6. CLIMATE AND ENERGY

Introduction

Board of Supervisors Environmental Vision:
"*The county will continue its leadership and commitment to promote and encourage energy efficiency and conservation efforts and renewable energy initiatives by employees, employers and residents. The county will work with local authorities, businesses, and residents to encourage sustainable reductions of the county's geographical emissions that will contribute to achieving the targets as identified by the Cool Counties Climate Stabilization Declaration and the Metropolitan Washington Council of Governments. The county will also continue to support attainment of air quality through regional planning and action.*"

Anthropogenic activities resulting in Greenhouse Gas emissions (GHGs) are the cause of climate change. The United States leads the world in the release of GHGs per capita. Within the U.S., actions at the federal, state and local level have all been part of the work that has been undertaken to reduce GHG emissions. Given the history of the United States in contributing to GHG emissions, it is important that the United States show leadership in reducing GHG emissions and it is appropriate that Fairfax County join national and state partners in reducing GHG emissions.

The summer of 2024 set record high temperatures worldwide and the Washington Metropolitan area, including Fairfax County. The Fairfax County website notes that the summer of 2024 observed higher temperatures that indicate that our climate is changing with hotter temperatures.

To limit the adverse impacts of global warming, the Paris Agreement of 2015 was adopted by 196 parties at the United Nations Climate Change Conference. The agreement calls for limiting global warming to 1.5°C above pre-industrial levels. Major reductions in GHG emissions will be required to meet the goal of limiting an increase in temperature to 1.5°C. Scientific experts find that current efforts will not be sufficient to limit the increase in temperature to 1.5° C. Many scientists fear that we may not be able to limit temperature increases until we have experienced an increase of 3°C or 7.4°F.

Like many other local governments, Fairfax County is undertaking efforts to both reduce GHGs and make the county resilient to climate change impacts. The county has adopted two programs to address climate change: 1) the Community-wide Energy and Climate Action Plan (CECAP) and 2) the Resilient Fairfax, which is the county's plan to boost resilience to changing climate-related conditions, such as changes in temperature, precipitation and storm severity. While Fairfax County is making significant progress in addressing climate change, programs that have historically been funded by the federal

government and are being funded by other governments are proposed to be eliminated by the current federal administration. This threat to funding will slow progress on climate programs, including making county residents more vulnerable to climate impacts and slowing progress to reduce toxic tailpipe and GHG emissions from vehicles.

Community-Wide Energy and Climate Action Plan (CECAP)

CECAP sets a goal for the county to reach carbon neutrality by 2050 and a reduction in GHG emissions of 50% by 2030. CECAP was adopted in 2021 and followed by an implementation plan in 2022. According to the most recent GHG inventory by the Metropolitan Washington Council of Governments (MWCOG), Fairfax County community-wide GHG emissions decreased by 30% between 2005 and 2020, despite a 12% growth in population. The Fairfax County Climate Dashboard provides information on past and projected GHG emissions. This information shows that GHG emissions associated with buildings and transportation dominate the county's GHG emissions.

