Fairfax County Community-wide Energy and Climate Action Plan (CECAP)

Working Group Meeting

CECAP Report Draft Discussion

Thursday, June 10, 2021
6:00 pm – 8:30 pm
Held Electronically via WebEx

Welcome & Meeting Overview

Michelle Paul Heelan, Ph.D. – ICF Facilitator

Agenda

- Recap from Tuesday's Meeting
- Feedback on Draft of Part II of CECAP
- Sector-Based Goals
  - Natural Resources
  - Waste
  - Fugitive Refrigerant Emissions
- Preview of Designed Templates for CECAP
- Wrap Up and Meeting Feedback

Meeting Objectives

- **Provide a summary** of what we heard on Tuesday.
- **Discuss your feedback** on the draft of Part II of CECAP.
- **Determine** the natural resources sector-based goal.
- **Discuss** the proposed waste sector-based goal.
- **Discuss** the proposed fugitive refrigerant emissions sector-based goal.
- **Preview** the designed templates for CECAP.

Recap from June 8

- Accepted the addition of Action 12c (*shorthand: cross-disciplinary county staff to add/strengthen climate change and natural resource policies and programs*).
- Changed EV sector-based goal percentage from 9% to 15% based on revising modeling.
- Discussed the Natural Resource goal; to be voted on tonight.
- Discussed the desire for a waste and fugitive refrigerant emissions goal; to be discussed/voted on tonight.
- Agreed to rename the renewable natural gas to “resource recovered gas” and discussed feedstocks.
- Proposed renaming of “implementation best practices” (on the next slide)
- Started to receive comments on Strategy and Action sections; to be completed tonight.

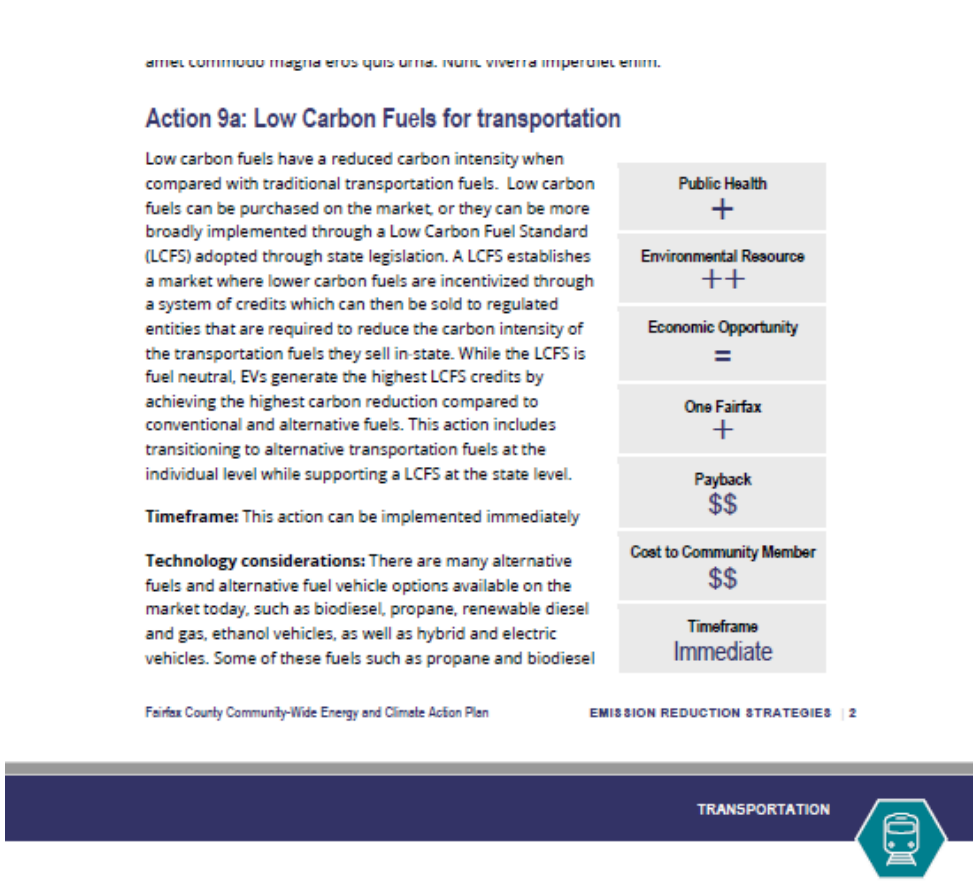
Structure of Each Section

- Sector
  - Strategy
    - Actions
    - Implementation for all Actions in the Strategy
      - Rename “Implementation Best Practices” → **“Working Group Recommended Implementations”**
        - Specific recommendations for Board of Supervisors

