Codes & BPS

Research & Pilot IL-SAG Introduction

7/22/20

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

slipstream

What are Stretch Codes?

A stretch code, also known as a “reach code”, is a locally mandated code or alternative compliance path that defines a higher level of energy efficiency or sustainability than the adopted base code. Another way to envision a stretch code is as the future base code.

Why Stretch Codes?

- Gives municipalities who want the ability to take meaningful action on energy use and climate change an alternative mandatory compliance path that promotes energy efficiency beyond the available code options,
- Provides significant cost savings for residents and businesses,
- Implement cutting-edge technologies and processes, and
- Help gain market acceptance of the adoption of more energy efficient codes in the future.

City of Boulder, CO

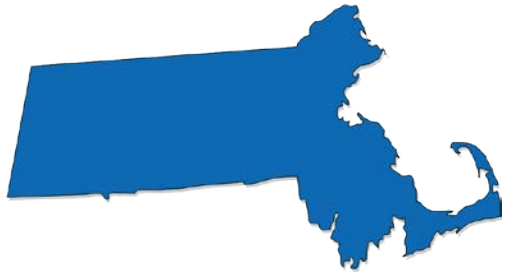
Individual Cities/Counties with No Statewide Code

The City of Boulder has set a goal of reaching net zero energy (NZE) construction through building and energy codes by 2031

- Baseline: IECC 2018/ASHRAE 90.1-2016
- Residential: sliding scale of ERI/HERS 50 or better; > 3,000 sq. ft. houses are required to be Net Zero Energy (NZE)
- Commercial: At least 5% of building energy use must be supplied by on-site renewables
- EV-ready and PV-ready are required by code for res & com
- Pilot: outcome-based code

