

Advancing Energy Efficiency in Boxborough: Specialized Stretch Code

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Project Overview & Objectives

Massachusetts Climate Goals:

- Massachusetts aims for net-zero emissions by 2050.
- Buildings are the largest source of municipal energy use.

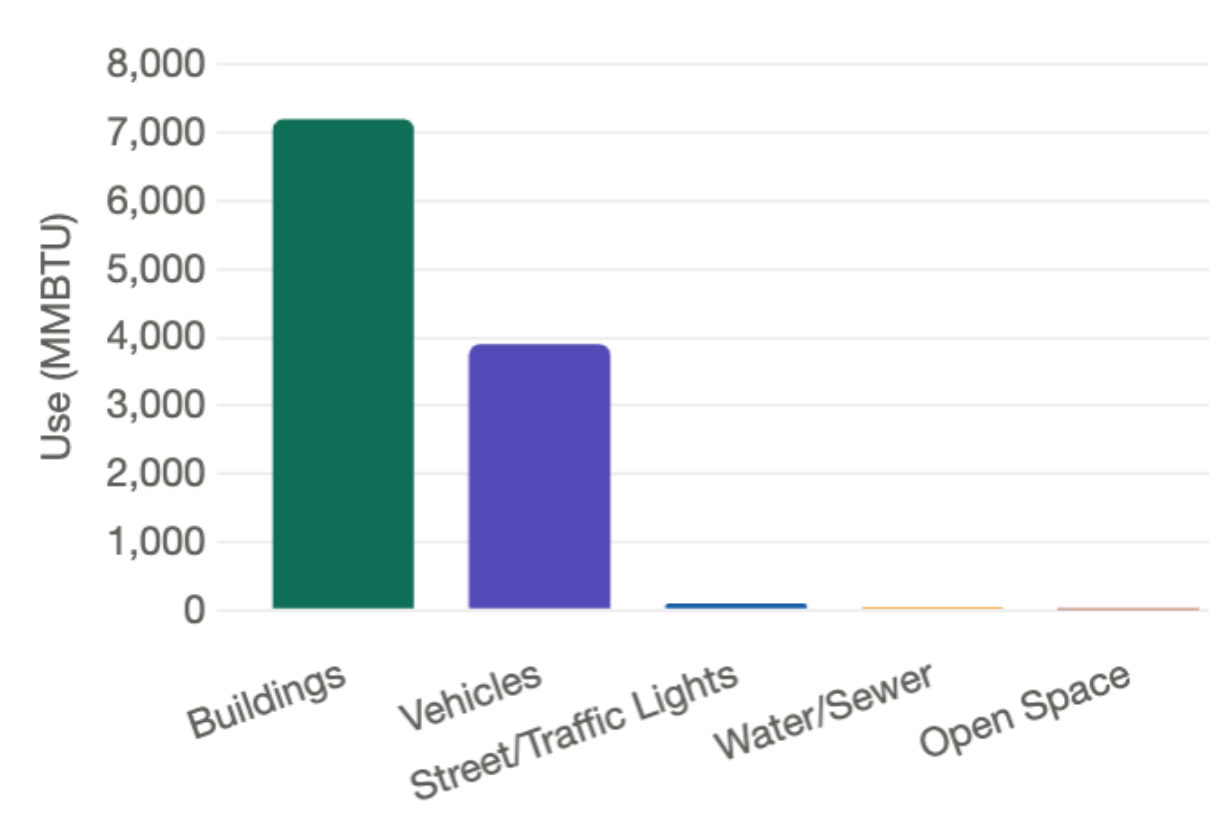
Why Boxborough?:

- Buildings account for over 64% of municipal energy use (Fig. 1).
- Natural gas is the town's dominant fuel source (Fig. 2).

Opportunity:

- Specialized Stretch Code reduces emissions from new construction.
- One of the most cost-effective local climate actions available.

