Climate Action Planning for Lincoln

Subcommittee of the

Green Energy Committee

Fall 2021

“Code Red for Humanity”

(- UN Secretary General’s comment on latest IPCC Report)

Two flooded vehicles sat under the railroad bridge on Cambridge Street in Worcester. MATTHEW HEALEY FOR THE BOSTON GLOBE

Regulations/Laws Affecting Lincoln

2008

Town Facilities Energy Performance Standard-

Applies to all Town-owned facilities

2015

Citizen Petition to require Boards to consider impact of decisions on Climate Change

2021

Next Generation Climate Roadmap signed by MA State Legislature

2021

Citizen Petition to take action to adopt measures to reduce our carbon footprint

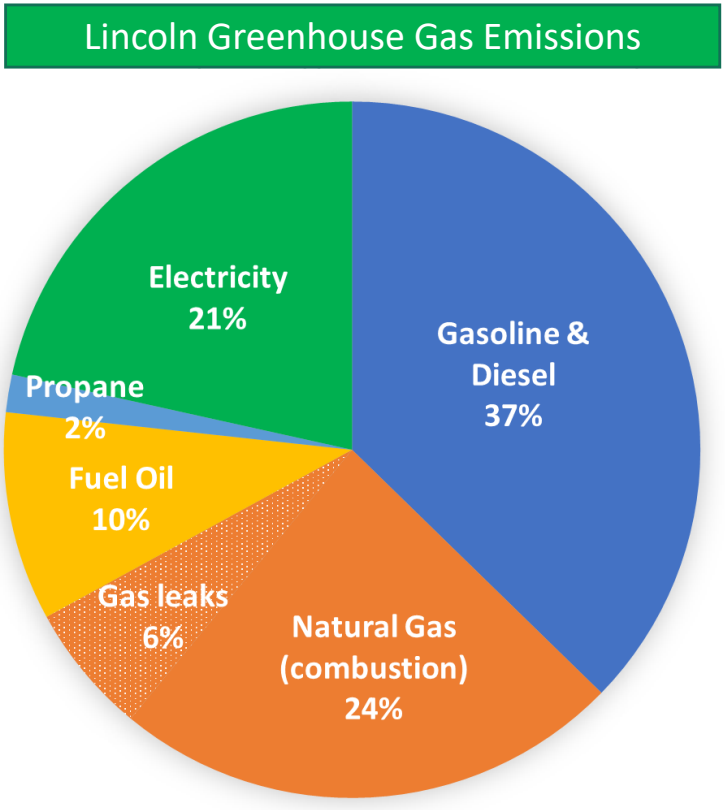
Since 2008, Lincoln Has Done a Lot....

- Facilities Energy Performance Standard, 2008
- Designated a “Green Community”, 2010
- Adopted Town solar bylaw, 2010
- Mass Save energy efficiency campaigns
- Mass Solarize programs, 2012 & 2017
- Mass Heat Smart program
- Approved ‘Net Zero’ School project, including solar PPA, 2018
- Hazard Mitigation Plan approved by FEMA, 2018
- Solar and EV campaigns
- Town completes Municipal Vulnerability Preparedness Report; designated an “MVP community”, 2019
- Town composting program
- Plastics and Polystyrene Reduction Bylaws
- Greenhouse Gas (GHG) Emissions Inventory
- Community choice green electricity program, 2021
- Adopted Stormwater Mitigation bylaws, 2021

What are Other Towns Doing?

In Acton, Arlington, Bedford, Belmont, Cambridge, Carlisle, Concord, Harvard, Lexington, Natick, Sherborn, Somerville, Sudbury, Wayland, Weston:

- Greenhouse Gas Emissions Report—most, *including Lincoln*
- Community Choice Electricity—most, *including Lincoln*
- Climate Plan—most, *NOT Lincoln*
- Climate Staff—many, *NOT Lincoln*



…We Need a Climate Action Plan!

- Town-wide vision
- Sustainability goals
- Measures to track progress
  - ✓Timeline
  - ✓Actionable steps
  - ✓Accountability
- Guide for Town operations, budget
- Information about regulations

What We're Working On

Build town-wide support for dealing with climate crisis

Identify what Lincoln will need

Plan for 2022 town vote to develop a CAP

Find funding in support of these actions

Why We're Here

- Early communication about this town goal. We want to hear what you think!
- Help us identify what Lincoln will need to develop a successful CAP.
- All prepare for multi-board input. You will hear from us again!

Thank you!

