



**Department Climate Initiative
2014 Periodic Review**

**New Hampshire Department of Environmental Services
Climate Land-use Energy And Natural Resources (CLEANR) Team**

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Table of Contents

Introduction	1
Agency-Wide Planning	3
Department Climate Initiative	3
Areas of Progress	5
Overview	5
Education & Assistance	5
Funding	9
Monitoring	10
Operations	10
Planning	11
Projects	13
Research	14
Rules & Regulations	14
Staffing	16
Structure	16
Other State Agency Efforts	18
State Agency Partnerships	18
Individual State Agency Efforts	18
External Collaborations	22
Adaptation Groups & Initiatives – New Hampshire	22
Adaptation Groups & Initiatives – Regional	23
Mitigation Groups & Initiatives – New Hampshire	25
Mitigation Groups & Initiatives – Regional	27
List of Acronyms	29

Introduction

NHDES recognizes that climate change is real, serious, and substantially man-made and that New Hampshire's residents, environment and economy are already experiencing its effects. NHDES has a responsibility to respond by taking steps to reduce the causes of climate change locally and regionally, as well as to prepare for the current and projected impacts that a changing climates poses to New Hampshire's residents, visitors, communities, and natural resources.

In response, the NHDES incorporated the need to address climate change in its [2010-2015 Strategic Plan](#) goals.¹ The NHDES *Climate, Land-Use, Energy And Natural Resources* (CLEANR) Team convened in 2010 as an ad-hoc cross-media staff working group, representing all three divisions and the commissioner's office, to support the implementation of the interrelated land-use and climate goals contained in the strategic plan. The team played an invaluable role in guiding the early implementation of the strategic plan through a phased-in approach that built on the success of small pilots to pave the way for more extensive projects and activities.

In 2013, under the guidance of the CLEANR Team and with the full support of its senior leadership, NHDES launched the "Department Climate Initiative" (DCI) to engage agency leadership, middle management and key staff in a strategic review of NHDES's programs and activities. The goal of the DCI is to make coordinate changes to department outreach activities, grants, and regulatory programs that: account for changing climate and environmental conditions; and promote the reduction of greenhouse gases (e.g., carbon dioxide, methane, ozone, black carbon) from all sources. To do so, each bureau in the department has been assessing their programs and activities in order to identify actions they can take to reduce emissions of greenhouse gases within New Hampshire and prepare for the impacts of a changing climate.

Even as the department-wide planning effort has been underway, considerable progress has been made across the agency. This document is the first periodic review of NHDES's efforts to incorporate considerations of climate change into all of its programs and activities. The purpose of the review is to reflect on the work done during 2014 and previously related to the goals NHDES has set for climate change, land use and energy in the 2010-2015 Strategic Plan. This organizes the progress into 10 overarching categories:

- Education & Assistance
- Funding
- Monitoring
- Operations
- Planning
- Projects
- Research
- Rules & Regulations
- Organizational Structure
- Staff

¹ The climate, energy and land-use goals arose, in part, from the 2009 [NH Climate Action Plan's](#) Recommended Action GLA Action 1.5 – Include Climate Change Adaptation and Mitigation in Programs and Planning, which noted that “[b]y incorporating climate change mitigation and adaptation into all of its planning and programming activities, the state can institutionalize climate change action and distribute responsibility to implement recommended actions across state government.” This recommendation informed the development of [NH NHDES 2010-2015 Strategic Plan's](#) Goal 1, which states the “NHDES and its partners address climate change through effective mitigation and adaptation strategies and efforts to foster the transition to a clean energy economy.”

This review provides a robust summary of the progress that has been made within NHDES bureaus that have taken the lead on the DCI and:

- Informs NHDES Senior Leadership of the ongoing work relative to the DCI.
- Provides continued direction and recommendations for future action to the NHDES CLEANR Team.
- Connects staff across NHDES with the ongoing work of their colleagues.
- Educates other NH state agencies and other states about the approach NHDES has taken.

Agency-Wide Planning

Department Climate Initiative

The DCI is a two-year effort to engage NHDES leadership, middle management and key staff in a strategic review of NHDES's programs and activities in order to make changes to outreach activities, grants, and regulatory programs that account for changing climate and environmental conditions, and promote the reduction of greenhouse gases (e.g., carbon dioxide, methane, ozone, black carbon) from all sources. The effort is not intended to lead to a wholesale alteration of the NHDES's goals, but instead to adjust the assumptions that inform its efforts. This is not new work, but rather current work under new conditions.

This internal initiative complements NHDES efforts to collaborate with other state agencies as well as other northeast states and eastern Canadian provinces. While the DCI is a two-year project, efforts that address climate change effectively will need to be sustained and iterative, as the climate is projected to continue to change for decades to come. By taking steps to comprehensively address climate change now, it is expected that NHDES staff and its partners will develop the experience and expertise necessary to address future challenges and to take advantage of new opportunities and technologies as they emerge.

Overview

The initiative is divided into four (4) phases, each lasting about 3-6 months. The process is intended to be an iterative learning process, in which flexibility and feedback are necessary to ensure success.

- Phase I: Brainstorm & Assessment (throughout 2014)
Each bureau & unit assesses its relationship to the causes and impacts of climate change, identifying potential responses that will reduce the causes and/or prepare for the impacts of climate change.
- Phase II: Evaluation & Prioritization (Winter & Spring 2015)
Each bureau and unit evaluates each proposed response in the climate assessment matrices against a set of criteria and develops a set of priority actions to implement.
- Phase III - Selection & Development (Summer & Fall 2015)
Division staff and senior management, through discussion with affected bureaus and units, select the actions to be implemented.
- Phase IV - Implementation & Monitoring (Winter 2016 & Beyond)
The selected actions are implemented and their progress tracked to assess effectiveness and adapt actions and plans as necessary.

Progress to Date

Most of calendar year 2014 focused on completing Phase 1: Brainstorm & Assessment. During this phase, all bureaus and units assessed their relationships to the causes and impacts of climate change, identified key linkages, and identified potential responses to address the causes and the impacts of climate change.

During 2014, over 150 key staff and managers from each of the 20 NHDES bureaus and units participated in training related to the causes and impacts of global warming and local climate change. Following the training, each bureau assigned a point person to work through a matrix that helped each bureau to understand its relationship to the causes and impacts of climate change and to identify a range of potential opportunities to mitigate the causes and prepare for its current and anticipated impacts.

During this assessment, NHDES bureaus and units proposed over 400 potential actions to increase the state's level of resilience and preparedness and nearly 200 recommendations that would reduce greenhouse gas emissions. In 2015, staff will focus on prioritizing those actions and developing a department-level climate action plan.

Point of Contact: Chris Skoglund, TSB

Areas of Progress

Overview

This 2014 review of NHDES's efforts to incorporate considerations of climate change into all programs and activities is organized into 10 overarching categories that were listed into the introduction. For each of those categories, the actions are attributed to either "Cross Bureau" or to the specific bureaus leading the effort. The lists under each category also contain a mix of activities that target reductions in GHG emissions and activities that address the impacts of climate change. In all cases, a point of contact has been listed to enable follow-up for additional information concerning each item.

Education & Assistance

- ***Cross-Bureau***

- ***Asset Management*** – Staff from the Drinking Water & Groundwater Bureau (DWGB) and the Waste Water Engineering Bureau (WWEB) conducted an all-day asset management workshop for 60 attendees. While not directly linked to climate change, asset management programs provide operators better understanding of their asset's full costs, which includes energy costs. Replacing inefficient equipment with more efficient equipment can lead to reduced greenhouse gas emissions. Inventory and maintenance record keeping done as part of asset management can help operators see the connection between the extreme and unparalleled weather patterns currently being experienced, such as repeated flooding events, and the impacts on existing equipment. This information can be used to improve the replacement or modification of at-risk equipment and thereby make the facility more resilient to climate change impacts. **NEW IN 2014**

Point of Contact: Luis Adorno, DWGB, and Sharon Rivard, WWEB

- ***Climate Outreach & Education*** – NHDES staff continued to provide support for education and outreach by drafting articles for NHDES publications, providing dozens of presentations to internal and external audiences concerning the causes and impacts of climate change, and curating dozens of slides for use by NHDES staff and partners.

ONGOING

Point of Contact: Sherry Godlewski, PEHB; Sharon Rivard, WWEB; Bethann McCarthy, DWGB; and Chris Skoglund, TSB.

