

CP-49 / Climate Change and DEC Action

New York State Department of Environmental Conservation

DEC Policy

Issuing Authority: Alexander B. Grannis, Commissioner

Date Issued: October 22, 2010

Latest Date Revised:

I. Summary

Based on overwhelming scientific evidence, the New York State Department of Environmental Conservation (“Department” or “DEC”) recognizes that New York State’s (“State”) air and water quality, forests, fish and wildlife habitats, and people and communities, are at risk from climate change. In order to perform its core mission of conserving, improving, and protecting the State’s natural resources and environment, DEC must incorporate climate change considerations into all aspects of its activities, including but not limited to decision-making, planning, permitting, remediation, rulemaking, grants administration, natural resource management, enforcement, land stewardship and facilities management, internal operations, contracting, procurement, and public outreach and education.

This Policy includes five components that are intended to integrate climate change considerations into DEC activities:

1. Department staff are directed to make greenhouse gas (GHG) reductions a fundamental goal and to integrate specific mitigation objectives into DEC programs, actions and activities, as appropriate.
2. Department staff are directed to incorporate climate change adaptation strategies into DEC programs, actions and activities, as appropriate.
3. Department staff are directed to consider climate change implications as they perform their daily DEC activities.
4. Each Department Division, Office and Region is directed to designate an individual to act as a coordinator for climate change integration. DEC will form an internal workgroup consisting of these coordinators to assist with climate change integration and to address data, information and training needs.
5. As part of its annual planning process, each Department Division, Office and Region is directed to identify the specific actions that will be taken to further this Policy’s climate change goals and objectives for both mitigation and adaptation, and to report progress of the prior year’s climate-related actions.

II. Policy:

As an element of its core mission, DEC shall incorporate climate change considerations into all aspects of its activities. DEC should serve as a statewide and national role model in responding to climate change. In performing its responsibilities, DEC must take into account both (a) mitigation of climate change, through reductions in GHG emissions and enhancement of carbon sinks, and (b) adaptation to the expected effects of climate change. Accordingly, Department staff are directed to integrate climate change considerations as may be relevant, along with other environmental issues and State priorities, into the full range of their Departmental activities, including but not limited to all decision-making, planning, permitting, remediation, rulemaking, grant administration, natural resource management, enforcement, land stewardship, facilities management, internal operations, contracting, procurement, and public outreach and education.

DEC staff, within their areas of responsibility, are directed to maximize the use of their existing authorities to: reduce GHG emissions and promote energy efficiency; encourage “low-carbon” design including smart growth and other sustainable development; encourage resilience of human and natural communities to climate change; elevate climate change awareness and research; foster carbon sequestration in our forests, soils and wetlands; conserve and restore habitats, landscape connections and hydrological functions that facilitate ecosystem resiliency; and engage other state agencies, local governments and stakeholders in the State’s collective effort to reduce emissions and minimize the effects of climate change on public health, communities and the environment.

The policy and procedures set out in this document are intended solely for the use of personnel of the Department. They are not intended to create any substantive or procedural rights, enforceable by any party in administrative or judicial litigation. The Department reserves the right to act at variance from the guidelines set forth in this Policy. In the event that the Department considers taking measures that require additional regulatory authority, the Department shall undertake a rulemaking with the opportunity for public comment.

DEC Divisions, Offices and Regions shall integrate the following specific mitigation and adaptation objectives into their DEC programs, to the extent appropriate and within their existing statutory and regulatory authority:

Mitigation Objectives

- Provide coordination, education, and technical support for a State GHG emission reduction program consistent with stabilizing atmospheric GHGs at concentrations that minimize the risks of the most severe impacts of climate change;
- Reduce GHG emissions to assist in the implementation of Executive Order 24 which established the Statewide goal of an 80 percent emissions reduction below 1990 levels by 2050 (“80 by 50”);
- Develop GHG reduction strategies transferrable to, and in cooperation with, local, regional, national and international climate protection efforts, where permitted under applicable federal or State legal authority;
- Encourage development of environmentally sustainable, core strategies necessary for a low-carbon economy such as energy efficiency and conservation, zero or near-zero carbon energy production

including renewable energy, “smart” electric transmission system with energy storage, zero carbon buildings, low-carbon liquid fuels, and smart growth;

- Maintain and enhance carbon sinks, such as forested and agricultural lands, wetlands and green infrastructure;
- Encourage municipal GHG mitigation measures; and
- Ensure that reduction strategies are consistent with DEC and State environmental and environmental justice policies and goals.