Figure 1. Fairfax County Greenhouse Gas Emissions with Future Scenarios

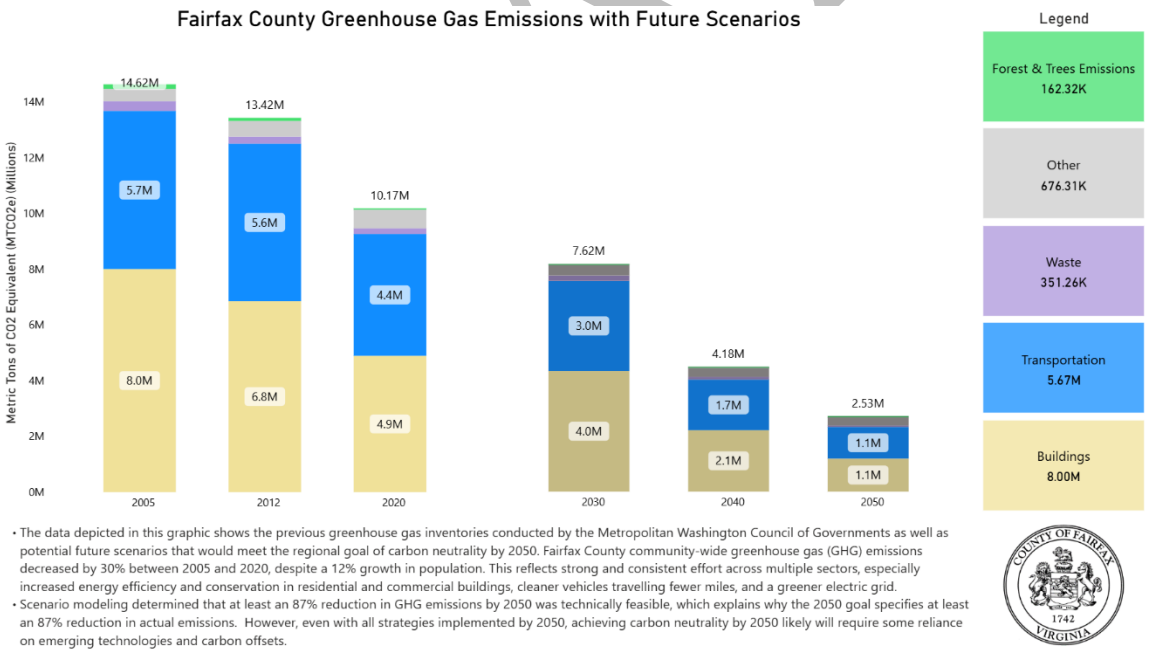

Figure 1 shows that GHGs associated with building operations and transportation dominate GHGs for the county. EQAC appreciates that the county has focused many CECAP related efforts on buildings, energy and transpiration. However, EQAC also recognizes that a plan is needed to reach county goals and for those actions to be funded. Thus, efforts to reduce emissions attributed to buildings and transportation should

continue to be a priority. Having a plan to show that resources are being directed so that the county will reach its climate goals is important to the BOS and the residents.

Appendix A includes the original CECAP strategies associated with buildings, transportation and renewable energy, which provide the greatest emissions reductions.

Some conclusions that can be drawn, including:

1. Shifting to renewable energy is critical to achieving GHGs reduction goals and the use of fossil fuels to generate energy should be eliminated to the extent feasible.
2. Moving power utilities, Dominion Energy for Northern Virginia, to renewable energy is under state control but would greatly facilitate meeting GHGs reduction targets.
3. Electrification of the vehicle fleet both reduces toxic air pollutants (see air chapter) and provides a lower GHG footprint than vehicles powered by fossil fuels.

If the electrical grid relied solely upon renewable energy, buildings were electrified (that is not reliant on burning diesel, natural gas or other fossil fuels) and transportation network powered by the electrical grid, the county would meet its GHGs reduction goals. Because there will be costs associated with shifting the electrical grid to renewable energy, other strategies including increasing onsite renewable energy, employing green building standards, employing battery storage systems, and purchasing renewable energy should all be pursued.

As noted in Appendix A, many actions will either require voluntary action or legislative changes. The World Bank, the National Center for Science Education, and others highlight the importance of outreach and education to build support for actions to address climate change. Outreach to inform the public of the actions that they can take. There is widespread concern for the impacts of climate change from individuals to corporations to government organizations. If people understand what they can do in their community to take action to combat climate change, better participation can be expected. Based on the county data, shown in Appendix A the greatest opportunities to reduce GHGs are with buildings, energy and transportation. As noted. In Appendix A, there are many actions that limit the county's ability to require action but could be taken voluntarily. EQAC commends the county for establishing the programs to encourage residents to take actions (e.g., Sustain Fairfax, grants to help community associations establish EV chargers, waiving permit fees for EV charger instillation, home audits and other).

As of August 1, 2025 the Green Business Partners has attracted only 25 members (parties who are seeking to green their operations) and 24 leaders (parties who are recognized through a 3rd party nationally recognized program). So there are 49 businesses either seeking to achieve a nationally recognized green certification or those who have achieved that status. In addition, there are 12 Allies (businesses that are not located in the county but work with county business to green operations that support businesses to adopt green practices). Based on a quick review of corporate environmental sustainability

commitments, the Green Business Partners program does not include some of the companies that have strong environmental sustainability commitments and practices. EQAC believes that much wider participation of businesses that can show progress towards GHG reductions should be the priority. While more work in both the residential and business areas is encouraged, the activities and the accomplishments of the Green Business Partners program are especially worthy of greater focus.

