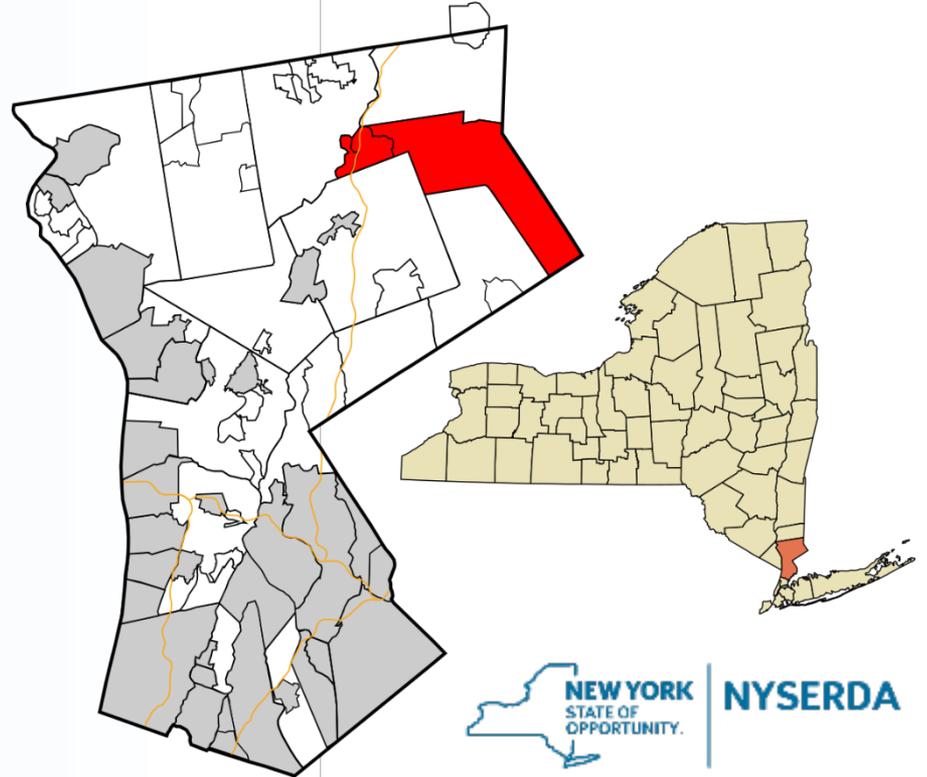


Community HIA Adoption: NYStretch Energy Code-2020

Town of Lewisboro, NY



March 14, 2022
Newport Ventures – Matt Evans

What is a Stretch Code?

NYStretch Energy Code — 2020

An Overlay of the 2018 International Energy Conservation Code and ASHRAE Standard 90.1-2016

READILY ADOPTABLE LOCAL ENERGY CODE

- **Approximately 11% more efficient than 2020 ECCCNY.**
- Expressly authorized by Article 11 of the NYS Energy Law.

OVERLAY OF THE 2020 ECCCNY

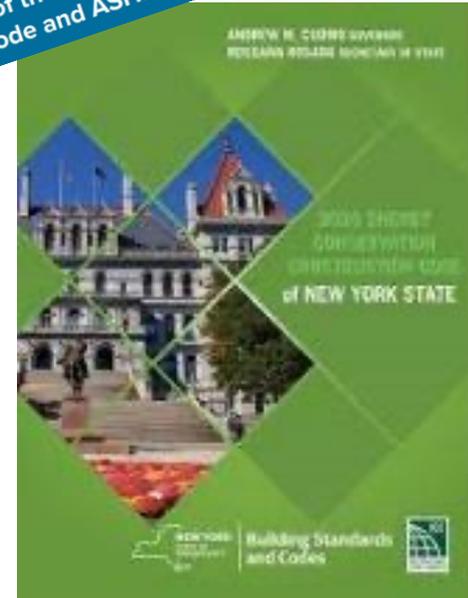
- NYStretch prepares municipalities for future code cycles

BASED ON PROVEN TECHNOLOGIES, SYSTEMS & RESEARCH

- Integrates best practices from programs such as ENERGY STAR for Homes.