Possible Climate Actions

- Make deep energy efficiency retrofits in existing buildings: insulation, air sealing, windows and doors, heat pump space heating, etc.
- Adopt new state stretch net zero energy building code (when available); apply code to new construction and renovations
- Use 100% green electricity via CCA , PPA, or other approach
- Install Electric Vehicle charging equipment (“EVSE”)
- Electrify vehicle fleet, if applicable
- Use Social Cost of GHG when considering buying large energy-consuming equipment

Heating and Cooling

Buildings estimated to account for 42% of Lincoln's total GHG emissions

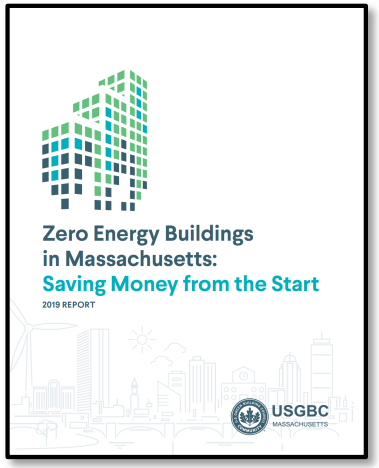
- Includes residential, commercial, and municipal

Energy efficiency design beyond existing stretch code is shown to be cost-effective with short payback time (e.g., see USGBC report)

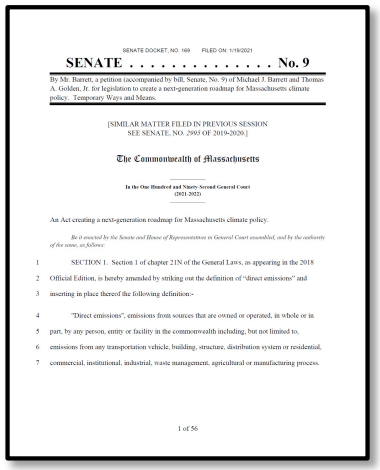
- Measures include insulation, air sealing, windows and doors, heat pump space heating and heat pump water heating

MA Next-Gen Climate law requires DOER to develop a net zero emissions building code that municipalities may adopt

- Code will likely cover above items plus renewable energy generation or procurement
- Due 9/2022; towns may choose to adopt thereafter



USGBC cost report


SENATE DOCKET, NO. 169 FILED ON: 1/19/2021

SENATE . . . . . No. 9

By Mr. Barrett, a petition (accompanied by bill, Senate, No. 9) of Michael J. Barrett and Thomas A. Golden, Jr. for legislation to create a next-generation roadmap for Massachusetts climate policy. Temporary Ways and Means.

[SIMILAR MATTER FILED IN PREVIOUS SESSION
SEE SENATE, NO. 2903 OF 2019-2020.]

The Commonwealth of Massachusetts

In the One Hundred and Ninety-Second General Court
(2021-2022)

An Act creating a next-generation roadmap for Massachusetts climate policy.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Section 1 of chapter 21N of the General Laws, as appearing in the 2018 Official Edition, is hereby amended by striking out the definition of "direct emissions" and inserting in place thereof the following definition:-

"Direct emissions", emissions from sources that are owned or operated, in whole or in part, by any person, entity or facility in the commonwealth including, but not limited to, emissions from any transportation vehicle, building, structure, distribution system or residential, commercial, institutional, industrial, waste management, agricultural or manufacturing process.

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Next-generation climate law

Electric Vehicles & Charging Equipment

- On-road vehicles estimated to be 37% of Lincoln's total GHG emissions
- MAPC helps towns use state purchasing contract for EVs and EV supply equipment (EVSE)*
- State EV Incentive Program (Mass EVIP) offers rebates on EVSE**
- Eversource "MakeReady" program brings electric line to your EVSE location at no cost***

**MAPC info: www.mapc.org/wp-content/uploads/2018/01/MAPC-GMGP-Program-One-Pager_2018-Redesign.pdf*

***MA EVIP info: www.mass.gov/doc/matrix-of-massevip-grant-programs/download*

****Eversource program info: https://www.eversource.com/content/ema-c/residential/save-money-energy/explore-alternatives/electric-vehicles/charging-stations/frequently-asked-questions*

Social Costs of GHG Emissions

- GHGs cause external costs (environmental, agricultural productivity, health, flood, etc. damage) not captured by traditional accounting
- To estimate these external costs, a federal Interagency Working Group developed the Social Cost of Greenhouse Gases, most recently in 2021*
- This covers CO_2, methane, and N_2O emissions under several scenarios
- The IWG is updating its approach and plans to issue a new version in January 2022
- These estimates may be used when considering purchasing equipment or planning operations that emit or sequester large amounts of GHGs

*IWG report available at https://www.whitehouse.gov/wpcontent/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf

Excerpts: MA Next Generation Climate Roadmap

March 2021

- Sets a net-zero limit on GHG emission by 2050
- Establishes a municipal stretch energy code which includes a definition of “net-zero building” and a net-zero building performance standard
- Sets appliance energy efficiency standards for a variety of common appliances
- Requires utilities to include an explicit value for greenhouse gas reductions when they calculate the cost-effectiveness of an offering of MassSave
- Increases the Renewable Portfolio Standard (RPS) by 3 per cent each year from 2025–2029, resulting in 40% renewable energy by 2030
- Factors the "carbon sequestration" capacity of Massachusetts' natural and working lands directly into our emissions reduction plans
- Sets benchmarks for the adoption of clean energy technologies including electric vehicles, charging stations, solar technology, energy storage, heat pumps and anaerobic digestors