DATE: MAY 28, 2019

TO: CAPE COD COMMISSION MEMBERS

FROM: CAPE COD COMMISSION STAFF

RE: MAY 30, 2019 PUBLIC HEARING – CLIMATE CHANGE ACTIONS AND MITIGATION ON CAPE COD

As part of the 2018 Regional Policy Plan (RPP), the Commission recognized climate change as a pressing concern for the region, consistent with the public comments received throughout the RPP update process. The RPP contains actions and policies that seek to mitigate, minimize or avoid the adverse effects of climate change on Cape Cod. Some of these policies and actions center on reducing greenhouse gas emissions widely recognized as a leading contributor to climate change.

The Commission received a citizens’ petition proposing various amendments to the newly adopted RPP. The citizens’ petition was not filed in accordance with the provisions in the Barnstable County Ordinance and is not properly before the Commission for consideration.

However, recognizing the significant continued public interest in climate change as a pressing planning concern in the region, Commission staff identified this as an opportunity to continue the public discussion about climate change issues, including the status of related actions the Commission committed to under the RPP.

The purpose of the hearing is to discuss the variety of potential approaches to address climate change effects on Cape Cod, including a discussion of those existing policies and actions under the RPP and what future actions and policies may be adopted. Given the complexity and breadth of the issue, the discussion must include consideration for the various public and private actors and actions involved, and the interplay with other planning goals, actions and policies. The backdrop for the discussion is the Commonwealth’s framework of climate change laws and policies, which informs the roles, responsibilities and opportunities for local and regional governments and stakeholders.
The Commission is the land use planning and regulatory agency within the structure of Barnstable County government but is not the County’s executive or legislative authority. The Barnstable County Assembly of Delegates is currently considering two ordinances related to climate change. The first would create a short-term working group which would lead to establishing a “permanent entity to address climate change mitigation and adaptation in all areas of the County”. The second would establish a “new Office of Climate Change Prevention... within Barnstable County government”. Both proposals recognize and name the Commission as a participant. Staff welcomes the opportunity to work with the County to reconcile and advance these initiatives.

The Cape Cod Commission Act (Act) requires the RPP to be a strategic, relatively short-term plan that is updated at regular intervals. The RPP must support and balance a variety of regional goals, values, purposes, and interests related to the economy, environment, and communities on Cape Cod. The Act does not allow the RPP to be a single-purpose plan or one disproportionately focused on certain issues while neglecting others.

The most recent RPP was developed to strike this balanced and measured approach to planning. With a balanced plan, certain adopted policies and actions not directly intended to further a particular goal may indirectly support such goal. For example, open space protection, among its other direct purposes, mitigates the detrimental effects of climate change in several ways including in the natural carbon sequestration associated with forested areas.

There are opportunities to develop other regional plans to complement the RPP. These types of plans – which the Commission has adopted regularly – can focus more on a single planning issue or set of related planning issues, such as the Regional Transportation Plan or Area-wide Water Quality Plan. A Climate Action Plan for Cape Cod could be such a plan that is developed regionally and collaboratively.

In adopting planning goals, policies and actions, especially within the RPP, the Commission must be mindful of the direct role such regional planning plays in its regulatory functions. The Commission requires in its regulatory reviews that projects are consistent with such regional goals and policies. Adopting planning goals and policies that are not in balance with one another may limit the Commission’s decision-making in ways that are not consistent with the Act and regional needs. The Commission reviews only a small percentage of the development projects on Cape Cod, so the effect of applying certain regional goals and policies on a project may have limited regional significance or benefit but a great or disproportionate impact or cost to the given project and private parties involved. The Commonwealth’s dominant, market-based policy approach to climate change mitigation, which imposes mandates on certain state governmental actors, creates incentives for private actors to pursue actions consistent with state policy.