Adaptation Objectives

- Identify potential adverse impacts from climate change;
- Incorporate climate change adaptation strategies into applicable DEC programs, actions and activities, based on reduction of threats from physical, chemical or ecological stressors, vulnerability analyses, risk assessments, and uncertainty identification, where permitted under applicable federal and State legal authority;
- In analyses and decision-making, use best available scientific information of environmental conditions resulting from the impacts of climate change (e.g., increased air and water temperatures, decreased air quality, sea level rise and increased coastal flooding); Incorporate adaptive management into program planning and actions, which uses scientifically based and measurable evaluation, testing of alternate management approaches, and readjustment as new information becomes available;
- Incorporate measures that enhance the capacity of ecosystems and communities to absorb and/or accommodate the impacts of climate change (e.g. management measures that allow for species adaptation, maintain native biodiversity, provide migration corridors, protect hydrologic function, employ green infrastructure practices, and protect communities and public infrastructure);
- Protect and restore the habitat and hydrologic functions of natural systems, such as forests, streams, wetlands and riparian buffers;
- Provide technical assistance to other State agencies, local governments and non-governmental partners to help them ensure that ecosystems, infrastructure and communities throughout the State are resilient to climate change;
- Work with federal partners, such as the U.S. Army Corp of Engineers, Federal Emergency Management Agency, etc., to incorporate climate change principles into their decisions regarding New York State projects;
- Encourage municipal adaptation measures; and
- Ensure that adaptation strategies are consistent with DEC and State environmental and environmental justice policies and goals.

In the course of their daily work, Department staff shall consider this policy's climate change goals, specific mitigation and adaptation objectives and specific climate change factors.

III. Purpose and Background:

Human-induced climate change has been called the most pressing environmental issue of our time. There is a clear international scientific consensus that our climate is changing significantly. Scientists have confirmed that the earth is warming, chiefly because of GHG emissions from fossil fuel combustion. Climate change represents an enormous challenge for New York, and has the potential for serious impacts on the State's natural resources, public health, communities and economy.¹ Severe impacts will result if the climate system exceeds critical thresholds. The earth could experience significant sea level rise, altered ocean circulation, massive species extinction, drastic changes in storm and drought cycles, and redistribution of vegetation and crops. Large and rapid GHG emission reductions are necessary to prevent the most severe climate change impacts. The State GHG goal is an 80 percent reduction below 1990 levels by 2050. As most GHGs are emitted from energy generation and use, reducing GHG emissions will require a fundamental transformation in how we produce and use energy.

Because most global warming gases remain in the atmosphere for decades or centuries, the choices we make today will greatly influence the climate and resources of future generations. During the 20th century, CO₂ emissions increased with each generation, and each generation has passed CO₂-induced "warming commitments" on to the next. Even if GHG emissions were abruptly reduced to zero, global climate change would continue through the 21st century and beyond due to the very long residence time of CO₂ in the atmosphere and the slow equilibration time of the oceans and terrestrial systems. Accordingly, it is imperative that we also plan for and take action to adapt to climate change to ensure the well-being of our ecosystems and communities.

