

Helping Massachusetts Municipalities Create a Greener Energy Future

COMMONWEALTH OF MASSACHUSETTS

*Deval L. Patrick , Governor
Timothy P. Murray, Lt. Governor
Richard K. Sullivan, Secretary
Mark Sylvia, Commissioner*



**November 14, 2011
Northfield, Ma**

**The Stretch Code
Background and Overview**

*Jim Barry – Regional Coordinator
Green Communities Division
Department of Energy Resources
Executive Office Energy and Environmental Affairs*

Green Communities Division

- **DOER Programs/Support for Municipalities**
 - **Energy Audit Program**
 - **Performance Contracting Technical Assistance**
 - **Mass Energy Insight System**
 - **Green Communities Grant**
 - **Outreach / Regional Coordinators**



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Green Communities Grant Program

- Provides up to \$10M annually in grants and loans to ***qualifying*** communities
 - Grants will fund significant energy efficiency initiatives, renewable energy, innovative projects
- Qualification Criteria
 - Adopt as-of-right siting, in designated locations, for RE/AE generation, or RE/AE R&D, or RE/AE manufacturing
 - Adopt expedited (12 month) application/permitting process
 - Establish an energy use baseline inventory with a program to reduce baseline by 20% in 5 years
 - Purchase only fuel-efficient vehicles
 - Require all new residential construction > 3000 ft², and new commercial and industrial real estate construction to minimize life-cycle energy costs



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Criteria #1: As-Of Right Siting

**Adopt as-of-right siting,
in designated locations,
for RE/AE Generation,
or RE/AE Manufacturing,
or RE/AE Research and Development**

- **Site Plan Approval and ConCom review still applicable but NO Special Permits**
- **Designated locations means NOT everywhere in town**
- **RE = Renewable Energy (Solar PV, Wind, Wave)**
- **AE = Alternative Energy (Biomass Combined Heat & Power)**



Criteria #2: Expedited Permitting Process

- 12 Months from date of complete application
- Not all permits, just those that relate to Criteria #1

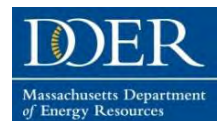
MGL 43 D ~ Priority Development Site is acceptable (requires 6 month process)

Or a letter from legal counsel:

- Affirm no preclusions for expedited permitting
- Include language addressing approval procedures
- Associated timing from any applicable bylaws/ordinances or regulations.



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Criteria #3: Energy Use Baseline

Establish Energy Use Baseline

And adopt a 5 Year Plan to reduce it by 20%

- All Municipal Buildings, Vehicles, Street and Traffic Lights
- Can use Energy Star Portfolio Manager Or ICLEI Software or new Mass Energy Insight
- Can be FY 2009 or CY 2009
- Comprehensive 5 year plan to reduce that baseline by 20 %



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Criteria #4: Purchase Only Fuel Efficient Vehicles



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Criteria #4: Purchase Only Fuel Efficient Vehicles

Whenever such vehicles are commercially available and practicable

- Heavy duty vehicles such as Fire Trucks, Ambulances and some DPW trucks are exempt**
- Police cruisers are exempt; until they become commercially available**
- If you do not have a fleet, must have a policy to promote reduced fossil fuel use**



Criteria 4 – Fuel Efficient Vehicles

Based on 2009 and 2008 EPA data, vehicles are to have a combined city and highway MPG \geq

2-wheel
drive



17



21



29

4-wheel
drive

16



19



24



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Criteria #5: Require all new residential construction > 3000 ft² and new commercial and industrial real estate construction to minimize life-cycle energy costs

Municipalities can meet this criteria by adopting the Stretch Code created by the BBRS (Board of Building Regulations and Standards).



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Topics to be covered

- What is the Stretch Code, who is involved
- What it means for New Homes, Additions, Renovations & Repairs, Commercial buildings
- Costs vs. Benefits
- How to adopt it
- Questions, Questions



Criteria #5: Require new buildings to be more Energy Efficient

Municipalities can meet this criteria by adopting the Stretch Code created by the BBRS (Board of Building Regulations and Standards).

- Stretch Code is an optional appendix to the 8th Edition of the Mass Building Code 780 CMR
- Similar process to Energy Star for Homes
- Training for Building Officials has been done
- Provides for Performance testing, rather than Prescriptive measures.



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Why Test Performance?

- Prescriptive codes do not guarantee good installation, air and water tightness, or that thermal insulation is effective.
- Small air gaps can reduce insulation R-values by 50% or more.