- ***Environmental Newsletter*** – Throughout 2014, NHDES utilized the Environmental News² publication to promote new programs and resources and provide information related to topics such as clean energy resources, extreme weather, and stormwater mitigation. The articles were developed by individual programs and bureaus as well as for the Commissioner's monthly column. **ONGOING**

Point of Contact: Jim Martin, PIP

² NHDES Environmental News, <http://des.nh.gov/organization/commissioner/pip/newsletters/en/index.htm>.

- Webpage Collaboration³ – In 2014, the DWGB and WWEB began to coordinate the development of asset management and resilience webpages to reduce the duplication and use limited planning time and resources more efficiently. **NEW IN 2014**

Point of Contact: Luis Adorno, DWGB; Bethann McCarthy, DWGB; Sharon Rivard, WWEB and Brandon Kernen, DWGB

- ***Air Resources Technical Services Bureau***

- Granite State Future - Climate & Energy TASC⁴ - Staff from the Air Resources Division led and participated in the Climate & Energy Technical Advisory Steering Committee (TASC) of the Granite State Future project, a 3-year (2012-2014) community-based program, coordinated among New Hampshire's nine regional planning commissions, to plan for the future of the state's communities and regions. The Climate & Energy TASC, whose members included regional planning commission staff, state staff and academic experts, served as a resource for information related to energy efficiency and conservation, renewable energy, and preparation for a changing climate. **COMPLETED**

Point of Contact: Chris Skoglund, TSB

- Green Your Fleet Event⁵ – The Granite State Clean Cities Coalition hosted its third Green Your Fleet workshop for fleet managers, businesses and the public in June 2014. The all-day event, held at the Lakes Region Community College campus, included a variety of tracks and sessions focused on alternative-fuel and advanced-technology vehicles, as well as an array of electric and hybrid-electric vehicles and large trucks and buses that run on electricity, propane and natural gas. **ONGOING**

Point of Contact: Dolores Rebolledo, TSB - MSS

- Transportation and Climate Change Webpage⁶ – The Mobile Sources Section (MSS) of the TSB developed a webpage that makes the connection between transportation, global warming and climate change and identifies the strategies to reduce greenhouse gas emissions from a variety of activities. **NEW IN 2014**

Point of Contact: Dolores Rebolledo, MSS

- ***Commissioners Office***

- Presentations – Speeches, talks and PowerPoint presentations were given on the topic of climate change throughout 2014, thereby increasing awareness and dialogue within and among state agencies. **ONGOING**

1. Annual State Energy Conference – May 2014

³ Climate Resilience for Drinking Water & Wastewater Webpage, <http://des.nh.gov/organization/divisions/water/dwgb/climate-resilience.htm> and Asset Management for Drinking Water and Wastewater Webpage, <http://des.nh.gov/organization/divisions/water/dwgb/asset-management/index.htm>.

⁴ Granite State Future webpage, <http://www.granitestatefuture.org/>

⁵ Green Your Fleet Event press release, <http://des.nh.gov/media/pr/2014/20140508-green-your-feet.htm>

⁶ Transportation and Climate Change Webpage, <http://des.nh.gov/organization/divisions/air/tsb/tps/msp/trans-and-climate-change.htm>.

2. Advisory Council on Emergency Preparedness and Security (invited by Commissioner Barthelmes) – May 2014
3. Department of Safety Senior Leadership Team (invited by Commissioner Barthelmes) – July 2014

Point of Contact: Tom Burack, NHDES Commissioner

- ***Drinking Water & Groundwater Bureau***

- *Presentations* – Conducted outreach on climate impacts and adaptation strategies at the American Water Works Annual Conference and Expo and at the NH Water Works Association annual expo. **NEW IN 2014**
- *Newsletters* - Issued a series of articles on climate change impacts and strategies in three DWGB newsletters. **NEW IN 2014**
 - *Climate Readiness: Weathering the Storms* (Fall 2014)⁷
 - *Climate Change Presents Water Quality Challenges* (Summer 2014)⁸
 - *Drinking Water Program Aims to Help Systems Deal with Climate Change*⁹
- *Staff Development* - Attended several energy efficiency trainings and webinars. **NEW IN 2014**

Point of Contact: Bethann McCarthy, DWGB

- ***New Hampshire Geological Survey***

- *Flume “Road Show”* – The New Hampshire Geological Survey (NHGS) is home to the state-owned river modeling flume, which shows how rivers work, and how actions undertaken on a river, such as undersized culverts, can impact river processes. Demonstrations are primarily tailored to community officials. **ONGOING**

Point of Contact: Jeremy Nicoletti, NHGS

- *Technical Assistance* - NHGS is the home unit for leadership of the New Hampshire Silver Jackets team (Pre- and Post-Incident River Response Team), which brings together multiple state and federal agencies to provide assistance relative to assessing and addressing flood hazard risks pre- and post-event to avoid damage during events and to assist with the recovery phase while also mitigating against future damage. This includes: pre- and post-flood event site visits and reports to communities, outreach relative to the value of flood insurance; and flood mitigation, which includes culvert maintenance and upgrades. **ONGOING**

Point of Contact: Shane Csiki, NHGS

⁷ *Climate Readiness: Weathering the Storms* (Fall 2014),

<http://des.nh.gov/organization/commissioner/pip/newsletters/dwgb/documents/2014-fall-supply-lines.pdf>.

⁸ *Climate Change Presents Water Quality Challenges* (Summer 2014),

<http://des.nh.gov/organization/commissioner/pip/newsletters/dwgb/documents/2014-summer.pdf>.

⁹ *Drinking Water Program Aims to Help Systems Deal with Climate Change*,

<http://des.nh.gov/organization/commissioner/pip/newsletters/dwgb/documents/2014-spring-supply-lines.pdf>.

- ***Planning, Prevention & Assistance Unit***

- *Energy Efficiency Assistance* - The New Hampshire Pollution Prevention Program (NHPPP) in the Planning, Prevention & Assistance (PPA) Unit incorporates the promotion of energy efficiency in all of its projects. NHPPP is partially funded through EPA grants to work with businesses and organizations (including state agencies) throughout the state to implement energy efficiency measures, water conservation and waste reduction strategies. The efforts of NHPPP contribute to EPA's 2014 goal to reduce greenhouse gas emissions by 7 million metric tons of carbon dioxide-equivalents¹⁰ (CO₂e) by 2018 through pollution prevention. **ONGOING**

Point of Contact: Melissa Zych, PPA

- ***Wastewater Engineering Bureau***

- *Presentations 2014* – Conducted presentations at the Granite State Rural Water Association (GSRWA) Annual Conference and at New England Water Environment Association (NEWEA) Asset Management Workshop promoting asset management and energy efficiency and funding opportunities for WWTFs. **NEW IN 2014**
- *Regional Leadership & Engagement* - Involvement with New England Interstate Water Pollution Control Commission Climate Change Workgroup and with a TR-16 update to address resiliency in WWTFs. Involvement with EPA-organized multi-state energy workgroup for wastewater. Member of the NEWEA Energy Committee. **NEW IN 2014**
- *Staff Development* – WWEB staff attendance at several energy and resiliency workshops. **NEW IN 2014**
- *Technical Assistance* – Jointly with EPA, WWEB has been providing one-on-one technical assistance relative to energy efficiency opportunities at WWTFs around New Hampshire. **NEW IN 2014**

Point of Contact: Sharon Rivard, WWEB

- ***Watershed Management Bureau – Coastal Program***

- *Coastal Hazards and Adaptation Webpage*¹¹ – The Watershed Management Bureau's (WMB) Coastal Program's (CP) web page provides decision makers with access to information concerning the risks associated with sea-level rise, storm surge and coastal flooding and provides resources to assist in planning and preparation. **ONGOING**
- *Coastal Viewer* – The Coastal Program began work on the Coastal Viewer, an online mapping tool that brings coastal resources spatial data, hazards-related spatial data, and other spatial data sets within New Hampshire's 42 coastal watershed communities together in one place. Users can: search for available data sets; display the data sets in multiple ways; and create, print, and share customized maps. Overall, the goals of the Coastal Viewer are to: serve as a one-stop shop for all coastal resources and hazards-related spatial data in New Hampshire's coastal watershed; improve access to new and existing spatial data sets; and provide information about coastal resources, hazards, and

¹⁰ Carbon dioxide equivalent is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP.