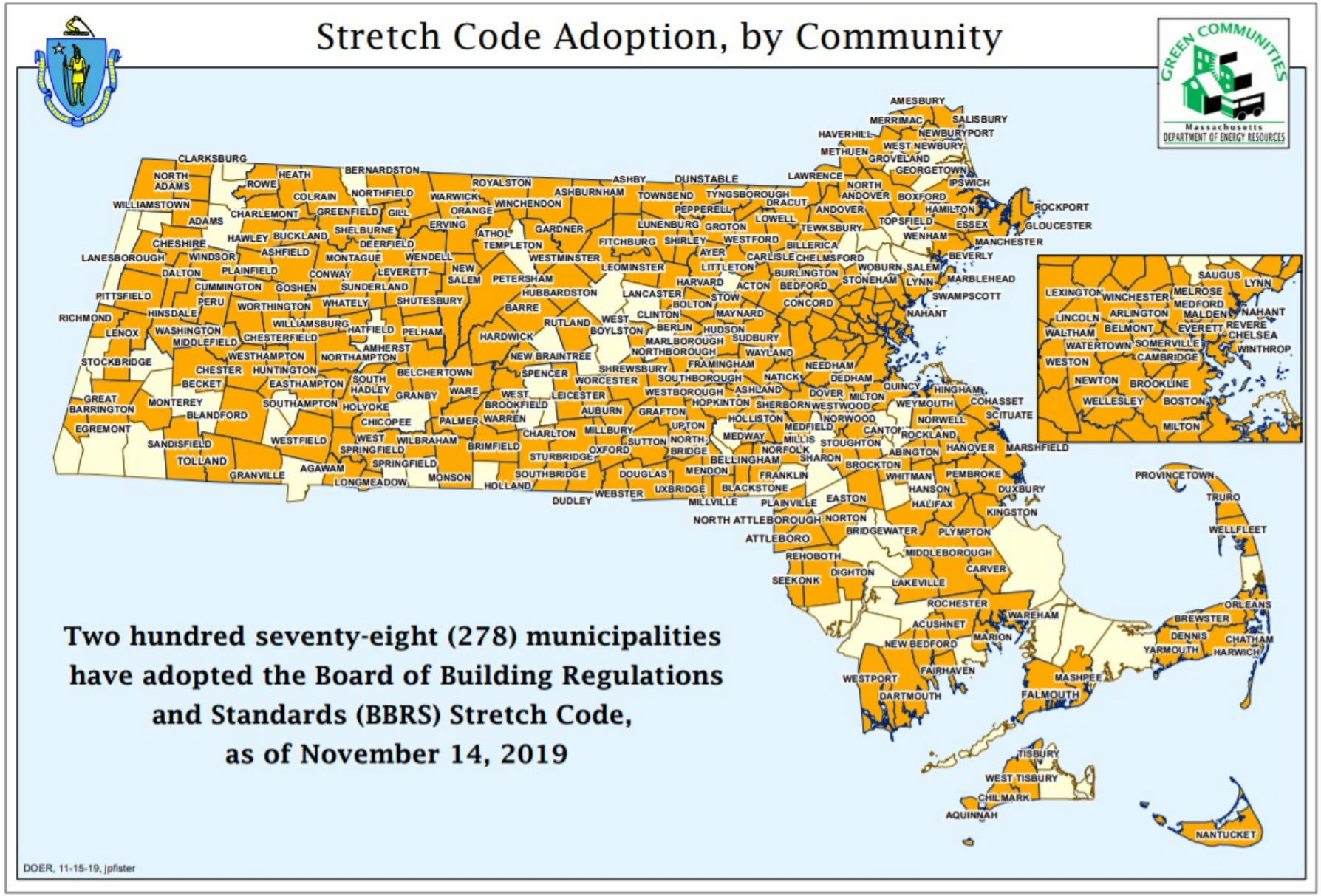
Massachusetts

Addition of a Stretch Code Component to the State Code



- 2009 - First state to adopt an above-code policy using an informative appendix to its state code
- New residential construction must achieve a HERS rating of 55
- The stretch code also applies to new commercial buildings over 100,000 square feet
- As of Nov 2019, 278 jurisdictions have adopted the stretch code – more than half of the state by population.

Massachusetts



Summary

- Stretch codes allow jurisdictions the ability to chart a path of efficiency toward zero energy.
- Stretch codes can vary widely in scope and content, from a simple percentage of energy savings over the baseline code to adaptation of advanced design guides.
- Complexity and ability for enforcement are important items to consider when determining stretch code components.
- Stretch codes created and administered in conjunction with utility partners have seen the highest rates of success (California, Massachusetts).

What is a BPS?

Building Performance Standard ordinances are a municipal tool to equitably reduce energy costs in existing buildings while creating jobs in the efficient and clean energy economy.

Building Performance Standards

- Set energy use or carbon emissions thresholds for commercial buildings within a jurisdiction.
- Property owners report actual energy consumption of their buildings on a set cadence (e.g. biennial) or upon certain triggers (e.g. sale or lease of property).

Building Performance Standard

- Buildings found to exceed their energy or carbon threshold are required to make operational and/or capital improvements to reduce energy consumption and bring the property into compliance.
- Participation requirements and thresholds are typically differentiated by size (e.g. buildings over 50,000 square feet) and sector (e.g. multi-family rental, office, etc.).

Building Performance Standard

Performance thresholds typically target the worst-performing buildings first. The BPS policy may chart stepped reductions over time, coinciding with broader city equity, jobs or carbon goals.

Building Performance Standards

Washington, DC.
New York City
St. Louis, MO
Boulder, CO
Washington state

Building Performance Standard

Washington, D.C.

- “Clean Energy DC”
- Went into effect 3-22-19
- 2021: Privately-owned buildings 50,000 square feet and District-owned properties 10,000 and above
- 2027: Privately-owned buildings between 25,000 and 49,999 sq. ft.
- 2033: Privately-owned buildings between 10,000 and 24,999 sq. ft.
- 5 years to comply with targets

Building Performance Standard

New York City

- "Climate Mobilization Act"
- Enacted 5/19/19
- Carbon intensity limits
- 2024-2029: 20% highest GHG intensity buildings
- 2030-2034: 75% highest GHG intensity buildings
- Intensity limits will fall in 2030, 2035, 2040 and by 2050

Research & Pilot

Phase 1 (Jun-Sept 2020)

- Technical Concept
- Municipality Engagement
- Tech Potential
- Program Concept

Phase 2 (TBD)

- Drive adoption in 1-3 pilot cities
- Savings & attribution protocols

Municipal Engagement – Stretch Code

Stretch Codes

Helping Cities Meet Energy Goals in Illinois

Energy codes are among the most cost-effective tools to meet a municipality's energy and climate action goals. Codes are the best path to impact the energy use and emissions of new construction and significant renovations in communities. While the Illinois energy code is a mandatory statewide code, local governments can set more ambitious standards for many buildings. We recognize that they may need direction and assistance to set those standards. **If Illinois cities want to meet their own climate goals, cities need other options for improving the baseline energy requirements for buildings. This is where we can help.**

What is a Stretch Code?

A stretch code defines a higher level of energy efficiency or sustainability than the adopted statewide base code or available model energy code. A stretch code can be envisioned as the future base code; it may contain aspects to consider for the next baseline code adoption. Stretch codes can be developed on their own (typically by/for municipalities) or as part of the larger state energy code (either as a separate state code or in an optional appendix). Once a stretch code is adopted, it becomes the mandatory baseline requirement for that jurisdiction.

A stretch code is a great option for jurisdictions that have set climate or energy goals. The stretch code also allows entities to test and showcase the feasibility and cost-effectiveness of cutting-edge technologies and processes before they are considered for inclusion in the next baseline code. Because the building and enforcement community knows what to expect for upcoming codes, stretch codes also accelerate market development, adoption and acceptance of more energy efficient codes in the future.