**The 2018 Regional Policy Plan**

The RPP, through the growth policy and the goals and objectives, has promoted the conservation and preservation of resources since the first RPP in 1991. The RPP supports and promotes the protection of water resources, wetlands and their buffers, coastal resources, habitat and restoration projects, and requires minimizing clearing of forested areas and
The adoption of the 2018 RPP involved a robust public engagement process. Development of the RPP was informed by input from stakeholders that met subregionally over the course of a year to consider past and present development, regional challenges, and a vision for the future. In addition, the Commission released the draft plan for a 60-day public comment period and provided multiple venues and modes for providing feedback, including more than 20 meetings with elected and appointed boards and three subregional public hearings. A total of 135 individual comments were received, either via verbal testimony or in one of the 30 comment letters received. Nearly half of the comments received on the draft plan were related to climate change. The Barnstable County Assembly of Delegates also held a public hearing prior to adopting the 2018 RPP as a County Ordinance.

Modifications were made throughout the draft RPP in response to the comments received, including in the following sections:

- **Cape Cod Systems (Introduction, Natural Systems, Wetlands, Open Space, Built Systems, Stormwater management, Utilities, Community Systems, Economy,)**
- **Key Challenges Facing the Region (More Development, Fewer Natural Areas; Development Impacts on Water Quality, excess Nitrogen in Coastal Waters, Climate Change, Provision of Adequate Infrastructure)**
- **Coordinated Regional and Local Planning (Climate Change Planning, Resilient Cape Cod project, Renewable Energy Planning and Development)**
- **Recommended actions (Update the Regional Transportation Plan; Cape Cod Response, Readiness, and Mitigation, including a greenhouse gas inventory, electric vehicle charging stations, and screening for amplified industrial scale solar development; and amend the Technical Bulletins to better Respond to Climate change)**

Language regarding climate change, impacts of climate change on Cape Cod systems, reliance on fossil fuels, and the need for mitigation was added throughout the plan. Modifications included significant revisions to the section on resiliency planning (titled Climate Change Planning in the final RPP) in Coordinated Regional and Local Planning and to the section on climate change in Key Challenges Facing the Region, to ensure the RPP incorporated and addressed both climate change mitigation and adaptation planning. This 2018 RPP notes that “including actions related to climate change mitigation and adaptation as well as through the following work described, may position the agency to consider a broader climate adaptation plan in the future.”

A summary from the Intergovernmental Panel on Climate Change (IPCC) report, which was released during the draft RPP public comment period, was added, as follows:
The 2018 Intergovernmental Panel on Climate Change Special Report projects continued sea level rise into the next century, with the rate of rise depending on how future greenhouse gas emissions are managed. Bringing emissions under control sooner than later will provide more time to plan for and respond to the Cape’s changing shoreline. The report calls on the global community to act collectively to reduce emissions to achieve a net zero CO2 emission rate as soon as possible in order to allow time for adaptation to the inevitable changes. While the problems posed by climate change appear unstoppable, there are actions the Cape community can take to reduce emissions and participate in the effort to slow the rate of change. Increasing the region’s resilience to climatic changes and a rising sea level means thinking into the future and adjusting behaviors that put people and property at risk. Mitigating the causes of climate change and adapting to its effects on Cape Cod involves making policy decisions with both environmental and economic considerations.

Many policies adopted in the RPP address carbon sequestration. Some of these strategies have been a part of planning on Cape Cod since the first RPP was adopted in 1991. Others, like the Placetypes scheme, refocus efforts to avoid impacts to Natural Areas and direct new and redevelopment toward activity centers. Some examples of these policies include:

- clustering development
- discouraging development in Natural Areas
- open space protection
- habitat restoration
- discouraging greenfield solar development

The RPP includes actions that support renewable energy development, advancing Green Communities designation, and other climate-related initiatives. A specific section on climate change response, readiness, and mitigation includes actions to engage communities to better understand regional greenhouse gas emissions and identify opportunities for mitigation. Actions include:

- Develop an estimated baseline of greenhouse gas emissions for the region using available models and data.
- Encourage more communities to seek Green Communities designation, which would facilitate greater funding opportunities for municipal energy efficiency and renewable energy initiatives and participation in the Community Rating System to reduce insurance costs.
- Conduct GIS screening analysis of potential electric vehicle charging station locations.
- Conduct a GIS analysis to identify appropriate potential sites for development of utility scale solar photovoltaic arrays or energy storage facilities (with an emphasis on “grayfield” sites outside of densely populated areas) to encourage development of on-site renewable energy to offset line losses associated with electricity supplied from the utility grid.
The RPP also includes an action relative to amending Technical Bulletins to better respond to climate change and specifically calls for incorporating methods that reflect the findings of the actions described above.

The RPP strives to balance the many interests that the Commission is charged with protecting under the Act; the 2018 update to the RPP continues that charge and incorporates more explicit references to climate change response. The 2018 RPP reflects an appropriate framework for planning and regulation moving forward. In the coming months, as the RPP is put into practice, staff will evaluate its effectiveness at balancing the purposes of the Act and addressing key regional challenges.

**Status and Scope of Climate Change Related Laws**

The Commonwealth has a clear, comprehensive and established regulatory and policy framework for addressing climate change issues. The framework centers on the Global Warming Solutions Act (GWSA) and Green Communities Act (GCA), both signed into law in 2008. The GWSA and GCA also further the Commonwealth’s approved air quality implementation plan (SIP) under the Federal Clean Air Act and the Environmental Protection Agency’s associated Clean Power Plan rulemaking. The uniform framework established by these Acts benefits municipalities and others in the Commonwealth and should hasten action towards meeting emissions reduction and renewable energy goals in the Commonwealth. Further, there is benefit that because the regulation is at the state level, it is predictable and consistent in application from town to town across the state.

Generally, the GWSA and GCA impose certain mandates on agencies and bodies of the Commonwealth; provide certain incentives to private actors to further the purposes and meet certain goals of the Acts; and create state agency regulatory requirements on certain industries and economic sectors regulated by the Commonwealth. The “unit” of emissions regulation under the GWSA is at the sector or large emissions category level: for practical and other reasons, it is not at the individual building, vehicle, etc. level. One of the principal purposes of the GCA is to assist the Commonwealth in meeting target emissions reductions goals established under the GWSA. The Commonwealth has neither expressly preempted nor mandated local government action and regulation with respect to climate change issues, but has set a regulatory and policy framework within which local communities and governments may contribute to address climate change issues and assist the state in meeting its target reductions goals as set out in the GWSA and GCA. Ultimately, the Commonwealth is the responsible party in meeting emissions reduction goals.

Attached to this memorandum is an overview of the Global Warming Solutions Act and the Green Communities Act.

**Other Cape Cod Commission Policies and Actions**

Commission policies have always been directed at the conservation of resources – land, water, wetlands, and habitats – and have thereby indirectly contributed to climate change mitigation...
Planning principles often called smart growth or sustainable practices, include directing growth toward activity centers, promoting walking, biking, and reducing the use of personal vehicles, protecting open space, and encouraging cluster development, have all been geared toward redirecting the growth patterns of the mid-20th century toward a more efficient use of land and resources.

In addition to the RPP, the Commission has been working for many years to apply the policies described above and address the impacts from climate change through regional planning efforts, resource and decision-support tool development, and local technical assistance. Below are some examples:

- **Cape Cod Tidally Restricted Wetlands Atlas:** In 2001, the Commission completed the Tidally Restricted Wetlands Atlas, which has enabled the restoration of hundreds of acres of wetlands across Cape Cod and brought in federal funds to accomplish those efforts.

- **Multi-Hazard Mitigation Planning:** The Commission has assisted nearly all Cape Cod communities with developing or updating their local Multi-Hazard Mitigation Plans. Since 2014, staff has worked with 10 towns to complete new or updated plans.

