Buildings & Development | Resilience | Renewable Energy

Analytical Science | *Project Application* | *Federal Grant Execution*

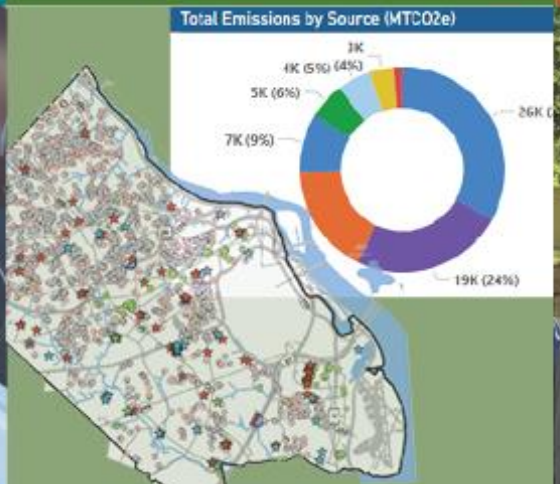
Arlington Initiative to Rethink Energy | CARBON 2050 NEUTRAL | ARLINGTON VIRGINIA

Carbon Roadmap

Years 3 - 5 (2023 - 2025)

Data Management | *Emissions Analysis* | *Social Dimension*

Transportation | County Government Activities | Education & Behavior Change



3-5 Years CEP Roadmap Strategies – Updated October 2024

Arlington County's Community Energy Plan (CEP) is a general policy approach to the County's path for carbon neutrality. The County's neutrality goal is structured along 6 sectors and disciplines: Buildings, Renewable Energy, Transportation, Resilience, Government Actions, and Behavioral Change/Market Transformation; and progress toward carbon neutrality is effectuated across the entire government enterprise as well as through public-private partnerships, independent private sector action, and individual behavior and choices. The Carbon Roadmap (launched in 2022) provides and defines policies, actions, programs and projects that serve as an energy-and-climate action/implementation framework, including roles and responsibilities, timelines, milestones, cost/benefit projections on orders of magnitude and accountability mechanisms.

Arlington has long deployed an "all-of-government" culture in pursuit of climate and energy goals, with the central strategic, technical, transactional, and programmatic direction developed under the Office of Sustainability and Environmental Management through its AIRE Team, utilizing the Team's advanced subject matter expertise and background in all aspects of climate mitigation, adaptation, and resilience that includes technical analytics, renewable energy contracting, human health impacts, technological applications, funding mechanisms including grants, strategic planning, policy and regulation, and integrating the social dimension on project design and delivery.

This Carbon Roadmap operationalizes the CEP and outlines how Arlington County (the County) and community will achieve the community's climate and energy goals. As noted above, the Carbon Roadmap identifies specific implementation strategies (by sector), establishes timelines and responsibilities for each strategy, and lays a framework for aligning and measuring their impacts. The Carbon Roadmap is constructed to allow for flexibility to adapt to emerging or evolving technologies, future policymaking, and changing financial, legislative, and regulatory contexts. Importantly, the Carbon Roadmap clearly defines actions in strategic profiles that advance transparency and accountability by identifying the leader and support actors, timeline, metrics, outputs and alignment with other County priorities and master plans.

The Carbon Roadmap is phased pursuant to time cycles, the first of which (Years 1-2) covered calendar years 2022-23. View the report-out of that cycle and progress. This Years 3-5 document represents the operationalization of the next 3-Year cycle (2024-26).

Each strategy description includes an (order of magnitude) estimate of the strategy's GHG emissions reductions potential using a 1-4 leaf scale. The 1-4 leaf scale, as shown in Table 1, is a qualitative scale of relative GHG emissions reductions potential, with one leaf indicating indirect, tangential, or hard to quantify emission reduction potential that may not directly reduce emission but are critical as prerequisite or enabling strategies.

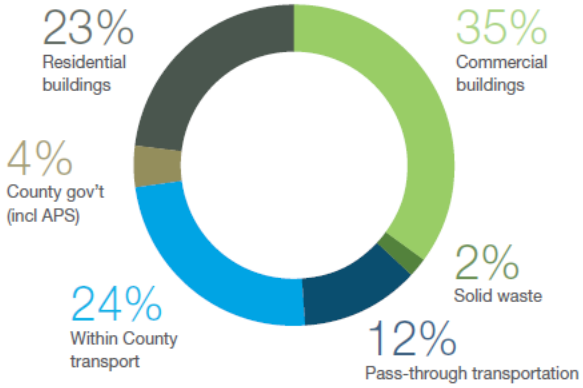
Two leaves then represent the lower potential emission reductions and four leaves higher impact strategies.

Table 1. Leaf Scale Legend

Leaf Scale	Strategy Contribution to GHG Emissions Reductions
	Indirect, tangential, or hard to quantify emission reduction potential
	Low emission reduction potential
	Medium emission reduction potential
	High emission reduction potential

The potential to reduce GHG emissions are determined based on 1) the County's emissions sources as estimated in the 2019 CEP and shown in Figure 1 below and displayed in the County's interactive GHG Dashboard linked below, and 2) the strategy's potential to reduce GHG emissions reductions. Note that in determining the emissions reductions potential for the "leaf score," the Carbon Roadmap strategies were mapped to the corresponding wedges in the 2019 CEP "wedge chart" modeling for buildings, transportation, and energy sectors to assess their relative emission reduction potential at a high level. Over the past year, OSEM/AIRE has launched a process to replace the existing generalized wedge chart with extensive disaggregation (e.g., precision downscaling of emissions per detailed sources under transportation, buildings, and waste) of the sources of greenhouse gas emissions. This approach supports identification and execution of performance-based measures, allows for cost-benefit analyses in the cost of GHG reductions, and provides greater strategic potential for measures that directly impact personal and commercial choices and behavior.

Figure 1. Arlington Countywide GHG Emissions by Sector per Latest (2016) Estimate

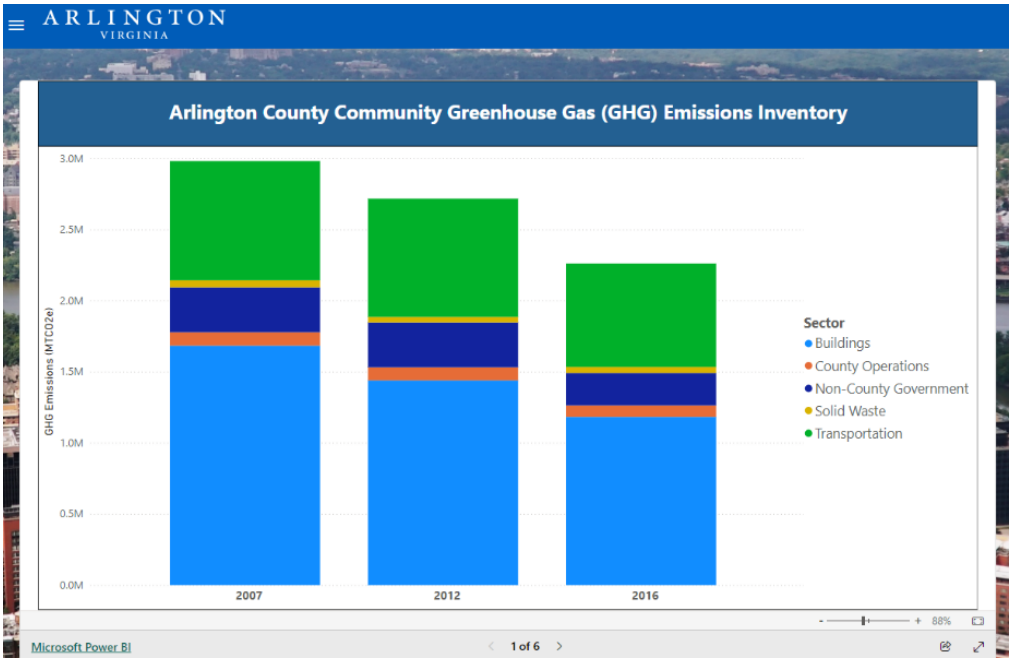


Overall transportation accounted for 36% of Arlington's GHG emissions, and along with commercial and residential buildings (35% and 23%, respectively), contributed the bulk

of the County's emissions (note that grid resource portfolio is embedded in the building sector emissions). As such, many of the strategies are focused on addressing these sectoral GHG emissions and on transitioning to less emissive transportation, energy, and building systems.

As noted above, OSEM/AIRE have also developed interactive GHG Dashboards as resources to visualize the GHG data for the Community-wide and County Operations inventories, linked here: Dashboards of the County's and Community's GHG emissions. The GHG Dashboards have multiple views for differing levels of granularity, such as sectors and subsectors, to communicate the sector contributions to the County's overall emissions profile for both the Community-wide and County operations. An example screenshot from the Dashboard is shown below in Figure 2.

Figure 2. Arlington GHG Emissions Dashboard Screenshot



The 1–2- and 3–5-year timeline strategy write-ups also include relative estimated cost scales. These relative cost scales are presented using a range of 1 to 3 (as illustrated in Table 2), with each level increasing by an order of magnitude, i.e., a cost scale of 1 coin is a strategy that will cost relatively little, a relative cost scale of 2 coins is a strategy that will cost approximately 10 times as much, and 3 coins designates a cost of at least 100 times. The Carbon Roadmap identifies and estimates where costs will be borne by the County or the public using gold coins for public cost estimates and blue coins for County costs. These relative cost scales consider all direct and indirect costs (including capital costs and maintenance and operational costs). The relative cost scales represent the marginal costs for projects that will be done regardless of this plan, in other words, the costs described in this plan are the additional estimated costs to

implement a clean energy strategy. These cost scales are based on the latest information available to the County and are subject to change.

Table 2. Cost Scale Legend

Cost Scale	Cost Order of Magnitude Estimates
	Expected Cost to Public: Expected Cost to County:
	~10 times costlier than one coin
	~100 times costlier than one coin

For example, the County already plans to buy new passenger/sedan fleet vehicles as a part of their operational budget and Strategy T.14 introduces the incremental costs associated with switching these planned purchases to include EVs (and supporting infrastructure). Thus, the cost estimate only focuses on this difference in costs (additional cost of buying electric vehicles compared to internal combustion engine vehicles, and all hard, installation and maintenance costs of all supporting infrastructure; not simply the total cost of the EVs). Depending on the yearly purchases planned and the required infrastructure to support the purchases, T.14 can represent relative costs that vary between cost neutral and one coin to the County.

In addition to the Carbon Roadmap strategy inputs described above, Figure 3 is a sample strategy worksheet that contains the definitions for each element. Each of the of 50 strategies within the Carbon Roadmap are consistent with this formatting approach for ease of use, enhanced transparency and focus on implementation, accountability and reporting outcomes through metrics.

Figure 3. Example Strategy Worksheet Table with Element Definitions

Icon representing the strategy	**Strategy Example**
Description	This section will provide the strategy's background information and goals, and any ideated and planned collaboration between groups in order to execute.
Lead Implementer(s)	The group(s) that will be implementing the strategy.

Stakeholders and Partners	The group(s) that will collaborate and support during implementation.	
Milestones and Next Steps		**Status**
• Point in timeline that is an action that works towards completing the strategy.		Date or update of completion: (e.g., Ongoing, Complete, FY)
Metrics	Quantifiable measurements that are used to evaluate performance.	
Contribution to Emissions Reductions	 Leaves for GHG reduction impacts, described above in Table 1.	
Barriers	Circumstances that would prevent this strategy from success or that need to be overcome in order to implement the strategy.	
Progress to Date		**Status**
• Example of an in progress or completed milestone or next step.		Date or update of point in time that the milestone will be completed.
CEP Guiding Principles and Co-Benefits	Example of a Community Energy Plan goal that this strategy is working towards realizing. This may include the policy number and purpose of the CEP goal.	
Expected Costs	Coins for cost estimates, described in above in Table 2. Public:  County: 	
Interaction with other strategies	This strategy may involve cross over with other strategies throughout the County and externally. These other strategies will be listed here.	

The Carbon Roadmap is intended to be a living document that will be updated with new strategies, initiatives and other progress over time. This table will catalogue the updates of this document over the 3-5 year time period.

