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CECAP Final Report Board Matter

Supervisor Dan Storck, Joint with Chairman Jeff McKay

September 14, 2021

The planning phase for the Community-wide Energy and Climate Action Plan (CECAP) has culminated and the final report delivered for our consideration and acceptance. The Report executive summary is Included with this Board Matter. The full Report is available on the County's Office of Environmental and Energy Coordination (OEEC) website at <a href="https://www.fairfaxcounty.gov/environment-energy-coordination/sites/environment-energy-coordination/sites/environment-energy-coordination/files/assets/images/cecap%20report%20release/cecap%20draft_designed%20report sept%202021 release 508.pdf.

When the planning process was first approved by the Board in September 2019, CECAP was envisioned as a community-driven process focused on reducing greenhouse gas (GHG) emissions in Fairfax County. Only 5 percent of emissions in the county are attributable to government and school operations. In order to address the remaining 95 percent of emissions, it was vital that community members be heavily involved in and able to take ownership of the plan. As such, the CECAP Final Report includes community-developed goals, strategies and actions to achieve emissions reductions including an overall goal to be carbon neutral by 2050.

Overseen by the OEEC, with support from consultants, the CECAP planning process started with kickoff meetings of the nine district-level Focus Groups, and the larger county-wide Task Force in January 2020. As a result of the COVID-19 pandemic, many changes were made to the planned CECAP format, including a transition to electronic meetings for the remainder of the process, and an eventual consolidation of the Focus Groups and Task Force into the Working Group. Working Group meetings were held electronically from December 2020 through June 2021. Public input was ongoing throughout the process due to the community representatives on the Focus Groups, Task Force and Working Group. County-wide public feedback was sought at three different points through virtual meetings and public surveys throughout the CECAP planning process, with over 4,500 responses received.

As presented in the CECAP Final Report, community members serving on the CECAP groups considered a variety of technical materials, made determinations on Greenhouse Gas (GHG) emission goal levels, and generated strategies and actions to address these goals based on emission reduction potential, impact categories, and other factors related

to implementation. The CECAP Final Report details the overall community goal of carbon neutrality by 2050, as well as interim GHG reduction goals of 50% for 2030 and 75% by 2040. Additionally, sector-level goals are identified for energy, transportation, waste, and natural resources. The report further details strategies and actions to provide a pathway to achieve these goals as well as recommended activities for implementation. Together, the strategies and actions are intended to empower individuals and organizations within the community to engage in, lead and champion the emissions reductions required to achieve county-wide carbon neutrality.

Climate change is an existential crisis already causing major impacts in Fairfax County. The report concedes that there are significant challenges in addressing the climate crisis but, with this plan, we have a positive path forward to accept the challenge and take action in Fairfax County. CECAP is a creative plan that builds on best practices and recognizes the need to adapt as technology and innovation spur new ideas over time. The Board would like to recognize the efforts of the community members, particularly the Working Group, for their role in creating this CECAP Report and ask for their continued dedication, engagement and leadership as we move into the implementation phase. It will take all of us working together to meet the climate crisis head on.

Fairfax County is committed to being a leader and a catalyst for action to address climate change as stated in the County's Carbon Neutral Counties Declaration, Operational Energy Strategy, and many related green initiatives that complement the Community-wide Energy and Climate Action Plan.

THEREFORE, Mr. Chairman, WE MOVE THAT THE BOARD accept the CECAP Final Report and direct OEEC, with support of relevant county agencies, to prepare a community implementation plan to guide both short-term and long-term strategies, actions and recommendations described in the Report.

The short-term implementation should focus on CECAP recommendations to initiate public outreach and education, build on existing initiatives and programs relevant to CECAP and consider the proposed legislative items. The short-term implementation plan will be brought for review to the Board's Environmental Committee early in 2022.

Fairfax County Community-wide Energy and Climate Action Plan





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The Community-wide Energy and Climate Action Plan (CECAP) was coordinated by the Fairfax County Office of Environmental and Energy Coordination (OEEC). The Project Team consists of the following community members, Fairfax County staff, and consultants.

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Table of Contents

LETTER FROM THE CHAIRMAN	V
EXECUTIVE SUMMARY	ES-1
INTRODUCTION	1
Climate Change Impacts in Fairfax County	2
Reducing Emissions	4
Why Develop a CECAP?	4
CECAP PROCESS AND METHODOLOGY	8
Key Contributors and Roles	8
Timeline	10
GREENHOUSE GAS EMISSIONS	13
Overview: 2005–2018	13
Community Inventory Methodology: 2005–2018	14
Drivers of GHG Change: 2005–2018	15
Components of the Emissions Inventory: Specific Inventory Sectors	16
County Operations Emissions Inventory	18
Modeled Scenarios for Consideration in Goal Setting	19
GREENHOUSE GAS REDUCTION GOALS	25
Goal-Setting Approach	25
Selected Goals	26
EMISSIONS REDUCTION STRATEGIES AND ACTIONS	32
CECAP Framework	32
Impact Categories	33
Implementation Categories	37
Greenhouse Gas Emissions Reduction Modeling	38
Impact Category Summary Matrix	39
Summary of Working Group Priorities	42
How to Read the Strategy and Action Sections	43

Buildings and Energy Efficiency	45
Strategy 1: Increase Energy Efficiency and Conservation in Existing Buildings	45
Action 1a: Increase Energy Efficiency in Residential Buildings	46
Action 1b: Increase Energy Efficiency in Commercial Buildings	48
Action 1c: Increase Energy Efficiency in Local Government Buildings and Streetlights	49
Action 1d: Develop and Expand District Energy and Combined Heat and Power Systems	50
Action 1e: Expand Gas and Electricity Demand Flexibility	52
Working Group-Recommended Activities for Implementation for Strategy 1	54
Strategy 2: Electrify Existing Buildings	58
Action 2a: Electrify Existing Residential Buildings	59
Action 2b: Electrify Existing Commercial Buildings	61
Action 2c: Reduce the Use of High Global Warming Potential Refrigerants	63
Working Group-Recommended Activities for Implementation for Strategy 2	65
Strategy 3: Implement Green Building Standards for New Buildings Action 3a: Increase Building Code Stringency for Residential and Commercial Buildings Action 3b: Support All-Electric Residential and Commercial Construction Action 3c: Support Green Building Principles and Practices Action 3d: Support Reuse of Existing Buildings Working Group-Recommended Activities for Implementation for Strategy 3	69 70 72 73 75

