li> <li>• Conduct a green space or natural open space (NOS) assessment and define strategy for green/space NOS (coordinate with Action N.1: “Adopt Natural Open Space Requirements”)</li> <li>• Develop green zoning around green space strategy</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$100k-\$1M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring consultant, including environmental assessment: \$500k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ No additional costs beyond existing staff time</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• # of green certified buildings (e.g., LEED)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Residential energy use and emissions</li> <li>• Commercial energy use and emissions</li> </ul>

### B.3: Incentivize energy efficient and electric new construction

<b>Action Title</b>	B.3: Incentivize energy efficient and electric new construction	
<b>Action Description</b>	Provide incentives for developers to build to energy-efficient or all-electric new developments, such as streamlined permitting, a reduction in real estate taxes, or a reduction in proffers.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Buildings	
<b>GHG Reduction Potential</b>	Medium	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Planning Office</li> <li>• Development Services</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• None identified</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Review legality of incentivizing/promoting certain fuel types in new construction</li> <li>• Establish the type of new developments that should qualify for incentive (e.g., all new developments, developments over a certain size, etc.)</li> <li>• Evaluate the projected new development of qualified buildings in the county</li> <li>• Develop County goals on the percent of qualified developments that will use the incentive to build all-electric</li> <li>• Use County goals to determine the incentive type/amount and number of new staff needed to implement expedited permitting or other incentives</li> <li>• Evaluate potential incentives for all-electric new construction, such as: <ul style="list-style-type: none"> <li>○ Reduction on real estate taxes</li> <li>○ Streamlined/expedited permitting for all-electric construction <ul style="list-style-type: none"> <li>▪ Office of Sustainability could provide funding to Building Services to expand permitting team, or new funding could be allocated to Building Services team through increased permit fees elsewhere</li> </ul> </li> <li>○ Density or height bonuses where permissible and with proper study on potential community impacts such as viewsheds or noise <ul style="list-style-type: none"> <li>▪ If a height bonus is granted, require a minimum distance from residential communities</li> </ul> </li> <li>○ Reduction in proffers if a development was to proffer to a specific standard or uses all-electric equipment</li> </ul> </li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: &gt;\$5M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ No additional first year costs (internal staff time)</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Potential additional staff to implement incentive programs</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % of new construction that is all-electric (use # of permits for all-electric new construction and permits for mixed-fuel new construction)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Community electricity use</li> <li>• Community natural gas use</li> </ul>

	<ul style="list-style-type: none"><li>• # of applications to real estate assessments</li><li>• Average permit time</li></ul>	
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## B.4: Promote Energy Efficiency and Electrification Incentives

<b>Action Title</b>	B.4: Promote Energy Efficiency and Electrification Incentives	
<b>Action Description</b>	Provide outreach and education to residents and businesses about tools, technology, and incentives for building energy efficiency and electrification. This would include providing a centralized webpage or tool for residents and businesses to reference relevant federal, state, and utility incentives, C-PACE information, and County programs, among other resources.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Buildings	
<b>GHG Reduction Potential</b>	Medium	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>Office of Sustainability</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>Development Services</li> <li>Communications Office</li> <li>Economic Development</li> <li>Green Business Council</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>Develop a centralized webpage or tool for residents and businesses to reference relevant federal, state, and utility incentives, C-PACE information, and County programs, among other resources</li> <li>Assign a dedicated staff member to maintain and regularly update webpage and conduct outreach to businesses and residents</li> <li>Coordinate with other departments to report new incentives to dedicated staff member</li> <li>Coordinate webpage or tool development with Action E.2: "Promote Renewable Energy Incentive Programs and Develop Additional Solar Incentives"</li> <li>Develop a physical/virtual Guidebook for incentives (as incentives change regularly, Guidebook can direct to website)</li> <li>Collaborate with homeowner associations (HOAs) to promote adaptive technologies in residential communities</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: ~\$1M</b> <ul style="list-style-type: none"> <li>First Year Budget Requests: <ul style="list-style-type: none"> <li>Hiring staff member: \$200k</li> </ul> </li> <li>Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>New staff salary</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li># of residents/businesses reached through program</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>Community electricity use</li> <li>Community natural gas use</li> </ul>