Date	**Update**

October 2024	Carbon Roadmap Years 3-5 released

Summary of Sectors and Years 3-5 Strategies

Buildings and Development

	Strategy B.1 Increase the number of ENERGY STAR-labeled buildings to 80[1] by 2025 and encourage greater energy efficiency and the use of lower carbon fuels in buildings
Description	This strategy encourages greater energy efficiency gains by promoting and updating the special exception development process and the transformation of construction certifications and by increasing the use of ENERGY STAR™ labeling and lower carbon fuels. The ENERGY STAR™ label indicates that a building's energy performance is in the top 25% of buildings in their building type nationally. Other energy efficiency labels such as the Green Building Index (GBI) may also be encouraged. Buildings that receive bonus density under the Green Building Incentive Program (GBIP) commit to achieving ENERGY STAR™ certification. Arlington staff will work with property owners, managers, and other stakeholders to encourage building owners and managers to pursue certification, and to quantify and qualify the multiple benefits gained when a building earns an ENERGY STAR™ label. Arlington will launch a recognition program for buildings that achieve ENERGY STAR™ certification either voluntarily or for compliance with GBIP requirements.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	CPHD, AED, Building Developers, Building Managers, property owners, and Energy Consultants

Milestones and Next Steps	**Status**
• Quantify and qualify ENERGY STAR™ benefits and impact	
• Recognition of ENERGY STAR™ certified buildings	
• Achieve 2025 goal for ENERGY STAR™ certified buildings in the County	

[1] As ENERGY STAR certification for buildings can be achieved on an annual basis, Arlington will assess this goal on a five-year rolling basis (i.e., the goal of 80 ENERGY STAR certified buildings is achieved for 2025 if 80 unique buildings have been certified from 2021-2025).

Metrics	**Buildings in Arlington County with Energy STAR™ label, by location** **Benefits/co-benefits impact** **GHG emission reductions relative to median energy performance**	
Contribution to Emissions Reductions		
Barriers	Funding; reliance on incentive programs to drive energy performance lacking in VA Building Code	
Progress to Date		**Status**
	• Between 2018 and 2023, 72 buildings earned confirmed ENERGY STAR certification	2018-2023
	• Identify benchmarking opportunities through both mandatory GBIP requirements and voluntary participation	2024
CEP Guiding Principles and Co-Benefits	Buildings Goal 1: Policies 1.1 - 1.4 Environmental commitment: improved air quality from lower building emissions Energy security: improved energy diversity and resilience Energy equity: increased affordability and accessibility of energy and energy programs	
Expected Costs	Public:  County: 	
Interaction with other strategies	Green Building Incentive Program (GBIP); potential federal grant programs for building upgrades; and Sustainable Facilities Strategy implementation	

Strategy B.2 Develop measures to address the split incentive between renters and owners over energy bills

Description	Roughly 71% of Arlington's population reside in multifamily apartment or condominium buildings. Typically, energy bills are paid directly by tenants while the whole-building operational systems are fully controlled by the landlord. Building owners are often disincentivized from making improvements as energy bills are the direct responsibility

	of the tenant, and tenants have no control over capital or maintenance investments to upgrade building systems ("split incentive"). Arlington will evaluate and implement programs to address the split incentive. Examples include energy efficiencies, green leases, green mortgages, pay-for-performance contracts, etc.
Lead Implementer(s)	DES-OSEM-AIRE and County Attorney's Office (CAO)
Stakeholders and Partners	AED, CPHD, DMF, DES-FMB, APS, other county agencies if their buildings are among those included in an ESA

Milestones and Next Steps	**Status**
• 2025 Literature review and benchmarking program best practices for programs that address the split incentive between renter and property owners	
• Develop energy efficiency leases or service agreements to address split incentive between renters and owners over energy bills	
• Promote energy service agreements for private sector buildings and for government facilities	

Metrics	Number of Building Rental Engagement initiatives and actions Number of Rental Building Owner/Operators providing feedback Potential number of Rental Buildings taking some affirmative action toward green lease practices or building measures
Contribution to Emissions Reductions	
Barriers	Willingness of building sector to engage Education gap Low interest renter profile (regarding energy performance) High cost of rental market

Progress to Date	**Status**
• Renter Survey Completed	2024
• Renters Resources website developed	2024
•	2025

CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.2 Goal 5, Policies 5.3 and 5.4
Expected Costs	Public:  County: 
Interaction with other strategies	CMRI 2.0

Strategy B.3 Launch and implement GBIP Upgrade / Pilot Program

Description	Previously, the County has focused its Green Building design and construction measures and activities on new buildings, relied upon modeled standards such as LEED®, and did not address opportunities for outreach, education and market transformation at project inception, when energy- and climate-performance design and construction decisions are made. In addition, the existing GBIP and its iterations since 2000 have not addressed existing buildings, which represent the largest greenhouse gas sources in Arlington's building sector. The proposed re-visioning of the GBIP prioritizes certified energy and other outputs (as opposed to modeled), introduces a public outreach and market transformation program for developers, building owners, architects and consultants, expands the incentive pool to include financial incentives along with bonus density, and, for the first time, introduces an existing buildings pathway (for repositioning as well as adaptive reuse). In addition, this is an area where entrepreneurial thinking is a core element of the climate strategy. Re-visioning Proposal is presented as a flexible, 5-Year Pilot Program.
Lead Implementer(s)	DES-OSEM-AIRE; CPHD
Stakeholders and Partners	AED, Building Developers and Owners, Managers and Operators, Energy Consultants, Arlington Chamber of Commerce, NAIOP

Milestones and Next Steps	**Status**
• Complete stakeholder engagement by October 2025	Continuous throughout cycle and rolling (into future cycles)

• Board decision on new GBIP Proposal by January 2025	On-Schedule

Metrics (based on assumption of piloting the program over 5 years, 2025-2029)	**Subject to the new GBIP, as adopted by the Board:** PHIUS Opt-ins by Developers and total square footage Number of Existing Building Renovations under the Green Building Incentive Program (GBIP) Adaptive Reuse Projects modeled, designed under the GBIP Square footage designed under each of the Existing Buildings and Adaptive Reuse models of the GBIP Affordable housing opt-ins by developers and units generated Number of Projects with 10% or more increase in energy efficiency Participation in Outreach/Market Transformation Program Assessed GHG emissions reductions
Contribution to Emissions Reductions	
Barriers	Funding and Technology; reliance on incentives to drive energy performance lacking in VA Building Code
CEP Guiding Principles and Co-Benefits	Goal 1: Policies 1.1 - 1.4 Goal 2, Policies 2.2 and 2.4 Goal 5, Policies 5.2 and 5.4 Environmental commitment: improved air quality from lower building emissions Energy security: improved energy diversity and resilience Energy equity: increased affordability and accessibility of energy and energy programs

Progress to Date	**Status**
• Adaptive Reuse Cohort Project / Study and AIRE Immersion 2023/24	Complete 2023/24
• Pursue potential federal funding (IRA) to support funding for existing commercial and residential buildings	2023-2025
• Five million square feet registered in 2023 under existing Green Building design and construction	FY 2024

• Coordination with Arlington Economic Development and CPHD	2023 -2025
• Initial County Manager and County Board briefings	May 2024
• **Stakeholder and Public Outreach Campaign**	May – October 2024
Expected Costs	Public: Varies,  to County: 
Interaction with other strategies	Green Building Incentive Program; potential federal grant programs for building upgrades; and Sustainable Facilities Strategy implementation As re-visioned, the GBIP would also cross-cut and support parallel County priorities, e.g., Arlington Economic Development and the CMRI 2.0, Biophilic Cities Resolution, Racial Equity protocols, and redevelopent initiatives such as Plan Langstron Boulevard

	Strategy B.4 – Revise and assess contemporary single family residential programs
Description	County staff will collaborate to assess and develop options for new residential programming based on input from County residents that implements energy efficiency and electrification upgrades with an optimal balance between performance and cost.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Arlington Residents, Building Developers and Owners, Contractors, Energy Consultants, CPHD, Virginia Department of Energy

Milestones and Next Steps	**Status**
• AIRE team to review and benchmark residential building energy performance programs	Q2 2025
• Scope and recommend program design	Q4 2025

Metrics	Energy use reductions, program participants, number or measures implemented Program impact and scalability (number of participating households, LMI program participants)	
Contribution to Emissions Reductions		
Barriers	Staffing capacity, funding	
Progress to Date		**Status**
• Benchmark Green Home Choice – indicating low-performance TRC		
CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.3 Goal 5, Policies 5.1 and 5.4 Goal 6, Policy 6.1	
Expected Costs	Public:  County: 	
Interaction with other strategies	CPHD Site Plan conditions and review	

Strategy B.5 - Update C-PACE Ordinance and Program

Description	In 2018, Arlington launched the Commonwealth's first Property Assessed Clean Energy (PACE or C-PACE) program, to provide a competitive funding option for commercial building owners to install energy and water efficiency measures as well as resilience features that enhance a building's value and performance. the Program is managed by a third-party Administrator who contracts with capital providers for the upfront capital costs, which are then repaid by a lien placed on the commercial property and repaid over time. T The State C-PACE enabling legislation has been updated since 2018 to add the water efficiency and resilience measures. The County will update its C-PACE ordinance to keep consistent with Virginia legislation, and to clarify terms that Administrators and capital providers found unclear in the original ordinance.
Lead Implementer(s)	DES-OSEM-AIRE, CAO, Treasurer's Office, Recorder's Office
Stakeholders and Partners	Private commercial property owners, capital providers

Milestones and Next Steps	**Status**
• Update the County's C-PACE ordinance to match current enabling legislation and meet market demands & needs. This includes working with multiple departments to align interests and answer process questions.	Q2-Q3 2024
• County Board approval of a Request to Advertise, followed by adoption of the updated Ordinance and Program	RTA Nov-2024 Adoption Dec-2024
• Announce and market the updated ordinance to capital providers, commercial building energy efficiency contractors and consultants, property owners (via Arlington BIDs), and others	Q3 2024 to 2025

Metrics	Annual reports from C-PACE Program Administrator, to include: • Number of approved and closed projects • Project types, e.g., energy efficiency, renewable energy, combined • Property types, e.g., office, retail, non-profit, industrial • Project sizes in dollars, i.e., range, average, median • Total capital invested • Clean energy deployed (kW/ MW) • Energy saved (MMBTU) • Energy cost reduction ($) • Reduction in GHG emissions (Tons) • Local Jobs created Annual utility bill (consumption and cost) data from Owner or utility pre- and post-project completion for C-PACE financed projects Comparison of building actual performance to projected performance over the initial one-year performance period
Contribution to Emissions Reductions	
Barriers	Complexity of updating the Ordinance and Program and managing new program change requests from capital providers
Progress to Date	Ordinance and Program updates and associated negotiations are complete
CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.2 Goal 5, Policies 5.3 and 5.4
Expected Costs	County: 

Interaction with other strategies	Green Bank programs, CMRI 2.0

	**Strategy B.6 - Work with USGBC & Arlington stakeholders on LEED v.5 (energy optimization updates)**
Description	The United States Green Building Council (USGBC) is developing the next iteration of its LEED standard; LEED v5. The Council intends to embrace market demands that align with critical imperatives in the built environment, such as decarbonization, ecosystem conservation, and equity. By virtue of this update, USGBC allows for a public comment period, in which local governments can participate in reviewing and providing feedback to the draft proposal. The AIRE Team's Green Building Performance Program will engage in this comment period, provide feedback, and advise how this update may affect Arlington's Green Building Incentive Program (GBIP). Aside from the public comment period, Arlington's AIRE Green Building Staff intends to influence the Council's LEED update via additional opportunities.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	USGBC

Milestones and Next Steps	**Status**
Rating system refinement	In Progress
Ballot and member ratification	Q4 2024
Early 2025 Rating system opens for registration	Q1 2025
Propose and implement an Automatic Update for LEED v5 in the GBIP	In Progress

Metrics	USGBC will decide and manage metrics.