Strategy 4: Increase the Amount of Renewable Energy in the Electric Grid Action 4a: Develop Large Offsite Grid Renewable Energy	78 79
Action 4b: Develop Grid Storage Action 4c: Maintain Nuclear Generation at Current Levels Working Group-Recommended Activities for Implementation for Strategy 4	80 82 84
Strategy 5: Increase Production of Onsite Renewable Energy	86
Action 5a: Expand Solar Photovoltaics on Existing Buildings Action 5b: Support Solar Photovoltaics in All New Construction	87 89
Action 5c: Support Community Solar Action 5d: Develop Battery Storage Projects	90 92
Working Group-Recommended Activities for Implementation for Strategy 5	94
Strategy 6: Increase Energy Supply from Resource-Recovered Gas, Hydrogen, and Power-to-Gas	97
Action 6a: Expand the Supply and Use of Resource-Recovered Gas, Hydrogen, and Power-to-Gas	99
Working Group-Recommended Activities for Implementation for Strategy 6	101

Energy Supply

78

	103
Strategy 7: Increase Electric Vehicle (EV) Adoption Action 7a: Leverage County Assets to Expand EV Use Across On-Road Vehicles	103
and Off-Road Equipment Action 7b: Increase EV Adoption by Residents, Businesses, and Private Fleets Action 7c: Install EV Chargers in New Buildings	104 106 107
Working Group-Recommended Activities for Implementation for Strategy 7	109
Strategy 8: Support Sustainable Land Use, Active Transportation, Public Transportation, and Transportation Demand Management (TDM)	
to Reduce Vehicle-Miles Traveled	112
Action 8a: Support the Use and Improvement of Bicycle and Pedestrian Infrastructure Action 8b: Support the Use and Improvement of Public Transportation and Commuter Services	113
Action 8c: Support Smart-Growth and Transportation Demand Management (TDM) Strategies	116
Working Group-Recommended Activities for Implementation for Strategy 8	118
Strategy 9: Increase Fuel Economy and Use of Low-Carbon Fuels	171
Action 9a: Support Low-Carbon Fuels for Transportation	121
Action 9b: Support Improvements to Fuel Efficiency	124
Action 9c: Support Low-Carbon Fuels for Aviation Working Group-Recommended Activities for Implementation for Strategy 9	125 127
Waste	129
Strategy 10: Reduce the Amount of Waste Generated and Divert Waste from	
Strategy 10. Reduce the Amount of Waste Generated and Divert Waste nom	
Waste-to-Energy Facilities and Landfills	129
Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities	129 130
Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting	129 130 131
Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10	129 130 131 134
Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities	129 130 131 134 137
Waste-to-Energy Facilities and LandfillsAction 10a: Reduce Overall Waste GenerationAction 10b: Increase Waste Diversion from Landfills and Waste-to-Energy FacilitiesThrough Recycling and CompostingWorking Group-Recommended Activities for Implementation for Strategy 10Strategy 11: Responsibly Manage Waste GeneratedAction 11a: Capture and Use Energy Generated at Waste-to-Energy Facilitiesand Landfills	129 130 131 134 137 138
 Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities and Landfills Action 11b: Explore Alternative Options for Long-Term Waste Management 	 129 130 131 134 137 138 140 141
 Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities and Landfills Action 11b: Explore Alternative Options for Long-Term Waste Management Action 11c: Capture and Use Energy Generated by Wastewater Treatment Processes Working Group-Recommended Activities for Implementation for Strategy 11 	 129 130 131 134 137 138 140 141 143
Waste-to-Energy Facilities and LandfillsAction 10a: Reduce Overall Waste GenerationAction 10b: Increase Waste Diversion from Landfills and Waste-to-Energy FacilitiesThrough Recycling and CompostingWorking Group-Recommended Activities for Implementation for Strategy 10Strategy 11: Responsibly Manage Waste GeneratedAction 11a: Capture and Use Energy Generated at Waste-to-Energy Facilitiesand LandfillsAction 11b: Explore Alternative Options for Long-Term Waste ManagementAction 11c: Capture and Use Energy Generated by Wastewater Treatment ProcessesWorking Group-Recommended Activities for Implementation for Strategy 11	 129 130 131 134 137 138 140 141 143 145
Waste-to-Energy Facilities and LandfillsAction 10a: Reduce Overall Waste GenerationAction 10b: Increase Waste Diversion from Landfills and Waste-to-Energy FacilitiesThrough Recycling and CompostingWorking Group-Recommended Activities for Implementation for Strategy 10Strategy 11: Responsibly Manage Waste GeneratedAction 11a: Capture and Use Energy Generated at Waste-to-Energy Facilitiesand LandfillsAction 11b: Explore Alternative Options for Long-Term Waste ManagementAction 11c: Capture and Use Energy Generated by Wastewater Treatment ProcessesWorking Group-Recommended Activities for Implementation for Strategy 11Natural ResourcesStrategy 12: Support Preservation, Restoration, and Expansion of Natural	 129 130 131 134 137 138 140 141 143 145
Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities and Landfills Action 11b: Explore Alternative Options for Long-Term Waste Management Action 11c: Capture and Use Energy Generated by Wastewater Treatment Processes Working Group-Recommended Activities for Implementation for Strategy 11 Natural Resources Strategy 12: Support Preservation, Restoration, and Expansion of Natural Systems, Green Spaces, and Soil Quality	 129 130 131 134 137 138 140 141 143 145 145
 Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities and Landfills Action 11b: Explore Alternative Options for Long-Term Waste Management Action 11c: Capture and Use Energy Generated by Wastewater Treatment Processes Working Group-Recommended Activities for Implementation for Strategy 11 Natural Resources Strategy 12: Support Preservation, Restoration, and Expansion of Natural Systems, Green Spaces, and Soil Quality Action 12a: Conserve Existing Tree Canopy, Green Spaces, and Soil Quality Action 12b: Expand Tree Canopy and Green Spaces, and Improve Soil Management 	 129 130 131 134 137 138 140 141 143 145 146 148
 Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities and Landfills Action 11b: Explore Alternative Options for Long-Term Waste Management Action 11c: Capture and Use Energy Generated by Wastewater Treatment Processes Working Group-Recommended Activities for Implementation for Strategy 11 Natural Resources Strategy 12: Support Preservation, Restoration, and Expansion of Natural Systems, Green Spaces, and Soil Quality Action 12a: Conserve Existing Tree Canopy, Green Spaces, and Soil Quality Action 12b: Expand Tree Canopy and Green Spaces, and Improve Soil Management Action 12c: Cross-Disciplinary County Staff Team to Evaluate Climate Change 	 129 130 131 134 137 138 140 141 143 145 146 148 450
 Waste-to-Energy Facilities and Landfills Action 10a: Reduce Overall Waste Generation Action 10b: Increase Waste Diversion from Landfills and Waste-to-Energy Facilities Through Recycling and Composting Working Group-Recommended Activities for Implementation for Strategy 10 Strategy 11: Responsibly Manage Waste Generated Action 11a: Capture and Use Energy Generated at Waste-to-Energy Facilities and Landfills Action 11b: Explore Alternative Options for Long-Term Waste Management Action 11c: Capture and Use Energy Generated by Wastewater Treatment Processes Working Group-Recommended Activities for Implementation for Strategy 11 Natural Resources Strategy 12: Support Preservation, Restoration, and Expansion of Natural Systems, Green Spaces, and Soil Quality Action 12a: Conserve Existing Tree Canopy, Green Spaces, and Soil Quality Action 12b: Expand Tree Canopy and Green Spaces, and Improve Soil Management Action 12c: Cross-Disciplinary County Staff Team to Evaluate Climate Change and Natural Resources Policies and Programs Working Group-Recommended Activities for Implementation for Strategy 12 	 129 130 131 134 137 138 140 141 143 145 146 148 150 152