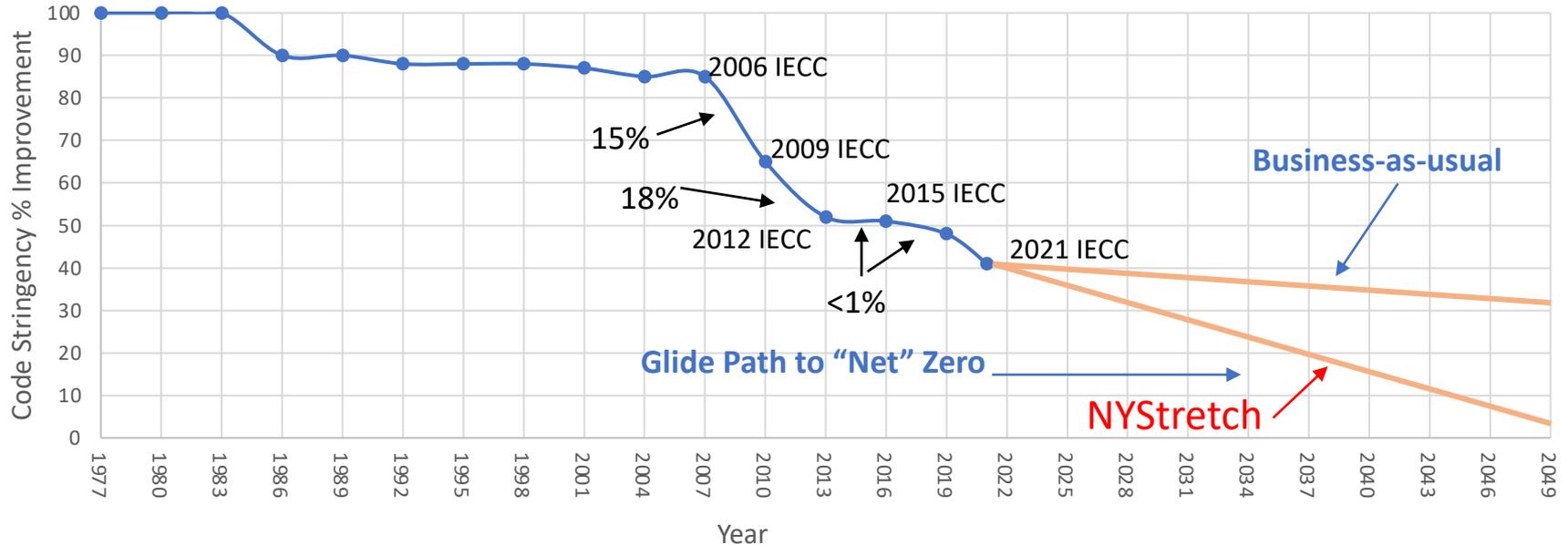
DIVERSE STAKEHOLDER & PUBLIC REVIEW

- Significant input and review by public, industry and technical experts.



What is a Stretch Code and Why Do We Need One?

Efficiency Improvements of IECC: Historic and Projected



Clean Energy Communities Action Grant: NYStretch Energy Code



- > Adopt NYStretch Code to reduce energy consumption, operating + utility costs, and greenhouse gas emissions
- > CEC designation not required
- > 1,200 points
- > \$5,000 or \$50,000 grants available
- > Must be adopted and take effect no later than June 30, 2022

Energy Benefits

- > Energy and cost savings of roughly 11%¹ over ECCCNY-2020
- > Cost Effective (1-2% incremental cost for new construction)
- > Paybacks <10 years
- > Greater GHG reductions than ECCCNY-2020
- > Residential code near net zero
- > Helps ensure verifiable performance
- > Addresses 40% of our energy use—buildings