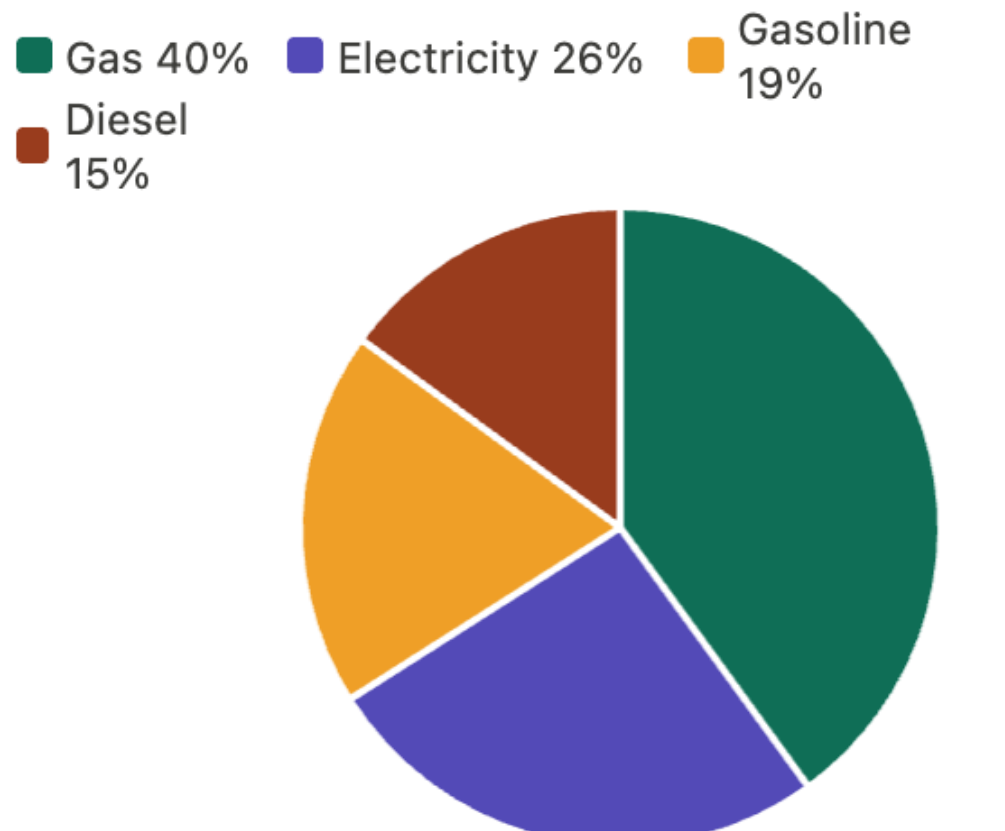
Fig. 1 — Energy use by facility category (FY 2023)



Buildings account for over 64% of municipal energy use

Source: Town of Boxborough Energy Reduction Plan (2024)

Fig. 2 — Energy usage by fuel type (FY 2023)



Natural gas is the leading fuel source — a key target for electrification

Deliverables and Findings

A. PEER TOWN ANALYSIS

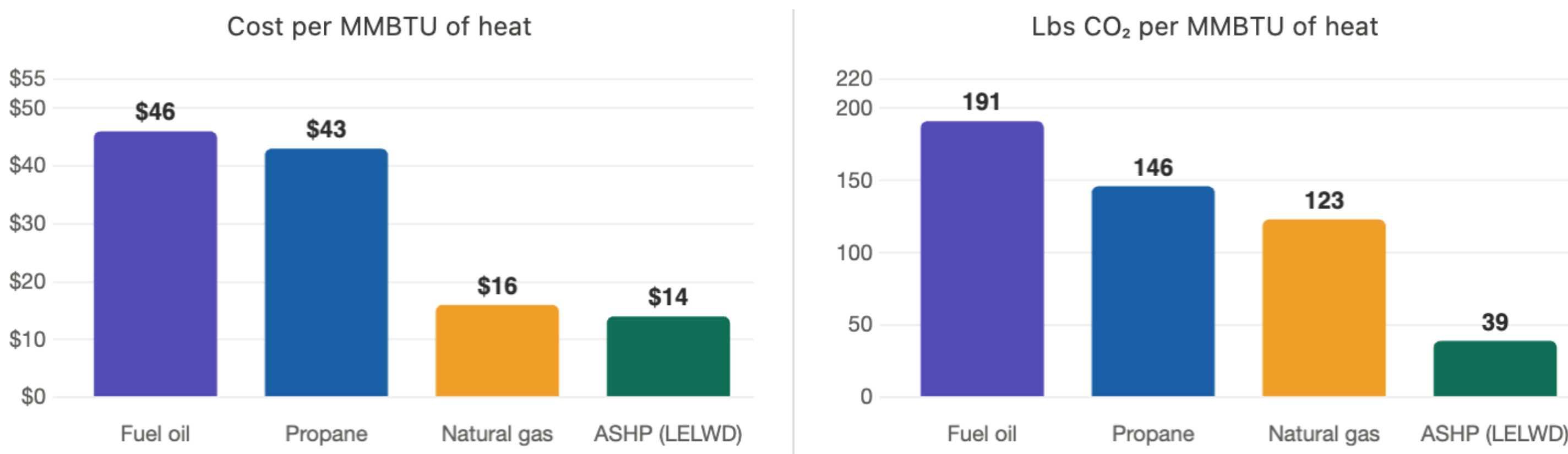
TOWN	ADOPTED SSC
Acton	Yes (effective 2024)
Carlisle	Yes (effective 2024)
Harvard	Yes (effective 2025)
Stow	Yes (effective 2024)