## B.5: Create Net-Zero Plan for County Government Facilities

<b>Action Title</b>	B.5: Create Net-Zero Plan for County Government Facilities
<b>Action Description</b>	Develop a net-zero emissions building plan for County government facilities, which will include implementing an energy benchmarking program and procuring 100% clean electricity for all County government operations.
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Source 100% of PWC’s county-wide electricity from renewable sources by 2035</li> <li>• Achieve 100% renewable electricity in PWC Government operations by 2030</li> <li>• Achieve 100% carbon neutrality in PWC Government operations by 2050</li> </ul>
<b>Climate Action Topic</b>	Electricity, Buildings
<b>GHG Reduction Potential</b>	Medium
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Facilities and Fleet Management</li> <li>• Finance – Risk and Wellness Services</li> </ul>
<b>Supporting Departments/Partners</b>	<p>Departments with facilities not managed by Facilities and Fleet:</p> <ul style="list-style-type: none"> <li>• Community Services</li> <li>• Housing and Community Development</li> <li>• Fire &amp; Rescue</li> <li>• Parks, Recreation &amp; Tourism</li> <li>• Public Works</li> <li>• Adult Detention Center</li> </ul>
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Develop a government operations GHG inventory</li> <li>• Hire consultant to develop Net Zero Plan</li> <li>• Develop a plan that includes the following elements: <ul style="list-style-type: none"> <li>▪ Conduct a feasibility study for facility electrification</li> <li>▪ Prioritize buildings for net-zero transition - identify buildings that would be exempt from full electrification</li> <li>▪ Evaluate cost of purchasing 100% green power from Dominion and NOVEC</li> <li>▪ Explore PPA and VPPA options (consider partnering with other municipalities to establish VPPAs)</li> </ul> </li> <li>• Hire employee to manage green power purchasing and energy benchmarking program</li> <li>• Develop mandatory energy benchmarking program by streamlining existing bill capture program</li> <li>• Conduct staff training for new technologies or processes for facilities (e.g., heat pumps)</li> </ul>
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: \$10M-\$100M</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring staff member: \$200k</li> <li>○ Developing plan: \$200k <ul style="list-style-type: none"> <li>▪ NOTE: Energy Efficiency and Conservation Block Grant Program funds can be applied towards developing Plan</li> </ul> </li> </ul> </li> <li>• Ongoing Cost Considerations (costs are dependent on results on net-zero study and green power options pursued): <ul style="list-style-type: none"> <li>○ New staff salary</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Implementing Net Zero for All Facilities: \$30M <ul style="list-style-type: none"> <li>▪ Cost includes all facilities transitioning to net-zero (may not occur before 2030)</li> <li>▪ Does not consider existing equipment replacement budget and any additional cost or savings from replacing equipment with electric options</li> </ul> </li> <li>○ Ongoing cost of purchasing clean electricity through Dominion or NOVEC: \$5-10M <ul style="list-style-type: none"> <li>▪ Purchasing electricity through VPPA/PPA would be much cheaper and even generate revenue</li> </ul> </li> <li>○ Implementing energy benchmarking program: &lt;\$200k</li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>● % of new public buildings built to net-zero energy standards</li> <li>● % of total net-zero public buildings</li> <li>● % building participation rate in benchmarking program</li> <li>● % of kWh used that are from clean or renewable sources</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>● Government building emissions</li> <li>● Government natural gas and fuel oil use</li> </ul>

## T.1: Improve Pedestrian and Bicycle Infrastructure and Enhance Connectivity

<b>Action Title</b>	T.1: Improve Pedestrian and Bicycle Infrastructure and Enhance Connectivity
<b>Action Description</b>	Improve active transportation infrastructure and improve sidewalk and trail connectivity to support walking, biking, and rolling, with improvements such as providing bike lockers, installing curb ramps, or installing traffic-calming designs like crosswalk islands or speed humps. This action would involve developing a strategic Active Transportation Plan that includes recommendations for prioritizing infrastructure improvements and outlines new active transportation policies, processes, and infrastructure.
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030
<b>Climate Action Topic</b>	Transportation
<b>GHG Reduction Potential</b>	High
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Parks, Recreation and Tourism</li> </ul>
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Planning Office</li> <li>• Watershed</li> <li>• Service Authority</li> <li>• Virginia Department of Transportation (VDOT)*</li> <li>• Schools</li> </ul>
<b>Implementation Steps</b>	<p><b>Coordination:</b></p> <ul style="list-style-type: none"> <li>• Coordinate with other entities that are developing active transportation programming/infrastructure to align all efforts (e.g., Schools, Parks, Transportation, Planning, and other supporting partners such as Watershed and Service Authorities)</li> <li>• Continue coordination with the COG Bike and Ped subcommittee to complete the National Capital Bike Trail Network to increase access to opportunities and other activities via non-motorized modes</li> </ul> <p><b>Planning:</b></p> <ul style="list-style-type: none"> <li>• Hire an active-mobility planning consultant to develop a strategic Active Transportation Plan that includes recommendations for prioritizing infrastructure improvements and outlines new active transportation policies and processes</li> <li>• Ensure Active Transportation Plan development process includes extensive community engagement</li> <li>• Evaluate expansion of Countywide Trails Plan in Comprehensive Plan <ul style="list-style-type: none"> <li>○ Review Trails and Blueways Council's Aspirational Trails Map and identify additional facilities to include</li> <li>○ Ensure elements of Active Transportation Plan are also incorporated into update of Countywide Trails Plan</li> </ul> </li> <li>• Incorporate the Trails and Blueways Council's Aspirational Trails Map into the forthcoming Parks, Recreation and Tourism Master Plan</li> <li>• Use forthcoming Transportation app to crowd-source data on barriers to pedestrian and bicyclist access to schools and transit and identify priority actions</li> <li>• Identify existing private facilities/community destinations that need bicycle facilities and evaluate incentives that could be provided to encourage visitor bicycle facilities</li> <li>• Evaluate use of counters to track usage of bicycle/pedestrian facilities or hire consultant develop bicycle/pedestrian facility usage counts</li> </ul>