Common air leaks



Insulation

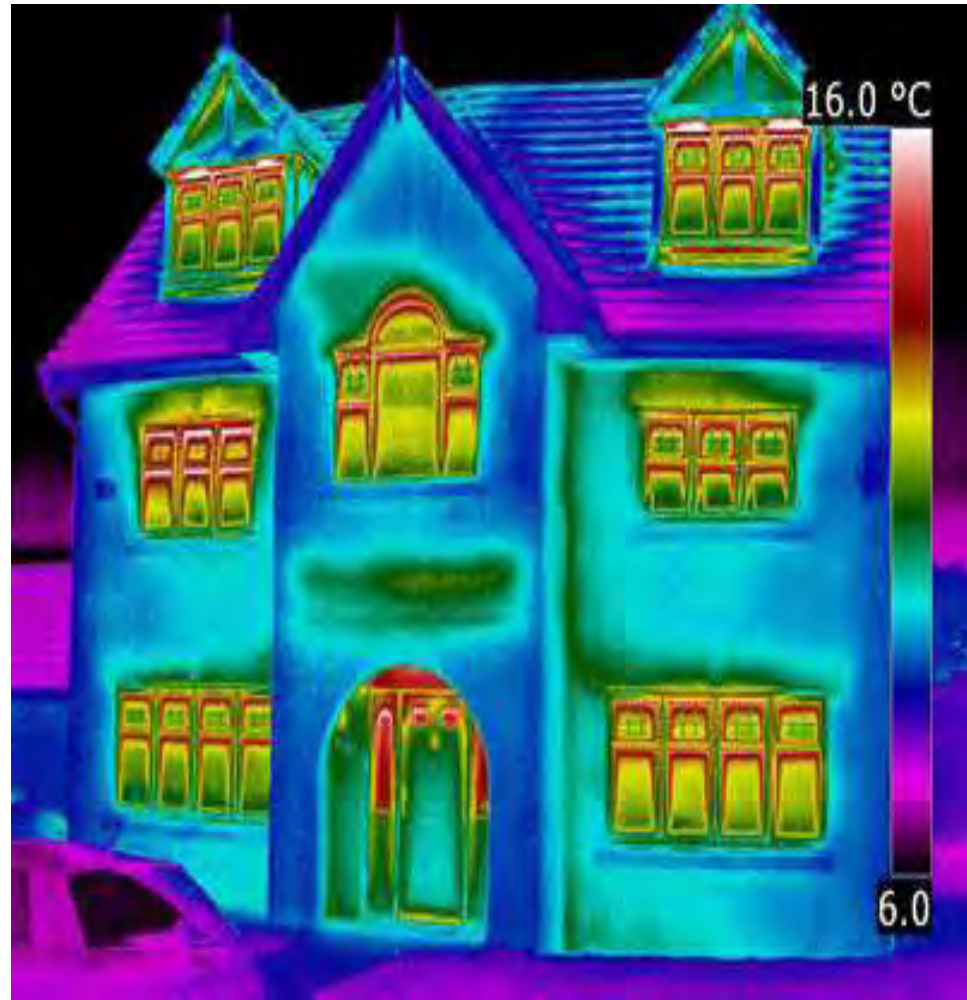
- Performance suffers rapidly when details aren't followed
- Quality installation is key



Tools to Test Performance

IECC 2009 moves towards performance testing – Stretch code requires:

- Blower-door test for air leakage
- Duct test for heating & AC
- Optional infra-red camera tests thermal barrier installation.



Stretch Code for New Residential Construction

New low-rise (three stories or less) residential buildings shall require a HERS (Home Energy Rating System) index rating as verified by a RESNET (Residential Energy Services Network) certified HERS rater.

- **For units greater than or equal to 3,000 sq ft in conditioned floor space, a HERS rating of 65 or less is required.**
- **For units less than 3,000 sq ft, a HERS rating of 70 or less is required.**
- **In addition, all new construction shall demonstrate compliance with the Energy Star Qualified Homes Thermal Bypass Inspection Checklist**