PRIORITY RECOMMENDATION 6CE-2021.4: Regularly, perhaps every 3 months, convene business leaders in the climate and energy area to share their successes and expertise with business leaders that are seeking to reduce their GHGs. energy use and waste. (modified)

Reducing Emissions from Buildings

These strategies are for commercial, residential and county buildings. Electrifying residential and commercial buildings and also reducing the use of refrigerants that have a high global warming potential are important to GHG reduction efforts. Similarly, increased energy efficiency and conservation in existing buildings will also be important to meeting GHG reduction goals by reducing energy needs (and associated GHG emissions. While this information shows that we can expect the least benefit from implementing the green building standards for new buildings, reducing energy needs will continue to have benefits into the future. In the absence of legislation to compel changes, decisions to undertake these strategies will be dependent upon the voluntary actions.

Using Renewable Energy to Reduce GHGs

Increasing the amount of renewable energy in the grid is required by the Virginia Clean Economy Act, which requires Dominion Energy to achieve carbon neutrality by 2045. Increasing the energy from renewable sources has the greatest potential to reduce GHG emissions among these strategies. Residential customers can voluntarily seek to purchase green energy from their energy provider or install renewable energy on their property. Similarly, owners of commercial building have similar options, but their choices may be dictated by strong environmental policies that prescribe that they be carbon neutral. Unfortunately, the county lacks the ability to track, much less compel parties to undertake these actions. In the absence of objective information tracking metrics used to evaluate the extent that progress is being made, it will be difficult if not impossible to claim progress in greening businesses.. Therefore, developing the capability to track progress for residential, commercial, or other entities on energy use, grid storage, and reliance on energy utilization is important for success of this strategy and EQAC recommends that the county develop this capability. This information is important to see progress and to highlight successful efforts of businesses to green their business, especially reducing GHGs.

The county established the Going Solar in Fairfax County website to encourage businesses and residents generate carbon-free power on their own properties. In addition, the website

includes information on Switch Together and Solarize Virginia . Participants in these programs can receive a free virtual assessment to determine if their home or business is well-suited for solar energy, gain access to qualified solar installers and financing, get lower costs for purchasing solar and battery storage, and purchase and install EV charging stations along with their solar purchase. Since 2015, 445 households in Fairfax County have gone solar through Solarize Virginia. 2023 was the first year Switch Together was promoted by Fairfax County Government, and the program has had 1,715 registrations and 122 signed contracts for solar in Fairfax County. A new marketing campaign dramatically increased sign-ups in the program in 2024.

Encouraging residents and businesses in Fairfax County to install solar and other alternative energy sources is a priority, which is included in CECAP. In response to concerns over the loss of prime agricultural and forested land, Virginia now has a regulation that requires offsets on some large solar projects. Siting solar panels on buildings, parking lot roofs, parking lots, and other appropriate locations in urban and suburban areas is therefore increasingly important. However, the goal should be to get to carbon neutrality so the use of offsite should be obtained when onsite renewable energy does not meet the property's energy needs. We appreciate the installation of solar canopies above parking lots, such as Metro is doing in several locations. Siting solar farms on brownfields and abandoned mines, which are already environmentally impaired, is generally well suited to this purpose.

Another barrier to onsite energy is that Dominion Energy imposes 100 percent of the costs of grid interconnection equipment needed for mid-sized solar installations on individual solar installers. This action is undercutting the economic viability of solar panels on several Fairfax County buildings, including schools. While efforts are underway to change this at the state level as a result of a new law directing the State Corporation Commission to review the connection rates and progress is expected soon.

Information on the progress of Fairfax County Public Schools to address climate change is summarized in the Spotlight on schools.

The last strategy in this group addresses expanding the supply and use of resource recovered gas, hydrogen and power-to-gas in the future.

STATUS: Both the county government and private sector are making progress in adopting renewable energy and it is critical that the county continue support for renewable energy.