	<p><b>Incentives and Resources:</b></p> <ul style="list-style-type: none"> <li>• Coordinate with developers on improving bicycle and pedestrian connectivity</li> <li>• Update the Design and Construction Standards Manual (DCSM) to include mobility requirements</li> <li>• Continue to implement Comprehensive Plan in formation of trails as part of development projects</li> <li>• Create a bike facility map that notes bike parking, lockers, and showers throughout the county</li> <li>• For new projects, ensure considerations for future trails projects</li> <li>• Evaluate Business Improvement Districts as an alternate funding mechanism for streetscape infrastructure that VDOT does not need to approve</li> </ul>	
<p><b>Potential County Action Cost Range (2025-2030)</b></p>	<p><b>TOTAL: ~\$50M</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring consultant: \$200k (consultant will development cost estimate to implement Active Transportation Plan strategies)</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Dependent on results of the Plans, could include maintenance (mowing) and repair/replacement (bike stations, water fountains, etc.)</li> </ul> </li> </ul>	
<p><b>Performance Indicators</b></p>	<p>Output Indicators</p> <ul style="list-style-type: none"> <li>• Miles of dedicated bike lane</li> <li>• Miles of trails</li> <li>• # or % of nodes connected</li> <li>• # of bike racks approved as part of new developments</li> </ul>	<p>Output Indicators</p> <ul style="list-style-type: none"> <li>• Commuting travel mode splits from the Census</li> <li>• # or % of students walking or biking to school (through Schools tracking)</li> <li>• Pedestrian and bicyclist morbidity and mortality (Health Authority)</li> <li>• On-road transportation emissions</li> </ul>

\*PWC can build public roads and sidewalks which are then adopted into the state system and maintained by VDOT. Any public road/sidewalk development proposed by PWC needs to be approved by VDOT and VDOT could override proposed development in any right-of-way.

## T.2: Incentivize Transit-Oriented Development

<b>Action Title</b>	T.2: Incentivize Transit-Oriented Development	
<b>Action Description</b>	Incentivize transit-oriented development (TOD) within 1/2-mile of transit stations. This could be done through developer incentives, such as streamlined permitting, a reduction in real estate taxes, or a reduction in proffers, or zoning amendments, such as density bonuses, by-right zoning, or zoning overlays. The County could establish parking maximums, remove parking minimums, and require bicycle parking minimums in TOD areas.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Transportation	
<b>GHG Reduction Potential</b>	High	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Planning Office</li> <li>• Transportation</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Potomac and Rappahannock Transportation Commission (PRTC)</li> <li>• VRE</li> <li>• Development Services</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Develop a TOD Action Plan</li> <li>• Identify new incentives that would promote TOD, such as streamlined permitting, a reduction in real estate taxes, or a reduction in proffers</li> <li>• Identify zoning amendments that would promote TOD, such as density bonuses, by-right zoning, or zoning overlays</li> <li>• Update the Design and Construction Standards Manual (DCSM) to: <ul style="list-style-type: none"> <li>○ Establish parking maximums and reduce parking minimums for TOD areas</li> <li>○ Enhance bike facilities within multifamily developments</li> </ul> </li> <li>• Require bike parking minimums in TOD areas</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: &lt;\$500k</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring a consultant for TOD Action Plan: \$200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ No additional costs beyond existing staff time</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % of qualified developments using incentive (using either square footage or # of developments)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Commuting travel mode splits from the Census</li> <li>• Transit ridership levels</li> <li>• On-road transportation emissions</li> </ul>