COMMUNITY ENGAGEMENT	
CURRENT POLICIES AND PROGRAMS/ IMPLEMENTATION	164
Strategies Related to Building Energy Use	165
Energy Supply	167
Transportation	169
Waste	171
Natural Resources	173
Next Steps	174
APPENDICES	175
Appendix A: Acronyms	175
Annendix B. Glossary	177
Appendix D: diossary	177
Appendix C: Full GHG Inventory Report, Business-As-Usual Projections,	177
Appendix C: Full GHG Inventory Report, Business-As-Usual Projections, and Emissions Reduction Scenarios	178
Appendix D: Full GHG Inventory Report, Business-As-Usual Projections, and Emissions Reduction Scenarios Appendix D: GHG Modeling Methodology	178 179
Appendix D: Full GHG Inventory Report, Business-As-Usual Projections, and Emissions Reduction Scenarios Appendix D: GHG Modeling Methodology Appendix E: Working Group Brainstorming Matrix	178 179 185
Appendix D: Glossary Appendix C: Full GHG Inventory Report, Business-As-Usual Projections, and Emissions Reduction Scenarios Appendix D: GHG Modeling Methodology Appendix E: Working Group Brainstorming Matrix Appendix F: Results of the Working Group Prioritization Exercise	178 179 185 186

Letter from the Chairman

Climate change is one of the biggest challenges facing Fairfax County today. As our region experiences more frequent and severe storm and precipitation events, flooding, high wind, and extreme heat, we are already grappling with the social, economic and environmental effects of a changing climate. As the largest county in Virginia, Fairfax County must lead in making significant, community-wide reductions to its greenhouse gas emissions that drive climate change.

Many Fairfax County businesses, organizations, and residents have already made notable progress toward reducing their greenhouse gas emissions. However, it will take collective action across the entire community to ensure we prevent or limit some of the worst effects of climate change. The Community-wide Energy and Climate Action Plan, or CECAP, lays out multi-sector greenhouse gas reduction strategies and identifies roles and responsibilities for federal, state and local stakeholders. As many of these strategies are ultimately voluntary, the CECAP is intended to educate and motivate community members on steps they can take to mitigate their carbon footprints.

When the Board of Supervisors voted to support the development of CECAP in 2019, we knew we needed a community-driven plan. Over the past 18 months, a Working Group including representatives from local businesses, utilities, environmental groups, religious organizations, and social justice institutions, met to define the goals of CECAP, including the overarching goal to be carbon neutral by 2050. Relying on public input through surveys, meetings, and feedback sessions, the Working Group met routinely with county staff and consultants to evaluate and prioritize strategies and actions that community members can take to reduce their greenhouse gas emissions.

The Working Group was charged with a difficult task – to develop climate mitigation goals, strategies, and actions that reflect the needs of the Fairfax County community. As an added challenge, the CECAP planning process coincided with the onset of the COVID-19 pandemic and the need to transition to a virtual meeting environment. Community engagement processes subsequently had to be adapted. I would like to commend all involved in the planning process for their flexibility and patience throughout this time. Despite these difficulties, the Working Group, with input from the greater Fairfax County community, has developed an ambitious yet achievable plan that addresses the unique issues and opportunities the County faces.

Although the planning process for CECAP has come to an end, our work is far from over. The Board of Supervisors is committed to the long-term success of the plan by ensuring adequate and dedicated resources are in place to support implementation. However, meeting these aggressive climate mitigation goals will require all of us together to act to fight climate change. This will be challenging. "Stopping" climate change often feels abstract, distant, and too difficult to resolve. That is why we developed CECAP to give our community the recommendations, tools, and steps to help us. This is crucial if we want Fairfax County to continue to be a safe and healthy place to live and work. As we move into the implementation phase of CECAP, I encourage each of you to work with us to ensure an equitable, sustainable future for generations to come.

McK-

Jeffrey C. McKay Chairman, Fairfax County Board of Supervisors

EXECUTIVE SUMMARY

Climate Change Impacts in Fairfax County

Climate change is an existential crisis that is affecting human health, the environment, infrastructure, and the lives of people around the world and in Fairfax County. Global temperatures have already increased 1.8 degrees Fahrenheit (°F) since the end of the 19th century and will continue to rise for the foreseeable future. This global warming has led to climate change, which includes various effects such as altered precipitation patterns, more frequent and intense storms, longer and harsher droughts, and much more.

In Fairfax County, the amount of snowfall has been decreasing for decades, the number of extremely hot days (95°F+) has increased seven days from 1970–2018, and the incidences of tick- and mosquito-borne diseases have been increasing in recent years

Key Points

- Climate change is a human-caused crisis affecting human health, livelihoods, and the environment.
- Climate change effects are already impacting the lives of Fairfax County residents.
- Fairfax County worked with local stakeholders to create a Community-wide Energy and Climate Action Plan (CECAP).
- CECAP sets several greenhouse gas reduction goals to combat climate change.
- CECAP provides many strategies and actions everyone can do to reduce their emissions.
- CECAP gives guidance on elective actions for community members to take to assist in reaching CECAP goals, as well as actions for county, state, and federal governments.

due to longer warm seasons. Current climate models project that Fairfax County and the surrounding region will experience substantial increases in temperatures by 2100 (up to 7°F) and increased levels of precipitation. Other key potential impacts of climate change include:

- Increased flood risk due to sea level rise and tidal surges.
- Expansion of flood-prone areas and an increase in flood frequency due to changes in precipitation patterns.
- Increased failure of septic systems, contaminating groundwater.
- Increased health impacts due to excessive heat, and vector-borne and communicable diseases.
- Economic impacts due to extreme weather events.
- Potential reduction in the reliability of electrical systems and the grid due to heating and cooling needs.¹

The scientific evidence demonstrating global climate change is clear and growing; human activities—such as burning fossil fuels, clearing undeveloped land, and managing waste

¹ Reston Association. 2020. Reston Annual State of the Environment Report (RASER). Available at https://www.reston.org/nature-environmental-overview.

poorly—are overwhelmingly responsible for causing climate change. These activities emit greenhouse gases (GHGs), such as carbon dioxide (CO₂), that enter the atmosphere and trap heat. Over time, the trapped heat slowly increases global temperatures, causing cascading climate effects that significantly impact our lives and the environment. Global GHG emissions have been increasing since the 1800s, and unless we reverse this trend, the effects of climate change and the impacts on people and the environment will continue to increase as well.