Contribution to Emissions Reductions	
Barriers	None
Progress to Date	In Progress; comments and questions were provided in the first public comment period over Q2of 2024. The second public comment period is currently open and staff will provide additional feedback by Q1 2025.
CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.2 Goal 2, Policies 2.1, 2.2 and 2.4 Goal 3, Policy 3.4 Goal 5, Policies 5.1, 5.2 and 5.4
Expected Costs	Non-County: None County: None
Interaction with other strategies	Green Building Incentive Program (GBIP), CMRI 2.0

Resilience

	Strategy R.1 Promote battery storage options under IRA-funded programs administered by the Commonwealth	
Description	Continue to track and evaluate federal grant opportunities for incentivizing installation and usage of battery storage options.	
Lead Implementer(s)	Vendors	
Stakeholders and Partners	DES-OSEM-AIRE; Dominion Energy; civic and commercial organizations; CBOs	
Milestones and Next Steps		**Status**
• Track and assess 2024-2025 federal grant cycle		2024-2025
• Consult with CBOs, advocates and nonprofits on potential end user clusters		2024-2025
• Develop proposals and apply for relevant grants, if any		Q1 – Q2 2025
• Implement grant awards, if any; or design County implementation programs		2025
Metrics	Number of installations (including critical infrastructure)	
Contribution to Emissions Reductions		
Barriers	Availability and competition of grants Funding and cost	
Progress to Date	Since 2023, tracking and assessment of federal grants has been routine	
CEP Guiding Principles and Co-Benefits	Goal 2; Policies 2.1 and 2.2	
Expected Costs	Public:  County: 	
Interaction with other strategies	Energy Assurance Plan; Green Building Incentive Program	

	Strategy R.2 Identify and Analyze Resiliency Technologies	
Description	County staff will identify and analyze energy resiliency technologies using a systematic approach to understand the various options available to enhance the resilience of energy systems technologies and best practices.	
Lead Implementer(s)	DES-OSEM-AIRE, DES, DPSCEM, and DTS	
Stakeholders and Partners	Relevant County agencies, e.g., ISD, ACFD, Dominion Energy, elected officials, federal agencies, state agencies, NGOs, regional governmental organizations, foundations, consultants, and business and civil sector partners.	
Milestones and Next Steps		**Status**
• Research Technologies: Conduct research to identify a range of energy resiliency technologies that can mitigate the identified risks. These may include: o Microgrids: Small-scale power grids that can operate independently or in conjunction with the main grid o Energy Storage: Batteries, pumped hydro storage, or other storage technologies to store excess energy for use during outages o Distributed Generation: Renewable energy sources such as solar panels, wind turbines, or small-scale gas generators located close to the point of use o Smart Grids: Advanced grid infrastructure that incorporates sensors, automation, and communication technologies to improve reliability and efficiency o Demand Response: Programs that incentivize consumers to reduce their energy consumption during peak periods or emergencies o Backup Power Systems: Diesel generators, fuel cells, or other backup power sources to provide electricity during outages		2024-2025
• Evaluate Suitability: Assess the suitability of each technology based on factors such as location, energy requirements, budget, and existing infrastructure. Regulatory and Policy Considerations: Consider regulatory requirements and government incentives that may impact the deployment of energy resiliency technologies. Explore available grants, tax credits, or other financial incentives to offset costs.		2024-2025

• Cost-Benefit Analysis: Conduct a cost-benefit analysis to compare the upfront costs, operational costs, and potential benefits of implementing each technology. Consider factors such as energy savings, reliability improvements, and avoided outage costs.	2024-2025
• Determine Ability to Integrate: Evaluate how the different technologies can be integrated into your existing energy infrastructure to maximize their effectiveness and resilience	2024-2025
• Regulatory and Policy Considerations: Consider regulatory requirements and government incentives that may impact the deployment of energy resiliency technologies. Explore available grants, tax credits, or other financial incentives to offset costs.	2024-2025
• Pilot Projects and Testing: Consider implementing pilot projects or conducting testing to evaluate the performance of selected technologies in real-world conditions before full-scale deployment	2024-2025
• Continued Monitoring and Optimization: Once implemented, continue to monitor the performance of energy resiliency technologies, and make adjustments as needed to optimize their effectiveness over time.	2025 +

Metrics	Number of energy resiliency projects implemented Capacity of storage deployed	
Contribution to Emissions Reductions		
Barriers	Funding for consultants and implementation	
Progress to Date		**Status**
		New
CEP Guiding Principles and Co-Benefits	Goal 2, Policies 2.1 and 2.2 Goal 5, Policies 5.3 and 5.4	
Expected Costs	Public:  to  County:  to 	
Interaction with other strategies	Energy Assurance Plan	

	**Strategy R.3 - Early Development for Microgrids and Resiliency Hubs**
Description	A majority of the power transmission and distribution assets that serve Arlington County are above ground and vulnerable. Since August 2000, the County has experienced over 30 extreme weather events resulting in a total of 380 days of severe weather conditions. The most common hazards impacting the County were high winds, urban/inland flooding, and extreme temperatures. These events – resulting in approximately 3,614,200 power outages and totaling over $15 million in direct damages – have exposed the limits and vulnerabilities of the County's electrical grid that could lead to more severe consequences as the frequency and severity of disasters continues to rise. A microgrid is a localized group of interconnected electricity sources and loads that operates autonomously or is connected to the traditional centralized grid but can function independently in the event of a grid outage. The key characteristic of a microgrid is its ability to disconnect from the main grid and operate in "island mode" during emergencies or outages, providing localized power to critical loads within its boundaries. Additionally, microgrids can support grid stability and efficiency by enabling demand response, load shifting, and other smart grid functionalities. A resiliency hub is a centralized location equipped with resources and infrastructure designed to support communities, particularly in times of emergencies or disasters. These hubs serve as focal points for coordination, communication, and assistance during crises, providing essential services and support to affected individuals and communities.
Lead Implementer(s)	DES-OSEM-AIRE, DES-Facilities, DPSCEM, DTS
Stakeholders and Partners	DES-Transportation; DHS; Power Utilities; Civic Federation; Civic Associations and CA Alliances

Milestones and Next Steps	**Status**

• Conduct Comprehensive Feasibility Study for Microgrid(s) and Resiliency Hub(s) • Install resiliency hub measures at Lubber Run • Conceptual design for portable resiliency hub framework	Federal BRIC Grant submitted

Metrics	**Critical services and/or community assets kept online during a large-scale grid outage** **Number of people who could be served by the resiliency hubs**
Contribution to Emissions Reductions	
Barriers	Funding

Progress to Date	**Status**
• Submit BRIC Planning Grant for Comprehensive Feasibility Study Microgrid(s) (up to 3 sites) and Resiliency Hubs (up to 9 sites)	Oct 2023 VA Approved May 2024 FEMA Pending
• Incorporated multiple Resiliency Hubs in LIDAC Areas as part of an EPA Environmental Justice Community Change Grant Proposal	June 2024 Submit
• Benchmarking and Literature Review re Mobile or Portable Resiliency Units	Q4 2024 – Q2 2025

CEP Guiding Principles and Co-Benefits	**Goal 2, Policies 2.1, 2.2 and 2.3**
Expected Costs	County:  to Public – TBD (assuming 3P Microgrid options)
Interaction with other strategies	Cross-cut with Emergency Management Plan; Equity Policy

	Strategy R.4 Assess urban heat island impacts and strategies
Description	Reduce urban heat island (UHI) impacts that result in higher ambient temperatures in urban areas, increasing summertime energy demand, greenhouse gas emissions, and heat- and air quality-related illness. Extreme heat, especially under patterns of high frequency, intensity and duration will adversely impact urban infrastructure and increase government costs of maintenance and operations, diminish economic activity, interrupt supply chains, and create a number of environmental stressors. Social, environmental and economic impacts of extreme heat are more severe in disadvantaged communities due to housing types and ages, restricted transportation options, pre-existing health vulnerabilities and disabilities, increased rates of outdoor labor, and lack of resources for personal responses and remedies to mitigate extreme heat.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	CPHD, Transportation, Department of Public Health (DHS), DPR, AED, developers, Civic Federation, Chamber of Commerce, Community-Based Organizations, Affordable Housing developers, and academic partners.

Milestones and Next Steps	**Status**
• Develop and socialize core objectives/goals and scope of work for Heat-Risk Assessment (including strategies and cost-benefit analysis) • Administer and complete Heat-Risk Assessment	Pending funding for a comprehensive, comparative assessment

Metrics	Alternative funding secured Updated projections of heat IDF curves Related human health metrics
Contribution to Emissions Reductions*	*Impactful co-benefits that supplement emission reductions
Barriers	Funding

Progress to Date	**Status**

• Support Partnership with the Virginia Climate Center (GMU) under the Center for Climate Risk Applications grant	Launched Feb-2024
• OSEM internal literature review on BMPs and programs from comparable jurisdictions.	Q4 2024 – Q2 2025
• Incorporated Comparative Heat Risk Study as part of an EPA Environmental Justice Community Change Grant Proposal	June 2024 Submit
• Consult CPO re extreme heat and future climate action planning	Q4 2024 in-progress
CEP Guiding Principles and Co-Benefits	Goal 2, Policy 2.1 Goal 5, Policies 5.2, 5.3 and 5.4
Expected Costs	Public:  County: 0 -  - to 
Interaction with other strategies	Forestry and Natural Resources Plan (FNRP), GBIP; Comp Plan Update; Plan Langston Boulevard; Equity Policy

Renewable Energy

	**Strategy RE.1 Facilitate renewable energy installations for low-to-moderate income households**
Description	Energy equity and equitable access to renewable energy reflect the highest objectives under the County's DEI commitments across all sector programs. The Inflation Reduction Act offers unprecedented support for energy incentives specifically matched to residents and businesses in underserved communities. Many of these federally-funded programs – covering energy efficiency, renewable energy, and decarbonization measures, systems and appliances, and administered by the Commonwealth – offer a new, robust and sustained foundation for driving healthier environments, reduced greenhouse gas reductions, and lower utility costs for disadvantaged constituents. In addition, federal tax incentives offer building owners tangible incentives for energy improvements and solar installations on rental buildings, both residential and commercial. The County will continue to work with other regional jurisdictions, stakeholders, non-profits, universities, and others to pursue community-wide solutions, federally funded onsite-solar and solar cooperative options, which provide substantial, diverse, and meaningful equity and equal access objectives. Efforts must also include building owner/operators, to reach prominent rental building stock and to address the split incentive tension of "who invests, who pays" in the rental market. This strategy also incorporates reducing the regulatory barriers to renewable energy access through shared and community solar programs.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Regional jurisdictions and organizations such as NVRC and the MWCOG, Solar Vendors and solar cooperatives, Arlington Residents and Businesses, Arlington County ISD, Department of Community Planning, Housing and Development (CPHD), Department of Human Services (DHS), Affordable Housing Partners, regional jurisdictions, Dominion Energy Virginia, ACFCU, Virginia Department of Energy
Milestones and Next Steps	**Status**

• Streamline the process for constituents to access and use renewable energy resources	Developing
• Identify federal grant and incentive programs supporting energy efficiency, decarbonization, and renewable energy upgrades	Continuing
• Coordinate program marketing and release schedules with VA DEQ; and develop outreach strategy, channels and content	Q4 2025; rolling into 2025 calendar year
• Assess categories of low-income housing for solar-readiness (through implementation of the EPA Environmental Justice G2G Project) 2024-2026	Implementing
• Continue to advocate for reducing and removing regulatory barriers for community and share solar programs.	Continuing, Share Solar comments submitted in Q3 2024

Metrics	Number of participants in programs providing energy to low-to-moderate-income households, by location Arlington participants, investment and energy savings in HEERES and HOMES federal incentives grant programs. Amount of time from permit application to finalization Annual assessment of GHG and energy impacts
Contribution to Emissions Reductions	
Barriers	Funding; Staff capacity, Federal funding awards.

Progress to Date	**Status**
• Leverage data from NREL Technical Study (Barcroft) from Clean Energy to Communities (C2C) Program	Complete
• Memorandum of Understanding with SUN-Switch re Solar Co-Op Program	Feb 2024
• Possible cross-jurisdictional partnership for "energy concierge" services	Contingent

CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.3. and 1.4. Goal 3, Policy 3.4

Expected Costs	County:  to Public 
Interaction with other strategies	Affordable housing, Regional targets for renewable energy deployment, NVRC and COG

	**Strategy RE.2 Use PPAs, VPPAs, and green power purchases to meet the CEP renewable electricity targets**
Description	Power Purchase Agreements (PPA) are transactions where a property owner contracts with a solar vendor/operator to design, install, operate, and maintain on-site solar for a set price paid by the property owner to the solar vendor-operator. A virtual power purchase agreement (VPPA) is a contract that allows a customer (buyer) to obtain renewable electricity from a specific off-site location, e.g., a solar farm or wind farm. Other mechanisms may exist for increasing Arlington's renewable energy profile, including purchase of "green energy", retail choice transactions, and aggregated transactions. Each of these options poses challenges that must be explored and, to the greatest extent, overcome. For example, the definition of "renewable energy" under Virginia law does not fully align with Arlington standards, but the power utilities apply the Commonwealth definition to define its "green energy" purchase option. Also, the green energy option pricing may exceed that offered under a VPPA. Further, the Virginia Clean Economy Act of 2020 includes language that bars new VPPAs like the one in which the County partnered with Dominion Energy Virginia and Amazon (2020). Thus, Virginia law limits options for local governments to secure, or to act on behalf of or in concert with residential or business ratepayers to secure, renewable energy resources.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	County Attorney's Office, County Manager's Office, Legislative Liaison Office, DES-FDC, DES-FMB; as well as Dominion Energy; VEPGA, and VESPN.