Full List of Strategies and Actions

Strategy 1	**Increase energy efficiency and conservation in existing buildings**
Action 1a	Energy efficiency in residential buildings
Action 1b	Energy efficiency in commercial buildings
Action 1c	Energy efficiency i local government existing buildings and streetlights
Action 1d	District energy and CHP systems
Action 1e	Gas and electricity demand programs
Strategy 2	**Pursue beneficial electrification in existing buildings**
Action 2a	Beneficial electrification in existing residential buildings
Action 2b	Beneficial electrification in existing commercial buildings
Action 2c	Reduction in the use of high GWP refrigerants
Strategy 3	**Implement green building standards for new buildings**
Action 3a	Increased building code stringency for residential and commercial buildings
Action 3b	All-electric new residential and commercial construction
Action 3c	Green building principles and practices
Action 3d	Reuse of existing buildings
Strategy 4	**Increase the amount of renewable energy in the electric grid**
Action 4a	Large offsite grid renewable energy
Action 4b	Grid storage
Action 4c	Continued operation of existing nuclear electricity production
Strategy 5	**Increase production of onsite renewable energy**
Action 5a	Solar PV on existing buildings
Action 5b	Solar PV in all new construction
Action 5c	Community Solar projects
Action 5d	Battery storage projects
Strategy 6	**Increase energy supply from renewable natural gas (RNG), hydrogen, and power-to-gas**
Action 6a	Expansion in supply and use of renewable natural gas, hydrogen, and power-to-gas
Strategy 7	**Increase electric vehicle (EV) adoption**
Action 7a	EV use across on-road vehicles and off-road equipment through the use of County assets
Action 7b	EV adoption by consumers and private fleets
Action 7c	EV chargers in new buildings
Strategy 8	**Support efficient land use, active transportation, public transportation and transportation demand management (TDM) to reduce vehicle miles traveled**
Action 8a	Bicycle and pedestrian infrastructure
Action 8b	Public transportation and commuter services
Action 8c	Smart-growth and transportation demand management (TDM) strategies
Strategy 9	**Increase fuel economy and use of low carbon fuels for transportation**
Action 9a	Low carbon fuels for transportation
Action 9b	Fuel efficiency improvements
Action 9c	Low carbon fuels for aviation
Strategy 10	**Reduce the amount of waste generated and divert waste from landfills and waste to energy facilities.**
Action 10a	Reduction in overall waste generation
Action 10b	Waste diversion from landfills and waste-to-energy through recycling and composting
Strategy 11	**Responsibly manage all waste generated including collected residential and commercial waste, wastewater, and other items.**
Action 11a	Energy capture and use at landfills and waste to energy facilities
Action 11b	Alternative options for long term waste management (landfill, waste to energy, and other options)
Action 11c	Improvements to wastewater treatment processes to capture energy
Strategy 12	**Strategy 12: Support preservation, restoration, and expansion of natural systems and green spaces**
Action 12a	Conservation of existing tree canopy and green spaces
Action 12b	Expansion of green spaces and tree canopy

Actions & Implementation



amet commodo magna eros quis urna. Nunc viverra imperdiet enim.