How Does Fairfax County Contribute to Climate Change?

Community-wide GHG emissions have been tracked in Fairfax County since 2005 by creating an inventory of all GHGs emitted by various sources each year. Different GHGs have different global warming potentials, so scientists created a measurement unit that converts the different potential to the equivalent amount of CO₂—this unit is called CO₂ equivalency, or CO₂e. This allows for direct comparison of the potency of different GHGs and for streamlined calculations and analysis.

In 2018, 12.6 million metric tons of CO₂e² (MMT CO₂e) were emitted in Fairfax County, which is equivalent to the emissions from the energy use of 1.5 million homes.³ More than 90% of these GHG emissions were the result of residential and commercial building energy consumption and transportation (see Figure ES-1). The remaining emissions are from other sources, including solid waste, wastewater treatment, and process and fugitive emissions (fugitive emissions are leaks and irregular releases). The main drivers of increased emissions in the county are primarily growth in population, increased commercial development, and use of synthetic refrigerants called hydrofluorocarbons. The main drivers of decreased emissions are improved energy efficiency, an increasingly less carbon-intensive electricity grid, and more fuel-efficient vehicles.



Figure ES-1: Fairfax County GHG Emissions by Activity Over Time

 $^{^{2}}$ CO₂ equivalent (CO₂e) is the basic unit of measure used to sum different GHGs by comparing their respective relative global warming effect to an index unit, namely the global warming effect of carbon dioxide. 3 2018 is the most recent year for available data for a GHG inventory for Fairfax County.

Between 2005 and 2018, the county population grew 15% to nearly 1.2 million people. Despite this growth, total GHG emissions decreased 13% from 14.52 MMT CO₂e in 2005 to 12.56 MMT CO₂e in 2018. Per capita emissions decreased 24% from 14.5 metric tons of CO2e (MT CO₂e) per capita in 2005 to 11.0 MT CO₂e per capita in 2018. These results show that we can reduce GHG emissions even as our community and economy grow. However, they also show that Fairfax County still emits a significant amount of GHGs and can reduce emissions further.

What Is CECAP?

In 2018, the Board of Supervisors Environmental Quality Advisory Council recommended that Fairfax County create CECAP to reduce GHG emissions. The Office of Environmental and Energy Coordination (OEEC) coordinated development of CECAP to:

- **Develop a roadmap** for Fairfax County to reduce GHG emissions and provide a way to engage the community in GHG emissions reduction efforts.
- Provide citizens and local stakeholders a voice in the climate planning process to ensure that the plan addresses local priorities and needs.

The plan gives a path for a **multi-level approach** to tackling climate change, which involves:

- **Community, individuals, and organizations**, which are specifically added to the climate change solution effort through CECAP.
- Fairfax County government, which can build on existing policies, programs, and planning processes to address climate change, as well as advocate for legislative change at the state level.
- **State and federal governments**, which both community members and the Fairfax County government can influence through collective advocacy.

CECAP is the first effort to involve the community in GHG emissions reduction actions, and the first opportunity to add individual activities to existing county, state, and federal emissions reduction actions. CECAP is a community-driven plan that seeks the involvement of everyone across the county to take action to reduce GHG emissions.

How Was CECAP Developed?

There were five main steps in the CECAP development process (see Figure ES-2), each of which had a distinct purpose and included several supporting actions. The key contributors included the following:

 The Office of Environmental and Energy Coordination (OEEC) led the process, coordinated among all the various contributors, and provided content for the final CECAP report.

- **ICF** supported climate action planning, technical analyses, facilitation of meetings with the community, and the development of the final CECAP report.
- The Metropolitan Washington Council of Governments (COG) developed the GHG inventory, business-as-usual emission projections, and emissions reduction scenarios.
- **The CECAP Working Group** served as the community decision-making body.
- The Board of Supervisors provided key input on the process.

			5) Develop Technica	Final Draft of C I Report	ECAP	
	4) Community Engag	gement Planni	ng (ongoing)			
1) Project Initiation		3) Cli Pla	mate Mitigatio anning & Supp	n Port		
2) GHG Reduction Inventories, Mod	lels and Goals					
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2020				2021		

Figure ES-2: The CECAP Process

- 1. **Project initiation**—Community members were selected by the Board of Supervisors to serve on nine Focus Groups, a Task Force (subsequently called the Working Group after October 2020) was created, and the project began in January 2020.
- 2. **GHG reduction inventories, models, and goals**—COG developed the 2018 GHG inventory for Fairfax County, COG created emissions reduction scenarios at the direction of Fairfax County to estimate future emissions, and members of the Working Group provided input on CECAP goals.
- 3. **Emissions reduction planning and support**—ICF developed the initial list of emissions reduction strategies and actions, which was revised and edited by the Working Group. ICF then developed the accompanying analyses, and the Working Group evaluated the options and selected the final set of actions.
- 4. **Community engagement planning**—The county developed outreach and communications materials and hosted public meetings to collect and assess public opinions of CECAP.
- 5. **Develop final CECAP technical report**—The CECAP technical report is a product of the Working Group discussions and perspectives, with technical materials produced by ICF and COG, with input from the public. The report reflects the majority opinion of the Working Group. Occasionally, in matters of significant difference, minority perspectives are represented.

Ultimately, the iterative process among community groups, local organizations, and other stakeholders resulted in a roadmap for the community to achieve its GHG emissions reduction goals.

What Is in the Plan?

There is no single immediate solution to reduce GHG emissions. Instead, we must implement multiple strategies, and all groups across society must commit to helping. CECAP sets forth GHG reduction goals, strategies, and their accompanying actions; the impacts of those actions; and activities for implementation for individuals and organizations, as well as county, state, and federal governments.

Greenhouse Gas Reduction Goals

CECAP is guided by a long-term emissions reduction goal, interim goals, and sector-specific goals. Fairfax County's long-term goal is to achieve carbon neutrality by 2050 from a 2005 base year, with at least 87% coming from GHG emissions reduction. The scenario modeling conducted by COG determined that at least an 87% reduction in GHG emissions was technically feasible given today's technologies and the additional opportunities future technologies may provide. It is



Fairfax County's long-term goal is to achieve carbon neutrality by 2050 from a 2005 base year, with at least 87% coming from GHG emissions reduction.

for this reason that the community's long-term goal specifies at least an 87% reduction in actual emissions as opposed to carbon offsets. Interim goals for 2030 and 2040 were established to help chart Fairfax County's path to carbon neutrality, as shown in Figure ES-3. The Working Group also established sector-specific goals for the Buildings and Energy Efficiency, Transportation, Waste, and Natural Resources sectors. See the <u>Greenhouse Gas</u> Reduction Goals section for more information on the goals of CECAP.