Milestones and Next Steps	Status
• Attain 100% RE for Government electricity use by 2025	Completed 2023
• Contractor to support PPA implementation (with site-specific feasibility limitations)	Complete[2]
• Pursue additional renewable resources to meet increased energy demand from building and transportation electrification, e.g., assess retail choice, aggregation and utilize the renewable electricity with the highest quality attributes that are cost effective.	2024~2025
• Legal and regulatory assessment of community choice aggregation, retail choice and aggregation	Q4 2023 – Q4 2025
• Complete solar analysis for existing County facilities	Planned FY 26

Metrics	Number of new PPAs by location and installation capacity Number of new VPPAs by location and installation capacity MW of energy contracted through PPA and VPPA arrangements % Renewable Energy powering Government facilities by type of resource
Contribution to Emissions Reductions	
Barriers	Funding, Lack of Legislative and/or Regulatory Frameworks to support local or regional government alliances to drive independent energy resources; Significant Market Constraints and Lack of Choice and Competition

Progress to Date	Status
• Complete competitive procurement for Power Purchase Agreement Solar vendor	Complete Q2 2024

[2] Noting that only one vendor applied and qualified under a Master Request for Proposals issued by the County. That entity is Dominion Energy Solutions, a wholly-owned subsidiary of Dominion Energy Virginia. Prior to issuance of the RFP, the only solar vendor active with Virginia jurisdictions and school districts was SunTribe, which obtained its equity funding solely from Dominion. The County had a prior contract with SunTribe for solar installation on the Lubber Run Community Center but, after 2-½ years of accommodation, SunTribe failed to meet initial due diligence and secure funding, and demanded infeasible changes to the contract before its obligations could be met. As a result of non-performance, the County cancelled the agreement with SunTribe.

• Work with PPA Vender to complete financial feasibility evaluation of County list of possible on-site solar sites. The County has provided Dominion Energy Solutions with a priority list of government facilities (greatest priority given to Lubber Run Community Center) for its feasibility assessments.	Q2 2025
• Initiate on-site solar installation. Board approved Lubber Run Community Center in July 2024.	Q3 2024
• An initial draft legal and regulatory analysis of community choice aggregation and retail choice has been completed, comments provided by CAO and OSEM, and revised version is scheduled for Feb-2024 (for initial review with the County Board).	Q1 2024
• Continuing discussion and organization among multiple Virginia jurisdictions regarding municipal aggregation.	

CEP Guiding Principles and Co-Benefits	Goal 3, Policies 3.1 - 3.4 .
Expected Costs	Public:  to County: 
Interaction with other strategies	Sustainable Facilities Policy

Strategy RE.3 Assess ability to use solar carports

Description	Focus: Non-county Streamline the processes for commercial property owners and for single-family homeowners with driveways to use solar carports to generate renewable electricity.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	CHPD-Planning, CPHD-Zoning, ISD, DES-Transportation, Incumbent Investor-Owned Utilities

Milestones and Next Steps	**Status**

• Engage Dominion Energy on technical and operational issues related to installations of portable and fixed solar facilities on single-family residence and commercial properties, respectively, including net metering agreements and interconnection parameters	New
• Map open commercial lots in Arlington County measuring more than 5,000 square feet	
• Socialize the above, on a continuous basis, with key stakeholders and advocates	
• Engage Dominion Energy Virginia on pricing and transactional options for portable and fixed solar facilities on single-family and commercial properties	

Metrics	Number of solar carport and/or open lot systems installed
Contribution to Emissions Reductions	
Barriers	Zoning, Site Plan Conditions, Bi-directionality of technology, Net-metering agreements, cost to commercial stakeholders; utility interconnection parameters, net-metering restrictions
Progress to Date	New
CEP Guiding Principles and Co-Benefits	Goal 3, Policies 3.1 and 3.4
Expected Costs	Public:  to County:  to
Interaction with other strategies	Cross-cut with EVSE efforts and Resiliency projects

Strategy RE.4 Evaluate Solar Co-Op Program Design and strategies for Greater Conversion Rates

Description	Over the past decade, Arlington County has participated in multiple regional solar cooperative programs and generally performed in a leadership role for the region. The 2024 early performance metrics suggest that a market and design assessment of the Program is timely and necessary to grow future impact of these programs; including consideration of program focus, marketing, and whether the Arlington market for residential solar may be moving from the "solar-ready" to a more challenging "solar-persuadable" target market.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Solar Co-Op Administrators (Solar Switch – partnered with Solar United Neighbors, and Solarize), Northern Virginia Regional Commission (NVRC), Metropolitan Washington Council of Governments (MWCOG)

Milestones and Next Steps	**Status**
• Comparative benchmarking analysis of regional and national solar co-op programs	Complete Q2 2025
• Implement recommended changes, if any, to Program design and marketing	Launch Q4 2025

Metrics	Enrollment-to-installation participation metrics; regional comparative performance metrics; geospatial location of program uptake; annual and cumulative GHG emissions reduction projections
Contribution to Emissions Reductions	
Barriers	Staffing capacity and funding; potential market trends; solar ready market is becoming exhausted
Progress to Date	See Milestones above

Progress to Date	**Status**
• Update and adopt Solar Tax Exemption Ordinance	May 2024 Adopted
• Conduct market and performance assessment of 2024 Program (in-progress)	Q4 2024
• Develop benefits/opportunities one-sheet (including local and federal incentives)	Q3 2024 Complete

CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.3 Goal 3, Policies 3.2, 3.3 and 3.4 Goal 5, Policy 5.4
Expected Costs	Public:  County: half to 
Interaction with other strategies	Regional targets for renewable energy deployment, NVRC and COG

Transportation

	**Strategy T.1 Design capital projects to increase connectivity between trails and other transportation channels to support multi-modal mobility. (CNTMP)**
Description	Expands the transportation infrastructure for convenient and effective use of carbon-free, micro-mobility options, including but not limited to trails, bike lanes as part of Complete Streets.
Lead Implementer(s)	DES-Transportation; ACCS, DPR
Stakeholders and Partners	OSEM, AIRE, DES-Engineering Bureau, Park Development Division (PDD)

Milestones and Next Steps	**Status**
• Continue the development of trails and complete streets improvements	In progress

Metrics	Number of connectivity projects Miles connected (counting full scale of connectivity, not only new connecting sections)
Contribution to Emissions Reductions	Individual project impacts vary, up to 
Barriers	Funding; possible need for State or national permitting
Progress to Date	***Ongoing.*** (Strategy originates with CNTMP 5-Year Action Program)
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.2 Goal 5, Policies 5.2 and 5.3
Expected Costs	County: 
Interaction with other strategies	Vision Zero, Master Transportation Plan, Biophilic Cities Resolution, Public Spaces Master Plan, Forestry and Natural Resources Plan

	**Strategy T.2 Develop or Expand Three Public Education Campaigns Regarding Clean Transportation Options and Benefits. (CNTMP)**

Description	Campaigns that inform and promote the use of carbon-free travel options, e.g., environmental benefits, health benefits, bike safety, mapping decarbonized routes of travel	
Lead Implementer(s)	DES-AIRE (Behavioral Change and Market Transformation); OSEM	
Stakeholders and Partners	ACCS; DES-Transportation; DES-Transit, DPR	
Milestones and Next Steps		**Status**
• Research cost and environmental benefits of measuring avoided SOV trips/SOV mileage avoided by micro-mobility equivalencies; and calculate correspondence GHG avoidance		In-Progress; Continuing
• Benchmarking safety programs/policies for electric-battery vehicles		Q1 2025
• Mapping/updating map (GIS) of micro-mobility channels, corridors and inter-connectivity		Q2 2025; Annual
• GHG Projections under multiple scenarios of micromobility market uptake		Q2 2025
• Develop possible means for measuring outreach impacts		Q3 2025
Metrics	Scale of distribution and market channels Hits per web-based marketing Use metrics for micro-mobility options, e.g., Capitol Bike-Share, electric scooters, etc. and sales data from commercial vendors Number of vouchers in program uptake Attendees at educational event	
Contribution to Emissions Reductions	Varies *Potential measurement through applications	
Barriers	None	
Progress to Date		**Status**
• Coordination with Permitting and the Fire Department on safety guidelines re electric-battery vehicles		In-Progress; Continuing

CEP Guiding Principles and Co-Benefits	Goal 4, Policy 4.4 Goal 5, Policy 5.4 Goal 6, Policy 6.2
Expected Costs	Public:  County: 
Interaction with other strategies	CNTMP; ACCS Strategic Plan;

Strategy T.3 Convene discussions with at least 3 potential electric car share program partners and (as relevant) recommend partnership to pursue as a pilot (CNTMP)

Description	Benchmarking, survey and literature review process to evaluate active electric car-share programs, suitability and compatibility with Arlington County, and recommendation and development of a pilot model
Lead Implementer(s)	OSEM-AIRE
Stakeholders and Partners	National local governments; consultant; EV car-share program administrators

Milestones and Next Steps	**Status**
• Complete Car-Share Program Study, using comparable jurisdictions	June-2024
• Funding – outside EPA EJ Community Change Grant, to seek funding through County and other alternative funding sources (see Strategy T4 below)	2025

Metrics	Milestones completed; if funded, Pilot Program metrics will include 1) number of trips; 2) distribution and cadence of trips; 3) tracking origin-destination patterns; 3) miles travelled
Contribution to Emissions Reductions	
Barriers	Funding; staffing capacity for Program management and potential grant implementation

Progress to Date	Status
• Benchmarking, surveys and lit review	Completed
• Interview(s) with EV car-share administrators	Completed
• Recommendations for Arlington-compatible program	Completed
• Funding – EV Car-Share Pilot integrated as an element of OSEM Proposal under the EPA Environmental Justice Community Change Grant	June 2024 Submitted

CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1, 4.2 and 4.4 Goal 5, Policy 5.3 Goal 6, Policy 6.5
Expected Costs	County: to Public: <
Interaction with other strategies	CNTMP; Equity Policy; Master Transportation Plan

Strategy T.4 Inventory opportunities for grants/ other funding to support electric car share programs and (as relevant) recommend funding opportunities to pursue. (CNTMP)

Description	Continuation of the 2022-23 actions to monitor, track and identify potential grants that may fund EV car-share programs or pilots.
Lead Implementer(s)	OSEM
Stakeholders and Partners	AIRE; CBOs

Milestones and Next Steps	Status
• Implement pilot or program; and track performance metrics (see Strategy T.3 above (subject to funding, grant or otherwise)	Pending

Metrics	Trimester review and identification, if any

Contribution to Emissions Reductions		
Barriers	Opportunities to date are extremely limited; no state grants available as of Q3 2024	
Progress to Date		**Status**
• Partner with consultant		Continuing
• Trimester review of available, relevant state or federal grant opportunities		Continuing
• If available, develop and submit grant proposal focused on or including an EV Car-Share Pilot or Program		Done – 06/24 EPA Grant Submission
• Funding – EV Car-Share Pilot integrated as an element of OSEM Proposal under the EPA Environmental Justice Community Change Grant		June 2024 Submitted
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1, 4.2 and 4.4 Goal 5, Policy 5.3 Goal 6, Policy 6.5	
Expected Costs	County*:  to  *Grant funding Public: < 	
Interaction with other strategies	Master Transportation Plan; CNTMP; ACCS Master Plan	

	**Strategy T.5 Inventory opportunities for grants/ other funding to support incentive programs and (as relevant) recommend funding opportunities to pursue. (CNTMP)**
Description	Continuation of standard actions to monitor, track and identify potential grants that may fund metro-transit bus system, trails, discount fare, school bus, or other programs or pilots that advance decarbonization of transportation.
Lead Implementer(s)	DES-Transportation

Stakeholders and Partners	OSEM; AIRE; Equipment Bureau; DES-Facilities; DES-Engineering Bureau;	
Milestones and Next Steps		**Status**
• DES-Transportation Grant Team leads cyclical review of state and federal grant opportunities		Continuing
Metrics	Grants secured; level-of-funding; as relevant, work with AIRE to determine environmental impacts such as GHG emissions reductions	
Contribution to Emissions Reductions	 (up to 4-leaf level)	
Barriers	Number and type of grants available; competitiveness of grant opportunities	
Progress to Date		**Status**
• Applying to grants		Complete
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1, 4.2 and 4.4 Goal 5, Policy 5.3 Goal 6, Policy 6.5	
Expected Costs	County:  to	
Interaction with other strategies	Master Transportation Plan; CNTMP; ACCS Master Plan	

Strategy T.6 Cyclical Assessment of EV Market, EVSE Demand and Alternative Options (no less frequently than every 2 years)