¹¹ Coastal Hazards and Adaptation Webpage, <http://des.nh.gov/organization/divisions/water/wmb/coastal/hazards-adaptation.htm>

opportunities to reduce risk from these hazards and increase coastal resiliency. **NEW IN 2014**

- *The Hard and Soft of Shoreline Management Conference*¹² – The Coastal Program co-sponsored the event, which was organized and hosted by the Coastal Adaptation Workgroup (CAW) and held in Portsmouth in December. The focus of the conference was on approaches to coastal shoreline management when considering climate change and the resultant sea level rise and marsh migration. Additional information about CAW's work is included under the Adaption Groups and Initiatives Section of this report. **NEW IN 2014**

Point of Contact: Kirsten Howard, CP

Funding

• *Cross-Bureau*

- *Utility Energy Program Coordination* - Initiated discussions with Eversource and other electric utilities relative to maximizing funding available for energy efficiency projects at WWTFs and public water systems (PWSs). Working on developing a partnership with the electric utilities. Coordinated with TSB, the lead on energy programs for the agency. **NEW IN 2014**

Point of Contact: Becky Ohler, TSB; Sharon Rivard, WWEB; and Brandon Kernen, DWGB.

- *Wetlands Plan Funding* – The Wetlands Bureau is working with the Coastal Program to include elements of its program plan in a National Oceanic and Atmospheric Administration (NOAA) grant. **NEW IN 2014**

Point of Contact: Mary Ann Tilton, WB; and Kirsten Howard, CP

• *Wastewater Engineering Bureau*

- *Clean Water State Revolving Fund (CWSRF) Changes* - Developed principal forgiveness programs for energy audits and asset management programs through the CWSRF¹³ loan program. **NEW IN 2014**

Point of Contact: Sharon Rivard, WWEB

• *Watershed Management Bureau – Coastal Program*

- *Coastal Resilience Grants* - The Coastal Program has developed contracts for the following climate proposals. Project work will be completed by the end of June 2016. **NEW IN 2014**

1. Newmarket-Moonlight Brook: Climate modeling and green infrastructure recommendations.
2. UNH Sea Grant: Dune Restoration at Hampton Beach State Park, Hampton Saltmarsh Wildlife Management Area.

¹² The Hard and Soft of Shoreline Management Conference (2014), <http://xml2.des.state.nh.us/blogs/watershed/?p=2601>

¹³ Clean Water State Revolving Fund, <http://des.nh.gov/organization/divisions/water/wweb/grants.htm#cwsrf>.

3. The Nature Conservancy: Tidal culvert assessment protocol development and design and permitting with a consideration of sea level rise for the Bay Road crossing of Lubberland Creek in Newmarket. The Town of Newmarket is a partner.
 4. USGS: State-wide modeling of hydrologic response to climate impacts.
- Point of Contact: Kirsten Howard, CP

- **Wetlands Bureau**

- Updates to the Aquatic Resource Mitigation (ARM) Fund¹⁴ – The ARM Fund program coordinates funding through a Site Selection Committee that consists of state and non-governmental organizations. In 2014, the Committee revised the 2015 application materials to encourage climate change considerations to be incorporated in the selection of habitats for conservation and restoration projects. The specific scoring criteria in the administrative rules are proposed for revision to incorporate stream-related projects that are focused on ranking deficient crossings based on their geomorphologic compatibility and aquatic organism passage scores. The program has conducted several sessions to educate municipalities on ways to use ARM Funds for the most critical stream improvement locations as a means of becoming more resilient to the effects of climate change. **NEW IN 2014**

Point of Contact: Lori Sommer, WB

Monitoring

- **Air Resources Technical Services Bureau**

- Greenhouse Gas Emissions Inventory - NHDES first developed and published a GHG emissions inventory in October 1997. The inventory established methodologies for tracking greenhouse gas emissions and a baseline from which projections have been estimated for use in policymaking. The inventory was redone in 2007 to support the development of the NH Climate Action Plan and has been conducted annually since that time. The information obtained from the inventory has been used to track the state's progress toward achieving the state's GHG emission reduction goals as well as the goals established under the NEG-ECP 2001 Climate Action Plan. **ONGOING**

Point of Contact: Chris Skoglund, TSB

Operations

- **Cross-Bureau**

- Instream Flow Maintenance – The Dam Bureau (DB) and Watershed Management Bureau coordinate on releases from lakes to streams to augment flow volume during droughts. They are evaluating the impact of releases of warm lake water on cooler streams, which are mostly fed by groundwater, and are measuring water temperatures of the water being released. **ONGOING**

Point of Contact: Dan Mattaini, DB

¹⁴ Wetland Mitigation Program, <http://des.nh.gov/organization/divisions/water/wetlands/wmp/>.

- ***Air Resources Technical Services Bureau***

- *Air Monitoring Station Operations* – Staff with the Air Monitoring Section (AMS) have partnered with the Appalachian Mountain Club to operate the air monitoring station at Camp Dodge in Green’s Grant New Hampshire. As this facility is located in northern New Hampshire, this partnership saves significant travel resources (e.g., fuel, vehicle wear & tear) as well as staff time. These savings translate directly into lower GHG emissions associated with fuel combustion and longer vehicle life. **ONGOING**

Point of Contact: Jim Poisson, AMS

- ***Dam Bureau***

- *Snowpack Monitoring* – As less snow is expected in winter due to a warmer climate, the Dam Bureau factors snowpack levels into their water management decisions. They hold bi-weekly calls with the National Weather Service on snowpack and runoff, along with forecasted precipitation (including seasonal model output discussions). **ONGOING**
- *Lake Level Management* – In order to determine where to set lake levels, the Dam Bureau uses its data regarding historical water levels and flow releases, and uses statistical analyses along with real-time basin wide models of inflow (using real-time rainfall and calculated soil moisture conditions in multiple soil horizons) to come up with daily release rates for all of New Hampshire’s big lakes. **ONGOING**

Point of Contact: Dan Mattaini, DB

Planning

- ***Cross-Bureau***

- *Stream Passage Improvement Program* – The NHGS and the Wetlands Bureau are working with NHDOT, the Fish & Game Department and the regional planning commissions to conduct consistent geomorphic condition assessments that include geomorphic compatibility and aquatic package assessments in order to identify the most vulnerable stream crossings and prioritize them for replacement in preparation for larger storms, and to improve aquatic organism passage. **NEW IN 2014**

Points of Contact: Shane Csiki, NHGS, and Lori Sommer, WB

- ***Air Resources Technical Services Bureau***

- *NHDES Annual Agency Energy Conservation Plan* – A NHDES plan that was developed to comply with the state requirement¹⁵ that all agencies develop an annual energy conservation plan and submit to the state energy manager by the fall of each year. The plan describes NHDES’s progress toward achieving the State’s 2025 goal of reducing fossil-fuel energy-use intensity (kBTU/sq ft) by 25 percent over FY2005 levels. The plan also lists the specific energy efficiency, energy conservation and renewable energy projects that NHDES has undertaken during the past fiscal year, and proposes a series of energy projects to take in the future. NHDES has consistently been well below its FY05

¹⁵ Senate Bill 73 (2010 Session). An Act requiring the state government to reduce energy use per square foot in state buildings, to develop an energy conservation plan, and to make an annual report on the state’s energy consumption.
<http://www.gencourt.state.nh.us/legislation/2010/SB0073.html>.

fossil-fuel energy-use intensity, with new energy projects occurring each fiscal year.
ONGOING

Point of Contact: Chris Skoglund, TSB

- ***Commissioners Office***

- *NHDES Climate Message* – Issued an internal NHDES Climate Message that notes that climate change is real, serious, and primarily caused by human actions, that NH residents are already experiencing its effects as our environment changes and that NHDES is taking steps to reduce the causes and prepare for the impacts. **NEW IN 2014**

Point of Contact: Tom Burack, NHDES Commissioner

- ***Drinking Water & Groundwater Bureau***

- *Preliminary Vulnerability Screening* – Completed preliminary screenings of vulnerability to flooding and riverbank erosion for community water systems based on available in-house data and system survey results. **NEW IN 2014**
- *Public Water System Vulnerability Assessment* – Collaborated with U.S. EPA and Granite State Rural Water Association on an assessment of Hinsdale’s public water system’s vulnerability to flooding. **NEW IN 2014**
- *Climate Change Resilience Plan*¹⁶ – The DWGB finalized and published a Climate Resilience Plan (WD-14-02), concluding work that began under an ARRA grant in 2013. The DWGB developed this plan to guide the bureau’s activities to help community water systems (CWSs) become more resilient to the impacts associated with climate change. **NEW IN 2014**

Point of Contact: Bethann McCarthy, DWGB

- ***New Hampshire Geological Survey***

- *Flood and Geologic Hazards Program*¹⁷ – As New Hampshire has endured multiple flood events in recent years that have washed out culverts, undermined bridges and roads, and washed away streambanks, the NHGS has focused its scientific and mapping expertise to address some of the hazards associated with flood events and the potential for significant erosion and catastrophic bank failures. Site visit assessments allow for the determination of the vulnerability of particular locations to future river responses to high flows that could lead to streambank failures and the subsequent potential for property and infrastructure damage. Bridge and culverts are being assessed statewide and towns and regional planning commissions can use this information as a guide to prioritize those crossings most in need of retrofitting or replacement. **ONGOING**

Point of Contact: Shane Csiki, NHGS

¹⁶ DWGB (2014). *Climate Change Resilience Plan*, <http://des.nh.gov/organization/divisions/water/dwgb/documents/wd-14-02.pdf>

¹⁷ NHGS (2013). *Fluvial Erosion Hazards and River Geomorphic Assessment Program* - <http://des.nh.gov/organization/commissioner/pip/factsheets/geo/documents/geo-10.pdf>.