### T.3: Expand Existing Programs that Reduce Single-Occupancy Vehicle Trips

<b>Action Title</b>	T.3: Expand Existing Programs that Reduce Single-Occupancy Vehicle Trips	
<b>Action Description</b>	Expand and promote programs that offer transportation demand management services, reduce transit fares, and support teleworking.	
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Achieve 100% carbon neutrality in PWC Government operations by 2050</li> </ul>	
<b>Climate Action Topic</b>	Transportation	
<b>GHG Reduction Potential</b>	Medium	
<b>Lead Department</b>	Transportation	
<b>Supporting Departments/Partners</b>	Planning Office Potomac and Rappahannock Transportation Commission (PRTC)	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Support PRTC/OmniRide’s Transportation Demand Management (TDM) Strategic Plan (Plan includes strategies for working with local employers)</li> <li>• Evaluate opportunities to enhance the County TDM Program by updating the Design and Construction Standards Manual</li> <li>• Continue to promote the Transit Fare Buy Down Program and support reduced transit fares</li> <li>• Evaluate pursuing grant opportunities for additional transit fare reduction programs or expand existing programs</li> <li>• Continue to work with VDOT to expand park and ride lots and encourage carpooling/ridesharing</li> <li>• Promote the Transportation Planning Board’s Commuter Connections program which encourages and incentivizes telework and transit use through employer-provided transit benefits, expanding telework options, providing transit and carpool benefits to employees, alternative work schedules, providing parking cash-outs for employees that drive and receive free paid parking, and reducing subsidized parking at work</li> <li>• Update Comprehensive Plan to support development of infrastructure to aid in teleworking (e.g., rural broadband, free Wi-Fi hotspots)</li> <li>• Work with private sector to encourage development to provide adequate infrastructure to support teleworking</li> <li>• In the Design and Construction Standards Manual update, explore providing parking reduction to developers who commit to providing a certain % of teleworking employees</li> <li>• Coordinate high speed internet infrastructure upgrades with transportation infrastructure projects</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$0</b> (No net additional costs beyond existing staff time)	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % utilization of commuter lots (through periodic snapshots)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Commuting travel mode splits from Census</li> <li>• Transit ridership</li> <li>• On-road transportation emissions</li> </ul>

## T.4: Upgrade Public Transit Infrastructure

<b>Action Title</b>	T.4: Upgrade Public Transit Infrastructure	
<b>Action Description</b>	Partner with County transit operators and VDOT to improve and provide new public transit infrastructure and build out transit nodes. Though PWC does not operate the public buses that service the County, PWC can help provide supportive infrastructure to help increase the efficiency and frequency of bus travel. However, as most public roads and bus infrastructure are maintained by VDOT, PWC will partner with VDOT to identify and develop transit priority treatments.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Transportation	
<b>GHG Reduction Potential</b>	Medium	
<b>Lead Department</b>	Transportation	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Planning Office</li> <li>• Potomac and Rappahannock Transportation Commission (PRTC)</li> <li>• Virginia Department of Rail and Public Transportation (DRPT)</li> <li>• Virginia Railway Express (VRE)</li> <li>• Virginia Department of Transportation (VDOT)*</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Work with transit operators and VDOT to develop Transit Improvement Study</li> <li>• Work with VDOT to identify corridors for transit priority treatments (e.g., priority bus lanes, dedicated or shared bus lanes, priority signaling, etc.)</li> <li>• Identify grants in order to build out mobility hubs or transit centers</li> <li>• Work with OmniRide and the broader community to identify priority locations for bus stops</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: \$100-\$250M</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>◦ Feasibility study for transit infrastructure: \$100-200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>• Implementing feasible range of improvements by 2030: \$100-250M</li> <li>• Implementing all priority treatments/improvements past 2030: \$250-500M</li> <li>• May incur maintenance costs for mobility hubs and transit centers, but not other priority treatments maintained by VDOT</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• Miles of dedicated transit lanes</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Commuting travel mode splits from Census</li> <li>• Transit ridership</li> <li>• On-road transportation emissions</li> </ul>