Climate change threatens our natural resources and built environments, with potential profound effects on the State's environment, communities and economy:

- Overwhelming scientific evidence demonstrates that the State's air and water quality, forests, fish and wildlife habitats and communities are all at risk from climate change.
- Scientists predict greater likelihood of damage from strong storms and flooding, as well as less-predictable rainfall to grow crops and replenish surface and groundwater.
- Higher air temperatures, especially in urban areas, will contribute to increased ozone concentrations and decreased air quality, thereby leading to greater morbidity and mortality from heat-related illnesses.
- Warmer winters will increase the survival of pests and diseases that threaten plants, animals and humans.
- The species composition of forest vegetation will change, further affecting fish and wildlife.

¹ See "Climate Change Issue Brief" for New York State Energy Plan 2009 (http://www.nysenergyplan.com/final/Climate_Change_IB.pdf).

- Important coldwater fish species, such as salmon and trout, will disappear from parts of the State as waters grow warmer.
- Increasing rates of sea level rise, caused by the expansion of warming ocean water and the melting of land ice, will have significant impacts on New York City and the coastal regions due to inundation, infiltration and damage from coastal storm surges.

A number of Governor's Executive Orders² direct State agencies to take specific actions related to reducing GHG emissions and adapting to the expected effects of climate change, improving the environmental sustainability of State government operations, and enhancing the sustainability of our communities. This Policy assists DEC staff to more effectively comply with those Executive Orders.

DEC has been a leader in taking actions that respond to the challenges of climate change, including the following:

- promulgating regulations for the first-in-the-nation power plant carbon emissions cap and trade program through the Regional Greenhouse Gas Initiative (RGGI), which set a national precedent by reinvesting auction proceeds to support additional mitigation measures such as energy efficiency, renewable energy, new technology and green jobs;
- adopting California's GHG standards for new motor vehicles;
- joining the Climate Registry and inventorying the direct and indirect GHG emissions from DEC operations;
- adopting a DEC policy that adds GHG assessments into applicable SEQRA reviews and provides for mitigating energy use and GHG emissions as part of approvals and funding decisions;
- chairing and staffing the NYS Sea Level Rise Task Force;
- finalizing the 2009 NYS Open Space Conservation Plan that incorporates a comprehensive suite of land use and acquisition recommendations to mitigate and adapt to climate change;
- serving as a member of the steering committee of the International Carbon Action Partnership;
- serving as co-executive director of the Governor's Climate Action Council and playing a lead role in implementation of Executive Order #24 and the development of the New York State Climate Action Plan;
- drafting and implementing the Climate Smart Communities Program;
- hosting a natural resource climate change adaptation workshop; and
- playing a key role in many interagency and national workgroups related to climate change mitigation, adaptation and sustainability.

² Executive Orders 111, 20, 4 and 24 were issued over the period 2001 to 2009.

DEC remains committed to these actions. To build upon this foundation, this Policy will facilitate DEC's continued leadership to address this global problem by directing the Department to further integrate GHG mitigation and adaptation considerations into all of its programs, operations and decision-making. DEC must do its best to ensure that its decisions utilize the best available scientific information with respect to changing environmental conditions. Climate change must be a fundamental consideration, along with other environmental issues and State priorities, in DEC's approach to natural resource stewardship and in its efforts to ensure adequate environmental infrastructure for New York's future. Dealing with climate change requires new public and private partnerships to share knowledge and develop effective policies to reduce GHG emissions and adapt to unavoidable impacts.

IV. Responsibility:

All Department Divisions, Offices and Regions shall integrate this Policy into their programs and fulfill the required annual planning and progress reporting. The Office of Climate Change will assist Department staff obtain climate change information necessary to meet policy objectives.

The Executive Deputy Commissioner, with the assistance of the Commissioner's Policy Office, Office of Climate Change and the DEC Climate Action Team (as described below), shall appoint a Chair to convene and lead the Climate Action Team and shall provide oversight to ensure implementation and ongoing compliance with this Policy.