Reducing Transportation Emissions

Of the transportation options, the adoption of EVs, including buses and heavy-duty trucks has the greatest potential to reduce GHG emissions. The numbers and trends for EVs are discussed in the Transportation Chapter. There are good reasons to shift from gasoline or diesel-powered vehicles to electric, especially battery EVs only including:

1. Battery EVs require less maintenance than gasoline powered vehicles.
2. Battery EVs a) do not emit toxic tailpipe gases, which are associated with many health impacts and threaten compliance with National Ambient Air Quality Standards (see Air chapter) and b) have a lower GHG footprint than gasoline powered vehicles.[1]
3. The cost of charging an EV is typically less than the cost of gasoline, especially when a home charging unit is available.

Federal plans to reduce support for environmental programs poses a threat to important county projects. For example, the federal government will terminate the $7,500 tax credit for EVs. A significant concern to the adoption of EVs is the limited options for charging, especially in multi-family buildings. The county has obtained a grant in partnership with the Metropolitan Washington Council of Governments that will be used to install Level 2 chargers, which require hours to charge a vehicle. Level 2 chargers are convenient for overnight or office charging but Level 3 chargers, which provide quick charging will likely be needed when time is limited.

In the absence of the ability to charge vehicles at their residence at a reasonable price, residents of multifamily buildings will likely need to go to much more expensive Level 3 commercial charging stations, which can be about an order of magnitude more than overnight charging at a home charger. Charging stations in multi-family buildings should ideally be managed by the association or property manager so that exorbitant rates are not charged to residents by a private, for profit company.

PRIORITY RECOMMENDATION 6CE-2021.5: **In order to support the county's goal of at least 15% of total light-duty electric vehicle registrations by 2030, reduce toxic air pollution from vehicle emissions, the county should ensure the development of a robust EV charging network so that residents of multifamily buildings and travelers will have convenient and low-cost options for charging EVs.** ~~**Plan and implement an EV charging network so that residents of buildings without EV charging and travelers will have options for charging their EVs**~~

Conversion of Landscaping Equipment to Electric

Conversion from gas to electric powered lawn equipment is another opportunity to reduce GHG emissions and reduce exposure to toxic gases from the combustion of gasoline.

[1] Reducing GHG emissions from transportation can be achieved by increasing the percentage of electric vehicles on the roads, significantly increasing gas-powered vehicles average miles per gallon (MPG), increasing use of mass transportation, biking and walking, and cutting the number of vehicles and trips made. An EPA calculator that incorporates the mix of energy sources used to generate electricity finds that a gas-powered vehicle must get at least 70 miles per gallon to have a lower carbon footprint than an electric vehicle. This EPA estimate is based on a mix of energy sources from 2021.

Recognizing this opportunity Fairfax County participated in the Clean Air Partners' "Green Your Lawn Event", which provides an opportunity to trade gas powered equipment for electric equipment. This program was a success, but more residents would likely participate with more effective outreach.

STATUS: This program is a great idea and has been well received by at least some.

As outlined in the Climate Plans 2024 Progress Update, GHG emissions from county operations constitute only about 5 percent of the county's GHG emissions. The county's efforts to address climate change are available on the Operational Energy Strategy website, which is an excellent source of information. The county's efforts will likely serve as a model for others as the county installs renewable energy, deploys electric vehicles and chargers, and prioritizes energy efficiency in new construction and major renovations.

Fairfax County is also making significant progress in growing the use of onsite renewable energy such as solar. While a number of projects on schools and other county structures have been built, the recent kick off of the solar farm that will be built over the Lorton landfill is a large project that will provide 5% of the county government's electricity needs.

Expanding solar photovoltaic on existing building and new construction, supporting community solar, and developing battery storage projects should all continue to be supported. Progress in these areas is growing. While the loss of federal support for renewable energy projects is threatening the progress, the payback of renewable energy should continue to grow but the rate of growth will likely be diminished until incentives are reinstated.

STATUS: The county serves as a model for other localities as it exhibits leadership in demonstrating the feasibility of undertaking the actions that are advocated to address climate change.

Climate Resilience

The Resilient Fairfax Plan provides strategies to adapt and build long-term resilience to the impacts of climate change. Implementation of the strategies began once they were adopted by the Board of Supervisors in October 2022. It is easy for county residents to appreciate the benefits of the county's efforts to be resilient to the impacts of climate change.

