

MA Stretch Code Update & New Specialized Code

DOER Overview for Newton City Council

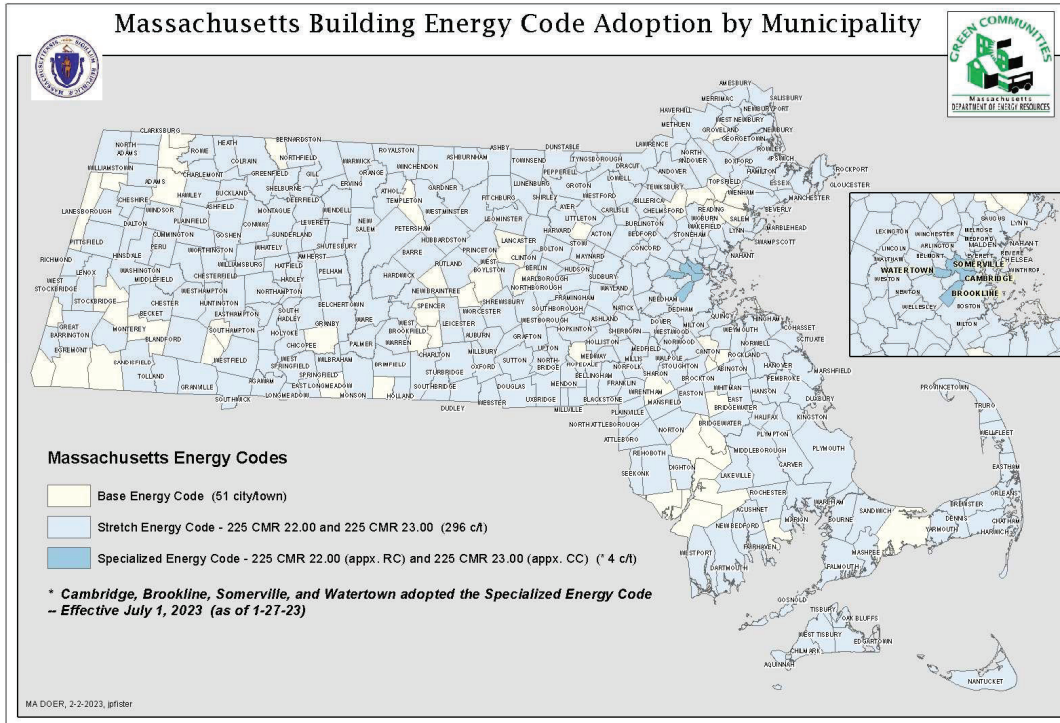
February 15, 2023

Ian Finlayson



Policy Context for Building Energy Codes

- 2030 Massachusetts legal limit is at least 50% reduction in GHG from 1990
- Stretch code for Energy Efficiency
 - 'All cost-effective EE' required by 2008 Green Communities Act
- Specialized code for GHG reduction
 - Specialized code required by 2021 Climate Roadmap Act
- 10 community fossil-fuel free demonstration program
 - 2022 Clean Energy and Offshore Wind Act



Base, Stretch, and Specialized – 3 Options

Base Code (IECC 2021)

- 51 communities
- 10th Edition MA code from BBRs:
- Effective date:**
Estimate Jan 2024

Stretch Code (2023 update)

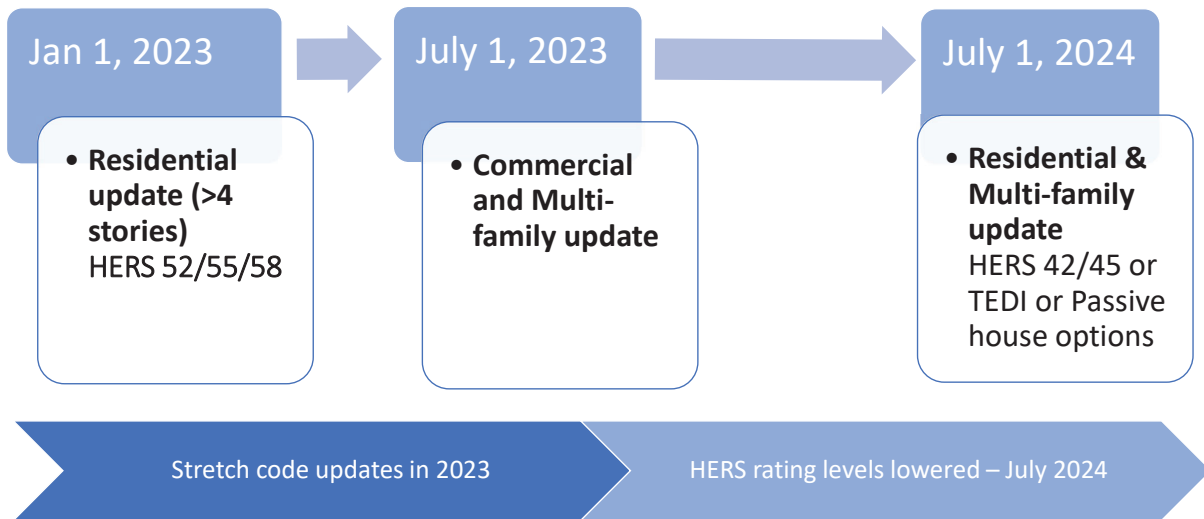
- 300 communities
- Effective dates:**
- Residential :** Jan 2023
- Commercial:** July 2023