- **Watershed Management Bureau**

- New Hampshire Nonpoint Source Management Program Plan¹⁸ – Incorporation of climate change considerations into a non-regulatory road map. Includes the Soak up the Rain (SOAK) Great Bay Project, which is a stormwater outreach and assistance program designed to increase awareness of stormwater runoff, the problems it can cause, and the simple ways it can be better managed to reduce water pollution and adapt to our changing climate. **NEW IN 2014**

Point of Contact: Jillian McCarthy, WMB

- Section 309 Enhancement Grants Program Assessment and Strategy¹⁹ – Development of draft program assessment that incorporates considerations of climate change into the review of problems and opportunities with respect to programs within each of the nine enhancement areas and assesses the effectiveness of existing management efforts to address identified problems. **NEW IN 2014**

Point of Contact: Kirsten Howard, CP

- **Wetlands Bureau**

- Program Plan – Updating the Wetlands program plan as part of an EPA grant to incorporate considerations of climate change. **NEW IN 2014**
- Wetland Buffer Guidance Research – Partially completed a literature review on buffers to develop guidance for wetland review for the New Hampshire Association of Natural Resource Scientists (NHANRS) Wetland Buffer Scientific Workgroup.²⁰ Due to the importance that wetlands have in terms of moderating the effects of runoff and drought, they are expected to be an increasingly important ecosystem resource going forward. **ONGOING**

Point of Contact: Mary Ann Tilton and Collis Adams, WB

Projects

- **Air Resources Technical Services Bureau**

- Air Monitoring Station Upgrades – Staff have developed two air-monitoring “super stations” that reduce fossil-fuel consumption through a combination of energy efficiency and renewable energy. Both stations maximize insulation, LED lighting, and Energy-Star rated HVAC equipment. One of the stations is equipped with solar panels, and plans for another array began in 2014. These stations also serve to educate the public on energy efficiency and renewable energy. **ONGOING**

Point of Contact: Jim Poisson, AMS

¹⁸ NHDES (2014). *New Hampshire Nonpoint Source Management Program Plan*, <http://des.nh.gov/organization/divisions/water/wmb/was/documents/full.pdf>

¹⁹ NHDES (2015). Section 309 Enhancement Grants Program Assessment and Strategy (February 2015 - DRAFT), <http://des.nh.gov/organization/divisions/water/wmb/coastal/documents/309strategydraft-2015.pdf>

²⁰ New Hampshire Association of Natural Resource Scientists (NHANRS) Wetland Buffer Scientific Workgroup, <http://nhanrs.org/nhanrs-wetland-buffer-scientific-workgroup/>.

- ***Winnepesaukee River Basin Program***

- *Ultraviolet (UV) Disinfection/Plant Water Project* –Project under construction at the Winnepesaukee River Basin Program (WRBP) Franklin wastewater treatment facility includes a new building that exceeds the current building energy efficiency code by at least 20 percent by incorporating efficient lighting, HVAC, and building shell components into the final design. Process equipment was selected to reduce energy consumption. **NEW IN 2014**

Point of Contact: Sharon McMillin, WRBP

Research

- ***Atmospheric Science & Analysis Program***

- *Adjusted Meteorological Forecast* – The ARD Atmospheric Science & Analysis Program (ASAP) Program staff held discussions with research members of the Air Quality Applied Science Team (AQAST)²¹ on how to develop models that provide an adjusted meteorological forecast for photochemical models that account for increasing temperatures. They have an agreement to begin a research project and seek funding. **NEW IN 2014**

Point of Contact: Jeff Underhill, PhD, ASAP

Rules & Regulations

- ***Air Resources Technical Services Bureau***

- *Strengthened Carbon Pollution Reduction Program*²² - The Regional Greenhouse Gas Initiative (RGGI) is the first market-based regulatory program in the United States to reduce GHG emissions from the electric sector. In 2013, the New Hampshire legislature approved House Bill 306²³, which adopted the RGGI's updated Model Rule, lowering the 2013 emissions cap by approximately 45% to 91 million tons of CO₂ annually from 165 million tons. This new cap went into effect in 2014 and declines annually at the rate of 2.5% from 2015 through 2020 to reach a 14% reduction below the 2014 cap from 91 million tons to 78 million tons. **NEW IN 2014**

Point of Contact: Joe Fontaine, TSB

- ***Alternation of Terrain Bureau***

- *Alteration of Terrain Permit Application Update* – The Alternation of Terrain (AoT) Bureau updated the AoT permit application²⁴ to require applicants to use updated rainfall data from the Northeast Regional Climate Center²⁵ for the region in the drainage analysis

²¹ AQAST is a NASA Applied Sciences Team of atmospheric scientists working in partnership with US air quality managers to exploit the power of Earth Science tools to address air quality issues - <http://acmg.seas.harvard.edu/aqast/index.html>.

²² Press release: RGGI States Make Major Cuts to Greenhouse Gas Emissions from Power Plants, January 23, 2014, http://www.rggi.org/docs/PressReleases/PR011314_AuctionNotice23.pdf.

²³ House Bill 306 (2013). An act relative to New Hampshire's regional greenhouse gas initiative. <http://www.gencourt.state.nh.us/legislation/2013/HB0306.html>.

²⁴ AoT (2013). Alteration of Terrain Permit Application, <http://des.nh.gov/organization/divisions/water/aot/documents/aot-application.pdf>.

²⁵ Northeast Regional Climate Center, <http://www.nrcc.cornell.edu/>.

to determine necessary steps to mitigate changes resulting from development.²⁶

ONGOING

Point of Contact: Ridge Mauck, AoT Bureau

- ***Drinking Water and Groundwater Bureau***

- *Design Review Regulations* – Drafted regulations, *Env-Dw 405*²⁷, for public water system designs to increase resilience, such as increasing freeboard above flood levels for certain structures. Final rules to be adopted in the future. **NEW IN 2014**
- *Flood Mapping* - Initiated the use of flood studies and mapping by USGS and other federal agencies, to evaluate flood inundation areas and flood levels. USGS analysis and mapping were used in conjunction with FEMA Flood Insurance Study mapping to assess the potential for flooding of public water system structures and recommend flood elevations for design purposes. **NEW IN 2014**

Point of Contact: Bethann McCarthy, DWGB

- ***Permitting and Environmental Health Bureau***

- *Coordinated Biofuels and Biomass Policy* – The Permitting and Environmental Health Bureau (PEHB) and other ARD staff evaluated stack testing data to support exempting combustion of specific biofuels and biomass from having to demonstrate compliance with Air Toxic standards found in *Env-A 1400*²⁸, thereby reducing barriers to use of these renewable fuels. **ONGOING**

Point of Contact: Pat North, PEHB

- ***Solid Waste Management Bureau***

- *Precipitation and Landfill Design Standards* – The Solid Waste Management Bureau (SWMB) updated *Env-Sw 805.10*, the Landfill Capping System Design Standards²⁹, to include geonet drainage material in the landfill capping in order to handle more intense rainfall events. The same rules require that capping systems shall be designed to properly manage stormwater resulting from a 25-year/24-hour storm event. The SWMB requires storm events to be calculated using the most updated rainfall data approved by the AoT Bureau, which is currently the Northeast Regional Climate Center data. **NEW IN 2014**
- *Financial Assurance* – The SWMB began planning to integrate considerations of climate change into its financial assurance program in 2014, with plans for a stakeholder meeting about requiring financial assurance funds for potential corrective action at landfills in the

²⁶ An explanation of this change was described in the article, “Updated Rainfall Data Incorporated into NHDES’s Programs” in the NHDES September-October Environmental News,

<http://des.nh.gov/organization/commissioner/pip/newsletters/en/documents/2014-sep-oct.pdf>.