- **Cape Cod Area-Wide Water Quality Management Plan (208 Plan):** In 2015, Massachusetts Governor Charlie Baker and the US Environmental Protection Agency certified and approved this regional water quality plan. The 208 Plan has enabled the use of nature-based solutions, which address both water quality and climate change resiliency.

- **Effects of Sea Level Rise on Freshwater Resources:** Initiated in 2014, the Commission collaborated on a United States Geological Survey study on the effects of sea level rise on water table altitudes and depths to water on the Sagamore and Monomoy lenses. The final report was published in 2016.

- **Resilient Cape Cod:** In 2016, the Commission was awarded a National Oceanic and Atmospheric Administration Regional Coastal Resiliency Grant to develop resources to assist communities in making difficult decisions related to coastal impacts and resiliency. The Commission worked with 120 stakeholders and held 13 subregional meetings to discuss Cape Cod’s response to climate change. Resources developed include a database of adaptation strategies, adaptation strategy fact sheets, a story map that captures stakeholder experiences with climate change impacts, and the Cape Cod Coastal Planner, a decision support tool to assist communities in the decision-making process around a more resilient coastline. The Resilient Cape Cod process has resulted in additional outreach requests and opportunities, including a series of workshops for the real estate community, which is ongoing.

- **Barnstable County Coastal Management Committee:** In 2018, the Commission worked with County leadership to establish the Barnstable County Coastal Management Committee to focus on coastal management issues facing the region. This committee serves as a forum for collaboration and coordination on climate change and coastal resiliency issues.
• **Historic Structures in the Floodplain:** Since 2018, the Commission’s historic preservation specialist has worked with the County floodplain manager on workshops to educate local officials and the public on protecting historic resources from flooding.

• **Municipal Vulnerability Preparedness Program:** In 2019, the Commission assisted 5 Cape Cod towns with the MVP planning process to identify climate change impacts and vulnerabilities and develop and prioritize strategies or actions to address those vulnerabilities. As a result, these communities will have access to state funding to implement identified actions.

• **Economic Assessment of Harbors:** In 2019, the Commission initiated a project to assess the economic impact of harbors on the local and regional economy. The assessment will integrate and consider impacts of climate change on these important economic assets.

• **Cape Cod Climate Change Collaborative:** The Commission is a founder of the Cape Cod Climate Change Collaborative and is a member of its Advisory Council. The actions identified in the 2018 RPP will contribute to the action steps identified in the Collaborative’s recent Net Zero Call to Action.

• **Transportation Planning:** The Cape Cod Regional Transportation Plan includes a discussion of climate change impacts in the region, encourages strategies that result in fewer vehicle miles traveled, and prioritizes projects that reduce greenhouse gas emissions. Commission staff are working with the Regional Transit Authority and their climate change task force, established with the help of the Climate Change Collaborative, to quantify emissions from their fleet and investigate low or no emission vehicles. The Transportation Improvement Plan quantifies greenhouse gas emissions for each project it includes.

• **Evaluation of Regulations and Bylaws:** In 2019, the Commission applied for grant funds through the Massachusetts Executive Office of Energy and Environmental Affairs FY20 Planning Assistance Grant Program to identify best land use practices to promote climate resilience, to evaluate existing zoning bylaws and regulations in four partner communities (Bourne, Sandwich, Brewster, and Eastham), to identify opportunities to incorporate best practices, and to develop a model coastal resiliency bylaw that could be utilized by any coastal community.

**Future Actions**

The Commission will continue to lead on issues of climate change and coastal resilience.

- Staff will continue work on the projects and initiatives described above, including those recommended actions identified in the 2018 RPP.
- Staff has already begun investigating methodologies for a greenhouse gas inventory and is working to identify an intern for the summer to complete this research. Development of the inventory will be done in collaboration with the Climate Change Collaborative and other stakeholders. Once the baseline is complete, greenhouse gas emissions may serve as a measure of the region’s progress toward climate change mitigation.
• The annual One Cape Summit, to be held on July 29-30 at the Wequasett Resort in Harwich, will include a dedicated session on climate change.
• Commission staff will participate in the process, to be established by the Barnstable County Assembly of Delegates through County Ordinance, to improve the region’s response to climate change.
• Moving forward, the Commission will work with organizations, such as the Cape Cod Climate Change Collaborative, on a climate-specific process and plan. This will require regional stakeholder involvement to identify and come to consensus on appropriate approaches to mitigate impacts.