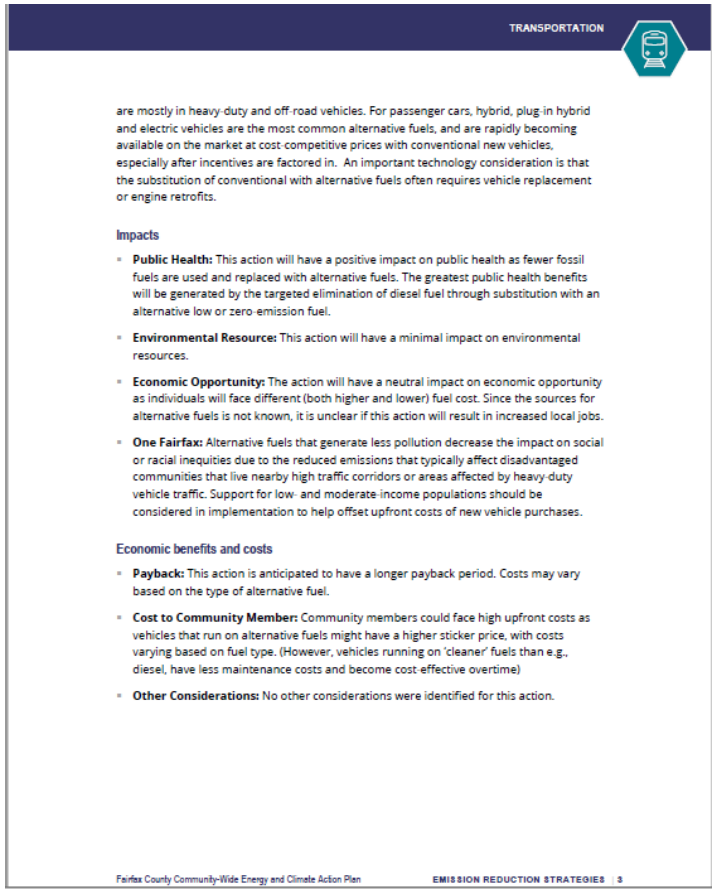
Action 9a: Low Carbon Fuels for transportation

Low carbon fuels have a reduced carbon intensity when compared with traditional transportation fuels. Low carbon fuels can be purchased on the market, or they can be more broadly implemented through a Low Carbon Fuel Standard (LCFS) adopted through state legislation. A LCFS establishes a market where lower carbon fuels are incentivized through a system of credits which can then be sold to regulated entities that are required to reduce the carbon intensity of the transportation fuels they sell in-state. While the LCFS is fuel neutral, EVs generate the highest LCFS credits by achieving the highest carbon reduction compared to conventional and alternative fuels. This action includes transitioning to alternative transportation fuels at the individual level while supporting a LCFS at the state level.

Timeframe: This action can be implemented immediately

Technology considerations: There are many alternative fuels and alternative fuel vehicle options available on the market today, such as biodiesel, propane, renewable diesel and gas, ethanol vehicles, as well as hybrid and electric vehicles. Some of these fuels such as propane and biodiesel

Public Health	+
Environmental Resource	++
Economic Opportunity	=
One Fairfax	+
Payback	$$
Cost to Community Member	$$
Timeframe	Immediate



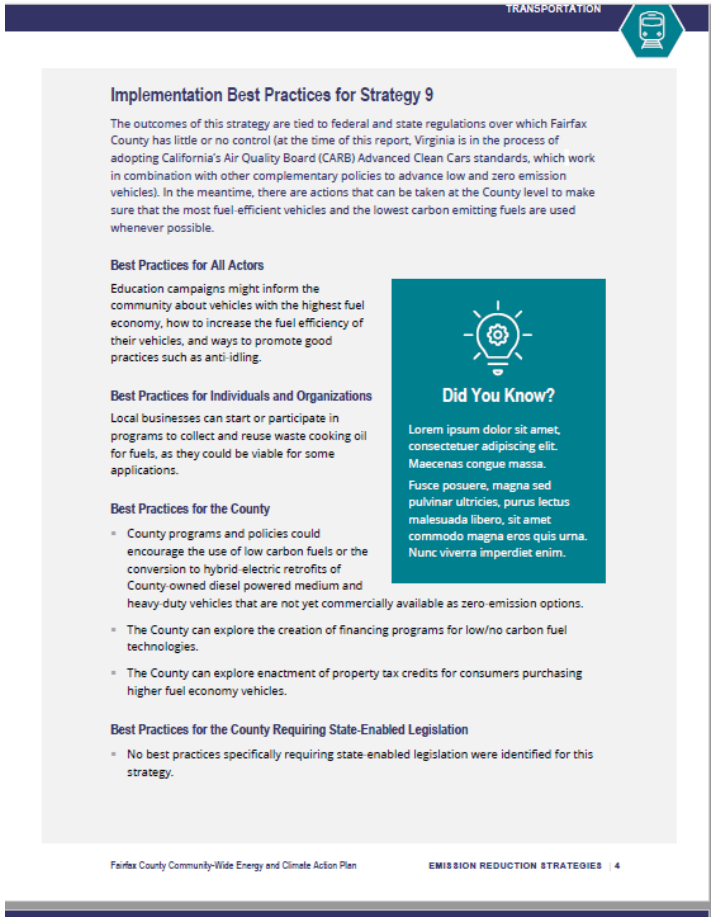
are mostly in heavy-duty and off-road vehicles. For passenger cars, hybrid, plug-in hybrid and electric vehicles are the most common alternative fuels, and are rapidly becoming available on the market at cost-competitive prices with conventional new vehicles, especially after incentives are factored in. An important technology consideration is that the substitution of conventional with alternative fuels often requires vehicle replacement or engine retrofits.