Stretch Code in Illinois

For commercial buildings, jurisdictions can already set standards stronger than the state energy code. Jurisdictions cannot adopt an energy code stronger than the state code for residential buildings except for jurisdictions over 1 million in population, or that have adopted an energy code prior to 2006; no jurisdiction has yet chosen to do so. Legislation or administrative action is likely needed to permit residential stretch code adoption. It is not required for commercial buildings, but legislation instructing the state to create a state stretch code for jurisdictions would allow for uniform enforcement and assistance, and encourage stakeholder input and state buy-in for the stretch code.

Stretch Code Examples

It is recommended for jurisdictions to pursue the same stretch code for adoption. Below are some components of a possible stretch code.

- Simple improvement of prescriptive or mandatory requirements found in model energy codes.
- Simple improvement of code efficiency from a performance perspective.
- Improvement of the energy code by consulting energy use indices such as the Energy Use Index (EUI), Zero Energy Performance Index (zEPI) number and Home Energy Rating System (HERS) Index.
- Improvement of energy efficiency through adoption of codes or standards that are above the baseline code and might include non-energy-efficiency measures, like the International Green Construction Code (IgCC) or Leadership in Energy and Environmental Design (LEED), or inclusion of EV-ready, solar-ready or other non-efficiency measures.

Technical Assistance

We are here to help. The Illinois investor-owned utilities are exploring the option of providing assistance with adoption of and compliance with stretch codes. This could include—but is not limited to—technical assistance, policy drafting, economic impact analyses and stakeholder engagement. Your feedback is essential to this effort.

MEEA slipstream

- Stakeholder engagement process
- Goals/targets
- Prescriptive/Performance/Outcome
- Official stretch code from IL legislature?
- Who drafts it?
- Who enforces it?
- Utility role / utility incentives

Municipal Engagement – BPS

Building Performance Standards

A municipal tool for equity, jobs and carbon reduction

Building Performance Standard ordinances are a municipal tool to equitably reduce energy costs in existing buildings while creating jobs in the efficient and clean energy economy. Buildings account for about 40% of all energy use in United States, so a BPS is also an opportunity for cities to lead their community on carbon reduction. **Illinois utilities can potentially help your municipality with adopting this approach.**

What is a Building Performance Standard (BPS)?

A Building Performance Standard sets energy use or carbon emissions thresholds for commercial buildings within a jurisdiction. Property owners report actual energy consumption of their buildings on a set cadence (e.g. biennial) or upon certain triggers (e.g. sale or lease of property). Buildings found to exceed their energy or carbon threshold are required to make operational and/or capital improvements to reduce energy consumption and bring the property into compliance. Participation requirements and thresholds are typically differentiated by size (e.g. buildings over 50,000 square feet) and sector (e.g. multi-family rental, office, etc.). Performance thresholds typically target the worst-performing buildings first. The BPS policy may chart stepped reductions over time, coinciding with broader city equity, jobs or carbon goals.

Building Performance Standard Examples

A growing number of U.S. jurisdictions have already enacted a BPS. These include:

- St. Louis, MO – Join upcoming webinar June 24, 2020 to learn more; free for city officials.
- Washington State
- New York City
- Washington, D.C.
- Boulder, CO

Enacting a Building Performance Standard

According to the Institute for Market Transformation, "effectively implementing a BPS requires more than just passing a law."[1] It requires broad and equitable stakeholder engagement during the policy/ordinance development process. Then owners and energy service providers must be engaged in ongoing fashion during operation, with ordinance education and compliance assistance as appropriate. Tools and processes will be developed for compliance reporting; for example, adopting the U.S. Department of Energy's Portfolio Manager platform.

Many building energy improvements are low-cost or even no-cost, particularly for the worst-performing buildings. Where capital outlays are required, programs exist to further improve the financial outcome of energy optimization or retrofits. A BPS can be aligned to leverage incentive programs, such as state-mandated utility energy efficiency programs that provide technical assistance and financial incentives. Property Assessed Clean Energy (PACE) programs currently launching in many Illinois counties can also provide attractive financing for building owners and overcome the owner/tenant "split incentive" hurdle to capital investment.

1 https://www.imt.org/whe-building-performance-standards-are-gaining-traction/

Technical Assistance

The Illinois investor-owned utilities are here to help. We are currently exploring partnership opportunities with municipalities to assist with the adoption and operation of Building Performance Standards. In the adoption phase this could include economic impact analyses, stakeholder engagement, policy writing and process/tool development. During operation it could include education, compliance assistance and integration with incentive programs and financing. We look forward to your feedback on this potential tool.

MEEA slipstream

- Stakeholder engagement process
- Applicable bldgs & reduction targets
- Site EUI / Source EUI / ENERGY STAR
- Official BPS from IL legislature?
- Benchmarking
- Compliance cycle & processes
- Utility role / utility incentives

Key Policy/Evaluation Discussion Points

- Determining ex ante kWh & therms:
  - Option 1: Channel to current programs for “processing”
  - Option 2: Market Transformation approach
  - Option 3: ???
- Capturing program influence
  - Adoption
  - Compliance
- How to continue engagement with the SAG as this pilot develops

Questions?

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