²⁷ DWGB (2014 Drafted), *Design Standards for Small Community Water Systems*, <http://des.nh.gov/organization/commissioner/legal/rules/documents/env-dw405.pdf>.

²⁸ ARD (2012), *Regulated Air Toxic Pollutants*, <http://des.nh.gov/organization/commissioner/legal/rules/documents/env-a1400.pdf>.

²⁹ *Env-Sw 805.10, Landfill Capping System Design Standards*, <http://des.nh.gov/organization/commissioner/legal/rules/documents/env-sw800.pdf>.

future. Ultimately, the rules will be amended to include the requirement. This includes catastrophic events caused by the consequences of climate change. **NEW IN 2014**

Point of Contact: Paul Gildersleeve, SWMB

- ***Waste Management Division***

- *Management of Mildly Contaminated Soils* – Waste Management Division (WMD) staff in the Oil Remediation and Compliance Bureau, Hazardous Waste Remediation Bureau, and Solid Waste Management Bureau are evaluating regulatory barriers to low-energy options for management of mildly contaminated soils, rather than requiring thermal treatment or landfill disposal. **NEW IN 2014**

Point of Contact: H. Keith DuBois, WMD

- ***Wastewater Engineering Bureau***

- *Sustainability and Energy in Standards* – Revised the *Env-Wq 700*³⁰ standards to incorporate sustainability throughout the standards, including energy efficiency and resiliency measures. **NEW IN 2014**

Point of Contact: Sharon Rivard, WWEB

Staffing

- ***Drinking Water and Groundwater Bureau***

- *Climate Workgroup* – The bureau has assembled a workgroup of bureau staff who have responsibilities for implementing specific action items recommended in their Climate Resilience Plan. **NEW IN 2014**

Point of Contact: Bethann McCarthy, DWGB

- ***Watershed Management Bureau – Coastal Program***

- *Coastal Resilience Position* – The Coastal Program upgraded and filled an existing position, specifically to support coastal resilience efforts. **NEW IN 2014**

Point of Contact: Kirsten Howard, CP

Structure

- ***Cross-Bureau***

- *Coordination of Effort* – Staff are brainstorming ideas for a Water Infrastructure Sustainability Bureau that would address climate change adaptation and mitigation issues for wastewater, drinking water and stormwater infrastructure. **NEW IN 2014**

Point of Contact: Sharon Rivard, WWEB

³⁰ WWEB (2014). *Standards for the Design & Construction for Sewerage and Waste Water Treatment Facilities*, http://www.gencourt.state.nh.us/rules/state_agencies/env-wq700.html.

- *CLEANR Team* – The NHDES Climate, Land-Use, Energy And Natural Resources (CLEANR) Team is an ad-hoc cross-media team that convened in 2010 to support the implementation of the land use and climate goals of the NHDES 2010-2015 Strategic Plan. The team has played an invaluable role in guiding the development of the Department Climate Initiative through a phased approach that built on the success of small pilots that helped to pave the way for many of the more extensive actions described above. In 2015, the team will provide a comprehensive, high-level review of all the climate actions proposed within the department to ensure that coordination is maximized and unintended consequences are avoided. **ONGOING**

Point of Contact: Chris Skoglund, TSB

Other State Agency Efforts

The following two sections describe initiatives and activities that are occurring external to NHDES. These efforts are led by our partner agencies and complement the work of NHDES staff. Very often NHDES staff work directly with these agencies to plan and implement these activities and, as such, NHDES staff points of contact have been listed along with the organizational contact.

State Agency Partnerships

- ***State Government Energy Committee***

Formed through Executive Order by Governor Lynch, the State Government Energy Committee (SGEC) is an interagency committee of state staff charged with reducing the State's fossil fuel consumption and energy costs through improved energy conservation and efficiency and expanded renewable energy development. The SGEC is chaired by NHDES Commissioner Burack and OEP Director Hatfield. **ONGOING**

NHDES Point of Contact: Becky Ohler, TSB

Individual State Agency Efforts

- ***Department of Administrative Services***

The Department of Administrative Services (DAS) oversees energy efficiency and renewable energy efforts in all of the state facilities, coordinating the development of the agency energy conservation plans and the state energy conservation plan. They also oversee energy-use data management by tracking energy consumption and cost for all state agencies, and analyze and report on the State's progress in achieving its goal of reducing fossil-fuel energy-use intensity by 25% by 2025 as laid out in Executive Order 2011-1³¹ and Senate Bill 73 (2010). **ONGOING**

Point of Contact: Karen Rantamaki, DAS

NHDES Contact: Chris Skoglund, TSB

- ***Office of Energy & Planning***

The NH Office of Energy & Planning (OEP) is collaborating on a variety of energy efficiency and renewable energy efforts, and is working with local communities and property owners to implement changes to the Federal Emergency Management Agency (FEMA) flood maps, and to educate the public about the associated risks and insurance implications. The OEP Energy Division³² is tasked with: promoting energy efficiency to reduce energy usage and costs; administering federally-funded fuel assistance and weatherization assistance programs; working to make state government buildings more efficient; exploring opportunities to expand the use of renewable, domestic energy resources such as biomass, wind and solar energy; and administering state and federal programs related to energy.

³¹ An Order for State Government to Continue to Lead-by-Example in Energy Efficiency, <http://sos.nh.gov/WorkArea/DownloadAsset.aspx?id=24566>.

³² NH OEP, Energy Division, <http://www.nh.gov/oep/energy/index.htm>.

The Floodplain Management Program³³ offers technical assistance to all stakeholders regarding floodplain management regulations, flood insurance, and floodplain mapping. OEP is also charged with assisting municipalities with planning issues, supporting implementation of state smart growth policies, and supporting land conservation, all valuable tools in minimizing the causes of climate change and providing protection from its impacts. **ONGOING**

Energy Contact: Rick Minard, OEP

Floodplain Management Program & Planning Contact: Jennifer Gilbert, OEP

NHDES *Energy* Contact: Becky Ohler, TSB

NHDES *Resilience* Contact: Sherry Godlewski, PEHB

- ***Department of Health and Human Services***

In 2013, the Division of Public Health Services (DPHS) in the NH Department of Health and Human Services (DHHS) received a Center for Disease Control and Prevention (CDC) grant to further prepare New Hampshire for the health impacts due to climate change³⁴. The grant is part of a CDC-funded national collaboration called the Climate Ready States and Cities Initiative (CRSCI)³⁵. The goal is to help local communities prepare for climate-related public health impacts such as pollen and asthma, extreme heat, or changing habitat and Lyme disease by assessing the connections between climate change and health impacts and helping public health networks develop plans to keep our citizens prepared and healthy. The DPHS is collaborating with the NHDES Coastal Program and the USGS to assess the impact of climate change on watersheds in the state, and estimate the state's changing vulnerability to flood or drought over the next century. **ONGOING**

Point of Contact: Matt Cahillane, DPHS

NHDES Contact: Steve Couture, CP, Sherry Godlewski, PEHB, and Chris Skoglund, TSB

- ***Division of Historical Resources***

The NH Division of Historical Resources (DHR) is offering a new grant program to repair historical properties that were damaged by Superstorm Sandy in October 2012. Grants will support projects that repair damage caused by the storm. Properties receiving funds must be listed on or eligible for listing on the National Register of Historic Places. Another important component of the disaster planning program will be the creation of a statewide online Geographic Information System of historical properties throughout the state. An important component of the program in the upcoming grant round will be a focus on pre-disaster planning for historic and cultural resources. DHR will be looking for proposals that increase community awareness of historic and cultural resources through initiatives that identify vulnerable historic properties and that develop strategies to protect a community's historic assets. **ONGOING**

Point of Contact: Amy Dixon, DHR

NHDES Contact: Sherry Godlewski, PEHB, and Chris Skoglund, TSB

³³ NH OEP, Floodplain Management Program, <http://www.nh.gov/oep/planning/programs/fmp/index.htm>.

³⁴ DHHS, Building Resilience Against Climate Effects in State Health Departments, <http://www.dhhs.nh.gov/dphs/documents/climatesummary.pdf>.