## T.5: Incentivize Zero-Emission Vehicles and Charging

<b>Action Title</b>	T.5: Incentivize Zero-Emission Vehicles and Charging	
<b>Action Description</b>	Develop incentives for residents and businesses to purchase ZEVs or install charging equipment, such as through streamlined permitting for EV chargers, "group-buy" programs for EV chargers, or EV purchasing co-ops.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Transportation	
<b>GHG Reduction Potential</b>	High	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Development Services</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Facilities and Fleet Management</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Establish a workgroup to identify priority ZEV incentives</li> <li>• Evaluate implementing streamlined permitting for EV chargers</li> <li>• Consider making EV chargers a "permitted accessory use" so they do not require site plan review and are granted automatic approval</li> <li>• Evaluate creating "group-buy" programs for charging stations or vehicles or establishing EV purchasing cooperatives</li> <li>• Evaluate integrating EV charging standards into Design and Construction Standards Manual update</li> <li>• Consider integrating electric bike purchasing and charging incentives</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: &gt;\$5M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests <ul style="list-style-type: none"> <li>○ No additional first year costs (internal staff time)</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Funding for group-buy programs or cooperatives</li> <li>○ Potential additional staff</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• City EV charger installation permit data</li> <li>• # of incentive program participants</li> <li>• Average permitting time</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• On-road transportation emissions</li> <li>• # of registered EV/ZEVs in County (EV Hub website)</li> </ul>

## T.6: Expand Public EV Charging Network

<b>Action Title</b>	T.6: Expand Public EV Charging Network	
<b>Action Description</b>	Expand public EV charging infrastructure especially along main routes and in popular destinations. This would include developing an EV Infrastructure Plan to guide community deployment and considerations for electric bike charging.	
<b>Related County Goal(s)</b>	Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030	
<b>Climate Action Topic</b>	Transportation	
<b>GHG Reduction Potential</b>	High	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Facilities and Fleet Management</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Virginia Department of Transportation (VDOT)</li> <li>• Virginia Railway Express (VRE)</li> <li>• Potomac and Rappahannock Transportation Commission (PRTC)</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Develop EV Infrastructure Plan for community deployment</li> <li>• Conduct regional EV gap analysis to identify most critical gaps in EV charging network</li> <li>• Install EV charging at publicly owned facilities</li> <li>• Incentivize newly constructed buildings in the community to accommodate EV charging</li> <li>• Implement combined solar and EV charger buying cooperatives (see Arlington County)</li> <li>• Coordinate County-installed public EV charging with VDOT's National Vehicle Infrastructure (NVI) Plan</li> <li>• Identify source of grant matching funds (no dedicated funding currently)</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$25-\$50M</b> <ul style="list-style-type: none"> <li>• First Year Budget Requests <ul style="list-style-type: none"> <li>○ EV Study: \$100-\$200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Charger maintenance</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• # public EV chargers installed</li> <li>• % utilization rate</li> <li>• % of chargers currently working (i.e. uptime)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• On-road transportation emissions</li> <li>• # of registered EV/ZEVs in County (EV Hub website)</li> </ul>

## T.7: Adopt Zero- or Low-Emissions County Fleet

<b>Action Title</b>	T.7: Adopt Zero- or Low-Emissions County Fleet	
<b>Action Description</b>	Transition County fleet to zero- or low-emissions vehicles and ensure supporting infrastructure is open to other fleets.	
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Achieve 100% carbon neutrality in PWC Government operations by 2050</li> </ul>	
<b>Climate Action Topic</b>	Transportation	
<b>GHG Reduction Potential</b>	Low	
<b>Lead Department</b>	Fleets and Facilities Management	
<b>Supporting Departments/Partners</b>	None identified	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Hire a consultant to develop an EV Fleet Transition Study</li> <li>• Hire a consultant to develop an EV Charging Infrastructure Study (for both community-wide and County fleet charging)</li> <li>• Evaluate if hybrid electric vehicles and plug-in hybrid electric vehicles should be included in fleet transition</li> <li>• Identify funding source and tax incentives for EVs</li> <li>• Purchase and install EVSE</li> <li>• Purchase zero or low-emissions vehicles</li> <li>• Conduct staff training on vehicle use</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: \$100M-\$1B</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ EV Fleet Transition Study: \$200k</li> <li>○ EV Charging Infrastructure Study: \$200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Installing charging infrastructure: \$100M</li> <li>○ Transitioning entire fleet (will most likely occur after 2030): \$1B <ul style="list-style-type: none"> <li>▪ Cost does not consider existing vehicle replacement budget and any additional cost or savings from replacing vehicles with low or zero emissions options</li> </ul> </li> <li>○ Maintaining charger stations</li> <li>○ Annual EV fuel costs will be lower than gas or diesel vehicle fuel costs</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % total fleet that is low or zero-emission</li> <li>• GHGs offset, kWh used, # of sessions (from ChargePoint Chargers data)</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Gasoline and diesel used by government fleet</li> <li>• County fleet emissions</li> </ul>