V. Procedure:

1. Climate Change Coordinators and Formation of Climate Action Team

Each Department Division, Office and Region shall designate a person to act as a coordinator for climate change initiatives within its programs. An internal DEC Climate Action Team will be formed consisting of the coordinators and will meet on an "as needed" or periodic basis to:

- a. Identify information (research, data, and guidance materials) requested or required to better integrate climate factors into DEC programs and work proactively to obtain that information;
- b. Collaborate on inter-divisional climate change plans and strategies, define metrics and develop a tracking mechanism for reporting progress;
- c. Summarize, and annually update, climate change training and information needs submitted by Divisions, Offices and Regions pursuant to V.3.d of this Policy; and
- d. Promote climate change education and training programs, and workshops (within available resources) for Department staff, tailored to information needs identified by the Divisions, Offices and Regions.

2. Climate Change Factors to Guide DEC Programs, Activities and Decisions

Department staff shall consider the following factors, along with other environmental issues and State priorities, to guide their programs, activities and decisions, and as they implement this policy:

- a. Future environmental conditions based on the best available scientific projections and data³;
- b. Need for additional data collection, research, training, or other necessary tools and procedures that address projected future conditions;
- c. Whether a new project, requirement, regulation or decision will lead to an increase or decrease of GHG emissions, and whether an expected increase in GHG emissions can be feasibly mitigated;
- d. Potential burden on environmental justice communities that may be vulnerable to the impacts of climate change;
- e. Opportunity to incorporate climate mitigation or adaptation strategies into proposed Environmental Benefits Projects;
- f. Whether a project's assumptions, planning, design, or implementation may contribute GHG emissions, could mitigate or reduce climate impacts, or could potentially incorporate adaptation features;
- g. Life cycle implications of actions or choices being made and whether there are feasible alternatives which could lower direct or indirect emissions of GHGs, including the potential for improved energy efficiency and the use of renewable energy;
- h. Legal and regulatory obstacles that make it more difficult to achieve climate change objectives, and the need for analysis of the legal authority and potential legal questions concerning the actions and activities contemplated; and
- i. Innovative ways to perform DEC activities and responsibilities that accomplish this Policy's climate change mitigation and adaptation goals and objectives.

The Climate Action Team shall use these considerations as a starting point when developing materials and guidance to help staff integrate climate change into their programs and decision- making.

3. Annual Climate Change Programmatic Review

As part of their annual planning processes, each Department Division, Office and Region will undertake an annual climate change programmatic review by March 15th for the upcoming fiscal year, which shall include the following:

- a. Recommended actions that further this Policy's climate change mitigation and adaptation goals and objectives. Activities to be examined in the review process include planning, permitting, remediation, rulemaking, grant administration, natural resource management, enforcement, land stewardship and facilities management, internal operations, contracting, procurement, and public outreach and education;
- b. A listing of quantifiable targets, if appropriate;

³See Attachment 1 for list of examples of environmental variables vulnerable to climate change.

- c. A report of progress and reevaluation of the prior year's climate related actions; and
- d. An assessment of information needs (research, data and training) that would assist in integration of climate change into its programs and activities.