³⁵ CDC, Climate-Ready States & Cities Initiative, http://www.cdc.gov/climateandhealth/climate_ready.htm.

- ***Homeland Security and Emergency Management***

In order to protect critical infrastructure and strengthen the state's response to natural disasters, the NH Department of Safety's (DOS) Homeland Security and Emergency Management (HSEM) has undertaken a new hazard mitigation initiative funded by FEMA through the Regional Catastrophic Planning Grant. The initiative includes an inventory, in Phase one, of the locations that have had the most frequent and expensive problems from natural disasters. Phase two of the initiative is a partnership with the Governors' Institute on Community Design³⁶ to develop a statewide master plan that will help ensure that mitigation resources are used in the most effective and cost-efficient manner possible. **ONGOING**

Point of Contact: Leigh Cheney, HSEM

NHDES Point of Contact: Shane Csiki, NHGS

- ***Fish and Game Department***

The NH Fish and Game Department (F&G) is engaged in an update to its Wildlife Action Plan with assistance from other natural-resource-based organizations in New Hampshire. The update includes the impacts from climate change on ecosystems and various species that are more vulnerable. The update is based on the Commission's amendment to a 2006 Plan: the Ecosystems and Wildlife: Climate Change Adaptation Plan.³⁷ This amendment was created with input from 59 state and federal agencies, researchers, non-profits, consulting biologists and towns and addresses actions to assist wildlife and ecosystems in staying healthy in the face of climate change. **ONGOING**

Point of Contact: Emily Preston, F&G

NHDES Contact: Sherry Godlewski, PEHB, and Chris Skoglund, TSB

- ***Department of Transportation***

The NH Department of Transportation (NHDOT) has conducted an assessment of its assets, programs, policies, and activities to determine what is at risk due to changing climate stressors. The NHDOT issued a plan that identifies short-, mid-, and long-term steps to develop adaptive strategies to counter the effects. An internal climate change committee meets quarterly to discuss State and Federal activities dealing with resiliency and adaptation plans. **NEW IN 2014**

Point of Contact: Ann Scholz, NHDOT

NHDES Contact: Chris Skoglund, TSB

- ***Regional Planning Commissions (Quasi-Governmental)***

New Hampshire's nine regional planning commissions³⁸ (RPCs) are required by statute to prepare regional master plans, compile housing needs assessments, and review developments that may have a regional impact. The regional planning commissions implemented the Granite

³⁶The Governors' Institute on Community Design®, <http://www.govinstitute.org/>.

³⁷ F&G (2013), Ecosystems and Wildlife Climate Change Adaptation Plan, http://www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/climate.html.

³⁸ NH Association of regional Planning Commissions link to the nine planning commissions, <http://www.nharpc.org/about-us>.

State Future project³⁹, which was led by the Nashua Regional Planning Commission. Some RPC staff are also involved in land-use and hazard-mitigation planning and more recently have become involved in regional energy procurement and solar campaigns. **ONGOING**

NHDES *Energy* Contact: Chris Skoglund, TSB

NHDES *Resilience* Contact: Sherry Godlewski, PEHB

NHDES *Transportation* Contact: Becky Ohler, TSB

³⁹ Granite State Future webpage, <http://www.granitestatefuture.org/>

External Collaborations

The following section includes descriptions of collaborative initiatives and activities that address the causes and impacts of climate change. NHDES staff play significant roles in all of these efforts and lead several of them.

Adaptation Groups & Initiatives – New Hampshire

- ***Coastal Adaptation Workgroup*** - <http://nhcaw.org>

The NH Coastal Adaptation Workgroup (CAW) has been working in the coastal watershed since 2010 and includes representatives from the federal, state, regional, academic, municipal, business and non-profit sectors. The CAW has secured over \$2.75 million in grant funding, brought local data & research, planning tools and technical assistance to over 100 community members, hosted a number of public workshops and summits. **ONGOING**

CAW & NHDES Point of Contact: Sherry Godlewski, PEHB

- ***Coastal Risks and Hazards Commission*** - <http://nhcrhc.stormsmart.org/>

The NH Coastal Risks and Hazards Commission (CRHC) was established by legislation⁴⁰ to help coastal communities and the state prepare for projected sea level rise and other coastal and coastal watershed hazards. The commission is charged with “recommending legislation, rules, and other actions to prepare for projected sea level rise and other coastal and coastal watershed hazards such as storms, increased river flooding, and storm water runoff, and the risks such hazards pose to municipalities and state assets in New Hampshire.” **ONGOING**

Commission Clerk: Kirsten Howard, CP

NHDES Point of Contact: Sherry Godlewski, PEHB and Steve Couture, CP (serves as alternate)

- ***New Hampshire Silver Jackets*** - <http://www.nfrmp.us/state/index.cfm>

The New Hampshire Silver Jackets is a pre- and post-incident river response team that brings together 12 state and federal agencies to provide assistance relative to assessing and addressing flood hazard risks pre- and post-event to avoid damage during events and to assist with the recovery phase while also mitigating against future damage. This includes: pre- and post-flood event site visits and reports to communities, outreach relative to the value of flood insurance; and flood mitigation, which includes culvert maintenance and upgrades. **ONGOING**

Silver Jackets Lead & NHDES Contact: Shane Csiki, NHGS

- ***Upper Valley Adaptation Workgroup*** - <http://www.uvlsrc.org/resources/uvaw/>

The Upper Valley Adaptation Workgroup (UVAW) has worked with New Hampshire and Vermont representatives since 2011. Its membership includes representatives from the state, regional, academic, public health, municipal, business and non-profit sectors. It has focused its efforts on community engagement and business resiliency, and has hosted a number of public forums. **ONGOING**

UVAW & NHDES Point of Contact: Sherry Godlewski, PEHB

⁴⁰ Senate Bill 163 (2013). AN ACT establishing a commission to recommend legislation to prepare for projected sea level rise and other coastal and coastal watershed hazards. <http://www.gencourt.state.nh.us/legislation/2013/SB0163.html>.

Adaptation Groups & Initiatives – Regional

- *Gulf of Maine Council* - <http://www.gulfofmaine.org/>

The Gulf of Maine Council on the Marine Environment (GOMC), created in 1989 by the governments of Maine, Massachusetts, New Brunswick, New Hampshire and Nova Scotia, works to foster environmental health and community well-being throughout the Gulf watershed. To help communities take effective action in a world with more variable and extreme weather events, the Council's Climate Network⁴¹ serves as a regional clearinghouse for information on climate impacts and adaptation strategies. **ONGOING**

GOMC Point of Contact: Ellen Mecray, NOAA

NHDES Point of Contact: Kirsten Howard, CP

- *New England States Climate Resilience Collaborative*

The six New England states, working through the Council of New England Governors (CONEG) began to organize the New England States Climate Resilience Collaborative (NESCRRC) with the intention to: enable the states to share best practices for helping drive local resilience and address cross-boundary issues related to infrastructure resilience, ecological resilience and disaster preparedness; advocate with Federal Agencies to increase investment in the region and to implement specific recommendations; seek grant funding to help foster resilience in New England communities; and ensure that adaptation and resilience initiatives continue as administrations change over time. The focus of this effort will be to focus on the work that can only be accomplished collectively and does not duplicate work that is being successfully accomplished in other areas. **NEW IN 2014.**

NESCRRC & NHDES Point of Contact: Chris Skoglund, TSB

- *New England Interstate Water Pollution Control Commission* - <http://www.neiwpcc.org/>

The New England Interstate Water Pollution Control Commission (NEIWPCC) is a not-for-profit interstate agency that utilizes a variety of strategies to meet the water-related needs of its member states (CT, MA, ME, NH, NY, RI & VT). NEIWPCC serves and assists the states by coordinating activities and forums that encourage cooperation among the states, developing resources that foster progress on water and wastewater issues, representing the region in matters of federal policy, training environmental professionals, initiating and overseeing scientific research projects, educating the public, and providing overall leadership in water management and protection. **ONGOING**

Cited Projects⁴²:

1. NEIWPCC's focus on issues of importance in New Hampshire is also seen in its staff's participation in events such as the Coastal New Hampshire Climate Summit, held in April 2014 in Greenland.