Figure 2. Resilient Fairfax Outcomes (add reference link)

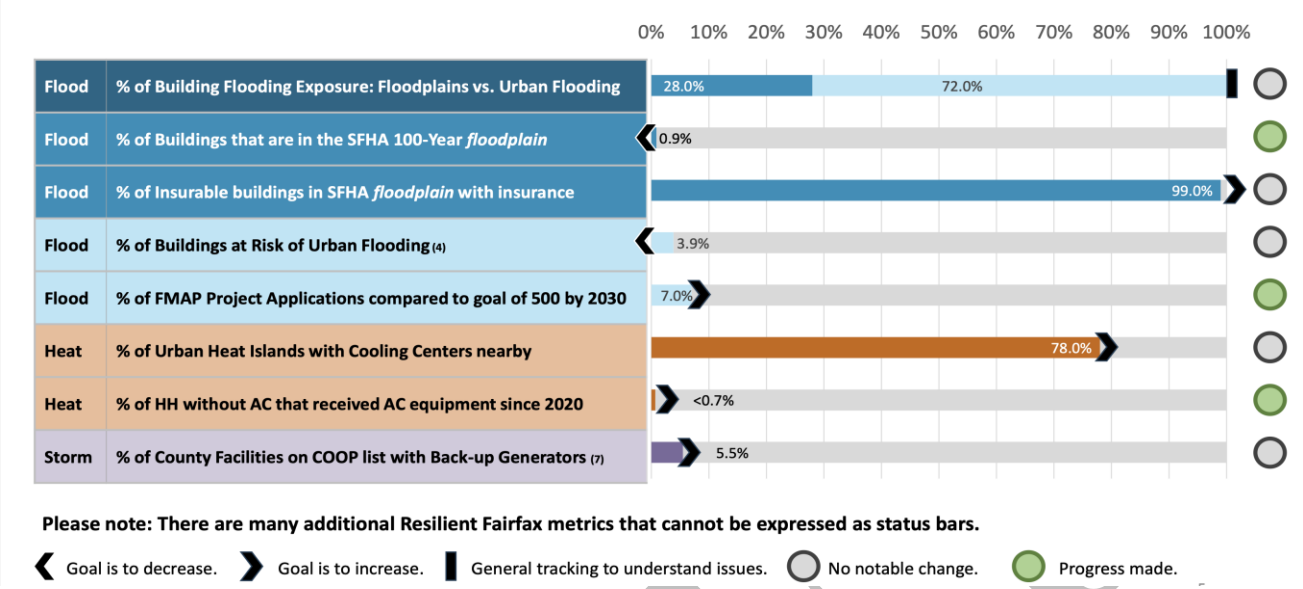

Figure 2 shows Resilient Fairfax outcomes that the county tracks. Clearly, there is a lot to be done to improve the county's climate adaptation and resilience.. The Resilient Fairfax Plan has identified 48 strategies and actions that should be taken to improve climate adaptation and resilience.

We are already experiencing the consequences of climate change, such as an increase in intensity of flooding (flooding is intensified as temperatures rise so that the air can hold more water) and higher temperatures that disproportionately threaten the health of vulnerable populations. The resiliency work is important to boost the resilience of our residents, public services, infrastructure, and natural resources to the changes in flooding, temperatures, storms, and other climate change impacts. Throughout Fairfax County, neighborhoods are facing increased risk of urban flooding, fluvial/floodplain flooding, and tidal flooding due to climatic changes.

The county's 48 resilience strategies are organized into 4 pillars:

- Climate Ready Communities (CRC): includes strategies relating to enhancements of public services, such as upgraded cooling and flood services and programs.
- Resilient Infrastructure and Buildings (RIB): includes strategies to boost the physical resilience of our critical facilities and infrastructure to a changing climate
- Adaptive Environments (AE): includes strategies to both protect natural resources that naturally provide resilience benefits and to restore natural resources that are vulnerable to a changing climate.
- Integrated Action Planning (IAP): sets the county up for success by integrating climate adaptation and resilience into various county-wide plans, policies, data, and funding.

RECOMMENDATION: The county should continue funding resilience work from ensuring that it maintains continuity of operations in the event of an emergency, ensuring

stormwater infrastructure can accommodate water so that areas do not flood, and continue the many actions needed to make the county resilient to climate impacts.