Description	In order to stimulate uptake in EV ownership, Arlington County has and mapped an initial network of public-access/public-use electric vehicle charging ports (EVSE). A second objective of this program is to address EVSE demand for potential EV owners in multifamily buildings with limited or no EVSE as well as single-family homeowners without driveways or garages (where EVSE is installed in SF homes). As of Q4 2024, the EV and alternative vehicle market is in dynamic flux and, in order to strike a responsive and responsible EVSE penetration point, OSEM will conduct cyclical reviews to assess the market that

	will include without limitation: 1) EV ownership (currently at ~ 2.4%); 2) origin-destination demand along three primary transportation corridors; 3) emerging technologies; 4) alternative vehicle ownership trending; 5) public polls and surveys; 6) contributing factors such as construction costs, usage rates of existing public-use EVSE, maintenance and operations, risks and costs associated with any alternatives, and grid capacity.	
Lead Implementer(s)	OSEM	
Stakeholders and Partners	Property Tax Office; DES-Facilities; DES-Transportation; DES-Transit; DES-ACCS	
Milestones and Next Steps		**Status**
• 2024 Assessment		Est. Q2 2025
• Inform Capital Improvement Program Update		Q1 2026
Metrics	• EV and alternative vehicle ownership • EVSE usage rates by location • Scale of demand-supply in major transportation corridors • % of EVSE available in multifamily buildings • Commercially available EVSE	
Contribution to Emissions Reductions	 (based on 10-year projection)	
Barriers	None	
Progress to Date		**Status**
• 2024 Analyses of origin-destination patterns and mapping potential EVSE locations on both government and private-sector sites		Done (part of the CNTMP)
• 2024 EV ownership analysis		Done
• Usage rates – public access-public use EVSE on government sites (2024)		Done
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.3 and 4.4 Goal 5, Policies 5.2 and 5.4 Goal 6, Policy 6.1	
Expected Costs	County: 	
Interaction with other strategies	CNTMP	

	**Strategy T.7. Establish a pilot program to provide incentives that offset the upfront cost of electric bicycles with at least 50% of funding allocated to low-income applicants. (CNTMP)**
Description	Design, launch and assess an E-Bike Pilot to provide an initial set of direct E-Bike incentives, based on two tiers for LIDAC and non-LIDAC applicants. Potential expanded E-Bike Program could include E-Bike accessories and storage units, as well as cargo and adaptive E-Bikes.
Lead Implementer(s)	OSEM-AIRE
Stakeholders and Partners	ACCS, DHS, Affordable Housing, Transportation, CPHD, Bike Arlington, and non-profit administrative support

Milestones and Next Steps	**Status**
• Launch Pilot	Q1 2025
• Implement and assess Pilot metrics	Q1 2025
• Open discussion of transition to expanded Pilot and funding	Internal Review under CAF – Q4 2024

Metrics	• Program participants • Number and miles of SOV trips avoided
Contribution to Emissions Reductions	
Barriers	Continued funding (which can escalate GHG emissions reductions)

Progress to Date	**Status**
• Develop Proposal for E-Bike Rebate Pilot under the US DOE Energy Efficiency Conservation Block Grant (EECBG) fund	Awarded June 2024
• Produce Pilot Design and engage partnerships with DHS and Eco-Action Arlington	Aug-Nov 2024
• Search and apply for additional support grants	Apr-Aug 2024

CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1, 4.2 and 4.4 Goal 5, Policy 5.4
Expected Costs	County: $ to $$ Public: $
Interaction with other strategies	ACCS Master Plan

Strategy T.8. Research and summarize smart phone apps that increase bike and pedestrian activity. As relevant, recommend at least one for a pilot. (CNTMP)

Description	Research and summarize smart phone apps that increase bike and pedestrian activity. As relevant, recommend one or more for a pilot.
Lead Implementer(s)	OSEM-AIRE
Stakeholders and Partners	ACCS, DES-BI and Technology Services, NREL, Bike Arlington

Milestones and Next Steps	**Status**
• Assess potential tools and applications that may be used in E-Bike Rebate Pilot (awarded June 2024)	Aug-Oct 2024
• If tools are used, analyze data gathered during E-Bike Rebate pilot	Q2 2025
• If tools are used, use data to extrapolate, project, and scenario-build for efficiencies under expanded E-Bike usage	Q2 – Q3 2025

Metrics	GHG emissions reductions, reclassification of VMT, impact on demand for bike trail/lane expansion
Contribution to Emissions Reductions	leaf to leaf leaf
Barriers	Quality of available tools; potential associated costs

Progress to Date	Status
• Develop Proposal for E-Bike Rebate Pilot under the US DOE Energy Efficiency Conservation Block Grant (EECBG) fund	Awarded June 2024
• Coordinate with National Renewable Energy Laboratory (NREL) on NREL-developed tool and demo tool	August 2024

CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1, 4.2 and 4.4 Goal 5, Policy 5.4
Expected Costs	County:
Interaction with other strategies	ACCS Master Plan; Transportation Master Plan, Strategic Transit Plan

Strategy T.9. Examine and summarize best practices in ROW charging and (as relevant) recommend one or more options to pilot in the County (CNTMP)

Description	This strategy seeks solutions to the space, structural and functional constraints and challenges to EVSE infrastructure in the ROWs.
Lead Implementer(s)	OSEM-AIRE
Stakeholders and Partners	Permitting, CPHD, DES-Transportation

Milestones and Next Steps	Status
• Develop Literature Review(s), summarizing regional programs as well as characteristically-comparable jurisdictions on a national level (e.g., City of Boston)	Complete Q2 2025
• Complete origin-destination demand calculations and mapping (as demonstrated in the CNTMP for south-western sector of the County)	Open, pending funding

• Identify special "charge desserts" compared to demand and existing infrastructure	Q1 2025
• Recommend modes and siting of pilots	Q2 2025

Metrics	
Contribution to Emissions Reductions	
Barriers	Continued funding to assess strategic sitings in Rosslyn-Ballston, Clarendon and Crystal/Pentagon City corridors

Progress to Date	**Status**
• Literature Review	In-progress (as of 09-01-2024)

CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4
Expected Costs	County:  Public:  to 
Interaction with other strategies	CNTMP 5-Year Action Program

Strategy T.10 Conduct targeted outreach within neighborhoods that include multi-unit dwellings to engage participants in one or more neighborhood EV charging cooperative pilot(s) (CNTMP)

Description	To address financial and other challenges to retro commissioning EVSE capacity in existing multifamily buildings or where land use development does not readily accommodate EVSE, e.g., residential neighborhoods without driveways or garages.
Lead Implementer(s)	OSEM-AIRE

Stakeholders and Partners	DES-Communications; DES-GIS	
Milestones and Next Steps		**Status**
• Work with GIS to map open lots and owners adjacent or convenient to concentrated multifamily / condominium development areas		Q2 2025
• Work with GIS to map residential neighborhoods without driveways or garages		Q3 2025
• Research and develop literature review regarding challenges for EVSE in multifamily buildings and solutions/alternatives		Q4 2025
• Recommend modes and siting of pilots; identify potential incentives (including fast-track permitting)		Q1 2026
Metrics	Demand-cost projections	
Contribution to Emissions Reductions		
Barriers	EVSE retro-commissioning for EVSE is currently prohibitively expensive compared to EV ownership in buildings.	

Progress to Date	Status
• Survey-Polling Pilot with Multifamily Rental and Condominium Building representatives	Completed Q2 2024
•	
•	

CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4
Expected Costs	County:  Government Costs Public:  to 

Interaction with other strategies	CNTMP 5-Year Action Program

Strategy T.11 Continue deploying public EV chargers at seven or more County-owned sites (CNTMP)

Description	Measures taken to increase public-access/public-use EVSE capacity
Lead Implementer(s)	OSEM-AIRE with DES-Facilities
Stakeholders and Partners	DES-Engineering Bureau

Milestones and Next Steps	**Status**
• Installation of EVSE on government facilities (public-access/public-use)	Q2 2024 – Q2 2026
• Measure use-rates of public-access/public-use EVESE installed	Q2 2024 – Q2 2026
• Annual reporting on EVSE usage, with recommendations	Q2 2024 Q2 2025 Q2 2026

Metrics	Average usage rates on a daily scale GHG emissions reductions / equivalencies Cost-benefits analysis
Contribution to Emissions Reductions	
Barriers	Continued funding source(s); staffing capacity during federal grant implementation

Progress to Date	**Status**
• Initial tranche of sites assessed and mapped	Complete

• Installation of initial tranche EVSE	Start Q2 2024
• Partnered with MWCOG under Rounds 1 and 2 of the CFI Grant Program	CFI Round 1 Grant Award Aug-2024
• Assess and map 2nd Tranche of Sites	Start August 2024
• Submit CIP and CAF Budget Requests	Q2 2024
Expected Costs	County: 
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4
Interaction with other strategies	CNTMP 5-Year Action Program

Strategy T.12 Recruit at least 6 houses of worship, nonprofit organizations, and/or businesses to develop public-private partnerships with the County to deploy public chargers at their properties (CNTMP)

Description	Measures taken to increase public-access/public-use EVSE capacity
Lead Implementer(s)	OSEM-AIRE
Stakeholders and Partners	Dominion Energy; Permitting; CPHD; DES-Transportation-TE&O, Faith-active non-profits such as VOICE and FACS

Milestones and Next Steps	**Status**
• Map origin-destination demand in high-congestion corridors, with siting for public-private partnership opportunities	Start Q1 2024
• Complete analysis of all high-congestion corridors	Pending funding
• Engineering studies for each potential location (e.g., grid capacity, other underground infrastructure conflicts)	Q2 2024

• Installation of EVSE under 3P relationships		Pending funding
Metrics	Average usage rates GHG emissions reductions / equivalencies	
Contribution to Emissions Reductions		
Barriers	Interested partnerships; funding; potential physical limitations; staffing capacity during federal grant implementation	
Progress to Date		**Status**
• Initial tranche of sites assessed and mapped for South County / Columbia Pike Corridor		Complete Q2 2024
Expected Costs	County: Public:	
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4	
Interaction with other strategies	CNTMP 5-Year Action Program	

Strategy T.13 Benchmark Arlington County's standards (including permitting processes) against best practices (CNTMP)

Description	Undertaken to ensure that Arlington remains in a leadership position and engages best and proven practices for effective EVSE deployment among communities with like characteristics	
Lead Implementer(s)	OSEM-AIRE	
Stakeholders and Partners	DES-Transportation	
Milestones and Next Steps		**Status**
• Conduct Literature Review within applicable scope		Start Q1 2025

• Provide initial recommendations for new or improved processes		Q3 2025
Metrics	Average usage rates GHG emissions reductions / equivalencies Cost-benefits analysis	
Contribution to Emissions Reductions		
Barriers	Staffing capacity during federal grant project implementation	
Progress to Date		**Status**
• New strategy.		In progress
Expected Costs	County:	
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4	
Interaction with other strategies	CNTMP 5-Year Action Program	

Strategy T.14 Advance next phase of County Fleet Electrification and Continue Reducing Fleet Vehicle Assignments (CNTMP)

Description	DES, the Equipment Bureau, OSEM, AIRE, and DES-Facilities have developed a pathway for electrification of the Government Fleet, that launched with pilot vehicles in **2010**and now places Arlington in a strong leadership position with more than 51% of its passenger fleet comprised of EVS, a mini-fleet of EV vans, work and field vehicles, and the impending arrival of 12 BEB transit buses (representing the highest percentage of electrified metro transit fleet in Northern Virginia).
Lead Implementer(s)	DES-Equipment Bureau

Stakeholders and Partners	OSEM-AIRE; DES-Facilities	
Milestones and Next Steps		**Status**
• For passenger cars, achieve 60% ZEVs by 2025		Q4 2024 @ 54%
• For light-duty trucks/SUVs, continue toward target of 50% ZEVs by 2030 and 100% ZEVs by 2037		See below
• For M/HDV, assess available technologies for the County fleet including costs, availability, and early deployment outcomes. As relevant, recommend one or more vehicle types for pilots		See below
Metrics	Car fleet reductions E-Bike usage rates GHG emissions reductions / equivalencies	
Contribution to Emissions Reductions		
Barriers	E-Bike funding; Light-Duty Trucks/SUVs and M/HDV goals are subject to market options, costs, performance and risks	
Progress to Date		**Status**
• Initial tranche of vehicle reductions		Complete FY 24
• Initial E-Bike expansion		Start FY 25
• Ongoing fleet usage assessments		continuous
• Sedan conversion rate of 61% attained		FY 25
Expected Costs	County: Cost neutral to 	
CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4	
Interaction with other strategies	CNTMP 5-Year Action Program	