## N.1: Adopt Natural Open Space Requirements

<b>Action Title</b>	N.1: Adopt Natural Open Space Requirements	
<b>Action Description</b>	<p>Establish minimum Natural Open Space (NOS) guidelines to encourage preservation of NOS, if appropriate, in new development.</p> <p>NOS is “open space with natural resource benefits within the boundaries of a development such as native forests; topographic features; critical habitats for threatened and endangered species and species of special concern; natural creeks, streams and lakes; and natural wetlands that are set aside as an area to remain undisturbed during development and in perpetuity for the preservation of the natural resources contained therein and for the passive use and enjoyment of the residents of the development and/or the public at large.”</p>	
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> <li>• Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030</li> </ul>	
<b>Climate Action Topic</b>	Natural Resources, Climate Adaptation	
<b>GHG Reduction Potential</b>	Unknown	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Public Works - Watershed</li> <li>• County Arborist</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Planning Office</li> <li>• County Attorney’s office</li> <li>• Owners of open space areas (HOA’s, commercial owners, environmental trusts, etc.)</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Review legal guidance with County Attorney regarding this action</li> <li>• Incorporate natural open space (NOS) requirements for a larger variety of zoning districts instead of just an open space requirement</li> <li>• Develop a NOS corridor overlay for the entire county and identify areas that should be targeted for preservation of substantial tracts to create wildlife habitat and facilitate safe wildlife movement</li> <li>• Translate the new Conservation Residential concept that was approved with the updated Comp Plan into specific standards in the Zoning Ordinance – this would help to codify standards in those districts for requiring undisturbed open space that preserves forests. This district should also have standards for restoration of forests for open fields that will not be used for farming</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: \$100k-\$1M</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ No additional first year costs (internal staff time)</li> </ul> </li> <li>• Ongoing Annual Cost Considerations: <ul style="list-style-type: none"> <li>○ Potential costs from legal fees</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<p>Output Indicators</p> <ul style="list-style-type: none"> <li>• Total area or % of NOS in the County</li> <li>• Total area or % of open space in the County</li> <li>• Acres of wildlife corridors</li> </ul>	<p>Outcome Indicators</p> <ul style="list-style-type: none"> <li>• Land use emissions</li> <li>• Average carbon sequestration potential per acre of NOS</li> </ul>

## A.1: Develop Adaptation Plans for Critical Facilities

<b>Action Title</b>	A.1: Develop Adaptation Plans for Critical Facilities	
<b>Action Description</b>	Develop site-level adaptation plans for critical facilities and service areas considering current and future climate change hazards.	
<b>Related County Goal(s)</b>	Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030	
<b>Climate Action Topic</b>	Climate Adaptation	
<b>Climate Hazard</b>	All Hazards	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Emergency Management</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Facilities and Fleet Management (for County facilities)</li> <li>• Risk and Wellness (for some County facilities)</li> <li>• External critical facility owners</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Review existing list of critical facilities in the County and determine which facilities PWC Emergency Management has authority to create adaptation plans for</li> <li>• Review any existing adaptation plans for critical facilities within PWC</li> <li>• Develop adaptation plan framework(s) for different types or groups of critical facilities</li> <li>• Complete adaptation plans for critical facilities that PWC has authority over</li> <li>• Provide GIS data and technical support to encourage adaptation plan development for critical facilities that PWC does not have the authority to create</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$600K</b> (consider starting goal around 2027 and completing in 3 years) <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ Hiring staff to review work and develop template: \$200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ Staff Support (Senior Emergency Management Planner): \$200K/year</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % of County's critical facilities with adaptation plans</li> <li>• # of technical assistance requests from external critical facility owners that the County supported each year</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• # of critical facilities that begin taking action on completed adaptation plans</li> </ul>