Specialized Code ("Net-Zero")

- 4 communities (to date)
- Effective date:**
Jan 1st or July 1st
- Recommend 6-11 months after Town/City vote



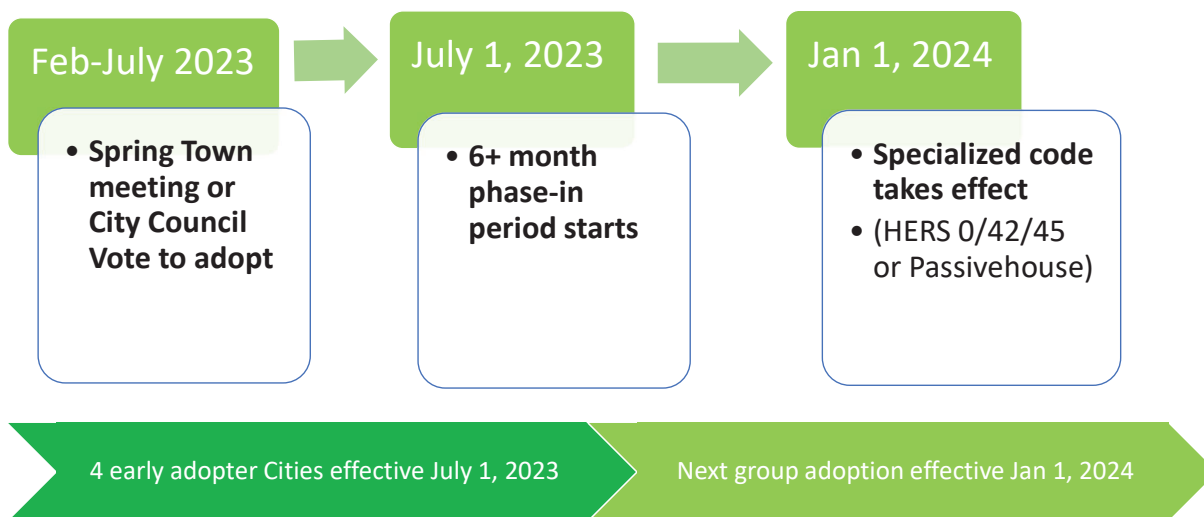
Timeline: Stretch code update



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Specialized local adoption – Recommended timeline



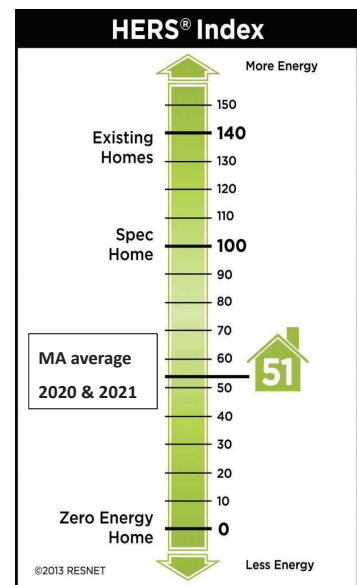
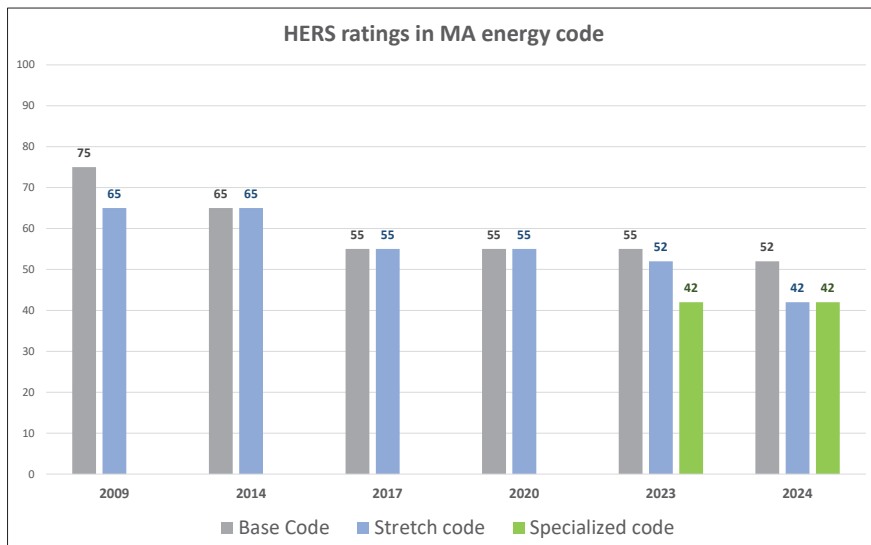
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RESIDENTIAL Low Rise & Multi-family