	**Strategy T.15 Inventory opportunities for grants and other funding to support fleet EV deployments and (as relevant) recommend funding opportunities to pursue (CNTMP)**	
Description	Support efforts to expand performance and increase GHG emissions reductions through additional, alternative funding	
Lead Implementer(s)	OSEM-AIRE	
Stakeholders and Partners	DES-Finance; DES-Equipment Bureau; DES-Transportation	
Milestones and Next Steps		**Status**
• Quarterly reviews of federal and state grant opportunities		Start Q2 2023, continuing
Metrics	Average usage rates GHG emissions reductions / equivalencies	
Contribution to Emissions Reductions		
Barriers	Funding; staff capacity	
Progress to Date		**Status**
• Submission of EV School Bus grant (eligibility requirements limited proposal to 3 buses)		Granted Q1 2024
• Federal IRA EV tax rebates application for FY 24 purchases		July 2024
• 2nd EV Bus Grant application under federal IRA Clean School Bus Program		Q3 2024
Expected Costs	County:  to	

CEP Guiding Principles and Co-Benefits	Goal 4, Policies 4.1 and 4.4 Goal 5, Policy 5.4
Interaction with other strategies	CNTMP 5-Year Action Program

Strategy T.16 Design and implement pilot program with Police Department to support at-home charging for electric law enforcement vehicles (CNTMP)

Description	"Charge First at Home" Programs for law enforcement have the potential to 1) reduce extraordinary grid infrastructure costs associated with locational aggregation of fleet and EVSE on government sites; 2) pilot performance of EVs for law enforcement and emergency use; and 3) demonstrate efficiencies and potential cost-effectiveness for expansion to other departments.
Lead Implementer(s)	DES-Equipment Bureau and Arlington Police Department
Stakeholders and Partners	OSEM-AIRE; DES-Finance; County Attorney's Office; County Risk Bureau

Milestones and Next Steps	**Status**
• Inventory and distance/use assessment of Police Department vehicles and identification of 1st Tranche Pilot	Q4 2024 Q1 2025
• Feasibility reviews, including cost, risk, tax, legal and regulatory aspects	Q3 2024 – Q2 2025
• Outreach to incumbent energy utilities for any incentive programs	Q1 2025
• Vehicle acquisitions and EVSE installations	Q2/Q3 2025
• Launch pilot	Q3/Q4 2025

Metrics	Costs and cost avoidance GHG emissions reductions / equivalencies

Contribution to Emissions Reductions		
Barriers	Funding; staff capacity	
Progress to Date		**Status**
• National research and review other "charge-first-at-home" programs		In progress
Expected Costs	County:	
CEP Guiding Principles and Co-Benefits	Goal 2, Policies 2.1 and 2.2 Goal 4, Policies 4.1 and 4.4 Goal 5, Policies 5.1, 5.2 and 5.4	
Interaction with other strategies	CNTMP 5-Year Action Program Enery Assurance Plan	

Strategy T. 17 - Formalize EV Charging Rate Ordinance (go from Temporary to Permanent)

Description	In July 2022, Arlington adopted an interim fee for public charging at County-owned EV charging stations, based solely on baseline cost recovery by the County. The Charging Rate Ordinance has allowed a one-year pilot period and data; supporting the adoption of a permanent EV Rate Ordinance (which may be considered and subject to change on an annual basis).	
Lead Implementer(s)	DES Budget & Finance	
Stakeholders and Partners	DES-OSEM-AIRE, DES-FMB, DES Transportation, Zoning	
Milestones and Next Steps		**Status**

• Finalize rate ordinance proposal	Q3 2024
• Brief C2E2 on the permanent rate ordinance	Q3 2024
• Present proposed permanent rate ordinance to the County Board	Q4 2024
• Develop communications plan for public on new fee structure	Q4 2024 – Q1 2025

Metrics	EVSE utilization rates EVSE revenue from public charging
Contribution to Emissions Reductions	
Barriers	None identified

Progress to Date	**Status**
• Update analysis on rate ordinances for local jurisdictions and market trends in the region	Q2 2024
• Evaluate what costs the rate should cover and how to calculate those costs	Q2 2024
• Evaluate methods to prevent vehicles from parking in charging spots when not charging, e.g., dwelling charges	Q2 2024

CEP Guiding Principles and Co-Benefits	Goal 4, Policy 4.4. Goal 5, Policy 5.4.
Expected Costs	County: 
Interaction with other strategies	Paid Parking ordinance and program Capital Improvement Programs for public facilities Permitting

County Government Activities

	Strategy CG.1 Develop an Energy Equity Pathway and new means-tested programs
Description	The County looks to develop means-tailored pilots, programs and initiatives that will increase energy efficiency and electrification in new and existing buildings and homes, and increased uptake in renewable energy, electric vehicles, alternative transportation modes, storage, and on-site resilient energy systems. The County will assess and pursue viable opportunities for leveraged funding under utility, federal, state, and institutional grant programs.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Racial Equity Office, Libraries, Department of Human Services, Affordable Housing, NVRC, Virginia Department of Energy

Milestones and Next Steps	**Status**
• Identify grants, other and outside funding opportunities, and design competitive proposals for programs that will directly serve the needs of underserved populations in the energy and climate space.	Continuous

Metrics	For funded Projects: Conversion rates/uptake Savings (energy costs, GHG, other) Miles decarbonized (if applicable) Human health metrics (if applicable and funded)
Contribution to Emissions Reductions	Varies by program. Up to 
Barriers	Funding, Policy, limitation of Utility Programs
Progress to Date	Over FY 24, OSEM prioritized its federal grant efforts on Justice 40 and other opportunities focused on low- to moderate income areas: EECBG – awarded on E-Bike Rebate Proposal EPA Environmental Justice G2G grant awarded on Energy-Health-Environment Project Proposal EPA Environmental Justice Community Change Proposal (Energy-Health-Equity Project Proposal (the EHE Project).), pending as of 08-19-2024 Building and Micro-Mobility Focused Proposals for funding the County's Climate Action Fund (CAF) - filed August-12-2024

Progress to Date	Status
• Over FY 24, OSEM prioritized its federal grant efforts on Justice 40 and other opportunities focused on low- to moderate income areas	Q3 2023 – Q4 2024
• EECBG – awarded on E-Bike Rebate Proposal	June 2024
• EPA Environmental Justice G2G grant awarded on Energy-Health-Environment Project Proposal	June 2024
• EPA Environmental Justice Community Change Proposal (Energy-Health-Equity Project Proposal (the EHE Project)), pending as of 08-19-2024	EPA Decision Pending
• Building and Micro-Mobility Focused Proposals for funding the County's Climate Action Fund (CAF)	Submitted Aug-2024

CEP Guiding Principles and Co-Benefits	Goal 1 Buildings, Policies 1.1, 1.3 and 1.4 Goal 2 Resilience Policies 2.1, 2.2 and 2.4 Goal 4 Transportation Policies 4.1, 4.2 and 4.4 Goal 5: County Government Activities Policy 5.4 Goal 6 Education and Behavioral Change Policy 6.5
Expected Costs	County:  -
Interaction with other strategies	Racial Equity Policy, ACCS Master Plan, Strategic Transportation Plan, Biophilic Cities Policy, Energy Asssurance Plan

Strategy CG.2 Explore and research emerging renewable and alternative energy tools, technologies, and options

Description	Arlington OSEM and AIRE Team members will continue to conduct research and participate in technical working groups in the state, region, and national levels to effectively track advancements in the energy industry. Staff will also work closely with energy experts from the Better Climate Challenge working group, national laboratories, trade groups and stakeholders from C2E2, Energy Committee and others to identify and assess opportunities in real-time. Staff will also explore alternative approaches, including through partnerships, pilots, transactional options, multi-jurisdictional structural and business options, cooperatives, or diverse utility

	models, to secure the community's energy goals and assure the County's energy leadership.	
Lead Implementer(s)	DES-OSEM-AIRE; CPO	
Stakeholders and Partners	National, state, regional, and local energy experts, Dominion Energy, other stakeholders	
Milestones and Next Steps		**Status**
• Routinely research emerging renewable and alternative energy, storage, and clean transportation technologies, e.g., NREL		Implementing
• Explore alternative approaches, including through partnerships, pilots, transactional options, multi-jurisdictional structural and business options, cooperatives, or diverse utility models		Implementing
Metrics	Number of alternative tools, technologies, and approaches deployed to support Carbon Roadmap strategies, by type of initiative, and location Comparative metrics of alternative approaches matched against business-as-usual (BAU) methodologies, matched to the technology or sector	
Contribution to Emissions Reductions		
Barriers	Funding, Technology, and Policy	
Progress to Date		**Status**
• NREL LIDAC Residential Buildings Technical Study		2023-24 Done
• Anaerobic technology at WPTP (design complete)		2024
• Literature review / research re alternative and emerging EVSE options		2024
CEP Guiding Principles and Co-Benefits	CEP Goal 5, Policies 5.3, 5.4, and 5.5	
Expected Costs	County:  to  Public:  to	
Interaction with other strategies	Better Climate Challenge	

	**Strategy CG.3 Create and Expand Suite of "Accountability Tools" to Demonstrate and Socialize Progress and Impact**
Description	This strategy promotes AIRE's success over the Carbon Roadmap Years 1-2 Cycle to launch a suite of analytics and assessment tools that establish comparative performance, disaggregate the prior generalized GHG inventories into sector-based detailed breakdowns of emissions sources, and broadly expand performance and outputs of various transportation propulsion modes. (The Facilities-Based Decision Support Tool is set out in its own Carbon Roadmap strategy.) Additional analytics will serve multiple purposes, including ROI calculations, development of CIP/PAYG budgets, prioritization of programs and projects, and public awareness and education.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	DES-Power BI and Data Division; DES-GIS; DHS; and other Departments and Bureaus providing data and information,

Milestones and Next Steps	**Status**
• Use GHG detailed Dashboards to develop updated strategy/approach to replace the "GHG Wedge" in the existing CEP model	Q1 2025
• Develop ROI metrics for climate benefits/co-benefits	Q2 2025
• Develop Impact-Tool Tailored to new Green Building Incentive Program	Q2-Q4 2025
• Develop metrics for sectors added to new climate action plan approach, e.g., Solid Waste, Green Infrastructure (with CPO)	Q2 2025
• Develop baseline metrics for extreme heat/urban heat island impacts	Q3-Q4 2025
• Produce LIDAC Multifamily and Small Commercial Decision-Support Tool for Energy Performance Upgrades (under EPA Environmental Justice G2G Grant)	2025-2026

Metrics	Expanded GHG analytics Energy Resources Metrics

	Social Value of Carbon, and other Social metrics re Climate Risk Assessments re Extreme Heat
Contribution to Emissions Reductions	
Barriers	Funding and Policy; and Staff Capacity

Progress to Date	**Status**
• Detailed Government and Community GHG Dashboards	Q2 2024
• Comparative Climate Performance Dashboards	Q2 2024
• Transportation Propulsion Modes – Comparative Analysis including GHG	Q3 2024

CEP Guiding Principles and Co-Benefits	Goal 5 and Policy 5.3 Goal 6, Policies 6.3 and 6.5
Expected Costs	County: 
Interaction with other strategies	CIP Budget Metrics, Better Climate Challenge

Strategy CG.4 Legislative Advocacy

Description	The County aims to actively keep track and implement the action items and milestones included in all sustainability, energy and climate plans. The County will also track the implementation and progress of these items and plans, to update the next iterations based on tangible data, and reflective of the challenges and opportunities discovered along the way.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	CMO Inter-governmental Liaison; CPO; County and municipal government agencies, C2E2, Energy Committee, Civic Federation, VESPN, PJM CCC, County residents and businesses

Milestones and Next Steps (Annual)	**Status**
• Review Advisory Commissions' Legislative Letters for 2024-25	Q4 2024 (annual)

• Review Board Legislative Priorities	Q4 2024 (annual)
• Respond Comments on potential legislation and liaise with County Inter-Governmental Liaison	Q4 2024 – Q1 2025 (annual)

Metrics	**Metrics and indicators as identified in strategies' write-ups**
Contribution to Emissions Reductions	
Barriers	Capacity; constrained resources
Progress to Date	
• Closed Session Matters Research and Analysis	Completed Q2 2024
CEP Guiding Principles and Co-Benefits	Goal 5, Policy 5.2
Expected Costs	County: less than 
Interaction with other strategies	Cross-cutting with Carbon Roadmap startegies

Strategy CG.5 Consult on New Climate Panning Protocol

Description	A new climate planning protocol will expand upon the existing CEP model and serve as the County's energy, climate, adaptation and resilience chapter of the County's Comprehensive Plan. This new protocol will be located in the CPO but require rigorous support and expertise from OSEM-AIRE and other Bureaus and Departments. It is anticipated that this new strategic plan will be informed by a preceding Climate Resolution of the County Board
Lead Implementer(s)	Climate Policy Office (CPO)