Commission staff welcomes the opportunity to provide periodic updates to the Commission members on progress toward the 2018 RPP actions and other efforts described in this memorandum.
Global Warming Solutions Act (GWSA) Overview

The GWSA requires the Executive Office of Energy and Environmental Affairs (EOEEA) and other state agencies to set greenhouse gas (GHG) emission reduction goals for Massachusetts:

- Between 10 percent and 25 percent below statewide 1990 GHG emission levels by 2020.
- 80 percent below statewide 1990 GHG emission levels by 2050.

To achieve these goals, the GWSA requires the Commonwealth to:

- Establish regulations requiring reporting and verification of greenhouse gas emissions by the Commonwealth's largest sources. Specifically, MA DEP promulgated mandatory greenhouse gas reporting regulations and identified what types of facilities are required to report and what types of emissions must be reported, which includes reporting by retail sellers of electricity and power plants. (See generally law established pursuant to the GWSA, M.G.L. Chapter 21N, “CLIMATE PROTECTION AND GREEN ECONOMY ACT”). Reporting provides data about the actual types and levels of GHG emissions in the Commonwealth, which will assist in setting future emissions reduction targets and determining whether those targets have been met.
- Establish a baseline assessment of statewide GHG emissions in 1990 (same base year used by many climate agreements including the Kyoto Protocol). The baseline will assist in measuring progress towards reduction targets.
- Project the likely statewide GHG emissions for 2020 under a "business as usual" scenario that assumes that no targeted efforts by government to reduce emissions are implemented.
- Establish target emission reductions/plan for 2020 levels (informed by ‘business as usual’ scenario)
- Establish baselines, projections and reduction targets through collaboration by the Secretary of Energy and Environmental Affairs, MADEP and the Massachusetts Department of Energy Resources.
- Establish two advisory committees through EOEEA to provide input on the implementation of the GWSA:
- Establish the Climate Protection and Green Economy Advisory Committee on measures to reduce greenhouse gas emissions.
- To establish the Climate Change Adaptation Advisory Committee on strategies for adapting to climate change.
Green Communities Act (GCA) Overview

- Comprehensive statutory amendments affecting the Massachusetts energy marketplace;
- Promotes an expansion in energy efficiency and the development of renewable energy resources, including through the creation of a new greener state building code and the Green Communities Program, specifically providing Massachusetts cities and towns with energy efficiency and renewable energy opportunities;
- Assists in meeting GWSA GHG reduction goals by setting renewable, alternative and energy efficiency goals (via EOEEA, the responsible planning entity for the Commonwealth), which are to:
  - meet at least 25 percent of the Commonwealth’s electric load by the year 2020 with demand side resources (e.g. storage, distributed energy, efficiency programs, peak demand management);
  - meet at least 20 percent of the commonwealth’s electric load by the year 2020 through new, renewable and alternative energy generation;
  - reduce the use of fossil fuel in buildings by 10 percent from 2007 levels by the year 2020 through the increased efficiency of both equipment and the building envelope;
  - develop a plan to reduce total energy consumption in the commonwealth by at least 10 percent by 2017 through the development and implementation of the green communities program;

GCA Statutory Highlights

Establishment of Green Communities Program

The Commonwealth provides financial assistance to incentivize a variety of energy efficiency, renewable energy and conservation projects by cities and towns, or at the local level, to qualified communities. Program funding is from the Commonwealth’s RPS and RGGI programs up to $10m/yr.

Net Metering

The GCA authorizes and establishes procedures around net metering for the purpose of incentivizing the production of clean distributed energy.