(Simplified) History of HERS ratings in MA energy code



Specialized vs Stretch code – what’s different? Residential Buildings:

Building Type	Fuel Type	Stretch code (July 2024)	Specialized Code (Jan 2024)
Residential low-rise (up to 3 stories)	All Electric	HERS 45	HERS 45
	Mixed Fuel	HERS 42	HERS 42 + Solar PV (4kw) + wiring for electrification HERS 0 (42) over 4,000 sf/home
Multi-family (4+ stories & over 12,000 sf)	All Electric	HERS 45 or TEDI or Passivehouse	Passivehouse
	Mixed Fuel	HERS 42 or TEDI or Passivehouse	Passivehouse + wiring for electrification



Residential: HERS for Large Additions & Alterations

- Note: Most additions and alterations don’t trigger these HERS ratings

Large Additions, Level III Alterations and Change of Use - Over 1,000 sf		
On-site Fuels used	Max. HERS index (before solar credit)	
	2017-2022 optional	2023 onwards required
Mixed-fuel	HERS 65	HERS 52
Mixed-fuel & Solar	HERS 70	HERS 55
All-Electric	HERS 70	HERS 55
All-Electric & Solar	HERS 75	HERS 58

- Additions over 1,000 sf **Or** greater than 100% of existing CFA
- Alterations over 1,000 sf **&** greater than 50% of existing CFA
 - Includes basement or attic unconditioned to conditioned space change

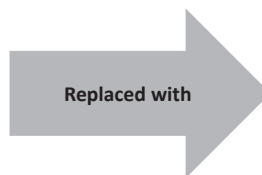


Key Changes to Commercial Stretch Code

Current Stretch Code

Mandates site energy
10% reduction

Buildings over 100,000-sf
Base code for additions or
alterations



New Stretch Code

Focus on heating and
cooling demand reduction

Significant fossil fuel
reductions

all building sizes
Includes additions &
alterations



Other Key Modifications vs. Base code



Envelope backstop

Add'l stringency



Tenant spaces

Treated like new construction



Electrification of space heating

*Highly ventilated: partial
Highly glazed: full*



Mixed-use

Treat each use independently



EV ready parking

*Wire 20% of new Business & Residential spaces
Wire 10% of spaces for other uses*

Specialized vs Stretch code – what’s different? Commercial Buildings:

Building Type	Fuel Type	Stretch code (July 2024)	Specialized Code (Jan 2024)
Schools, Offices, Municipal buildings	All Electric	TEDI or Passivehouse	TEDI or Passivehouse
	Mixed Fuel	TEDI or Passivehouse	TEDI or Passivehouse + wiring for electrification + Solar PV
Other Commercial (over 20,000 sf)	All Electric	ASHRAE or TEDI or Passivehouse	ASHRAE or TEDI or Passivehouse
	Mixed Fuel	ASHRAE or TEDI or Passivehouse	ASHRAE + Solar or TEDI + Solar or Passivehouse + wiring for electrification

Solar PV in Specialized code

- Required:
 - Using Fossil fuels
 - Using Net Zero path
- Optional:
 - All-electric building
- Exceptions for shaded sites can reduce min. size



Increased Incentives for builders & developers

- All-electric homes are generally cheaper to build
Heat Pump replaces both Central A/C + Furnace
 - Mass Save incentives for 1-4 unit all-electric homes
 - \$15,000 for HERS 45 single-family
 - \$25,000 for HERS 35 / Passive House single-family
 - Mass Save incentives for multi-family Passivehouse
 - \$3,000 per unit plus design study funding
 - Federal IRA:
 - 45L tax credit: \$2,500 or \$5,000/home (aligned with HERS)
 - 179D tax credit: up to \$6/sqft for commercial & multi-family
- <https://www.masssave.com/saving/residential-rebates/all-electric-home>
<https://www.masssave.com/saving/residential-rebates/passive-house-incentives>



Improved Life Cycle Cost

Our 2021 study team (below) found that reducing energy demand:

- Lowered Lifecycle cost for all building types
- Lowered first cost for some building types

<https://www.mass.gov/lists/stretch-energy-code-development-support-documentation>



Demand reduction means less equipment and equipment elimination



Specialized Code: Adoption process & Timeline

Adoption Process: Similar to the Stretch code

- Warrant article
- Town Meeting Bylaw vote or City Council vote

Timeline: Published in State Register – Dec 2022

- Town meeting / city council vote
- Effective date: Jan 1, or July 1
- recommend 6-12 months



Questions?

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