Residential Energy Services Network

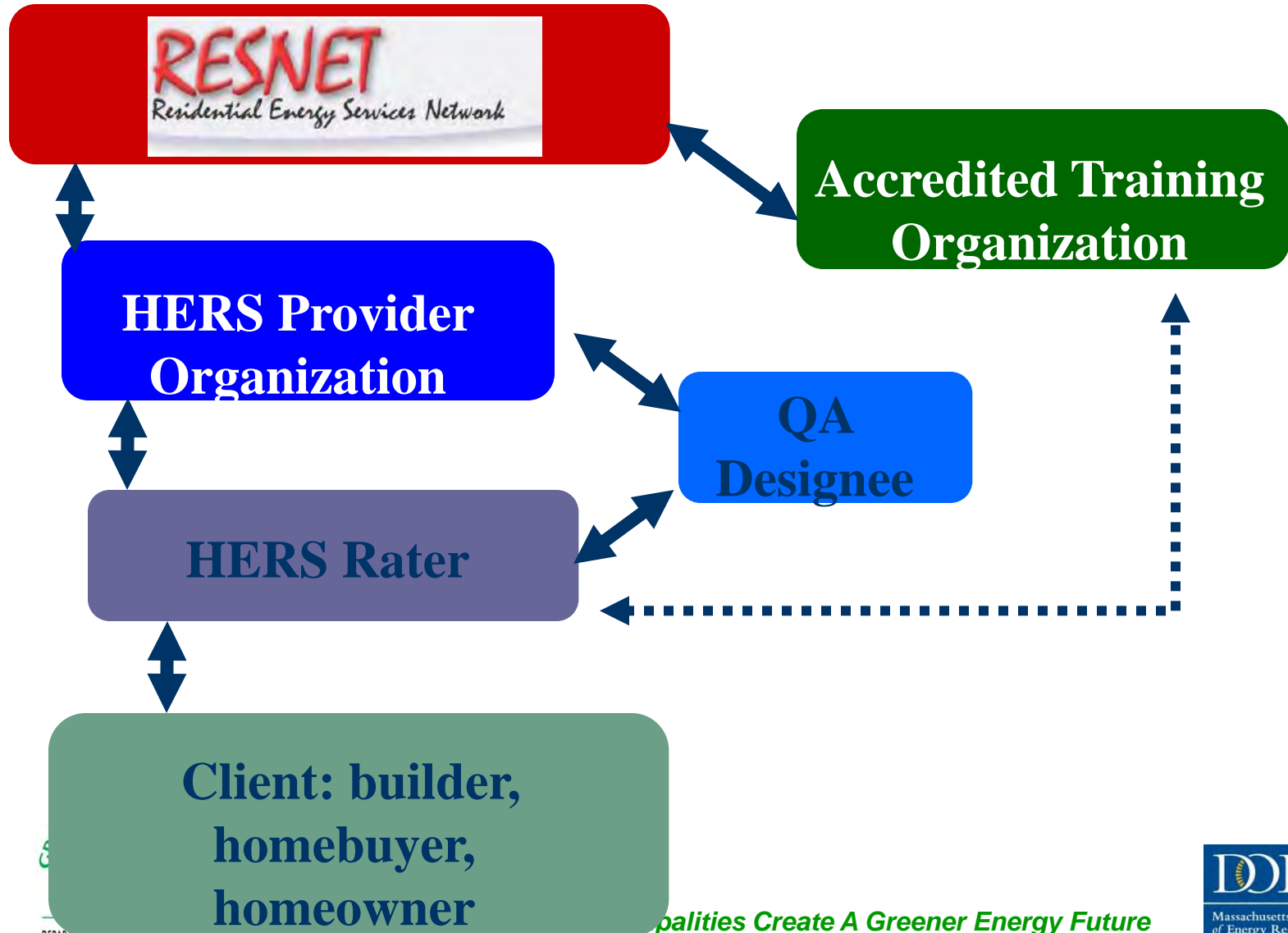
- RESNET: National, nonprofit HERS (Home Energy Rating System) advocacy organization (www.resnet.us)
 - Standards development and maintenance
 - Quality Assurance oversight
 - Forum for public comment on rating issues
- Recognized by
 - Environmental Protection Agency - EPA
 - Department of Energy – DOE
 - Internal Revenue Service – IRS



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HERS - Home Energy Rating System Industry and Stake Holders



What is a HERS Rating?