Non-energy Benefits

- > Long-term benefits of building better today
 - Lower energy use means reduced operating costs, saving building tenants and owners money
 - Money saved in YOUR community is more likely to STAY in the community
- > Climate & community benefits
 - Opportunity for professions involved in higher-performance building design, construction and performance verification
 - Increases community attractiveness - more owners and tenants desire green and energy efficient buildings
 - More resilient buildings and communities
 - Energy Codes help provides healthier indoor environments
 - Greater comfort = resident/occupant satisfaction/comfort



Residential compliance paths

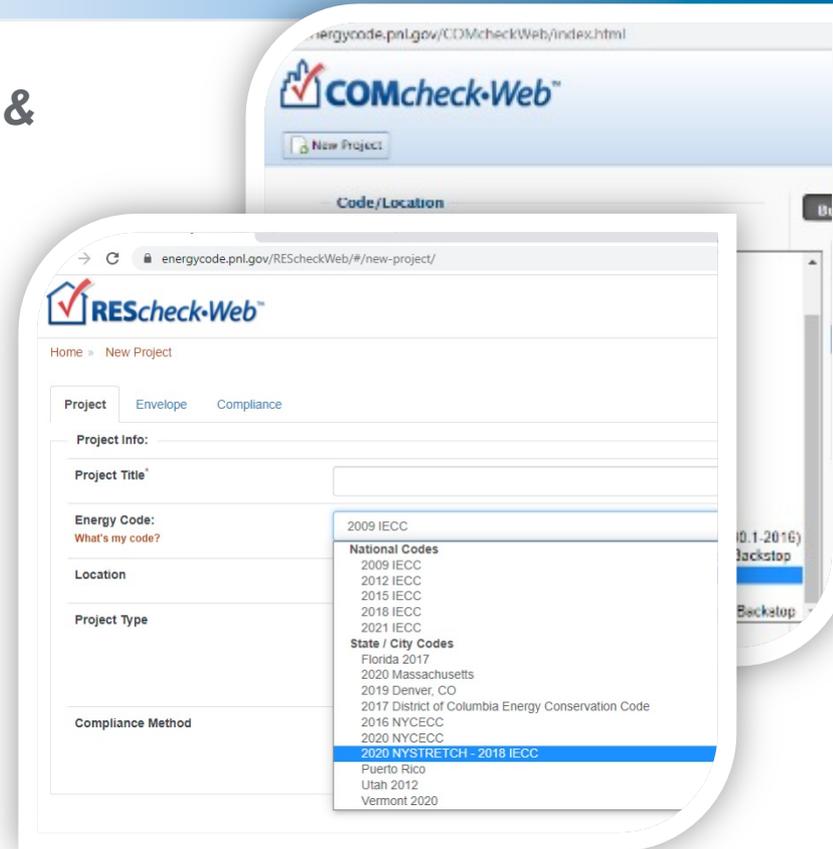
- > **Prescriptive path** (often using *REScheck* software)
 - Roughly equivalent to ENERGY STAR Homes, ERI of ~63
 - *REScheck* supports NYStretch-2020
- > **Performance path**
 - Energy cost of proposed home <80% of reference home
- > **Passive house path**
 - Mandatory residential provisions plus PH metrics
- > **ERI path**
 - Mandatory provisions plus ERI index

Maximum ERI	
ECCCNYS-2020	NYStretch-2020
62	50

Demonstrating Compliance w/ NYStretch

Free training available!