Residential homes without air conditioning

An increase in extreme heat days and average temperatures increases the risk for heat-related illnesses such as respiratory difficulties, heat cramps, heat exhaustion, and heat stroke. Residents without sufficient access to air conditioning are at extreme risk of heat related illnesses during periods of prolonged extreme heat, as was experienced in summer 2024. While mobile home parks often have lots of heat-absorbing concrete with little shade other housing., especially older housing with inadequate insulation that lacks air conditioning can pose a danger to inhabitants. Many, especially older model homes are often poorly insulated, and many residents frequently can't afford their utility bills or air conditioners. Often, those residents who are low income and do not qualify for utility assistance, live in housing with poor or inadequate insulation and are surrounded by heat islands are at greatest risk of heat related illnesses.

During the 2024 summer of persistent extreme heat, Fairfax County's Office of Environmental and Energy Coordination (OEEC) partnered with the Faith Alliance for Climate Solutions, Rebuilding Together, Daniels Run Peace Church and staff from Hybla Valley Community Center to bring relief to residents of Harmony Place Mobile Home Park who were without sufficient air conditioning (AC), or no AC at all. Within just a few days of being notified of the urgent situation at Harmony Place, Fairfax County and non-profit partners across the county came together to create an innovative pilot project to provide window and portable AC units to these families. This effort to "fill the gap" and enhance access to extreme heat-related services is part of the county's Resilient Fairfax Plan. As a result of this need, the county has transformed AC Rescue from a pilot project into a standing county program to assist residents in need. EQAC appreciates the efforts that OEEC undertook to partner with other organizations to address this and other resilience challenges.

STATUS: EQAC appreciates the systematic assessment of urban heat islands that county staff has undertaken and supports futher efforts to identify populations at risk and provide relief to these populations.

Heat Islands and Tree Cover

As discussed in the Land Use Chapter, heat islands are created in urban areas with concrete and asphalt absorb the sun's energy and heats the ground and surrounding surfaces. While the county has a tree canopy goal of 60% overall coverage with a minimum of 40% coverage in every census tract, road expansion (along with clearcutting of the right of way) and development are resulting in tree loss. While efforts should be made to replace trees from the areas where they are removed, replacement is not always possible and when trees are replaced, they are often young trees that will not provide the canopy that the previous trees provided.

As a part of the county's efforts to address heat islands, OEEC has worked with DPWES to plant trees especially in heat island areas. This work is commendable. Heat islands can be especially hard on disadvantaged populations as cooling a structure in a heat island. Recommending that the county explore adoption of a policy to support tree planting should help to solidify current practices and provide more transparency to the work that the county supports.

PRIORITY RECOMMENDATION (NEW): EQAC recommends that the Board should support EQAC's recommendation to direct the county executive to provide the Board with options to increase tree planting, especially tree planting in heat islands with disadvantaged populations.

Communications and Outreach for Resiliency

EQAC commends the Resilient Fairfax Program for their outreach, communications, planning and taking community input into action. Funding to support Resilient Fairfax is funding that will help to reduce emergency situations. Planning for heat emergencies, flooding, and other climate related events is important and should be appreciated by county residents as they efforts clearly serve them. The Resilient Fairfax Program has an excellent website, and they they also provide regular briefings to various groups, including a stakeholder group.

STATUS: While there is a significant funding need, the Resilient Fairfax program works with the community and has a sensitivity to One Fairfax priorities. Moreover, the Resilient Fairfax program is appreciated by many residents.

Budgets and Priorities

The Board of Supervisors and community members have raised concerns that CECAP Priorities have not clearly been established to show that the program will be adequate to meet CECAP goals. For CECAP, the county should prioritize CECAP actions by considering GHG reductions and feasibility as described earlier. The county has established goals and a plan is needed to show how investments in climate actions will lead to meeting the county's goals. Resilient Fairfax has made good progress in prioritizing work and taking actions but there are still significant needs that require funding, such as addressing flood risks.

PRIORITY RECOMMENDATION 6CE-2022.1: Prioritize climate funding and provide adequate funding for both CECAP and Resilient Fairfax to meet goals in the annual operations and CIP Budgets.

Planning and Implementation

In response to this challenge and as reflected in the above text, the county has established a climate website that has made significant progress in meeting this need. County residents appreciate the importance of taking action to address climate change and it is

important that county residents can easily see what actions the county is taking and the progress that is being made. The complexity of the different programs requires a lot of work to understand both the requirements and progress.