KEY LESSONS LEARNED

- Early outreach is critical.
- Cost data builds trust.
- Local examples increase support.

B. COST & EMISSIONS ANALYSIS

Boxborough heating cost & emissions by fuel type



Air-source heat pumps at LELWD rates cost 70% less per MMBTU than fuel oil — and emit 80% less CO₂

Sources: Mass DOER April 2026 fuel prices; LELWD rate schedule; CO₂ factors from MA GHG Tool.

Case study: new fire station (~15,000 sq ft) — Stretch Code vs. Specialized Code

	Stretch code	Specialized code
Primary heating fuel	Gas / partial HP	All-electric (ASHP)
Est. annual energy cost	\$35–40k	\$16–20k
Annual GHG emissions	140–170 MTCO ₂ e	40–55 MTCO ₂ e
GHG reduction vs. base code	~37%	~80%
30-yr lifecycle savings	~\$300k	\$800k+

Based on EUI benchmarks, LELWD municipal rate \$0.144/kWh, and April 2026 fuel prices. Lifecycle savings assume 3% annual fuel price escalation.

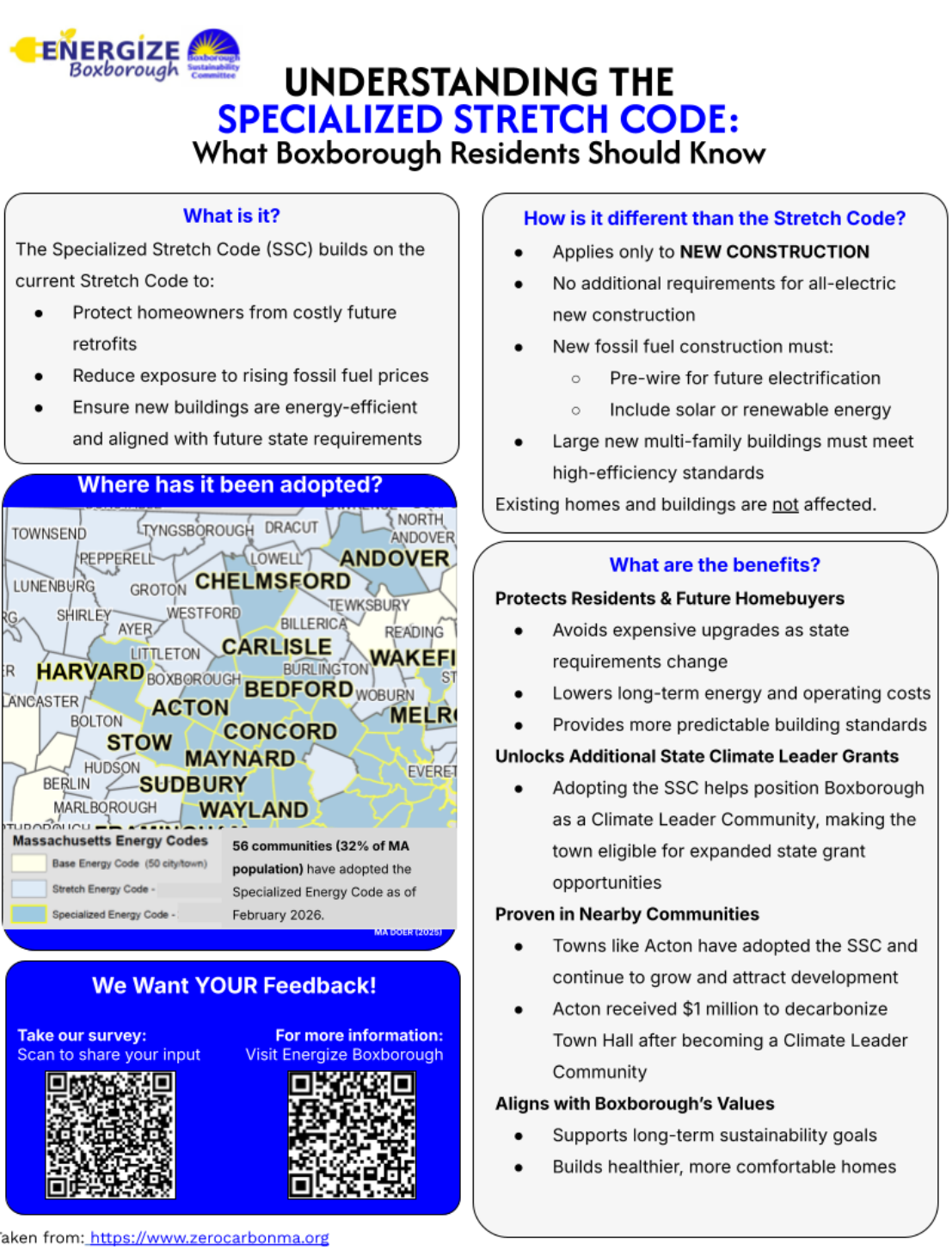
C. FUNDING AND INCENTIVES FOR BOXBOROUGH

Program	Amount	Eligibility	Eligible uses
AVAILABLE NOW			
Green Communities grant	Up to \$250,000	GC designated ✓	HVAC, lighting, renewables in municipal buildings
DOER META grant	\$5,000–\$12,500	All municipalities ✓	Energy audits, feasibility studies, pre-design work
MVP Action grant	Varies	MVP designated ✓	Resilience and energy overlap projects
UNLOCKED BY SSC ADOPTION → CLIMATE LEADER COMMUNITIES			
CLC Decarb. Technical Support grant	Up to \$150,000	CLC certified*	Engineering & design for clean energy projects
CLC Decarb. Accelerator grant	Up to \$1,000,000	CLC certified*	High-impact GHG reduction projects