Impacts

- **Public Health:** This action will have a positive impact on public health as fewer fossil fuels are used and replaced with alternative fuels. The greatest public health benefits will be generated by the targeted elimination of diesel fuel through substitution with an alternative low or zero-emission fuel.
- **Environmental Resource:** This action will have a minimal impact on environmental resources.
- **Economic Opportunity:** The action will have a neutral impact on economic opportunity as individuals will face different (both higher and lower) fuel cost. Since the sources for alternative fuels is not known, it is unclear if this action will result in increased local jobs.
- **One Fairfax:** Alternative fuels that generate less pollution decrease the impact on social or racial inequities due to the reduced emissions that typically affect disadvantaged communities that live nearby high traffic corridors or areas affected by heavy-duty vehicle traffic. Support for low- and moderate-income populations should be considered in implementation to help offset upfront costs of new vehicle purchases.

Economic benefits and costs

- **Payback:** This action is anticipated to have a longer payback period. Costs may vary based on the type of alternative fuel.
- **Cost to Community Member:** Community members could face high upfront costs as vehicles that run on alternative fuels might have a higher sticker price, with costs varying based on fuel type. (However, vehicles running on 'cleaner' fuels than e.g., diesel, have less maintenance costs and become cost-effective overtime)
- **Other Considerations:** No other considerations were identified for this action.



Implementation Best Practices for Strategy 9

The outcomes of this strategy are tied to federal and state regulations over which Fairfax County has little or no control (at the time of this report, Virginia is in the process of adopting California's Air Quality Board (CARB) Advanced Clean Cars standards, which work in combination with other complementary policies to advance low and zero emission vehicles). In the meantime, there are actions that can be taken at the County level to make sure that the most fuel-efficient vehicles and the lowest carbon emitting fuels are used whenever possible.

Best Practices for All Actors

Education campaigns might inform the community about vehicles with the highest fuel economy, how to increase the fuel efficiency of their vehicles, and ways to promote good practices such as anti-idling.

Best Practices for Individuals and Organizations

Local businesses can start or participate in programs to collect and reuse waste cooking oil for fuels, as they could be viable for some applications.

Did You Know?

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas congue massa.

Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim.

Best Practices for the County

- County programs and policies could encourage the use of low carbon fuels or the conversion to hybrid-electric retrofits of County-owned diesel powered medium and heavy-duty vehicles that are not yet commercially available as zero-emission options.
- The County can explore the creation of financing programs for low/no carbon fuel technologies.
- The County can explore enactment of property tax credits for consumers purchasing higher fuel economy vehicles.

Best Practices for the County Requiring State-Enabled Legislation

- No best practices specifically requiring state-enabled legislation were identified for this strategy.

Proposed Improvements

- Put Actions in Table of Contents
- Put full list of Strategies and Actions in the Executive Summary
- Rename “Implementation Best Practices” → “Working Group Recommended Implementations”
- Explicitly identify and highlight Board of Supervisor actions (currently under Best Practices for County)

Feedback on Draft of Part II of the CECAP

Michelle Paul Heelan, Ph.D. – ICF Facilitator

Framing Today's Discussion

- We will discuss the remaining sections of the second half of CECAP.
  - We will be going Strategy by Strategy, starting with Strategies 7-12 and then Strategies 1-6, followed by Sections 8 and 9 and Appendices.
  - Copyediting comments are not the focus for this discussion.
  - Please focus on the *content* so that we can hear from other Working Group members whether they agree or disagree.
- We'll be taking notes on the feedback we receive, and you will see changes reflected in the report that goes to the Board's Environmental Committee in July.