- **NYStretch-2020 is supported by COMcheck & REScheck**
 - Free, commonly used compliance software
 - Builders, designers, code officials familiar
- **3rd party HERS Raters**
 - REM Rate or other performance-based software
- **Passive House PHIUS certifiers**
- **Building Code Officials**



WHMV: Conflicting provisions between NYStretch-2020 and the State Uniform Code

- NYStretch-2020, Section R403.6.2 requires the use of an HRV or ERV system in Climate Zones 5 and 6, and any balanced ventilation solution in Climate Zone 4, to satisfy mechanical ventilation requirements in new construction. However, the 2020 Residential Code of New York State (2020 RCNYS), Section M1505.4.1, allows for ventilation to be provided through the use of either exhaust only, supply only, or a balanced combination of the two.
- Municipalities that adopted the NYStretch-2020 supplement, or are considering its adoption, should consult with their municipal attorney on filing a Notice and Petition for approval by the Code Council with respect to NYStretch-2020, Section R403.6.2, as it conflicts with the 2020 RCNYS, Section M1505.4.1.
- Alternatively, municipalities may sever Section R403.6.2 from local adoption of NYStretch-2020, while still retaining eligibility for the Clean Energy Communities Leadership Round, NYStretch Energy Code High Impact Action.

NYStretch-2020 vs ECCCNY-2020: Commercial Differences

> Building Envelope:

- Improvements to the prescriptive tables, applicable to roofs, walls, floors, slabs, windows, skylights and doors
- Air Leakage: Blower door testing required for buildings between 25,000-50,000 SF and < 75ft high

> Lighting/Plumbing/HVAC:

- More efficient lighting; additional occupancy sensors
- Shorter hot water piping lengths or recirculation
- Ducts in conditioned space and sized properly



NYStretch-2020 vs ECCCNY-2020: Commercial Differences

> Compatibility:

- EV ready if more than 10 parking spaces: breaker space in panel and empty conduit run;
- Solar ready:
 - applicable to buildings 5 stories or less
 - breaker space in panel and empty conduit run;
 - 40% roof space on south side available

> Miscellaneous:

- Whole building energy monitoring:
 - Buildings \geq 25,000 SF; monitor electrical energy use
- Air barrier commissioning: buildings > 25,000 SF
- Elevator performance in high rise buildings
- More efficient commercial kitchen equipment
- One additional efficiency measure from set of options



> Download the full NYStretch-2020 overlay and comparison doc: www.nyserda.ny.gov/stretchenergy2020

NYStretch and Existing Buildings

- > Triggers are the same
 - ECCCNY-2020 and NYStretch-2020 apply to existing buildings the same way
 - Only applies to new work—
 - Not part of the project scope? Does not need to comply
- > Commercial building commissioning and air barrier requirements
 - Applies to alterations and additions if applicable to the project scope
- > “In new buildings”
 - Requirements that refer to “in new buildings,” even if Mandatory, are NEVER mandatory for existing building projects



Economics: Single Family and Multifamily by Climate Zone

Climate Design Zone	Single-family			Multifamily		
	Total Annual Energy Cost Savings (\$/dwelling unit)	Total Incremental Costs (\$/dwelling unit)*	Simple Payback (Years)*	Total Annual Energy Cost Savings (\$/dwelling unit)	Total Incremental Costs (\$/dwelling unit)*	Simple Payback (Years)*
4A-NYC	\$265	\$1,910	7.2	\$156	\$1,625	10.4
4A-balance	\$264	\$2,463	9.3	\$148	\$1,488	10.1
5A	\$407	\$2,202	5.4	\$198	\$1,745	8.8
6A	\$431	\$1,914	4.4	\$205	\$1,791	8.7
NY State	\$389	\$2,156	5.5	\$165	\$1,590	9.7

Statewide *average* Residential energy cost savings is 21.5%

***Before utility incentives, federal tax credits, etc.**

Results will vary depending on building and construction type.