Figure ES-3: Fairfax County GHG Emissions Reduction Goals

CECAP Goals

- **Long-term target goal:** Fairfax County will aim to achieve carbon neutrality by 2050 from a 2005 base year, with at least 87% coming from GHG emissions reduction.
- Interim year goal 2030: Fairfax County will reduce GHG emissions by 50% by 2030, from a 2005 base year.
- Interim year goal 2040: Fairfax County will reduce GHG emissions by 75% by 2040, from a 2005 base year.
- Sector-specific goals: The sector-specific goals include two goals specific to the Building and Energy Efficiency sector, two goals specific to the Transportation sector, one goal specific to the Natural Resources sector, and one goal specific to the Waste sector.
 - All new, eligible buildings will have a commitment to green building.
 - Retrofit at least 100,000 housing units with **energy efficiency** measures by 2030.
 - Increase **transit and non-motorized commuting** to 30% (including teleworking) by 2030.
 - Increase plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) to at least 15% of all light-duty vehicle registrations by 2030.
 - Expand the tree canopy to 60% with a minimum of 40% tree canopy coverage in every census block by 2030 and a minimum of 50% tree canopy coverage in every census block by 2050, prioritizing areas of highest socioeconomic need first.
 - Achieve **zero waste** by 2040, defined as at least 90% waste diverted from landfill/ incineration. In alignment with the Zero Waste International Alliance, "zero waste" is defined as the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.

Emissions Reduction Strategies and Actions In order to achieve those goals, CECAP encompasses

strategies and actions needed to reduce GHG emissions in Fairfax County. Because more than 95% of all GHG emissions in the county come from sources other than government and school operations, CECAP describes what residents, businesses, and nonprofit organizations can do to be part of the solution. CECAP also describes what

Due to the ambitious nature of the GHG goals, all strategies and actions must be part of the solution.

government at the county, state, and federal levels can do to reduce GHG emissions in the county. CECAP includes 12 strategies and 37 actions, presented in Figure ES-4. In the figure, each strategy is indicated with an "S" followed by the strategy number and each of the five sectors is identified by a different color.

Each strategy and its associated actions have different expected impacts, as well as different activities for implementation recommended by the Working Group, all of which are described in detail in CECAP. Some actions are less expensive, easier, and faster to deploy than others. Some actions will have additional benefits, such as improved health outcomes or increased equity. Some actions will reduce emissions a great deal, while others may reduce emissions to a lesser degree.

All of the actions described in CECAP will need to be undertaken in order to achieve the plan's emissions reduction goals. Still, Fairfax County residents, businesses, county government, and other stakeholders (e.g., organizations, commuters, state and federal governments) have diverse priorities and values that may lead to the selection of one action over another. To help community members and decision makers inside and outside of Fairfax County prioritize which actions to take, each action section describes the action's potential impacts in various categories.

The impact categories assessed include the following and are described further in the Impact Categories section:

- Greenhouse Gas (GHG)
- Payback
- Equity (i.e., One Fairfax)
 Timeframe

Public Health

- Environmental Resources
 Cost to Community Members
- Other Considerations (e.g., climate adaptation, synergies with other strategies)

Economic Opportunity

The expected GHG emissions reductions for each strategy are presented in Figure ES-5. Even with all strategies implemented by 2050, members of the Fairfax County community will need to rely on a portion of either emerging technologies or carbon offsets to meet the goal of carbon neutrality.

Together, the actions in CECAP can reduce emissions, slow climate change, and create a healthier and more just community.

Read the How to Use This Report and use the links to each strategy and action section in Figure ES-4 on the next page.

Figure ES-4: Links to Strategies and Actions

S1: Increase energy efficiency and conservation in existing buildings

- O 1a: Increase energy efficiency in residential buildings
- 1b: Increase energy efficiency in commercial buildings
- 1c: Increase energy efficiency in local government existing buildings and streetlights
- O 1d: Develop and expand district energy and CHP systems
- 1e: Expand gas and electricity demand programs

S2: Electrify existing buildings

- 2a: Electrify existing residential buildings
- 2b: Electrify existing commercial buildings
- O 2c: Reduce the use of high-GWP refrigerants

S3: Implement green building standards for new buildings

- 3a: Increase building code stringency for residential and commercial buildings
- 3b: Support all-electric new residential and commercial construction
- O 3c: Support green building principles and practices
- 3d: Support the reuse of existing buildings

S4: Increase the amount of renewable energy in the electric grid

- 4a: Develop large offsite grid renewable energy
- O 4b: Develop grid storage
- O 4c: Maintain nuclear generation at the current levels

S5: Increase production of onsite renewable energy

- 5a: Expand solar PV on existing buildings
- O 5b: Support solar PV in all new construction
- O 5c: Support Community Solar
- O 5d: Develop battery storage projects

S6: Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas

 6a: Expand the supply and use of resource-recovered gas, hydrogen, and power-to-gas

S7: Increase electric vehicle (EV) adoption

- 7a: Leverage county assets to expand EV use across onroad vehicles and off-road equipment
- 7b: Increase EV adoption by residents, businesses, and private fleets
- O 7c: Install EV chargers in new buildings

S8: Support sustainable land use, active transportation, public transportation, and transportation demand management (TDM) to reduce vehicle-miles traveled

- 8a: Support the use and improvement of bicycle and pedestrian infrastructure
- 8b: Support the use and improvement of public transportation and commuter services
- 8c: Support smart-growth and transportation demand management (TDM) strategies

S9: Increase fuel economy and use of low-carbon fuels for transportation

- 9a: Support low-carbon fuels for transportation
- 9b: Support improvements to fuel efficiency
- 9c: Support low-carbon fuels for aviation

S10: Reduce the amount of waste generated and divert waste from landfills and waste-to-energy facilities

- 10a: Reduce overall waste generation
- 10b: Increase waste diversion from landfills and waste-toenergy facilities through recycling and composting

S11: Responsibly manage all waste generated, including collected residential and commercial waste, wastewater, and other items

- 11a: Capture and use energy generated at waste-toenergy facilities and landfills
- 11b: Explore alternative options for long-term waste management (landfill, waste to energy, and other options)
- 11c: Capture and use energy generated by wastewater treatment processes

S12: Support preservation, restoration, and expansion of natural systems, green spaces, and soil quality

- 12a: Conserve existing tree canopy, green spaces, and soil quality
- 12b: Expand tree canopy and green spaces, and improve soil management
- 12c: Create a cross-disciplinary county staff team to strengthen climate change and natural resources policies and programs





- S1: Increase energy efficiency and conservation in existing buildings
- S2: Electrify existing buildingsS3: Implement green building standards for new buildings
- S4: Increase the amount of renewable energy in the electric grid
- S5: Increase production of onsite renewable energy
- S6: Increase energy supply from resource-recovered gas, hydrogen, and power-to-gas
- S7: Increase electric vehicle (EV) adoption
- S8: Support sustainable land use, active transportation, public transportation, and transportation demand management (TDM) to reduce vehicle-miles traveled
- S9: Increase fuel economy and use of low-carbon fuels for transportation
- S10: Reduce the amount of waste generated and divert waste from landfills and waste-to-energy facilities
- S11: Responsibly manage all waste generated, including collected residential and commercial waste, wastewater, and other items
- S12: Support preservation, restoration, and expansion of natural systems, green spaces, and soil quality

Note that there are technical differences between the business-as-usual (BAU) scenario used by COG in the GHG inventory and the Reference Case used for the GHG emissions reduction modeling shown here. See <u>Appendix D: GHG Modeling Methodology</u> for details.

