Fairfax County CECAP Impacts Discussion Starter

Background

ICF and MWCOG are supporting Fairfax County as they work towards the creation of the County's Community Energy and Climate Action Plan (CECAP). The CECAP will focus on actions that community members can take to address climate. CECAP Working Group members have already made progress toward the plan by establishing greenhouse gas (GHG) reduction goals including a long-term goal and a pending interim year goal. The goals established and pending from the previous meetings are:

> **Long-term goal:** Carbon neutrality by 2050, with at least 87% coming from emissions reductions from a 2005 base year.
> **Interim goal:** 50% reduction by 2030 from a 2005 base year, with a 2040 interim goal pending.

As Working Group and community meetings progress, we will continue to develop the plan and finalize all goals for CECAP.

Definitions

Throughout the document, ICF has used the terms Sectors, Strategies, Actions, and Implementation in the ways defined below:

> **Sector:** An area of emissions focus or an economic sector which generates carbon emissions from its energy use or economic activity.
> **Strategy**: A broader set of actions or set of sub-sector work that can be modeled to understand emissions reductions.
> **Action:** A project or specific technology that impacts greenhouse gas emissions within a strategy or sector.
> **Implementation:** Programs or policies that support realization of actions.

Purpose of this Document

Members of the CECAP Working Group have not had the opportunity to prioritize which strategies and actions should have specific emphasis in the CECAP framework and document. The purpose of this document is to provide background information and an initial framework for considering the impacts of various strategies, actions, and implementation methods. This document is meant to be paired with the *Prioritization Matrix* and the accompanied *Energy Framework* or *Transportation, Waste and Land Framework* documents, to help Working Group members prioritize within the project framework.

The impact categories covered in this document include:

- Greenhouse Gases (GHG)
- Public Health
- Environmental Resource
- Economic Opportunity
- Equity (i.e., One Fairfax)
- Payback
- Cost to Community Member

- Timeframe
- Other Considerations

Each of the impact categories is included in the Prioritization Matrix with associated values or indicators, based on the information provided below. This document, as with all the current CECAP framework documents, is aimed at helping to inform the final CECAP report and will be revised based on additional feedback from the CECAP Working Group.

Greenhouse Gas Emissions

Greenhouse Gas Emissions (**GHG**)- A measure of the total greenhouse gas reduction potential from each strategy.

GHG emissions estimates will be provided based on ICF's modeling of the various strategies. For each strategy, ICF has provided a GHG impact measured in metric tons of carbon dioxide equivalent ($MTCO_2e$) that represents the fully implemented technical potential.

Example: ICF's initial modeling showed that increasing renewable energy in the grid mix (Strategy 4), is projected to reduce carbon emission by 1,387,127 $MTCO_2e$ annually by 2050.

Social Impact Categories

Social impacts include public health, environmental resource, economic opportunity, and equity. Each of these impacts are defined further below.

Social impacts have been initially measured using an indicator framework which indicates whether there is a detrimental/unfavorable impact, a neutral/no potential impact, or a beneficial/favorable impact. ICF has provided initial indicators as well as a data sources from which the indicators were derived.

Symbols are used to provide indication of the impact. The symbols include two negative signs (--), one negative sign (-), an equal sign (=), a positive sign (+) or two positive signs (++).

Proposed Impact Indicators for Social Impact Categories:

Detrimental or unfavorable Impact	--
Slighting detrimental or unfavorable impact	-
Neutral or no potential Impact	=
Slightly beneficial or favorable impact	+
Beneficial or favorable Impact	++

Public Health

Public Health- A measure of how the action benefits the health of Fairfax residents and visitors by improving air or water quality, increasing active commuting, or supporting wellness.

Example: Improving bicycling and pedestrian infrastructure (an action in Strategy 8) will support choices such as walking and biking that would have a beneficial impact on public health by promoting exercise and wellness. This action has two plus signs (++), to indicate a beneficial public health impact.

Environmental Resource

Environmental Resource- A measure of how the action impacts the preservation, improvement and restoration of environmental resources such as air, water and land.

Example: Retrofitting existing residential buildings with heat pumps, split systems and ground source heat pumps (geothermal) and other cost-effective residential electrification actions (an action in Strategy 2) will provide some benefits to local environmental resources, but they aren't expected to be significant. This action has one plus sign (+) to indicate a slight beneficial impact on environmental resources.

Economic Opportunity

Economic Opportunity - A measure of how the action might lead to local or regional job and/or business growth in economy.

Example: Encouraging solar PV or solar PV ready construction (an action in Strategy 5) would provide a positive benefit to local jobs since rooftop solar construction has a strong correlation with local job creation. This action has a two plus signs (++) to indicate a favorable impact on economic opportunity.

Equity (i.e., One Fairfax)

One Fairfax- A measure on how and if the action has an impact on eliminating social and/or racial inequities in alignment with the County's One Fairfax policy.

Example: Improving fuel economy by implementing a Low Carbon Fuels Program (an action in Strategy 9) would not tangibly impact social or racial inequities. This action has an equal sign (=) to indicate a neutral impact for its One Fairfax impact.

Cost Impact Categories

Cost impacts include payback and cost to the community member (i.e., individual or organization paying for the action). Cost impacts have been initially measured using an indicator framework demonstrating both the payback and potential initial costs for the community member. The community member is the individual or organization that pays for the action. ICF has provided initial indicators as well as a handful of sources from which we have determined the most appropriate indicator.

Payback

Payback- A measure of total costs divided by cost saved from the action. A simple payback is meant to serve as a proxy for cost effectiveness.

Proposed Impact Indicators for Payback:

Not Applicable	/
High or Quick Payback (1-3 years)	$
Medium Payback (3-7 years)	$$
Low or Slow Payback (over 7 years)	$$$

Cost to Community Member

Cost to Community Member - A measure initial investment of dollars spent by a community member (i.e., individual) to implement the action at one location or in one instance.

Proposed Impact Indicators for Cost to Member:

	Cost Ranges	Symbol
Not Applicable	$0	N/A
No Cost	$0	/
Low Cost	< $300	$
Medium Cost	$300- $2000	$$
High Cost	> $2000	$$$

Timeframe

Timeframe- While most technologies and actions being reviewed are already available in the customer marketplace, some items may not yet be deployed at scale and others may not yet be available at all. Additionally, some actions are restricted by either local or state policy, which restricts implementation. The timeframe indicator is meant to provide context as to when this action might be taken and when the technology is mature.

Proposed Impact Indicators for Timeframe:

Immediate (Available presently)	Action/Technology is currently available, and is being commercially deployed at significant scale (Currently being implemented)
Soon (Available before 2030)	Action/Technology is currently available, but not yet commercially deployed at significant scale (1-10 years from broad implementation)

Future (Available after 2030)	Action/Technology is not yet available, emerging technology (Over 10 years from broad implementation)

Other Considerations

This impact category is designed to cover considerations that are unique to a particular action or strategy.

Other Considerations- A measure of other considerations specific to the action not included in other impact categories. These may include a variety of considerations including:

- Feasibility, scalability, ease of implementation, reliability, or availability of the action.
- Life cycle emissions impact (as opposed to annual emissions)
- Cost to the county, state, or other stakeholder (for those items which do not carry a cost to the individual)
- Impact on climate adaptation, resiliency, and/or hazard mitigation
- Overall affordability, and specific cost burdens

This section also provides space to evaluate whether the action is holistic in its approach and how it aligns with other Fairfax plans and stakeholder work. Many of the items identified under the Other Considerations category will be included in the narrative of the report.