VI. Related References:

- Intergovernmental Panel on Climate Change, Fourth Assessment Report, "Climate Change 2007" [http://www.ipcc.ch/publications_and_data/publications_and_data.htm].
- National Research Council. (2010). *Advancing the Science of Climate Change*. Washington, DC: The National Academies Press. <http://americasclimatechoices.org/panelscience.shtml>
- National Research Council. (2009). *Informing Decisions in a Changing Climate*. Panel on Strategies and Methods for Climate-Related Decision Support, Committee on the Human Dimensions of Global Change. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. [http://www.nap.edu/catalog.php?record_id=12626#toc]
- National Academy of Sciences. (2008). *Understanding and Responding to Climate Change, Highlights of the National Academies Reports*. [http://dels.nas.edu/dels/rpt_briefs/climate_change_2008_final.pdf]
- National Academy of Sciences. (2008). *Ecological Impacts of Climate Change*. Committee on Ecological Impacts of Climate Change. Board on Life Sciences. Division on Earth and Life Studies. Washington, DC: The National Academies Press. [http://www.nap.edu/catalog.php?record_id=12491]
- EPA Climate Change Website [<http://www.epa.gov/climatechange/>]
- Executive Order No. 111, issued June 10, 2001 (Directing State Agencies to be More Energy Efficient and Environmentally Aware: "Green and Clean State Buildings and Vehicles");
- Executive Order No. 20, issued December 4, 2007 (Establishing the Governor's Smart Growth Cabinet);
- Executive Order No. 4, issued April 25, 2008, (Establishing A State Green Procurement And Agency Sustainability Program)
- Executive Order No. 24, issued August 6, 2009, (Establishing A Goal To Reduce Greenhouse Gas Emissions Eighty Percent By The Year 2050 And Preparing A Climate Action Plan);
- DEC Program Policy, issued July 2009, "Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements";
- Climate Smart Communities Program [<http://www.dec.ny.gov/energy/50845.html>]
- Climate Registry emissions reporting system [<http://www.theclimateregistry.org>];

- Sea Level Rise Task Force [Chapter 613, Laws of New York 2007]
[<http://www.dec.ny.gov/energy/45202.html>]
- Regional Greenhouse Gas Initiative, Memorandum of Understanding, December 20, 2005
[<http://www.rggi.org>];
- New York Ocean and Great Lakes Ecosystem Conservation Act [Article 14 ECL] and New York Ocean and Great Lakes Report dated April 8, 2009 [<http://www.nyoglecc.org/reports.html>];
- Mid-Atlantic Governor's Agreement on Ocean Conservation dated June 4, 2009
- <http://www.midatlanticocean.org/agreement.pdf>;
- Climate Change Issue Brief, New York State Energy Plan, December 2009
- http://www.nysenergyplan.com/final/Climate_Change_IB.pdf;
- ClimAid report [2009]; and
- New York State Open Space Conservation Plan [2009]
[<http://www.dec.ny.gov/lands/47990.html>].

Attachment 1: - Examples of Environmental Variables Vulnerable to Climate Change

Temperature

Air:

- 1) Average annual, seasonal, daily and diurnal over/under thresholds (e.g. $>90^{\circ}\text{F}$ or $<32^{\circ}\text{F}$)
- 2) Degree day accumulations
- 3) Frost freeze cycles (crossings of 32°F)
- 4) Number of consecutive days above freezing (or some other thresholds)
- 5) Elevation gradients (lapse rates)

Non-air:

- 1) Groundwater
- 2) Ground surface (soil, under forest litter, under snow/ice)
- 3) Below ground soil
- 4) Inland waters
- 5) Coastal waters
- 6) Open Ocean

Precipitation

- 1) Average precipitation – decadal, annual, seasonal, daily
- 2) Extreme precipitation rates (10-day, 1-day, 1-hour)
- 3) Soil moisture
- 4) Drought indices
- 5) Consecutive dry days (wet days, etc.)
- 6) Timing of precipitation/moisture deficit with key phenological events

Water Quantity

- 1) Streamflow average – decadal, annual, seasonal, daily
- 2) Streamflow extremes – decadal, annual, seasonal, daily, hourly

- 3) Lake/reservoir levels
- 4) Groundwater quantity/flow

Snow/Ice

- 1) Extreme snowfall rates
- 2) Total snowfall
- 3) Number of snow-free days
- 4) Lake effect snowfall amounts
- 5) Seasonal maximum snow depth
- 6) Duration of snow cover
- 7) Seasonal maximum snow water equivalent (amount of water in snow)
- 8) Ice in/ice out dates
- 9) Ice thickness

Other Variables

- 1) Sea level rise rate and magnitude
- 2) Storm frequency
- 3) Storm intensity
- 4) Evaporation/evapotranspiration
- 5) Relative humidity
- 6) Solar radiation
- 7) Wind speed (average and also high/low threshold exceedences)
- 8) Wind direction