Total potential with SSC adoption	Up to \$1,412,500+		

*CLC certification requires GC designation + SSC adoption + ZEV policy + active sustainability committee. MassSave excluded — Boxborough served by Littleton Electric (MLP).

Main Takeaways

EDUCATIONAL MATERIALS CREATED



Introduction to the Specialized Stretch Code

Becky Caruso
CELT Municipal Fellow
Town of Boxborough



Slide Deck

Fact Sheet

RECOMMENDATIONS FOR BOXBOROUGH

Immediate:

- Apply for Green Communities grants — up to \$250k for municipal buildings
- Apply for META grant — fire station pre-design study

Near-term:

- Advance SSC adoption — build warrant article, Town meeting vote

Long-term:

- Initiate CLC certification — unlock up to \$1.41M in grants

KEY TAKEAWAYS

- Small towns can successfully prepare for Specialized Stretch Code adoption with the right research and community groundwork. Peer town profiles, cost-impact analysis, and stakeholder mapping provide the foundation.
- Cost-impact analysis and peer examples are critical tools for building public support. Translating complex policy into locally relevant numbers, like \$800k+ in fire station savings and 80% GHG reductions, make the case concrete and compelling.
- Boxborough is now equipped with a full suite of educational and engagement materials to support a future Town Meeting vote. This framework is replicable for similarly sized Massachusetts towns navigating SSC adoption.

Acknowledgements

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- Boxborough Sustainability Committee