⁴¹ GOMC, Climate Network, <http://www.gulfofmaine.org/2/climate-network-homepage/>

⁴² http://www.neiwpcc.org/neiwpcc_docs/2014statesummaries/NEIWPCC%202014%20Highlights%20-%20New%20Hampshire.pdf

2. NEIWPCC coordinates 23 workgroups, in areas ranging from climate change to wastewater certification, and New Hampshire members are key contributors.
3. Cyanobacteria: Blooms becoming more common. In 2014, NEIWPCC and EPA planned to convene a pre-conference workshop at the New Hampshire Water and Watershed Conference in March 2015.

- ***Northeast Waste Management Officials' Association*** - <http://www.newmoa.org/>

The Northeast Waste Management Officials' Association (NEWMOA) is a non-profit, non-partisan interstate association whose membership is composed of the state environmental agency directors of the hazardous waste, solid waste, waste site cleanup, emergency response, pollution prevention, and underground storage tank programs in the states of CT, MA, ME, NH, NJ, NY, RI and VT. NEWMOA's mission is to develop, lead, and sustain an effective partnership of states that helps achieve a clean, healthy, and sustainable environment by exploring, developing, promoting, and implementing environmentally sound solutions. **ONGOING**

Cited Projects⁴³:

1. NEWMOA regularly meets with NEIWPCC and NESCAUM to coordinate on cross-media topics, such as climate change, mercury, underground storage tanks, enforcement, pharmaceutical waste, and emergency response.
2. NEWMOA initiative on coordinating on disaster debris management, caused by extreme weather events. NEWMOA supports a Disaster Debris Networking Group that meets occasionally through conference calls to share information and lessons learned.
3. New Hampshire Waste Management Division representatives to NEWMOA are participating in the regional initiative to remove regulatory barriers and promote green or sustainable remediation practices as outlined in:
 - a. ASTM E2876-13 Standard Guide for Incorporating Sustainable Objectives Into Cleanup;
 - b. ASTM WK35161 - New Practice for Greener Site Assessment and Cleanup; and Interstate Technology & Regulatory Council (IRTC) Guidance;
 - c. GSR-1 Green and Sustainable Remediation: State of the Science and Practice;
 - d. GSR-2 Green and Sustainable Remediation: A Practical Framework

- ***Northeast Regional Ocean Council*** - <http://northeastoceancouncil.org/>

The Northeast Regional Ocean Council (NROC) is a state and federal partnership that facilitates the New England states, federal agencies, regional organizations, and other interested regional groups in addressing ocean and coastal issues that benefit from a regional response. It is NROC's mission to provide a voluntary forum for New England states and federal partners to coordinate and collaborate on regional approaches to support balanced uses and conservation of the Northeast region's ocean and coastal resources. The Coastal Hazards Resilience Committee⁴⁴ is one of three NROC Standing Committees. This committee was established to inform and recommend to the Council how best to approach regional issues and coordinate activities related to coastal hazards resilience and climate adaptation in New England. **ONGOING**

NROC Point of Contact: Dani Carter, NROC Coordinator

NHDES Point of Contact: Kirsten Howard, CP

⁴³ http://www.newmoa.org/about/Audit_for_the_NE_Committee_on_the_Environment.pdf

⁴⁴ NROC, Coastal Hazards Resilience Committee, <http://northeastoceancouncil.org/committees/coastal-hazards-resilience/>

Mitigation Groups & Initiatives – New Hampshire

- ***Building Code Review Board***

The State Building Code Review Board (BCRB)⁴⁵ is charged with reviewing and amending the New Hampshire building code, including the state energy code. The BCRB provides independent analysis and recommendations to the legislature on modifications of the state energy code as well as the building and fire codes to promote uniformity with all applicable laws, rules and regulations. The current energy code is the 2009 International Energy Conservation Code. In June 2014, the BCRB began to review of the 2015 International Codes, including the 2015 IECC, which requires 30 percent greater energy efficiency than the current state energy code. The Board is expected to make a recommendation regarding the adoption of the new IECC in 2015. **ONGOING**

BCRB Point of Contact: Shawn Bergeron, Sr., Board Chair, Bergeron Technical Services

NHDES Contact: Chris Skoglund, TSB

- ***Building Energy Code Collaborative***

The NH Building Energy Code Collaborative (BECC) was formed to implement the NH Building Energy Code Compliance Roadmap Report⁴⁶, which sets a goal to achieve 90% compliance with the 2009 International Energy Conservation Code (IECC) for new building construction by 2017. In addition, the Collaborative is looking to increase demand for more energy efficient homes, an effort that includes utilization of the energy rating space in the real estate listing for homes. **ONGOING**

BECC Point of Contact: Bruce Buttrick, Town of Bow Code Official, BECC Co-Chair

NHDES Point of Contact: Chris Skoglund, TSB

- ***Commute Smart/Commute Green NH*** - <http://www.commutegreennh.org/>

Commute Green NH (CGNH) is a partnership among the state's nine regional planning commissions and specific transit agencies, working in collaboration with other transit providers, state agencies, municipalities, businesses, and public health organizations. CGNH is dedicated to encouraging and assisting people to choose sustainable transportation options in place of driving single occupancy vehicles. CGNH and its partners are actively supporting the development and implementation of strategies and policies to reduce travel demand across the state through such measures as walking, bicycling, carpooling and using public transportation. In 2013 and 2014, CGNH started to undergo a complete reorganization, with the final organizational structure and funding expected in the future. The partnership will be rebranding itself as "Commute Smart." **ONGOING**

Commute Smart Point of Contact: Mike Iazard, Lakes Region Planning Commission

NHDES Point of Contact: Becky Ohler, TSB

⁴⁵ State Building Code Review Board, <https://www.nh.gov/safety/boardsandcommissions/bldgcode/>.

⁴⁶ The NH Building Energy Code Compliance Roadmap Report, <http://www.nhenergycode.com/live/index.php?go=roadmap>.

- ***Energy Efficiency Resource Standard***

In 2014, the Public Utilities Commission (PUC) began to explore the establishment of an Energy Efficiency Resource Standard (EERS), a policy to establish specific targets or goals for energy savings that utilities must meet in New Hampshire. This builds on prior work, conducted on behalf of the State by the EESE Board⁴⁷ and consultants⁴⁸, which describes the benefits an EERS could provide. An EERS would require electric and/or natural gas utilities to achieve, within short- and long-term time frames, energy-type-specific levels of customer energy savings (efficiency goals), based on sales volumes for a specific baseline year. During 2014, the PUC staff met with stakeholders to understand their perspectives regarding such a policy. That information is intended to be included in a straw proposal that will be shared in 2015. **NEW IN 2014**

PUC Point of Contact: Les Stachow, Assistant Director, Electric Division

NHDES Point of Contact: Becky Ohler, TSB

- ***Energy Efficiency & Sustainable Energy Board*** - <http://www.puc.state.nh.us/EESE.htm>.

The Energy Efficiency & Sustainable Energy (EESE) Board was created in 2008 to promote and coordinate programs related to energy efficiency, demand response, and sustainable energy in New Hampshire. The Board is administratively attached to the PUC, and logistical support is largely provided by Board members. Membership in the Board is broad, including representatives from state agencies, non-profit organizations and associations, legislators, businesses in the energy efficiency and sustainable energy sectors, as well as non-voting members from the electric and natural gas utilities. The Board largely serves as a means for stakeholders in the energy sector to develop and maintain relationships and discuss issues in an open and non-adjudicative setting. The Board members periodically convene working groups to investigate particularly issues on behalf of the larger body and has also, at times, submitted letters to the New Hampshire legislature. **ONGOING**

EESE Board Contact: Kate Peters, Eversource (Acting Chair)

NHDES Contact: Mike Fitzgerald, Assistant Director, ARD

- ***Local Energy Working Group*** - <http://www.nhenergy.org/>

The NH Local Energy Working Group (LEWG) was formed in the fall of 2007 to support the growing local energy committee movement that arose from a 2007 ballot initiative. The LEWG is focused on supporting the energy work of Local Energy Committees/Commissions, Municipalities and Schools through regular education and outreach, an annual conference and by building a strong network across the state. **ONGOING**

LEWG Point of Contact: Leigh Cameron, Northeast Grassroots Environment Fund

NHDES Contact: Chris Skoglund, TSB

⁴⁷ [Final Report On the New Hampshire Independent Energy Study, http://www.puc.state.nh.us/EESE%20Board/Annual%20Reports/VEIC%20-%20EESE%20Board%20Report%20-%20FINAL%20FULL%20113012.pdf](http://www.puc.state.nh.us/EESE%20Board/Annual%20Reports/VEIC%20-%20EESE%20Board%20Report%20-%20FINAL%20FULL%20113012.pdf).