NYStretch vs. 2020 ECCCNY

Economics: Commercial Costs & Savings by Climate Zone

Prototype	Construction Weight	Energy Cost Savings	Incremental First Cost	Simple Payback (Years)*
Climate Zone 4A	71%	5.5%	\$ 0.85/SF	11.0
Climate Zone 5A	21%	10.5%	\$ 1.81/SF	9.8
Climate Zone 6A	8%	9.9%	\$ 1.96/SF	10.5

Statewide *average* Commercial energy cost savings is 7.1%

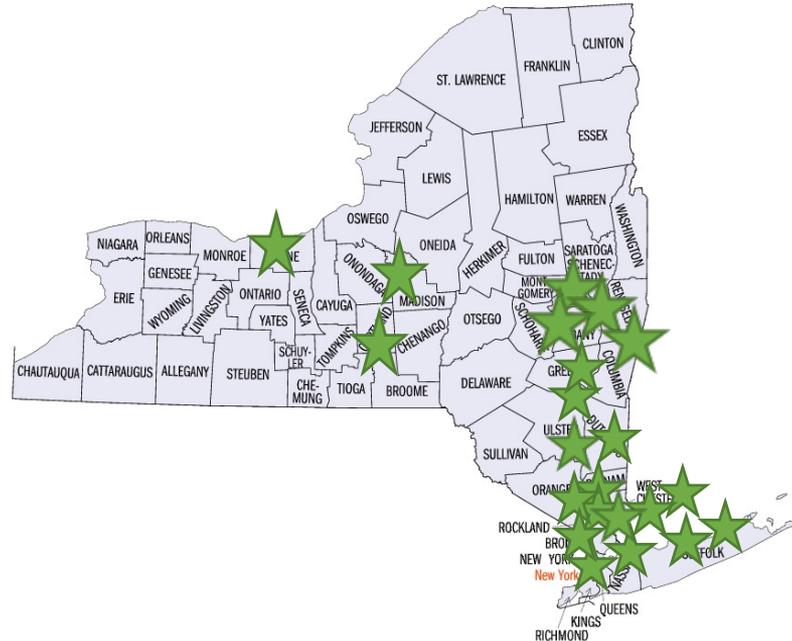
***Before utility incentives, federal tax credits, etc.**

Based on prescriptive and mandatory provisions.

NYStretch – community interest

Hudson Valley

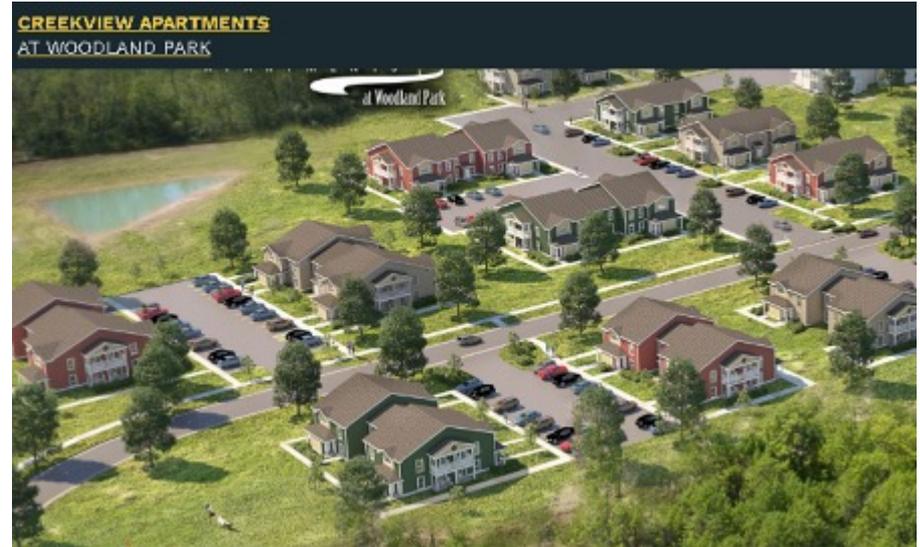
- ✓ City of Beacon
- ✓ Town of Bedford
- ✓ Town of Bethel
- ✓ Town of Cortlandt
- ✓ Village of Dobbs Ferry
- ✓ Town of Esopus
- ✓ Village of Hastings-on-Hudson
- ✓ Village of Irvington
- ✓ City of Kingston
- ✓ Town of Mamaroneck
- ✓ Town of Marbletown
- ✓ Town of New Castle
- ✓ City of New Rochelle
- ✓ Town of North Salem
- ✓ Town of Orangetown
- ✓ Town of Ossining