Working Group-Recommended Activities for Implementation

Recommended activities for implementation were developed by the Working Group in consultation with county staff and ICF. Each recommended activity for implementation is grouped into one of five categories, which indicate where the ability to impact change might exist.

These implementation categories were developed because Virginia is a Dillon Rule state. The Dillon Rule declares that state law is pre-emptive of local law unless the state confers the power to local government. The Dillon Rule is strictly interpreted so that if there is reasonable doubt about whether a power has been conferred to a local government, then it has not been.

Working Group-recommended activities for implementation may fall into one or more of the following categories.



Recommended Activities for Implementation for All Actors: Actions that are applicable to all four types of actors, including individuals and organizations, the county (with and without additional state-enabling legislation), state government, and federal government.



Recommended Activities for Implementation for Individuals and Organizations: Actions that individuals, businesses, and organizations can take now.



Recommended Activities for Implementation for the County: Measures and programs that the Fairfax County government can do right now. The recommended measures and programs in this category were specifically noted by the Working Group for action by the Fairfax County Board of Supervisors.



Recommended Activities for Implementation for the County Requiring State-Enabled Legislation: Programs and policies that the county might someday be able to do with state enabling legislation. The county and its stakeholders can advocate for items in this section at the state level.



Recommended Activities for Implementation for State and Federal Governments: State and federal measures and programs that the county will likely not have the authority to do on its own. The county and its stakeholders can advocate for these items at the state, regional, or federal level.

Working Group-Recommended Activities for the Board of Supervisors

This section summarizes the list of Working Group-recommended activities that the county government can begin to implement for each of the 12 strategies in CECAP. The Working Group wished to emphasize these specific recommendations in the Executive Summary for immediate consideration by the Fairfax County Board of Supervisors, as the Board can take immediate action without state-enabling legislation. While these activities for implementation are called out in the Executive Summary, note that there are Working Group-recommended activities for the other three levels of actors (individuals and organizations, county requiring state-enabled legislation, and state and federal governments) detailed for each strategy in the report. Click on the links in the table below to go directly to these recommendations within each strategy section.

Strategy	Working Group-Recommended Activities for Implementation for the Board of Supervisors
Strategy 1: Increase Energy Efficiency and Conservation in Existing Buildings	Establish new energy efficiency and conservation incentive programs; Require energy code compliance requirements; Develop a county code enforcement officer training program; Create an energy audit program; Support businesses that focus on energy efficiency; Establish energy efficiency job training programs; Establish a local green bank, financing program, or Property Assessed Clean Energy (PACE) program; Implement technology pilots in government buildings
Strategy 2: Electrify Existing Buildings	Establish incentive programs through grants, rebates, and tax credits; Expand existing financing programs to support electrification measures; Continue to support the Commercial PACE program; Support businesses providing electrification services; Support and educate installation contractors; Establish job training programs; Partner with building owners to conduct an analysis and work to reduce refrigerant emissions
Strategy 3: Implement Green Building Standards for New Buildings	Push for more stringent green building policies; Incorporate the county's own policies in planning and zoning guidelines; Develop a county code enforcement officer training program; Create an energy audit program within Fairfax Land Development Services; Encourage building commissioning; Establish new green building incentive programs; Expand incentives for homebuilders to build green and reuse existing buildings
Strategy 4: Increase Renewable Energy in Electric Grid	Support renewable energy projects and products (e.g., power purchase agreements, community solar); Enhance opportunities for renewable energy via zoning changes and partnerships in land use and transportation planning; Educate the community on efforts to make the regional grid more sustainable and how they can help; Develop county-wide renewable energy projects and/or programs, such as a green bank
Strategy 5: Increase Production of Onsite Renewable Energy	Implement programs that lower soft costs of solar PV; Support community solar projects; Amend local building codes to accommodate battery storage; Implement programs that connect with residents and private businesses to determine the best way to improve battery adoption; Build solar canopies at county owned sites; Provide financial incentives such as tax incentives or grants
Strategy 6: Increase Energy Supply from Resource-Recovered Gas, Hydrogen & Power- to-Gas	Subsidize the upfront costs of equipment for resource-recovered gas feedstock operators to provide an opportunity to encourage increased levels of adoption
Strategy 7: Increase EV Adoption	Electrify county and school fleet; Install EV charging at county facilities; Enact local policies to streamline EV charging permitting and inspection processes; Incentivize EV-ready charging infrastructure; Work with key industry and policy partners to integrate EV technologies in autonomous vehicles; Take advantage of federal grant and incentive programs for alternative fuel vehicles; Create equitable opportunities for EV adoption through low interest EV loans and rebates; Incentivize integrating EVs across carsharing programs and ride hailing services

Strategy	Working Group-Recommended Activities for Implementation for the Board of Supervisors
Strategy 8: Support Sustainable Land Use, Active Transportation, Public Transportation, and TDM to Reduce Vehicle-Miles Traveled	Expand and improve maintenance/safety of paths and bike lane networks; Install bike racks; Expand public transit routes; Conserve and plant trees along trails and sidewalks; Use zoning and land use codes to create dense, mixed-use development; Explore higher pricing programs for parking at county-owned facilities; Modify parking minimums; Create local congestion fees, zero/low emission delivery zones, and pedestrian-only zones in densely populated areas; Allow telework options for county employees; Upgrade broadband infrastructure; Work with private companies to promote rental bikes and other micro mobility solutions; Support carpooling and vanpooling
Strategy 9: Increase Fuel Economy and Use of Low-Carbon Fuels for Transportation	Encourage the use of low-carbon fuels or the conversion to hybrid-electric retrofits of county-owned diesel powered medium and heavy-duty vehicles; Create financing programs for low/no carbon fuel technologies; Enact property tax credits for consumers purchasing higher fuel economy vehicles
Strategy 10: Reduce the Amount of Waste Generated and Divert Waste from Landfills and Waste-to-Energy Facilities	Expand education and outreach on source reduction, recycling and composting; Improve accessibility through education materials in alternate languages; Expand composting operations (e.g., drop-off sites, curbside pick-up); Expand the glass recycling program; Provide for stricter enforcement of recycling; Implement a pay-as- you-throw program; Incentivize building deconstruction, rather than demolition, to salvage and reuse building material
Strategy 11: Responsibly Manage Waste Generated	Ensure waste contracts align with best practices and best available technology for reducing emissions; Understand and clearly disclose impacts of existing waste-to- energy facilities; Reclaim treated wastewater and sewage sludge; Optimize trash pickup frequency; Develop plans to reduce litter and illegal dumping; Promote solar PV projects on closed landfills
Strategy 12: Support Preservation, Restoration, and Expansion of Natural Systems, Green Spaces, and Soil Quality	Strengthen county programs that conserve and expand green spaces and trees; Pursue the expansion of financial tools to include tree planting in private spaces; Use research and inventory data to conduct land use reviews and status checks; Require a higher density tree canopy replacement in development projects; Partner with homeowner's associations to promote additional trees and native vegetation; Incentivize more infill development; Reevaluate the existing Infill Development Review Process to incorporate best practices for preserving mature tree canopy; Incentivize or require conservation of tree canopies or green spaces in development projects and reduction of soil disturbance