Appendix A

EQAC recommends that the county prioritize CECAP actions with the greatest potential to reduce GHG emissions and are economically feasible. In reviewing CECAP efforts, this chapter focuses on the strategies associated with the greatest emission reductions. Countywide GHG emissions come from transportation (44%), residential and commercial buildings (49%), air conditioning and refrigerant escaped gases (5%), and waste (2%). Because the vast majority of emissions result from buildings and transportation, this chapter focuses on those activities in reviewing CECAP efforts.

In order to better appreciate the potential Page 40 of the county's Community-Wide Energy and Climate Action Plan includes a dozen strategies. Each strategy can have from two to five actions. CECAP only reports emission estimates at the strategy level but provides qualitative information on the cost of each action.

Table 1. Strategies Associated with Buildings, Energy Production and Transportation.

County Estimate of Emissions Reduction (MT CO_2e)	Strategy	Comment
2,044,000	Increase electric vehicle (EV) adoption	The county should continue efforts to promote EV adoption and supporting the development of EV charging. Adoption of EVs is critical to meeting the county's climate goals. the county can make it easier to own an electric vehicle by providing/facilitating the placement of charging options (especially Level 3), possible local tax credits, and requiring charging capabilities in construction.
1,390,000	Increase the amount of renewable energy in the electric grid	Dominion Energy largely controls the mix of renewable energy in the electrical grid and they must be held to Virginia Clean Economy Act requirements.
1,324,000	Increase Energy Efficiency and Conservation in Existing Buildings	Legislative changes are needed to even know more about energy efficiency and conservation, let alone require it.
129,000	Implement Green Building Standards for new Buildings	While the county has Green Building standards for county projects and the Environmental Element of the Comprehensive Plan applies the Green Building Policy to private developments that go through the entitlement process, green building standards should be

		applied to all building projects that provide an opportunity to reduce energy.
1,145,000	Electrify Existing Buildings	The county can electrify its buildings but other entities (private and other governmental) control electrification so outreach should help with voluntary conversion but legislative changes will likely be needed..
946,000	Increase fuel economy and use of low-carbon fuels for transportation	Success with this action will require choosing vehicles that are fuel efficient or use low-carbon fuels.
733,000	Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas	This action will most likely have benefits in the future.
462,000	Increase production of onsite renewable energy	Fairfax County is undertaking this kind of work (e.g., Lorton Landfill solar farm) but much more is needed on the private side.
392,000	Support sustainable land use, active transportation, public transportation and transportation demand management to reduce vehicle-miles traveled	This strategy is largely under the control of the county. This estimate of GHG reduction may well be underestimated.

In reviewing Table 1, it is clear that there are many challenges to achieving the county's estimates of potential GHG reduction.

Reducing Building Related GHG Emissions

Building energy needs can be reduced by the use of green energy (i.e., energy from sources that do not contribute to GHG emissions) and energy efficient building.

The following information is built off of Table 1 in the final CECAP report. The main difference between Table 1 in the CECAP report and the tables below is the inclusion of the comment column. It should be noted that cost represents a cost estimate to a community member.

Table 2. Potential GHG Reductions from Buildings (Modified from Table 1 in CECAP Report)

Strategy	Action	Cost	Timeframe	Comment
S1 Increase energy efficiency and conservation in existing buildings (1,324,999 MT CO_2e)				
S1a	Increase energy efficiency in residential buildings	$$$	Immediate	Increasing energy efficiency in residential buildings is feasible but outreach will be critical to gain support for work with savings that would pay into the future.

S1b	Increase energy efficiency in commercial buildings	N/A	Immediate	Similar to residential
S1c	Increase energy efficiency in local government existing buildings and streetlights	$	Immediate	This work has been underway for years and has been effective in also reducing future operating costs.
S1d	Develop and expand district energy and CHP* systems	N/A	Immediate	
1e	Expand gas and electricity demand flexibility	$	Immediate	
S2 Electrify Existing Buildings (1,145,000 MT CO_2e)				
2a	Electrify existing residential buildings	$$$	Immediate	Costs would be reduced if changes were made when equipment replacement is needed
2b	Electrify existing commercial buildings	N/A	Immediate	Similar to residential for companies
2c	Reduce the use of high-GWP refrigerants	None	Soon	At least some companies with good environmental stewardship have been doing this for years
S3 Implement Green Building Standards for New Buildings (129,00 MT CO_2e)				
S3a	Increase building code stringency for residential and commercial buildings	$$	Immediate	Legislation is needed to compel uniformity, but voluntary actions have been effective
3b	Support all-electric new residential and commercial construction	$$	Immediate	Legislation would be needed for uniformity, but voluntary actions are effective
3c	Support green building principles and practices	N/A	Immediate	Many like the idea of green building principles and practices but may not be clear on actions.
3d	Support reuse of existing buildings	N/A	Immediate	

*Combined Heat and Power

Increase Renewable Energy

GHG emissions is also dependent up on the energy source that powers building operations.