Green Building Code

The GCA directs the MA Board of Building Regulations and Standards (BBRS) to adopt and regularly update state building codes in accordance with the latest edition of the IECC energy code, in addition to adopting other energy conservation regulations into the state building codes.
Implementation of Regional Greenhouse Gas Initiative (RGGI) in Massachusetts

Department of Public Utilities: emissions cap and trade program inter- and intrastate Auction sale of all emissions allowances RGGI trust fund proceeds directed to Green Communities Program, etc.

MA Renewable Portfolio Standard (RPS)

The GCA requires that a certain percentage of retail energy sales in Massachusetts comes from the renewable portfolio to ensure that an increasing larger slice of Massachusetts’ electric energy comes from renewable sources. The RPS has been divided into two classes, arranged by generation type and whether the sources are new or existing.

MA Alternative Energy Portfolio Standard (AEPS)

Independent of RPS requirements, all electric energy sold in the state must have a minimum percentage supplied from AEPS qualified sources. Technologies that qualify for the standard include some fossil fuel derived energy. However, there is an explicit emissions limit that requires significant carbon capture and sequestration from any coal or petroleum-based sources. An alternative compliance payment system is allowed, which payments are dedicated to purposes like the Green Communities Program.

Other notable provisions in the GCA

Requires the state, to the maximum extent feasible, to purchase hybrid or alternative fuel Vehicles.

Requires all new or renovated state facilities with costs over $25,000 to conduct construction in a manner that minimizes life-cycle costs through energy efficiency, renewables, and water conservation.

Creates the Office of Ratepayer Advocacy within the Attorney General’s office, with the purpose of intervening, appearing and participating in utility regulatory, administrative and judicial proceedings on behalf of customers, and the Energy Efficiency Program Design and Oversight Council to ensure that energy demand resource plans maximize economic benefits to consumers.

Requires electric and gas distribution utilities to increase investments in energy efficiency and demand resource programs that are cost-effective for all consumers.

Authorizes a bidding process for the competitive procurement of electric generation for any state agency or authority and establishes a contract and procurement process for state agencies, building authorities and local governments relative to energy management services, including a streamlined process for energy conservation projects with a total cost of less than $100,000.

Expressly allows electric companies and distribution companies from building, owning, and
operating solar energy facilities.

Extends the authorized payback period for local debt related to energy conservation and renewable and alternative energy projects from 10 to 20 years.

**Other Regulations/Policies of the Commonwealth in furtherance of the GWSA and GCA**


To help achieve the greenhouse gas emissions goals of the GWSA and renewable energy goals of the GCA, this Act requires utilities to competitively solicit and contract for approximately 1,200 megawatts (MW) of clean energy generation – base load hydropower, onshore wind and solar supported by hydropower, standalone onshore wind, solar, or other RPS Class I renewable resources. In addition, it allows for the procurement of approximately 1,600MW of offshore wind and authorizes the use of energy storage technologies paired with renewable power generation.


- Lifts net metering caps
- Establishes Clean Peak Standard requiring retail electricity providers to meet a baseline minimum percentage of sales with qualified clean peak resources during seasonal peak periods
- Raises annual RPS percentage increase
- Updates procurement target for offshore wind
- Sets 2030 and 2040 statewide greenhouse gas emissions limits
- Establishes statewide energy storage target
- Requires the Commonwealth to develop and implement a market-based compliance mechanism on the transportation sector by 2020, the commercial, industrial, and institutional sectors by 2021, and the residential building sector by 2022

**Massachusetts Solar Massachusetts Renewable Target (SMART) Plan**

MA DOER established regulations to create, working in conjunction with utilities, a long-term sustainable solar incentive program that promotes cost-effective solar development in the Commonwealth. The basis of the SMART program is a declining block tariff incentives system of up to 1,600 MW of new solar generating capacity. The program supersedes the Commonwealth’s former Solar Renewable Energy Credit (SRECS) programs.