In addition, Fairfax County government will continue to build on existing policies, programs, and planning processes to address climate change, as well as advocate for legislative change at the state level. As described in the section above, recommended activities for implementation are also provided for individuals and organizations, and for state and federal governments.

🖓 Working Group Priorities

Of the six strategies in the Buildings & Energy Efficiency and Energy Supply sectors, the Working Group prioritized Strategy 1 and Strategy 4. Of the six strategies in the Transportation, Waste, and Natural Resources sectors, the Working Group prioritized Strategy 7, Strategy 8, Strategy 9, and Strategy 12. Working Group members noted that there are both synergies and tradeoffs between strategies, and that actions taken during implementation should seek to balance the strategies' varied tradeoffs and maximize synergies. See the Working Group Priorities textboxes throughout the report for more information and <u>Appendix F: Results of the Working Group</u> <u>Prioritization Exercise</u>.

Cost and Benefits Considerations

Throughout the development of CECAP, Working Group members emphasized the importance of analyzing the costs and benefits of the strategies and actions in CECAP. When a Working Group member raised a concern about the high costs or the need to conduct a detailed quantification of costs, another Working Group member countered with the need to also quantify the benefits of the climate actions and the cost of not taking action. The CECAP planning process and report were not intended to provide a quantitative cost-benefit impact assessment, but a key output of the CECAP process was the desire of the Working Group for a detailed quantification of costs and benefits from the strategies and actions, as part of CECAP implementation. See <u>Costs and Benefits Considerations</u> for more discussion on how costs were considered in this report and recommendations for future cost assessments.

Emerging Technologies

As the GHG modeling shows, emerging technologies will be needed to reach the goals set forth in CECAP. Through research and development efforts and innovative business practices, technologies continue to improve over time, and novel technologies emerge that can reduce GHG emissions further. Emerging technologies can help shift the current emissions-intensive energy paradigm to a green growth paradigm and can help "futureproof" long-term plans by overcoming existing economic and technological barriers and minimizing future systemic shocks or stresses. Some emerging technologies include advanced fuel cells and refrigerants, next generation heat pumps, microgrids, and electric cars, among others, and they will become more widespread and effective over time. See the <u>Emerging Technologies</u> section for more information.

Community Engagement

Since CECAP development began in earnest in 2019, the public has been engaged in the process in two distinct ways. First, the members of the CECAP Working Group are, essentially, public representatives. Several members represented their magisterial districts as individuals. All of them served voluntarily on this public body to advise the Board of Supervisors. They represent the first tier of public engagement in CECAP, and their very invested and high level of engagement has made the creation of this report and all the substantive recommendations it contains possible.

Second, throughout the CECAP development process, county staff created opportunities for widespread public outreach, education, and engagement. Occurring in three phases over the course of 10 months, these engagement periods were designed to provide timely and relevant information to county residents and stakeholders about CECAP, and to invite their input on the goals, strategies, and actions likely to appear in this final plan. This portion of the report summarizes the public engagement tactics used to gather feedback and to raise county residents' awareness of the climate planning effort. See the <u>Community Engagement</u> section for more information.

Current Policies and Programs/Implementation

The county has existing policies, programs, and tools to help residents and businesses enact GHG reduction measures. Together with federal, state, and other local programs, existing initiatives provide a starting point for the strategies included in CECAP. The Fairfax County community, including government, residents, businesses, and organizations, can continue to support additional programs and policies at the local level, while advocating for state and federal assistance to help make the goals of CECAP a reality. This section identifies the existing programs, policies, and tools that can help community members begin to adopt the CECAP strategies. Remaining challenges and implementation methods are summarized for future consideration. See the <u>Current Policies and</u> <u>Programs/Implementation</u> section for more information.

How to Use This Report

As CECAP is a community-driven plan, written by community members of Fairfax County, this is the first opportunity for community members, individuals, and organizations to get involved in addition to the existing efforts at the county, state and federal level. CECAP describes 12 strategies and 37 actions. Detailed descriptions of strategies and actions are provided in the <u>Emissions Reduction Strategies and Actions</u> section. **Use Figure ES-6: Strategy and Action Roadmap below to navigate the Strategy and Action sections of the report.**

A **strategy** is a broader set of actions or set of subsector work that can be modeled to understand emissions reduction. Each **strategy section** includes the following:

- A description of the strategy, including a list of actions included in the strategy.
- The GHG emissions reduction potential for each strategy by the year 2050. The percentage provided demonstrates the reductions needed from the 2050 business-asusual projection to reach the county's carbon neutrality goal.
- Cost considerations for the strategy, such as whether the strategy is currently costeffective or challenged by cost barriers.
- Working Group Priorities textbox, that summarizes the opinions and priorities of the Working Group to focus efforts during implementation of CECAP.

An **action** is a project or specific technology that impacts GHG emissions within a strategy. Each **action section** includes the following:

- A description of the action
- A rating for each impact category and a discussion of the rating

Finally, **Working Group-Recommended Activities for Implementation** are provided for each strategy for five categories: all actors, individuals/organizations, county government, county government with state-enabling legislation, and state and federal governments.

To be successful, CECAP needs the support of your fellow community members and you! To learn more about how to get involved, visit <u>Fairfax County's CECAP Web page</u>.