Strategy 7 & Actions 7a – 7c (starting on pg. 7-94)

S7: Increase electric vehicle (EV) adoption
7a: EV use across on-road vehicles and off-road equipment through the use of County assets
7b: EV adoption by consumers and private fleets
7c: EV chargers in new buildings

1. Does the report **accurately reflect the process**, **the discussions, and the decisions** of the Task Force/Working Group?
2. Are there any areas that need **additional emphasis or explanation**?
3. Was **anything important left out**?
4. Are there any areas that could be **cut or deemphasized**?

Strategy 8 & Actions 8a – 8c (starting on pg. 7-100)

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

8a: Bicycle and pedestrian infrastructure

8b: Public transportation and commuter services

8c: Smart-growth and transportation demand management (TDM) strategies

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Strategy 9 & Actions 9a – 9c (starting on pg. 7-108)

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

9a: Low carbon fuels for transportation

9b: Fuel efficiency improvements

9c: Low carbon fuels for aviation

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Strategy 10 & Actions 10a – 10b (starting on pg. 7-113)

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

10a: Reduction in overall waste generation

10b: Waste diversion from landfills and waste-to-energy through recycling and composting

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3. Was **anything important left out**?
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Strategy 11 & Actions 11a – 11c (starting on pg. 7-118)

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

11a: Energy capture and use at landfills and waste to energy facilities

11b: Alternative options for long term waste management (landfill, waste to energy, and other options)

11c: Improvements to wastewater treatment processes to capture energy

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Strategy 12 & Actions 12a – 12b (starting on pg. 7-124)

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

12a: Conservation of existing tree canopy and green spaces

12b: Expansion of green spaces and tree canopy

12c: Cross-disciplinary county staff to add/strengthen climate change and natural resource policies and programs

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Strategy 1 & Actions 1a – 1e (starting on pg. 7-51)

S1: Increase energy efficiency and conservation in existing buildings

1a: Energy efficiency in residential buildings

1b: Energy efficiency in commercial buildings

1c: Energy efficiency in local government existing buildings and streetlights

1d: District energy and CHP systems

1e: Gas and electricity demand programs

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Strategy 2 & Actions 2a – 2c (starting on pg. 7-59)

S2: Pursue beneficial electrification in existing buildings

2a: Beneficial electrification in existing residential buildings

2b: Beneficial electrification in existing commercial buildings

2c: Reduction in the use of high GWP refrigerants

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Strategy 3 & Actions 3a – 3d (starting on pg. 7-56)

S3: Implement green building standards for new buildings

3a: Increased building code stringency for residential and commercial buildings

3b: All-electric new residential and commercial construction

3c: Green building principles and practices

3d: Reuse of existing buildings

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Strategy 4 & Actions 4a – 4c (starting on pg. 7-74)

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

4a: Large offsite grid renewable energy

4b: Grid storage

4c: Continued operation of existing nuclear electricity production

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Strategy 5 & Actions 5a – 5d (starting on pg. 7-80)

S5: Increase production of onsite renewable energy

5a: Solar PV on existing buildings

5b: Solar PV in all new construction

5c: Community Solar projects

5d: Battery storage projects

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Strategy 6 & 6a (starting on pg. 7-91)

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

6a: Expansion in supply and use of resource recovered gas, hydrogen, and power-to-gas

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Sections 8/9 & Appendices: pg. 8-134 to end

Emerging Technologies
Section 8: Community Engagement
Section 9: Current Policies & Programs and Implementation
Appendices*