Stakeholders and Partners	DES-OSEM, AIRE, MWCOG, County departments, C2E2, Energy Committee, private property owners, Arlington County Advisory Groups

Milestones and Next Steps	**Status**
• Create a SOW for a CAP and release for competitive procurement	Q1 2025
• Produce the CAP	2025-2026

Metrics	Metrics replacement for existing CEP GHG Wedge Chart
Contribution to Emissions Reductions	
Barriers	None
Progress to Date	

• Produce a 2023 greenhouse gas emissions inventory project	Q3 2024 – Q1 2025
• Assessed consumption-based GHG inventory measures for selective integration	Q4 2024

CEP Guiding Principles and Co-Benefits	Potential integration into the climate action plan
Expected Costs	County:  to
Interaction with other strategies	Comprehensive Plan

Strategy CG.6 - Execute EPA EJ G2G Grant

Description	OSEM-AIRE have been awarded an EPA Environmental Justice G2G Grant its Energy-Health-Equity Project Proposal (the EHE Project). The EHE Project is anchored in the creation of two technical resources, 1) a decision-support tool, and 2) a comprehensive financing/incentives portfolio; and a third civic tool, a Public Engagement, Outreach and Education Manual for use by community-based organizations, non-profits, other government departments and bureaus, contractors and community partnerships. specifically tailored to underserved communities. The EHE Decision Support Tool will allow users to the model the potential benefits of single and bundled-measure energy improvements to multifamily housing and small commercial structures common to disadvantaged communities (DACs) in the Northern Virginia and greater regional territories. The EHE Project will culminate with a final deliverable report that will be leveraged to build a pipeline of projects and support scalability and replicability.
Lead Implementer(s)	DES-OSEM; AIRE
Stakeholders and Partners	Community, project partners (Columbia Pike Partnership Organization, Northern Virginia Affordable Housing Alliance, Virginia Clinicians for Climate Action, and George Mason University Virginia Climate Center)

Milestones and Next Steps	**Status**
• Research into Public and Private-Sector Engagement Plan and Best Practices	Q2 - Q3 2025
• Data- and information-gathering to populate the Decision-Support Tool	Q4 2024 – Q3 2025
• Energy Modeling for Energy-Performance Upgrade Planning and Decision Support (the EHE Decision Support Tool)	Q4 2025 start

• Funding Opportunity Identification (the Financing/Incentive Portfolio)	Q3 2024 – Q3 2025
• Creating a Technical Support/Program Support Platform	Q3 2025 – Q2 2026
• Demonstration and Scaling	Q2 2026

Metrics	GHG reduction capacities, energy efficiency values, human health metrics
Contribution to Emissions Reductions	
Barriers	None

Progress to Date	**Status**
• Board approval and appropriation of the EHE Project	June 2024
• Execution of Sub-Recipient (Partner) Agreements	Q2-Q3 2024
• Finalize QAPP and ICR Agreements with the EPA	Q2-Q4 2024

CEP Guiding Principles and Co-Benefits	Goal 1; Policies 1.1., 1.3 and 1.4 Goal 5, Policies 5.3 and 5.4 Goal 6, Policies 6.1 and 6.5
Expected Costs	County:
Interaction with other strategies	Equity Policy, Affordable Housing Policy

Strategy CG.7 - Execute EECBG e-Bike Grant

Description	This pilot program provides two tiers of financial incentive (standard and enhanced for income-qualifying applicants) for purchases of electric bicycles ("e-bikes"). The Pilot is designed to advance energy equity (50% of the incentives fund is dedicated to enhanced rebate vouchers); encourage micromobility options, and reduction of transportation-related GHG emissions. AIRE Team study of existing programs in other states indicates quick exhaustion of the rebate funds and demand that exceeds fund pools by as much as 10 times. Accordingly, OSEM-AIRE are seeking additional funding embedded in other grant applications, as well as a budget proposal for the County's Climate Action Fund.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Arlington Transportation Partners, Arlington bike shops, DHS, EcoAction Arlington

Milestones and Next Steps	**Status**
• Work with local retailers to secure partnerships and develop MOUs; develop marketing and outreach campaign	Q4 2024
• Launch marketing and outreach campaign, including a "test bike" event to promote e-bikes and the voucher program	Q1 2025
• Launch Pilot Project with goal to recruit participation to meet or exceed budgeted totals	Q1 2025
• Report out on Pilot Project performance and metrics	Q2 2025

Metrics	• Potential surveys and NREL Performance Metrics Tool to voucher recipients would seek information about (non-exhaustive list): o Number of trips taken per week o Number of trips they would have otherwise taken by car o Average length of trips taken o Average length of trips they would have otherwise taken by car o Additional co-benefits that may be realized o Influence of the program on purchasing decision o Influence on Capital BikeShare e-bike usage
Contribution to Emissions Reductions	
Barriers	Feasibility of storage and charging for LIDAC applicants Quick buy-down of rebate voucher fund (need to replenish)

Progress to Date	**Status**
• Board approval and appropriation of the E-Bike Rebate Pilot Project	Q2 2024
• Research into analytics tools and test of NREL E-Bike Tool	Q3 2024
• Start of DOE Reporting	Q3 2024

CEP Guiding Principles and Co-Benefits	Goal 2, Policies 2.1 and 2.2 (reduced grid demand for transportation) Goal 4, Policies 4.1, 4.2 and 4.4 Goal 5, Policies 5.1 and 5.4 Goal 6, Policies 6.1 and 6.5
Expected Costs	County:  Public 

Interaction with other strategies	CNTMP; ACCS Master Plan

Strategy CG.8 Take Advantage of GGRF funding to advance clean energy projects

Description	On April 4, 2024, the Biden-Harris Administration announced $20 billion in grants under the Greenhouse Gas Reduction Fund (GGRF). These grants are awarded to mobilize private capital and incentivize clean energy projects to launch throughout the US. Arlington County submitted a letter of support for the Coalition for Green Capital (CGC) GGRF application. CGC was awarded $5 billion from the GGRF and is a nonprofit with almost 15 years of experience helping establish and work with dozens of state, local, and nonprofit green banks that have already catalyzed $20 billion into qualified projects. The CGC's program will have particular emphasis on public-private investment and will leverage the existing and growing national network of green banks as a key distribution channel for investment—with at least 50% of investments in low-income and disadvantaged communities. In addition, during the Virginia 2024 legislative session, SB 729 passed both the House and Senate to create "the Virginia Clean Energy Innovation Bank to finance clean energy projects, greenhouse gas emissions reduction projects, and other qualified projects through the strategic deployment of public funds in the form of grants, loans, credit enhancements, and other financing mechanisms." The County will monitor ongoing negotiations between the legislature and the Governor regarding the legislation.
Lead Implementer(s)	DES-AIRE, DMF, AED
Stakeholders and Partners	Private property owners, ACFCU

Milestones and Next Steps	Status
• CGC has noted that the US EPA would like to get a contract signed with CGC in the summer of 2024 so CGC and partners can deploy the $5B in available GGRF funding.	Pending
• The County will work to develop partnerships with local lending institutions and discuss possible partnerships toward using the Federal funds to improve buildings' and homes' energy efficiency and deployment of clean energy technologies	Q1 – Q3 2025
• Potential aggregation of program with other Northern Virginia jurisdictions	Q4 2024 – Q1 2025

Metrics	Amount of Federal and State money deployed to support and help fund energy efficiency and clean energy projects in Arlington
Contribution to Emissions Reductions	
Barriers	Secure local non-profit lending agencies to enroll for funds under CGC
Progress to Date	Support letter to CGC provided

Progress to Date	Status
• CGC award from and contract with the EPA.	Q3 2024
• OSEM-AIRE outreach with at least two potential localized lenders	Q3 2024 – Q1 2025

CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 through 1.4 Goal 5, Policies 5.1, 5.3 and 5.4
Expected Costs	County:  to Public:  to

Interaction with other strategies	GBIP

	**Strategy CG.9 - Assess 2nd Tier of Buildings Through the Decarbonization Tool (continuation)**
Description	The County designed and is now implementing the Decarbonization Tool (Decarb Tool), that modeled energy performance upgrade scenarios that focuses on existing County facilities electrification opportunities and quantifies impacts across energy, cost and GHG metrics. The first iteration of the tool focused on 12 representative facilities across the County's diverse buildings portfolio to develop specific scenario for energy and GHG savings measures. The Decarb Tool informed the facility engineering and design process at the Madison Community Center and the Quincy site for specific measures to implement, including the electrification of the HVAC equipment. The update the Decarb Tool will focus on analyzing additional County facilities, any new decarbonization measures and expanding the metrics to include considerations such as the social cost of carbon into key metrics and scenario outputs.
Lead Implementer(s)	DES-OSEM-AIRE, FMB,
Stakeholders and Partners	FD&C, Better Climate Challenge Working Groups, C2E2 and Energy Committee (Inform)

Milestones and Next Steps	**Status**
• Implement tool enhancements during Phase II development	Launch Q1/Q2 2025
• Apply Tool analytics to inform operational, PAYG and CIP budgets	Q1 2025 – Q2 2026

Metrics	Number of facilities modeled for energy performance GHG savings from measures implemented from tool outputs Energy savings from modeled (ex-ante) to achieved (ex-post) savings
Contribution to Emissions Reductions	
Barriers	Equipment and labor cost estimates increases, quantifying feasibility considerations

Progress to Date	**Status**
• Executed SOW for Phase II of the Decarb Tool	Q2-Q3 2024
• Kicked off Phase II of development and enhancements	Q3 2024

CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1, 1.2 and 1.3Goal 2, Policies 2.1 and 2.2 Goal 5, Policies 5.1, 5.2 and 5.5
Expected Costs	County:  to 
Interaction with other strategies	CIP Budget Development Process, Better Climate Challenge, Sustainable Facilities Policy

Strategy CG.10 - Better Climate Challenge (continuation)

Description	In early 2024, Arlington signed documentation to participate in the US DOE's Better Climate Challenge. Through this submission, Arlington committed to reduce GHGs by 70% in 2032 compared to 2022 and committed to reducing EUI by 20% in 2032 compared to 2022. These commitments apply to 1.9M square feet of County buildings, excluding only infrastructure like the water treatment plan and street/traffic lights that are not associated with an indoor facility per se. To achieve this commitment, Arlington needs to pursue energy efficiency and decarbonization measures regularly over the next decade.
Lead Implementer(s)	DES-OSEM, DES-FDC, DES-FMB
Stakeholders and Partners	Arlington teams and departments that use each of these facilities

Milestones and Next Steps	**Status**
• Submitted 2022 baseline and 2023 performance data	Q2 2024
• Complete assessments, analytics and projections from Phase 2 of the Decision-Support Tool informed program for Facilities new construction and retro-commissioning	Q1 2025
• Calculate on-site solar projections and update upon project completions	Q2 2025
• Assess new measures for decreasing energy use intensity	Q1 2025

Metrics	• Greenhouse gas emissions by relevant sector • Source EUI by facility
Contribution to Emissions Reductions	
Barriers	Funding to upgrade facilities, ongoing need for continual performance monitoring
Progress to Date	Identified new tranche of buildings in Phase 2 of Decision-Support Tool deployment

CEP Guiding Principles and Co-Benefits	Goal 5, Policy 5.1
Expected Costs	County: to
Interaction with other strategies	Decarbonization Tool, Energy Management Working Group, Sustainability Facilities Policy

	Strategy CG.11 Begin Implementation of Short-term Actions Identified Within Solid Waste Management Plan/Zero Waste Plan
Description	This strategy looks to incorporate the County's waste diversion goals. The Solid Waste Management Plan/Zero Waste Plan was adopted by the County Board in June 2024. The objectives of the plan were developed to meet Virginia's planning requirements for waste management and fulfilling the County Board's 2015 Zero Waste Resolution to divert 90% of waste from incineration or landfill by 2038. The plan covers a 20-year planning period with initiatives separated into short, medium, and long term. For more details, please refer to the plan document.
Lead Implementer(s)	DES-Solid Waste Bureau
Stakeholders and Partners	County agencies, County residents and businesses

Milestones and Next Steps	**Status**
• On-street food waste collection pilot for multi-family properties	Short-term (2024-2025)
• Develop zero-waste dashboard to track progress towards diversion goal.	Short-term (2024-2025)

• Implement short-term initiatives identified within SWMP/ZWP pursuing 60% diversion target by 2028 as funding and opportunities allow	Short-term (2024-2028)

Metrics	Annual Recycling Rate per DEQ recycling rate report
Contribution to Emissions Reductions	
Barriers	Funding, Staff capacity