Figure ES-6: Strategy and Action Roadmap

A) Review Strategy Description and Associated Actions

BUILDINGS AND ENERGY EFFICIENCY

Strategy 1: Increase Energy Efficiency and Conservation in Existing Buildings

Energy efficiency and energy conservation are cost effective and proven strategies that produce significant co-benefits while also improving the effectiveness of future strategies. Energy efficiency encompasses technology enhancements that improve building energy performance (i.e., delivering the same services with fewer British thermal units spent). Energy conservation includes behavioral enhancements that improve building energy performance (i.e., services are adjusted to reduce the amount of British thermal units). This strategy includes the following actions:

- Action 1a: Increase Energy Efficiency in Residential Buildings,
- Action 1b: Increase Energy Efficiency in Commercial Buildings,
- Action 1c: Increase Energy Efficiency in Local Government Buildings and Streetlights,
- Action 1d: Develop and Expand District Energy and Combined Heat and Power (CHP) Systems, and
- Action 1e: Develop and Expand Gas and Electricity Demand Programs.

C) Review each Action Description

Action 1a: Increase Energy Efficiency in Residential Buildings

This action supports increasing energy efficiency and energy conservation in existing single-family and multifamily residential buildings.

Timeframe: Immediate. The technology is currently available and is being commercially deployed on a significant scale.

Technology considerations: Building energy efficiency can employ many technologies and target various end uses depending on scope and budget. Efficiency measures can be sensitive to occupant behavior. In residential buildings, occupant comfort and preferences are important to consider. Renters have less ability to make meaningful upgrades, while long-time homeowners can face significant energy cost burdens.

E) Review Working Group-Recommended Activities for Implementation

Working Group-Recommended Activities for Implementation for Strategy 1

Implementation for this strategy may include a combination of incentive programs, financing tools, education and outreach, support for business growth, pilot programs, and regulations and other mandates. Recommended activities for implementation for this strategy were developed by the Working Group and include:

유승은 Recommended Activities for Implementation for All Actors Education

Energy efficiency and, in particular, energy conservation will affect residents' interactions with the buildings they live in, work in, and visit. Individuals will need to learn how to use and maintain different building systems. Many of these interactions will be seamless, however educational programs can help earn broad understanding of the changes and why they are happening and may help to realize higher adoption rates. Education programs should leverage existing tools such as EPA's <u>ENERGY STAR</u> which including appliance labeling, and building and home performance tools. B) Review Emissions Reductions Associated with the Strategy



D) Review Impact Category Results





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6th Annual Tour *de* Mount Vernon Supervisor Dan Storck

September 14, 2021

Mr. Chairman, it's that time of the year again – the 6th Annual Tour de Mount Vernon Community Bike Ride will be on October 23. This year we will be riding in the northern portion of the Mount Vernon District, beginning and ending at the Woodlawn & Pope Leighey House. Again this year, there will be a 20-mile short ride and a 35+mile long ride, so riders of all levels are welcome. Riders will roll past Mount Vernon Estate, Gristmill, Fort Hunt Park, River Farm, Gum Springs, the National Museum of the US Army, and Fort Belvoir. This event continues to grow with the help of our partner, FABB - Fairfax Alliance for Better Bicycling. Last year due to COVID-19 we had to cap the ride at 250 riders and many were turned away. This year, all are welcome! We will again have a rolling start and encourage safe COVID protocols to keep everyone safe. This event is focused on encouraging community members to explore the many treasures of the Mount Vernon District.

Additional information and the registration portal can be found by visiting the Mount Vernon District webpage.

Therefore, Mr. Chairman, I ask, with unanimous consent, that the Board direct the Office of Public Affairs to publicize the 2021 Tour de Mount Vernon.

Attachment

Join Mount Vernon District Supervisor Dan Storck for the 6th Annual

Tour *de* Mount Vernon 2021



Woodlawn & Pope-Leighey House Saturday, October 23, 2021 8:30 a.m.

Beginning and ending at the Woodlawn & Pope-Leighey House, the ride will take a scenic tour of the Mount Vernon District. Riders will have the option of riding the full 35+ mile route or a shorter 20 mile route.

The ride will begin with a rolling start from 8:30 - 9 a.m. and will conclude with music, fun, food and beverages!

Ride Highlights

Woodlawn & Pope-Leighey House Mount Vernon Estate & Grist Mill & River Farm Fort Hunt Park & Historic Gum Springs Fort Belvoir & National Museum of the US Army

COVID-19 Protocols: Rolling start, masks or face coverings required indoors and when social distancing is not possible.

For more information and to register:

FairfaxCounty.gov/MountVernon





Fairfax Alliance for Better Bicycling





The 6th Annual Tour de Mount Vernon is dedicated to our friend and inspiration, Dave Evans.



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Motion for Expedited and Concurrent Processing WMATA Huntington Metro CDP/FDP and SSPA Plan Amendment PA-2021-5

September 14, 2021

The Huntington Metro Station serves as the southern terminus of Metro's Yellow Line and provides the only direct connection for some communities to the Metro System. Consistent with the Embark Comprehensive Plan Update, the Huntington Metro Station will also serve as the connection point for the future Bus Rapid Transit (BRT) system proposed for Richmond Highway.

On January 26, 2021, the Board authorized the consideration of Plan Amendment PA-2021-00005, to evaluate a plan option for the future redevelopment of the 30-acre Huntington Metro Station with mixed-use up to 1.5 Floor Area Ratio (FAR) (1.8 million square feet (sf)), including: public facilities for Huntington Metrorail Station, 360,000 sf office/retail use, and 2,250-2,350 dwelling units on subject parcels in low, mid, and high-rise buildings between 55 and 200 feet in height. This Plan Amendment study is currently in process.

WMATA's proposed redevelopment of the Huntington Metro Station is not happening in a vacuum. The Huntington Metro Station lies adjacent to the Huntington Club property and will require detailed coordination with that project to ensure viable interconnectivity.

In addition, on June 16, 2021, Amazon and WMATA announced a \$125 million dollar commitment to create more than 1,000 new affordable housing units at Metro Stations throughout the Washington, D.C. metropolitan region. This commitment provides a valuable additional source of funding for affordable housing, beyond competitive VDH tax credit programs and the County's own efforts to promote such projects on County-owned land.

To ensure prompt action on this commitment, eligible projects on WMATA properties are required to have obtained all necessary development approvals by the Fall of 2024. To achieve this deadline, WMATA will need to obtain the requisite rezoning (CDP and FDP) and site plan approvals for the Huntington Metro Station.

Processing the rezoning of the Huntington Metro Station and any concurrent site plans will also enable the affordable housing component of this redevelopment to achieve the deadlines required for funding eligibility under the Amazon-WMATA commitment.

Therefore, Mr. Chairman, I hereby move that the Board:

- (a) Approve expedited processing for WMATA's future rezoning case (including CDP and concurrent FDP for the affordable housing and transportation infrastructure components), which will be submitted shortly, so that they can be considered concurrently with the Plan Amendment study; and
- (b) Approve concurrent processing of site plans associated with the future rezoning of the Huntington Metro Station, at the Applicant's risk.

This motion should not be construed as a favorable recommendation by the Board of Supervisors for any of the aforementioned applications and reviews, nor does it relieve the Applicant from compliance with the provisions of all applicable ordinances, regulations or adopted standards.