*not all appendices are included in the draft report so far

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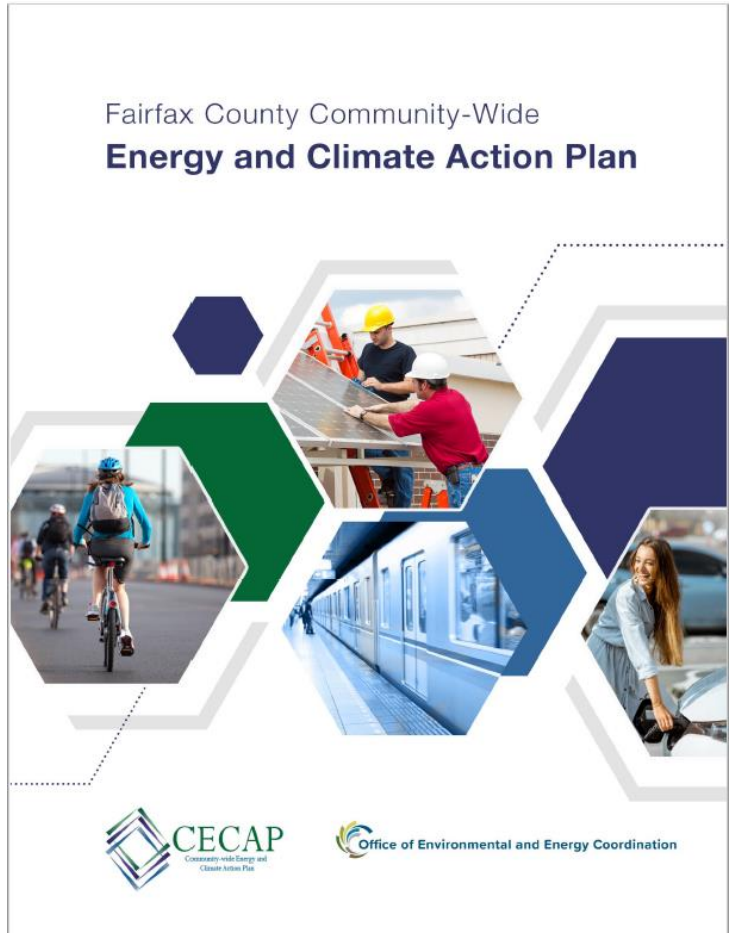
Preview of Template for the Final Report

Michelle Paul Heelan, Ph.D. – ICF Facilitator

Preview of Template for the Final Report



CECAP Framework

The framework includes five sectors, 12 strategies, and 36 actions. Each action impacts the community differently and has different implementation methods. Each strategy and its associated actions are described in greater detail in the following sections.

Buildings and Energy Efficiency

Strategy 1: Increase energy efficiency and conservation in existing buildings.

Strategy 2: Pursue beneficial electrification in existing buildings.

Strategy 3: Implement green building standards for new buildings.

Energy Supply

Strategy 4: Increase renewable energy in grid mix.

Strategy 5: Increase production of onsite renewable energy.

Strategy 6: Increase energy supply from renewable natural gas (RNG), hydrogen, and power-to-gas.

Transportation

Strategy 7: Increase electric vehicle (EV) adoption.

Strategy 8: Support efficient land use, active transportation, public transportation, and transportation demand management (TDM) to reduce vehicle miles traveled.

Strategy 9: Increase fuel economy and use of low carbon fuels for transportation.

Waste

Strategy 10: Reduce the amount of waste generated and divert waste from landfills and waste-to-energy facilities.

Strategy 11: Responsibly manage all waste generated including collected residential and commercial waste, wastewater and other items.

Natural Resources

Strategy #12: Support preservation, restoration, and expansion of natural systems and green spaces.

Impact Categories

All of the activities described in the CECAP Framework will need to be undertaken in order to achieve emission reduction goals. Still, Fairfax County residents, businesses, and other stakeholders have diverse priorities and values that may lead to the selection of one action over another. To help community members decide which actions to take, each action section describes the action's various potential impacts.

TRANSPORTATION

Strategy 9: Increase fuel economy and use of low carbon fuels for transportation

This strategy models the reduction of GHG emissions from the transportation sector including aviation by implementing three primary actions:

- Action 9a: Lowering the carbon footprint of fuels
- Action 9b: Supporting higher federal fuel economy standards, and
- Action 9c: Supporting measures that improve fuel efficiency and provide low carbon fuels to aviation.