## A.2: Manage Stormwater Flooding Outside of the Floodplain

<b>Action Title</b>	A.2: Manage Stormwater Flooding Outside of the Floodplain	
<b>Action Description</b>	Increase understanding of flooding in areas outside of the delineated FEMA floodplain through modeling and/or historic flood records. Develop and implement mitigation actions to reduce stormwater flooding.	
<b>Related County Goal(s)</b>	Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030	
<b>Climate Action Topic</b>	Climate Adaptation	
<b>Climate Hazard</b>	Precipitation	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>Emergency Management</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>Public Works – Watershed</li> <li>VDOT</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>Review work done in this area by Emergency Management (including ongoing flood resilience plan which will include data development and filling in gaps in flood mapping)</li> <li>Develop mitigation actions for areas that are identified as vulnerable to stormwater flooding (including stormwater improvements, transportation infrastructure updates, building adaptation, etc.)</li> <li>Implement mitigation actions</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: &gt;\$3M</b></p> <ul style="list-style-type: none"> <li>First Year Budget Requests: <ul style="list-style-type: none"> <li>No initial funding needed <ul style="list-style-type: none"> <li>\$1.2M has already been allocated for the flood resilience assessment</li> <li>\$150K has been allocated for mitigation measures in FY23</li> <li>\$600K requested for FY24 for implementation for mitigation measures</li> </ul> </li> </ul> </li> <li>Ongoing Annual: <ul style="list-style-type: none"> <li>Implementation (will depend on the mitigation actions determined in the flood resilience assessment): \$500K/year</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<p>Output Indicators</p> <ul style="list-style-type: none"> <li>KPI's in the flood resilience plan (will get updated as the plan progresses)</li> <li>Status of implementation on items that come out of the plan</li> </ul>	<p>Outcome Indicators</p> <ul style="list-style-type: none"> <li>Reduction in closed roads and swift water rescues</li> </ul>

### A.3: Improve Power Resilience for Critical Infrastructure

<b>Action Title</b>	A.3: Improve Power Resilience for Critical Infrastructure	
<b>Action Description</b>	Improve the resilience of electrical infrastructure for publicly owned essential services and infrastructure.	
<b>Related County Goal(s)</b>	Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030	
<b>Climate Action Topic</b>	Climate Adaptation	
<b>Climate Hazard</b>	Extreme Temperature; High Winds/Tornadoes	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Emergency Management</li> <li>• Critical Infrastructure Owners</li> <li>• County Energy Providers</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Facilities and Fleet Management</li> <li>• Parks &amp; Rec</li> <li>• Fire</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Review work done in this area by Emergency Management including the existing list of county buildings without available backup power</li> <li>• Rank county buildings by criticality</li> <li>• Complete electrical assessment studies</li> <li>• Develop plan to fund backup power and/or micro grids</li> <li>• Purchase and implement backup power for county facilities in order of criticality, as funding is available</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<b>TOTAL: \$1.3M-6.0M</b> <ul style="list-style-type: none"> <li>• First Year Budget Request: <ul style="list-style-type: none"> <li>○ Electrical assessment by existing staff: \$250K-\$500K</li> </ul> </li> <li>• Ongoing Annual: <ul style="list-style-type: none"> <li>○ Dependent on selected projects</li> <li>○ Purchase/installation for all facilities and annual maintenance of 5-10% of total cost: \$1M-\$5M</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>• % of critical infrastructure implemented with backup power</li> <li>• # of mission essential / primary mission essential functions supported with backup power</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>• Reduced downtime for critical facilities</li> </ul>

#### A.4: Implement Shoreline Protection and Nature-Based Solutions

<b>Action Title</b>	A.4: Implement Shoreline Protection and Nature-Based Solutions	
<b>Action Description</b>	Develop guidance to prioritize nature-based solutions for shoreline protection for coastal areas.	
<b>Related County Goal(s)</b>	Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030	
<b>Climate Action Topic</b>	Climate Adaptation	
<b>Climate Hazard</b>	Erosion (from sea level rise/storm surge)	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>Public Works – Watershed Team</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>Development Services - Land Development Division</li> <li>Emergency Management</li> <li>Parks, Recreation and Tourism</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>Compile available information and studies on existing and planned shoreline protection and nature-based solutions within the county including existing implementation progress for county properties</li> <li>Fund and implement nature-based solutions on existing County property in coastal areas</li> <li>Fund and implement incentive program to encourage coastal shoreline protection and nature-based solutions on existing private property</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: &gt;\$5M</b></p> <ul style="list-style-type: none"> <li>First Year Budget Requests <ul style="list-style-type: none"> <li>One FTE to review existing studies/projects and develop plan for implementing nature-based solutions on existing County properties in the coastal zone: \$200K</li> </ul> </li> <li>Ongoing Cost Considerations:  <ul style="list-style-type: none"> <li>New staff salary</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>Shoreline miles where projects have been completed</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>Decreased emergency shoreline stabilization projects</li> </ul>

