

Overview of the climate action fact sheets

This overview of the climate action fact sheets serves as a primer or “read me” to help understand what is included across the 15 climate action fact sheets. This primer presents each fact sheet section followed by text about the type of content included in that section. Below is a list of all 15 strategies. Fact sheets for all can be found at: capecodcommission.org/our-work/climate-action-toolkit-municipal.

Housing

- Net Zero New Non-municipal Buildings
- Net Zero Existing Non-municipal Buildings
- Net Zero Municipal Buildings
- Waste Diversion
- Address Vulnerable Structures

Energy

- Clean Electricity

Communications

- Public Awareness of Climate Change

Transportation

- Complete Streets
- Municipal EVs
- Infrastructure Resilience
- Reduce Vehicle Miles Traveled
- Residential EV Adoption

Natural Resource Working Lands

- Stewarding Open Space
- Supporting Coastal Wetlands
- Agricultural Practices

INTRODUCTORY CONTENT

These fact sheets are developed for municipal decision-makers in Barnstable County who want to learn more about specific climate adaptation or mitigation strategies, but they also provide useful information to a variety of audiences. Each fact sheet includes an introduction summarizing the benefits of implementing that specific resiliency strategy and also provides a general content overview. Additionally, each fact sheet provides a side text box with a consistent set of costs and benefits that may be applicable to each strategy. The boxes are checked if those attributes are applicable to that fact sheet.

KEY FINDINGS

Each key findings section includes icons and key takeaways for equity, financial benefits, non-market benefits, greenhouse gas (GHG) reductions, and ease of implementation. Below are the criteria for achieving a certain number of icons.

Criteria for Number of Icons

The number of icons for each key finding indicates how the strategy rates for each category, where more icons represent a better ranking. Equity and financial benefits icons are scaled on defined/absolute criteria while non-market benefits, GHG reductions, and ease of implementation are based on relative scales compared to the remaining strategies.



Equity: Includes a ranking that blends consideration of benefits to vulnerable populations and opportunities to engage and work with these populations.

- **3 Icons:** These projects provide clear benefits (e.g., reduced climate impacts, expanded social and economic benefits, job development, increased food security, increased access to natural areas and open space) to vulnerable populations and/or opportunities to engage and work with vulnerable populations.
- **2 Icons:** These projects may provide some benefits to or opportunities for engagement with vulnerable communities, though benefits and opportunities are less defined.
- **1 Icon:** These projects provide limited benefits or opportunities to engage with vulnerable communities and/or could result in disproportionate costs or loss of opportunities for vulnerable populations.
- **0 icons:** Project provides no benefits or opportunities to engage with vulnerable communities and/or will result in disproportionate costs or loss of opportunities for vulnerable populations.



Financial benefits: This includes financial costs and benefits only (e.g., capital costs, other up-front costs, maintenance costs, operational costs, and costs savings) and excludes job creation and non-market benefits such as increased recreation, increased health benefits, or decreased environmental benefits.

- **3 Icons:** These projects have a clear positive financial return on investment (e.g., there will be a cost savings of implementing a strategy versus the traditional/baseline approach; the reduced damage will exceed the cost of building and maintenance).
- **2 Icons:** These projects have an ambiguous financial return on investment. These are typically beneficial to society with moderate to high non-market benefits.
- **1 Icon:** These projects provide financial benefits, but the costs will exceed the financial benefits or cost savings. These strategies, however, can often be beneficial to society with moderate or high non-market benefits.
- **0 Icons:** These projects provide no financial benefits or cost savings, and the costs will greatly exceed the benefits to the point that non-market benefits will not make this beneficial to society.



Non-market benefits: This captures the contribution of health benefits from reduced air pollution, health benefits from increased recreation, ecosystem service values, reduced environmental impacts from GHG reductions, and other non-market benefits. High contributions from non-market benefits can make strategies quite favorable for a community even when financial costs may exceed financial benefits or cost savings.

- **3 Icons:** Relative to other projects, these produce the highest levels of societal benefits.
- **2 Icons:** Relative to other projects, these produce moderate levels of societal benefits.
- **1 Icon:** Relative to other projects, these produce lower levels of societal benefits.
- **0 Icons:** These projects produce no societal benefits.



GHG reductions: This captures the potential reductions in greenhouse gas emissions. The ranking does not incorporate the "cost-effectiveness" (i.e., cost per metric ton of CO₂ reduced); however, some strategies can be quite cost effective but may not have the potential to reduce GHG emissions.

- **3 Icons:** These projects have the potential for relatively high levels of GHG reductions.
- **2 Icons:** These projects have the potential for relatively moderate levels of GHG reductions.
- **1 Icon:** These projects have the potential for relatively low levels of GHG reductions.
- **0 Icons:** These projects do not lead to GHG reductions (e.g., a resilience strategy).



Ease of implementation: This captures the relative ease for municipalities to implement the strategy in each fact sheet.

- **3 Icons:** These projects require the least level of effort for municipal staff and fewest municipal resources.
- **2 Icons:** These projects require a moderate level of effort for municipal staff and moderate municipal resources.
- **1 Icon:** These projects require the greatest level of effort for municipal staff and most municipal resources.

BENEFIT COST ANALYSIS

When feasible this section of each fact sheet includes both market (i.e., money exchanging hands) and non-market benefits (e.g., benefits from reduced GHGs, benefits from increased recreation) into the results. This includes a mix of case studies that could be informative to municipalities as well as information and outputs that could be used by municipalities to make their own estimates (e.g., the benefit per kWh of moving to green energy).

EQUITY

This section of each fact sheet includes implementation benefits to vulnerable populations and ways to optimize equity throughout the implementation process itself.

While all of us experience the impacts of climate change, not all populations experience these impacts equitably. Equity considerations must be integrated into climate actions to ensure no one population is disproportionately affected by climate impacts and to promote solutions that provide broad benefits without being overly burdensome to any population.

For the purposes of these fact sheets, “vulnerable communities” broadly refers to populations who are disproportionately impacted by the effects of climate change and who are less likely to have the resources needed for recovery (City of Boston, [CAP 2019](#)). A population’s exposure to climate hazards, access to resources, and ability to recover after a climate event all factor into climate change vulnerability ([MAPC](#)).

Vulnerable populations are traditionally identified through existing designations, such as [socially vulnerable populations](#) and [environmental justice populations](#) as defined by the Environmental Protection Agency and the Massachusetts Executive Office of Energy and Environmental Affairs, respectively. These designations are used to identify populations disproportionately impacted by climate change and include, but are not limited to, communities of color, low-income individuals and families, indigenous peoples, immigrants and refugees, people with disabilities, children and youth, people with limited English language proficiency, and those facing socioeconomic and health inequities.

Equity may be addressed in ways that vary by location, based on the characteristics of a community. Age, income, race, ethnicity, language barriers, mobility challenges, traditional industries, tribal interests and education level may all be factors, as well as location of homes or businesses in climate hazard areas. We encourage exploration of the [population mapping resources](#) available through Data Cape Cod and to apply local knowledge and context while considering, identifying, and engaging with vulnerable communities within a municipality.

STATE OF PRACTICE

This section of each fact sheet includes an overview of the state of the practice nationally (or in general) as well as the context on Cape Cod (e.g., how many municipalities may have implemented it). This also includes a short case study detailing the success and/or challenges of implementation.

IMPLEMENTATION

This section includes a set of steps or key considerations for successful strategy implementation. It also includes a text box with required expertise needed for the implementation stage. This section ends with a table of links to financial and technical support as well as resources for more information.

CITING THIS WORK

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