Table 3. Strategies to Reduce GHGs with Renewable Energy

Strategy	Action	Cost	Timeframe	Comment
S4 Increase the amount of renewable energy in the electric grid (1,390,000 MT CO_2e)				
4a	Develop Large Offsite grid renewable energy	$	Immediate	There are efforts to develop large offsite grid renewable energy from the county and others

4b	Increase energy efficiency in commercial buildings	N/A	Immediate	Similar to residential for companies
4c	Maintain nuclear energy at current levels	No Cost	Immediate	Small nuclear reactors are favored by some data centers so there may be more pressure to site to support data centers.
S5 Increase production of onsite renewable energy (462,000 MT CO_2e)				
5a	Expand solar PV on existing buildings	$$$	Immediate	While PV on existing building may be expensive, it will pay for itself over time.
5b	Support solar PV in all new construction	$$	Immediate	Solar PV in all new construction will add to cost when resources might be tight for the client.
5c	Support Community Solar	$	Soon	Community solar may be very welcomed by community members
5d	Develop battery storage products	$$$	Soon	An ordinance is in development and some progress is being made.
S6 Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas (733,000 MT CO_2e)				
6a	Expand the supply and use of resource-recovered gas, hydrogen, and power-to-gas	N/A	Future	Hydrogen in particular may be a long way off-if fossil fuels are used to generate hydrogen, then there would not be a net benefit.

Reducing Transportation Related GHG Emissions

Emissions associated with transportation provide significant opportunities to reduce transportation related GHG emissions.

Table 4. Strategies to Reduce GHGs from Transportation

Strategy	Action	Cost	Timeframe	Comment
S7 Increase electric vehicle (EV) adoption (2,044,000 MT CO_2e)				
7a	Leverage county assets to expand EV use across on-road vehicles and off-road equipment	N/A	Immediate	While progress has been made, FCPS just cancelled their orders for electric school buses
7b	Increase EV adoption by residents, businesses, and private fleets	$$$	Immediate	EV adoption is increasing but the loss of federal benefits for EVs and high tariffs appears to be a deterrent to potential EV purchasers
7c	Install EV chargers in new buildings	N/A	Immediate	County staff have stated that Comprehensive Plan language will include language to require some EV

				chargers and capacity to provide charging stations for all parking (see EQAC comments on draft Comprehensive Plan language)
S8 Support sustainable land use, active transportation, public transportation and transportation demand management (TDM) to reduce vehicle miles traveled (392,000 MT CO_2e)				
8a	Support the use an improvement of bicycle and pedestrian infrastructure	$	Immediate	In addition to reducing vehicle miles traveled, Improvements to walking and bike paths are also important for a healthy Fairfax.
8b	Support the use and improvement of public transportation and commuter services	$	Immediate	Supporting public transportation is critical to providing people with an alternative to vehicle traffic-and associated emissions.
8c	Support smart-growth and transportation demand management (TDM) strategies	$	Soon	We expect that Tysons and other high density development near metro are already having real benefits by providing residents the ability to live, work and recreate within a neighborhood.
9 Increase fuel economy and use of low-carbon fuels for transportation (946,000 MT CO_2e)				
9a	Support low-carbon fuels for transportation	$$$	Immediate	Alternative fuels have a reduction in GHG emissions but much less than EVs, especially when EVs are powered by green energy.
9b	Support improvement to fuel efficiency	$$$	Immediate	Improvements to fuel efficiency in the county are largely depend upon turnover of vehicles that are designed to have lower emissions.
9c	Support low-carbon fuels for aviation	N/A	Future	This action will require technological changes.

~~1. Increase fuel economy and use of low-carbon fuels for transportation (946,000 MT CO_2e)~~