## A.5: Restore Streams to Reduce Flooding

<b>Action Title</b>	A.5: Restore Streams to Reduce Flooding	
<b>Action Description</b>	Develop and implement stream restoration projects in support of reduced flooding outcomes.	
<b>Related County Goal(s)</b>	Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030	
<b>Climate Action Topic</b>	Climate Adaptation	
<b>Climate Hazard</b>	Precipitation	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>Public Works, Watershed Team</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>Planning Office</li> <li>Emergency Management</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>Review existing stream restoration projects, develop lessons learned, and develop a list of potential stream restoration project areas on County-owned property with focus on flood mitigation potential</li> <li>Secure funding for stream restoration projects</li> <li>Implement stream restoration projects with focus on flood mitigation</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: &gt;\$5M</b></p> <ul style="list-style-type: none"> <li>First Year Budget Request: <ul style="list-style-type: none"> <li>1 FTE to evaluate current stream restoration projects and determine flood mitigation potential: \$200K</li> </ul> </li> <li>Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>New staff salary</li> <li>Funding from stormwater fee and DEQ grant funding supports current work</li> <li>For additional ramp-up current staff could support additional work, but need consultant for implementation</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li>Stream miles restored</li> <li>Flood conveyance capacity (acres) added since start of project</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>None identified</li> </ul>

## A.6: Incentivize Technology for Residents to Make Homes Adaptive

<b>Action Title</b>	A.6: Incentivize Technology for Residents to Make Homes Adaptive	
<b>Action Description</b>	Provide additional incentives or subsidies for residents of low-income housing and rental properties to install or retrofit buildings with climate adaptive technologies to reduce energy, reduce water use, reduce waste heat, and minimize urban heat gain.	
<b>Related County Goal(s)</b>	<ul style="list-style-type: none"> <li>• Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030</li> <li>• Reduce GHG emissions county-wide to 50% below baseline 2005 levels by 2030</li> </ul>	
<b>Climate Action Topic</b>	Buildings, Climate Adaptation	
<b>Climate Hazard</b>	High Heat	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>• Office of Sustainability</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>• Development Services</li> <li>• Dominion Energy</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>• Identify technology that the County would encourage use of to make homes adaptive</li> <li>• If possible, identify buildings that have highest energy bills compared to other buildings of the same size/age. Or consider starting with older buildings to help prioritize outreach</li> <li>• Review existing State/National funding programs that residents could use and advertise this available funding</li> <li>• Develop new County-run incentive programs to encourage the use of adaptive technology</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: &gt;\$2.4M</b></p> <ul style="list-style-type: none"> <li>• First Year Budget Requests: <ul style="list-style-type: none"> <li>○ One FTE to support implementation (would include assessments and plan development for the first year): \$200k</li> </ul> </li> <li>• Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>○ New staff salary</li> <li>○ Grant funding: \$200k/year</li> <li>○ One FTE salary: \$200K/year</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<p><b>Output Indicators</b></p> <ul style="list-style-type: none"> <li>• # of households contacted/year</li> <li>• % of residences (that have been identified as having the most benefit from adaptive technology) within the County that have been granted the incentive/grant</li> </ul>	<p><b>Outcome Indicators</b></p> <ul style="list-style-type: none"> <li>• Residential energy consumption</li> </ul>

## A.7: Plan Alternate Evacuation Routes for Flood-prone Areas

<b>Action Title</b>	A.7: Plan Alternate Evacuation Routes for Flood-prone Areas	
<b>Action Description</b>	Develop localized evaluation routes throughout PWC and socialize with the public.	
<b>Related County Goal(s)</b>	Become a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030	
<b>Climate Action Topic</b>	Climate Adaptation	
<b>Climate Hazard</b>	All Hazards	
<b>Lead Department</b>	<ul style="list-style-type: none"> <li>Emergency Management</li> </ul>	
<b>Supporting Departments/Partners</b>	<ul style="list-style-type: none"> <li>None Identified</li> </ul>	
<b>Implementation Steps</b>	<ul style="list-style-type: none"> <li>Review flood-prone areas that affect evacuation routes</li> <li>Develop alternative evacuation routes</li> <li>Develop plan to implement road closures and rerouting</li> <li>Implement plan</li> </ul>	
<b>Potential County Action Cost Range (2025-2030)</b>	<p><b>TOTAL: ~\$3.2M</b></p> <ul style="list-style-type: none"> <li>First Year Budget Requests: <ul style="list-style-type: none"> <li>Gap analysis, vulnerability assessment, data pull and tool development: \$500k</li> </ul> </li> <li>Ongoing Cost Considerations: <ul style="list-style-type: none"> <li>One FTE salary: \$200K/year</li> <li>Recurring costs (including data systems): \$250k</li> </ul> </li> </ul>	
<b>Performance Indicators</b>	<b>Output Indicators</b> <ul style="list-style-type: none"> <li># of evacuation routes established</li> </ul>	<b>Outcome Indicators</b> <ul style="list-style-type: none"> <li>None identified</li> </ul>