Examples of low-carbon fuels include alternative fuels such as biodiesel, propane, refuse-derived fuels, non-fossil (or renewable) methane from anaerobic digestion, vegetable oil, and zero-emission technologies such as battery electric and fuel cell vehicles. While commercially available in some U.S. states, many of the renewable biofuels have limited applications and supply chain constraints. However, low-carbon fuels are expected to represent an increasing share of the total fuel use especially for vehicles that cannot be readily or cost-effectively fully electrified. Likewise, more stringent policies to increase the fuel economy of combustion engines are expected to be released in the coming years as a complementary strategy to vehicle electrification. All actions that lower fuel consumption and emissions by increasing vehicle efficiency and/or reduce the carbon footprint of fuel are expected to generate costs savings overtime as well as public health benefits. This is especially true if these actions are strategically utilized to replace the most polluting fuels such as fossil-based diesel or aviation jet fuel with a cleaner choice.

GHG Emissions Reduced by 2050
1,295,124 MT CO_2e

Emission Reduction Contribution Needed in 2050
15%

GHG Reductions

The GHG reductions resulting from this strategy are 1,295,124 MT CO_2e. This strategy is anticipated to account for 15% of emissions reductions needed to achieve the long term carbon neutrality goal by 2050.

Natural Resources Sector-Based Goal

Michelle Paul Heelan, Ph.D. – ICF Facilitator

Adam Agalloco – ICF

Maya Dhavale – Fairfax County

Sector goals should be SMART:

- **Specific:**
  - Be specific to **the community's priorities** and **ability to influence** the emissions reduction strategy or action (but not limiting); and
  - Be set for **specific metrics** that are **understood by the public** and would contribute to the overall goal (generally, not specified with a GHG emission reduction target)
- **Measurable:** Be **measurable** based on **available data**
- **Attainable:** Be **attainable** if in the short term
- **Results-Oriented:** Support **target** year goal & focus on **larger sectors** (not strategies)
- **Time-Bound:** Set a specific **timeframe** to achieve the goal

Natural Resources Sector-Based Goal

Proposal Goal Language: 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*.

Waste Goal

Michelle Paul Heelan, Ph.D. – ICF Facilitator

Adam Agalloco - ICF

Waste Goal

- Zero waste goal is a way to pursue this.
- Goal would include both about reducing/diverting and responsible management of disposed material in alignment with zero waste goals.
- Typically aligned with a waste diversion limit
- **Goal Language for Discussion:** Achieve zero waste by 2040 (defined as 90% waste diverted from landfill/incineration), in alignment with the definition by the Zero Waste International Alliance.

Zero Waste Goal Language

United States Conference of Mayors

Zero Waste definition and set of Zero Waste principles, that recognizes a Hierarchy of Material Management as follows:

Extended Producer Responsibility and Product Redesign

Reduce Waste, Toxicity, Consumption, and Packaging

Repair, Reuse and Donate

Recycle

Compost

Down Cycle and Beneficial Reuse

Waste-Based Energy as disposal

Landfill Waste as disposal

Zero Waste International Alliance

Zero Waste: 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.

https://www.epa.gov/transforming-waste-tool/how-communities-have-defined-zero-waste

Wrap-up and Next Steps

Michelle Paul Heelan, Ph.D. – ICF Facilitator

Review of Meeting Objectives

- **Provided** a summary of what we heard on Tuesday.
- **Discussed** your feedback on the draft of Part II of CECAP.
- **Determined** the natural resources sector-based goal.
- **Discussed** the proposed waste sector-based goal.
- **Previewed** the designed templates for CECAP.

What's Next?

June:
Finalizing Full Report

July: Final Draft Presented to BOSEC

Fall Educational Campaign & Move into Implementation Phase

Stay Informed

CECAP Homepage

Office of Environmental & Energy Coordination (OEEC) Climate Action News Blog

Twitter: @ffxgreen / #ffxCECAP

Follow for updates on the CECAP process, as well as information on climate and energy science, policy, and best practices.

Learn about the topics and trends driving the climate conversation in Fairfax County.

Thank You!

For further questions, please contact:

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703-324-7165 (W), 571-373-1758 (C)

CECAP email

CECAP website