Progress to Date	Status
• The SWMP/ZWP was adopted by the County Board in June 2024	Completed – June 2024
• On-street food waste collection pilot for MF properties launched July 9, 2024, with deployment of 14 collection containers	In-progress
• Zero-Waste Dashboard development	In-progress

CEP Guiding Principles and Co-Benefits	Goal 5, Policies 5.2 and 5.4
Expected Costs	County
Interaction with other strategies	

Strategy CG.12 Sustainability Enhancements at the Water Pollution Control Plant

Description	This is a suite of projects to upgrade equipment and processes with more efficient and resilient systems at the County's Water Pollution Control Plant.
Lead Implementer(s)	DES-WPCB

Stakeholders and Partners	Arlington Residents; Re-Gen Advisory Group

Milestones and Next Steps	**Status**
• Upgrade lighting to LED at WPCP and at off-site stations	Ongoing as budget allows
• Upgrade HVAC systems at WPCP and at off-site stations	Ongoing as budget allows
• Participate in electrical Demand Response program to take WPCP off-grid during times of high electricity demand and improve grid resiliency	Ongoing
• Upgrade solids handling facilities to produce Renewable Natural Gas, reducing Arlington's reliance on fossil fuels (Re-Gen)	Design
• Project Update website: Arlington Re-Gen (arlingtonregen.com)	Ongoing

Metrics	Upon completion, the Re-Gen program is estimated to reduce CO2 emissions by 4,290 metric tons per year and have a net energy usage of -4.7 MMBtu/hour (the processes will produce more energy than they consume). Re-Gen has a minimum goal of an Envision Silver rating.
Contribution to Emissions Reductions	
Barriers	

Progress to Date	**Status**
Many of the activities are ongoing. Re-Gen design has started, and facilities are anticipated to come online in 2029-2030	Full Design Phases, 2025-2026

CEP Guiding Principles and Co-Benefits	Goal 2, Policies 2.1 and 2.2 Goal 3, Policies 3.1 and 3.4 Goal 5, Policies 5.2 and 5.4 The Re-Gen program complies with the goals of the County's Green Building Policy. It also uses the Envision sustainability framework to ensure that goals are met. Envision is comprehensive sustainability framework from the Institute for Sustainable Infrastructure that advances sustainable infrastructure using a sustainability framework, through education, training and third-party project verification.
Expected Costs	County: 
Interaction with other strategies	Sustainable Facilities Policy

Education and Behavior Change

	Strategy EBC.1 Develop Green Renters Program (outreach/education to building owners)
Description	Approximately 52% of Arlington residents are renters and, as more energy financing options become available to renters, it is important to launch tenant-specific education. Among Arlington County's housing units/types of multifamily buildings account for 71.5%; and even among condominium buildings (vs. Apartment rentals), roughly one-third of the units in Arlington are renter-occupied. For rental buildings, the split-incentive dynamic impedes green and energy-based performance upgrades, i.e., tenants are directly billed for utilities but have no control over building owner investments and upgrades, and with no responsibility for utilities outside the common areas (costs generally factored into the rent in any event), there is little incentive for building owners to prioritize green or sustainable building improvements. A Green Renters Program targeted to reach both renters and building owners and operators can demystify building energy performance standards (BEPS) and stimulate greater uptake in these improvements and in the personal choices of renters that affect energy and water consumption.
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Arlington condo associations, apartment managers, BOMA, apartment owners, civic associations, CPHD-Housing Division

Milestones and Next Steps	**Status**
• Educational website for renters and newsletter section geared towards renters DIY projects and education	Completed
• Include multifamily buildings/building managers as host site in annual Green Home and Garden Tour	In Progress
• Develop relationships and events with Arlington MFH building managers	In Progress

Metrics	Number of in-person outreach events with multifamily building managers and owners in attendance Number of virtual education series with multifamily building managers and owners in attendance Number of engaged building owners/managers as potential site hosts for Green Home and Garden Tour
Contribution to Emissions Reductions	
Barriers	Direct communication with apartment buildings and condo associations Educational awareness around energy upgrade opportunities Lack of knowledge about BEPS and less about ***net*** costs
Progress to Date	Series of renter-friendly energy efficiency web pages uploaded Winter 2024
CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.2 Goal 5, Policies 5.1 and 5.3 Goal 6, Policies 6.1 and 6.2
Expected Costs	County:  to 
Interaction with other strategies	GBIP

Strategy EBC.2 Partner with organizations that provide training in energy sector

Description	Arlington will work with stakeholders, for example, voluntary, academic, public, and private professional resources, including non-governmental organizations, and trade and business associations, to provide training related to the energy sector. These efforts may be accelerated in

	the event federal and/or state funding represents itself, especially for multi-jurisdictional or regional opportunities.	
Lead Implementer(s)	DES-OSEM-AIRE (in partnership with the training lead)	
Stakeholders and Partners	Energy Utilities, Alexandria/Arlington Regional Workforce Council, AED, Arlington Tech (CTE), EcoAction	
Milestones and Next Steps		**Status**
• Baseline assessment of workforce, gaps and job functions to inform what training is needed		To be started
• Partner with organizations that provide training in energy efficient system installation and maintenance		To be started
• Grant and other funding that supports workforce and development programs		To be started
Metrics	Number of trainings in gap areas Partnerships or contracts established to deliver training related to energy sector Number of individuals participating in training and workforce development programs	
Contribution to Emissions Reductions		
Barriers	Funding	
Progress to Date		**Status**
Webinar Series		Completed and in progress
CEP Guiding Principles and Co-Benefits	Goal 5, Policy 5.3 Goal 6, Policies 6.1 and 6.2	
Expected Costs	County  to  Public:  to 	
Interaction with other strategies		

	Strategy EBC.3 - Assess Measures From Consumption-Based GHG Inventories
Description	A consumption-based GHG inventory is fundamentally designed to address personal and private-sector choices and behavior. While not effective as a stand-alone framework for climate action, the OSEM-AIRE team looks to deploy certain consumption-based strategies to influence behavior and motivate market transformations. These could include: o Continuing initiatives focused on reducing carbon intensity of fuels o Enhanced micromobility o Encouraging reuse, consignment, barter, and other practices in lieu of new purchases of new goods o Encouraging low-carbon diets and reducing food waste o Reduced private vehicle ownership
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	CPO, Libraries, Board Advisory Commission and Committees, AED, Chamber of Commerce, APS

Milestones and Next Steps	**Status**
• Identify key strategies to reduce consumption-based GHG emissions	In progress
• Develop outreach plans	In progress
• Launch outreach campaigns	In progress
• Website-based tools for public use and reference	In progress
• Recruit partners (including non-profits) as outreach mechanisms	In progress

Metrics	Number of residents reached Visitors to website
Contribution to Emissions Reductions	
Barriers	Arlington County has little to no direct control over sources of consumption-based GHG emissions. This strategy will focus on outreach, education, and compelling campaigns.

Progress to Date	**Status**
• Identify key strategies to reduce consumption-based GHG emissions	Q3 2024 – Q2 2025

CEP Guiding Principles and Co-Benefits	Goal 5, Policy 5.4 Goal 6, Policy 6.1
Expected Costs	County: to Public: to
Interaction with other strategies	

Strategy EBC.4 Encourage the use of information technology and "smart" building energy management to help residents and businesses monitor energy use

Description	Using energy efficiently improves the bottom line and helps the environment. Information, data technology, and analysis play a key role in making certain that these goals are achieved.
Lead Implementer(s)	DES-OSEM-AIRE

Stakeholders and Partners	DES-FMB, AED, EcoAction Arlington, Universities, private sector tech companies, e.g., offering technologies, residential energy monitoring programs, Dominion	
Milestones and Next Steps		**Status**
• Implementing positive and motivating energy campaigns.		Implementing
• Building automation systems and demand-response mechanisms in Government sites and facilities		Implementing; and In Development
• Encourage the use of Information Technology and 'Smart' Building Energy Management to help residents and businesses monitor energy use.		To be started
Metrics	Energy (kBTUs) saved Number of residences and businesses monitoring their energy use # of case studies produced Educational webinar events	
Contribution to Emissions Reductions		
Barriers	Capacity	
Progress to Date		Status
Webinar series		Completed and ongoing
CEP Guiding Principles and Co-Benefits	Goal 1, Policies 1.1 and 1.3 Goal 5, Policy 5.4 Goal 6, Policy 6.1	
Expected Costs	County:  to  Public:  to 	
Interaction with other strategies		

	Strategy EBC.5 - BCMT (Behavioral Change/Market Transformation) - PHIUS Awareness Campaign
Description	An update to the Green Building Density Incentive program adds Passive House (PHIUS) Zero Certification for building developers to earn both bonus density and a financial incentive. This strategy would develop a 6-month training/education program for community audience members (architects, developers, engineers, contractors) to gain awareness of how to achieve this certification. The training/education program will include case studies, cost-benefit analyses, PHIUS experts, and more. Resources: • PHIUS Certification • Arlington Zero Energy | PHIUS • Green Building Incentive Policy – Official Website of Arlington County Virginia Government (arlingtonva.us)
Lead Implementer(s)	DES-OSEM-AIRE
Stakeholders and Partners	Passive House (PHIUS) International, Private Developers, Contractors, Designers, Engineers, Sustainability Consultants, CPHD, Zoning, Permitting, DES/AIRE Communications, Tweetsquad, Cadmus

Milestones and Next Steps	**Status**
• Email blasts through GovDelivery, Direct Email	Completed and ongoing
• Develop PHIUS – specific webpage ○ Recordings of experts	
• Benchmarking analysis	
• Develop and implement GBIP Training/Education Program	In progress

Metrics	Number of emails sent to developers and contractors Attendees at trainings Number of Phius buildings in the region through a benchmarking effort Number of clicks on webpage	
Contribution to Emissions Reductions	Ranges, dependent on implementation	
Barriers	More examples of LEED building systems than PHIUS buildings in Arlington County. Most barriers apply to the certification itself, not the awareness campaign portion.	
Progress to Date		Status
GBIP Training/education presentation series		In progress
CEP Guiding Principles and Co-Benefits	Goal 1: Policies 1.1 - 1.4 Environmental commitment: improved air quality from lower building emissions Energy security: improved energy diversity and resilience Energy equity: increased affordability and accessibility of energy and energy programs CEP Education and Behavioral Change Goal 6: Advocate and support residents and businesses acting to reduce their energy usage.	
Expected Costs	County: to	
Interaction with other strategies	Green Building Incentive Program	

Strategy EBC.6 Encourage and educate on the use of electrification

Description	Educating residents and building owners; individuals; on the use of electrification.	
Lead Implementer(s)	DES-OSEM-AIRE	
Stakeholders and Partners	Virginia Energy, Virginia Clean Cities, Rewiring America	
Milestones and Next Steps		**Status**
• Education trainings		Implementing
• Newsletter promotions		
• Tabling events: providing resources, materials, collateral		
• Researching and identifying partnerships, models, and collaborations that can scale education and outreach scale for homeowners		
Metrics	Outlets/channels: Educational webinars, presentations, self-view survey, other's view survey	
Contribution to Emissions Reductions		
Barriers	Capacity	
Progress to Date		**Status**
Webinar Series: Buildings (Sierra Club Presentation, EcoAction, BEEAC MWCOG, Solar Switch, GBIP Update) Sustainable Transportation Webinar, Energy Presentation, Hispanic Festival tabling event, Earth Day tabling event, Arlington County Fair tabling event		Completed and Ongoing
CEP Guiding Principles and Co-Benefits	Goal 1: Policies 1.1 and 1.2 Goal 5, Policy 5.4 Goal 6, Policy 6.1 and 6.2	
Expected Costs	County: 	
Interaction with other strategies	Decarb Tool Develoment and Implementation, Better Climate Challenge, EPA G2G EHE Grant Project	

	Strategy EBC.7 Social Dimension Development and Integration	
Description	Explore feasibility and impact of physical, behavioral and technological innovations that may uniquely drive climate facing behavioral change and market transformation in Arlington, Super Block Development, emerging EVSE technologies, incentive-based programs, etc. Ex. super blocks, walking, biking, micromobility, innovation	
Lead Implementer(s)	DES-OSEM-AIRE	
Stakeholders and Partners	Startups, CBOs, VCC, academic institutions, federal research institutions	
Milestones and Next Steps		**Status**
• Staying current on emerging and best practices		
Metrics	TBD on an individual basis	
Contribution to Emissions Reductions		
Barriers	Capacity and funding	
Progress to Date		**Status**
NREL Tool supporting E-bike Voucher Program		Ongoing
CEP Guiding Principles and Co-Benefits		
Expected Costs	County:  to	
Interaction with other strategies	Diverse; multidisciplinary	