Case Studies: Buildings that Meet or Exceed NYStretch

CreekView Apartments, Canandaigua, NY

- Developed by: Baldwin Real Estate Development Corp.
- Designed by: Sustainable Comfort, Inc.
- Full Net Zero energy
- On-site PV
- GSHP coupled to VRF
- GSHP–coupled DHW
- Ventilation
- *Passive House* levels of insulation



Case Studies: Buildings that Meet or Exceed NYStretch

Affordable and Sustainable Multifamily Housing for City of Hudson, NY

Adaptive re-use of existing buildings

- Developed by: Galvan Initiatives Foundation, Inc.
- Designed by: River Architects, PLLC
- 75-unit mixed use
- Panelized wall assemblies
- HVAC: ASHP w/ energy recovery, ventilation and humidity controls
- CO2 sensors
- Efficient DHW
- PV



Case Studies: Buildings that Meet or Exceed NYStretch

Zero Place, New Paltz, NY

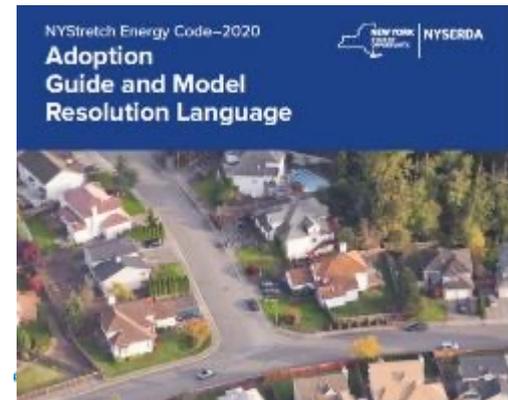
- Developed by: Net-Zero Development LLC
- Designed by: Integral Building & Design, Inc.



- Market-rate apts. with 5 affordable housing units.
- Thermal enclosure: ICF Walls, spray foam in slabs and roof areas, and high-R fenestration.
- GSHP for space conditioning.
- Thermal storage tanks for the central DHW system.
- Central pump station with two high efficiency, variable speed circulators.
- Unitary Energy Recovery Ventilators.
- High output solar PV arrays and solar awnings.
- Smart building controls, display monitors to (anonymously) share energy consumption.
- CO2-activated demand-controlled ventilation, heat pump clothes dryers, induction cooktops.
- (20) EV car charging plus e-bike charging stations.

RESOURCES

- Adoption Guide & Model Local Law
 - Training & Technical Support
 - Code Enforcement Tools/checklists
 - Single Volume Code Manual (coming soon)
 - NYStretch-specific *US-DOE REScheck™* & *COMcheck™* tools
 - Hotline for Technical and Interpretation Assistance
 - NYStretch Circuit Riders – technical and adoption support
 - www.nyserda.ny.gov/stretchenergy2020
- ** NYS-DOS has determined there is one conflict with the Uniform Code – It is addressed in the new Adoption Guide; PLUS - NYSERDA will review and comment on your language before you adoption**



NYStretch 2020 - Technical Support

Clean Energy Communities Coordinators:

Mid-Hudson

Carla Castillo

Hudson Valley Regional Council

ccastillo@hudsonvalleyrc.org

(845) 564-4075

Eleanor Peck

Hudson Valley

Regional Council

epeck@hudsonvalleyrc.org

(845) 564-4075

Kat Carroll

Hudson Valley Regional Council

kcarroll@hudsonvalleyrc.org

(845) 564-4075

Regional Circuit Rider:

Long Island, Hudson Valley

Matt Evans of Newport Ventures.

mevans@newportventures.net

NYSERDA

Chris Sgroi

Christopher.Sgroi@nyserda.ny.gov