⁴⁸ [Increasing Energy Efficiency in New Hampshire: Realizing Our Potential, http://www.nh.gov/oep/resource-library/energy/documents/nh_eers_study2013-11-13.pdf](http://www.nh.gov/oep/resource-library/energy/documents/nh_eers_study2013-11-13.pdf).

- ***NH CORE Utility Programs***

The electric utilities serving New Hampshire have established a set of energy efficiency programs, the CORE Energy Efficiency Programs⁴⁹ that assist residential, commercial and industrial customers at both new and existing homes and facilities. The CORE programs also provide low-income weatherization assistance. The programs are funded by a combination of sources and some, but not all, CORE efficiency programs are fuel neutral and serve to achieve building thermal energy improvements as well as electric efficiencies. **ONGOING**

NHDES Point of Contact: Becky Ohler, TSB

- ***NH Renewable Energy Standard (RPS) and Renewable Energy Fund (REF)***

The NH RPS⁵⁰ was enacted in 2007 and its administrative rules were adopted in 2008. The Standard requires that the state's electricity suppliers procure 24.8% of their energy from renewable sources by 2025. The RPS has been revised to include thermal renewable energy credits (RECs) to incent the development and installation of renewable thermal energy projects. The rules regarding the thermal RECs were finalized by the PUC in 2014. As part of the program, the PUC administers the Renewable Energy Fund (REF)^{51,52} to provide rebates for residential as well as commercial and industrial renewable energy projects, including biomass, wind and solar. As the price for the renewable systems has come down, the rebates have been lowered in order to make funding available to a greater number of projects.

NHDES Point of Contact: Becky Ohler, TSB, and Joe Fontaine, TSB

Mitigation Groups & Initiatives – Regional

- ***Coalition of New England Governors*** - <http://www.coneg.org/>

The Coalition of New England Governors (CONEG) is a non-partisan association of the seven governors of the Northeast states: Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island and Vermont. CONEG encourages intergovernmental cooperation on issues affecting the economic, social and environmental well-being of the Northeast, including climate change mitigation planning and coordination. The body serves as a forum for states to exchange information and undertake cooperative action and provides a regional voice to articulate their shared concerns, and an efficient means to monitor and understand evolving federal issues. CONEG has worked to promote the long-term economic well-being of the Northeast with a focus on policies and programs in surface and rail transportation, energy, and the environment. **ONGOING**

CONEG Contact: Sarah Rutter, CONEG

NHDES Contact: Mike Fitzgerald, Assistant Director, ARD

⁴⁹ NH PUC CORE Energy Efficiency webpage, <https://www.puc.nh.gov/Electric/coreenergyefficiencyprograms.htm>

⁵⁰ Renewable Portfolio Standard webpage, https://www.puc.nh.gov/Sustainable%20Energy/Renewable_Portfolio_Standard_Program.htm.

⁵¹ Renewable Energy Fund webpage, <https://www.puc.nh.gov/Sustainable%20Energy/RenewableEnergyFund.html>.

⁵² Renewable Energy Rebates webpage, <https://www.puc.nh.gov/Sustainable%20Energy/RenewableEnergyRebates.html>.

- *New England Governors-Eastern Canadian Premiers* - <http://www.coneg.org/negecp>

Since 1973, the New England Governors-Eastern Canadian Premiers (NEG-ECP), which includes the six New England states and the five Eastern Canadian provinces have worked cooperatively to address their shared interests across the international border. Through the annual conferences of governors and premiers and the discussions of staff level joint committees, NEG/ECP encourages cooperation on a number of issues and topics including: ensuring a clean, efficient and reliable energy future for the region; energy innovation for a competitive economy; changing global energy markets and the region's energy landscape; transportation and air quality; and climate change action plans and greenhouse gas emission reduction strategies.

ONGOING

CONEG Contact: Sarah Rutter, CONEG (provides the administrative support to the NE states)

NHDES Contact: Mike Fitzgerald, Assistant Director, ARD & Becky Ohler, TSB

- *Regional Greenhouse Gas Initiative* - <http://www.rggi.org/>

The Regional Greenhouse Gas Initiative (RGGI) is the first market-based regulatory program in the United States to reduce greenhouse gas emissions. RGGI is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce CO₂ emissions from the power sector. The RGGI CO₂ cap represents a regional budget for CO₂ emissions from the power sector. **ONGOING**

NHDES Contact: Joe Fontaine, TSB

- *Transportation Climate Initiative* - <http://www.georgetownclimate.org/state-action/transportation-and-climate-initiative>

The Transportation Climate Initiative (TCI) is a regional collaboration of 12 Northeast and Mid-Atlantic states that seeks to develop the clean energy economy and reduce greenhouse gas emissions in the transportation sector. The TCI engages the transportation, energy, and environment agency heads from each member state. The initiative is facilitated by the Georgetown Climate Center. **ONGOING**

NHDES Contact: Becky Ohler, TSB

List of Acronyms

AMS	Air Monitoring Section, in the Air Resources Division, NHDES
AoT	Alternation of Terrain, in the Water Division, NHDES
ARD	Air Resources Division, NHDES
ARM	Aquatic Resource Mitigation, a funding program of the Wetlands Bureau, NHDES
ASAP	Atmospheric Science & Analysis Program, in the Air Resources Division, NHDES
ASTM	American Society for Testing and Materials
BECC	NH Building Energy Code Collaborative
CAW	NH Coastal Adaptation Workgroup
CDC	US Center for Disease Control and Prevention
CLEANR Team	Climate, Land-Use, Energy And Natural Resources Team, an interdisciplinary team within NHDES
CO ₂ e	Carbon dioxide equivalent
CONEG	Council of New England Governors
CP	Coastal Program, in Watershed Management Bureau, NHDES
DAS	NH Department of Administrative Services
DCI	Department Climate Initiative, a strategic initiative of NHDES
DHHS	NH Department of Health and Human Services
DHR	NH Division of Historical Resources
DOS	NH Department of Safety
NHDOT	NH Department of Transportation
DPHS	NH Division of Public Health Services, DHHS
DWGB	Drinking Water & Groundwater Bureau, in the Water Division, NHDES
EPA	US Environmental Protection Agency
EESE Board	Energy Efficiency & Sustainable Energy Board
FEMA	Federal Emergency Management Agency
F&G	NH Fish and Game Department
GOMC	Gulf of Maine Council on the Marine Environment
GSRWA	Granite State Rural Water Association
GSR	Green and Sustainable Remediation
GWP	Global warming potential
HSEM	Homeland Security Emergency Management, DOS
IECC	International Energy Conservation Code
LEWG	Local Energy Working Group
MSS	Mobile Sources Section, in the Air Resources Division, NHDES
NEG-ECP	New England Governors-Eastern Canadian Premiers
NEIWPC	New England Interstate Water Pollution Control Commission
NEMOA	Northeast Waste Management Officials' Association
NESCAUM	Northeast States for Coordinated Air Use Management
NESCRC	New England States Climate Resilience Collaborative
NEWEA	New England Water Environment Association
NHDES	NH Department of Environmental Services
NHGS	New Hampshire Geological Survey, in the Commissioner's Office, NHDES
NOAA	National Oceanic and Atmospheric Administration
NROC	Northeast Regional Ocean Council
PEHB	Permitting and Environmental Health Bureau, in the Air Resources Division, NHDES

PIP	Public Information and Permitting Unit, in the Commissioner's Office, NHDES
PPA	Planning, Prevention & Assistance Unit, in the Commissioner's Office, NHDES
PUC	NH Public Utilities Commission
RECs	Renewable Energy Credits
REF	Renewable Energy Fund
RPC	Regional Planning Commission
RGGI	Regional Greenhouse Gas Initiative
SGEC	State Government Energy Committee
SOAK	Soak Up the Rain New Hampshire, a program of the Water Division, NHDES
SWMB	Solid Waste Management Bureau, in the Waste Management Division, NHDES
TCI	Transportation Climate Initiative
TSB	Technical Services Bureau, in the Air Resources Division, NHDES
UVAW	Upper Valley Adaptation Workgroup
WB	Wetlands Bureau, in the Water Division, NHDES
WD	Water Division, NHDES
WMB	Watershed Management Bureau, in the Water Division, NHDES
WMD	Waste Management Division, NHDES
WWEB	Wastewater Engineering Bureau, in the Water Division, NHDES
WRBP	Winnepesaukee River Basin Program, in the Water Division, NHDES
WWTF	Wastewater Treatment Facilities