Annualized energy analysis

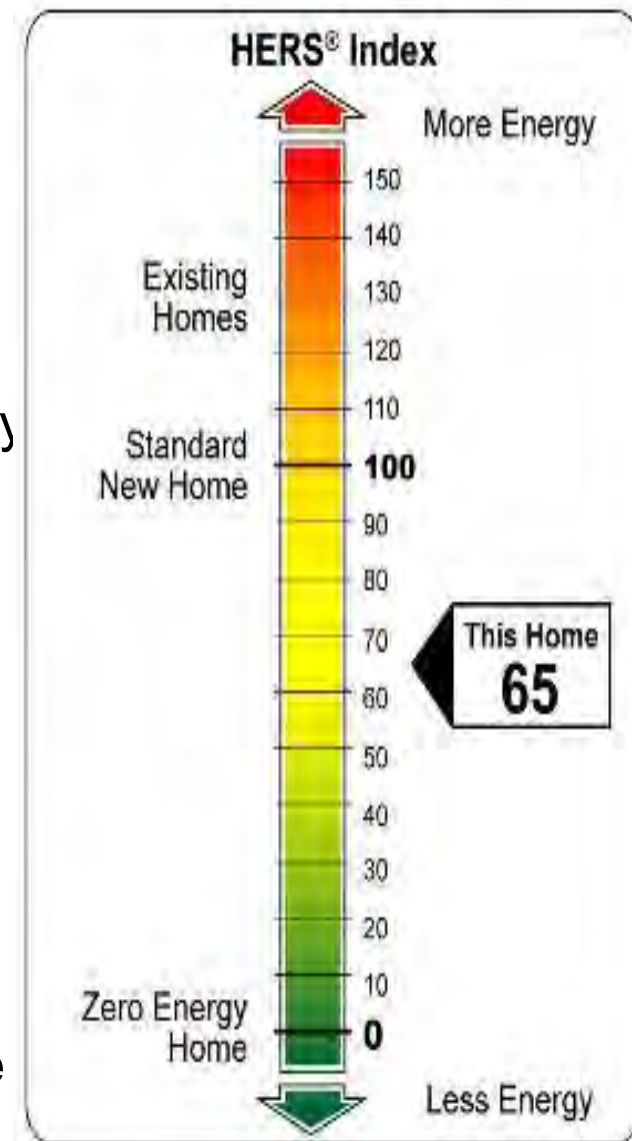
Heating, Cooling, Water Heating,
Lighting and Appliances....

On site power generation-renewable energy

Reference Home

- Based on IECC **2006** Code
(International Energy Conservation Code)
Defined as 100 Points
- 1 % change in consumption = 1 point

**HERS 65 means about
35% more efficient than reference home**



What is HERS Process?

1. Review Building Plans via Computer Modeling
2. In-process inspections
 - First inspection
 - Thermal Bypass Checklist
 - Duct tightness test (if applicable)
 - Second Inspection (usually combined with 1st)
 - Insulation
 - Final Inspection
 - Blower door test
3. Finalize energy model based on verified performance and equipment



The EPA Thermal Bypass Checklist

- EPA requirement for ENERGY STAR Qualified New Homes
- Multi-point checklist for ‘common mistakes’
 - Focus: comfort, energy, warranty issues
- Builders may verify up to six items
 - Subject to the HERS Rater’s approval
 - All remaining items must be verified by the certified rater
- Builder and certified rater both sign the Checklist to ensure accountability



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ENERGY STAR Qualified Homes

Thermal Bypass Inspection Checklist

Home Address: _____		City: _____		State: _____	
Thermal Bypass	Inspection Guidelines	Corrections Needed	Builder Verified	Rater Verified	N/A
1. Overall Air Barrier and Thermal Barrier Alignment	Requirements: Insulation shall be installed in full contact with sealed interior and exterior air barrier except for alternate to interior air barrier under item no. 2 (<i>Walls Adjoining Exterior Walls or Unconditioned Spaces</i>)				
	All Climate Zones:				
	1.1 Overall Alignment Throughout Home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1.2 Garage Band Joist Air Barrier (at bays adjoining conditioned space)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1.3 Attic Eave Baffles Where Vents/Leakage Exist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Only at Climate Zones 4 and Higher:				
	1.4 Slab-edge Insulation (A maximum of 25% of the slab edge may be uninsulated in Climate Zones 4 and 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Best Practices Encouraged, Not Req'd.:				
	1.5 Air Barrier At All Band Joists (Climate Zones 4 and higher)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.6 Minimize Thermal Bridging (e.g., OVE framing, SIPs, ICFs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Walls Adjoining Exterior Walls or Unconditioned Spaces	Requirements: <ul style="list-style-type: none"> Fully insulated wall aligned with air barrier at both interior and exterior; OR Alternate for Climate Zones 1 thru 3, sealed exterior air barrier aligned with RESNET Grade 1 insulation fully supported Continuous top and bottom plates or sealed blocking 				
	2.1 Wall Behind Shower/Tub	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.2 Wall Behind Fireplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.3 Insulated Attic Slopes/Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.4 Attic Knee Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.5 Skylight Shaft Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.6 Wall Adjoining Porch Roof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.7 Staircase Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.8 Double Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Floors between Conditioned and Exterior Spaces	Requirements: <ul style="list-style-type: none"> Air barrier is installed at any exposed fibrous insulation edges Insulation is installed to maintain permanent contact with sub-floor above including necessary supports (e.g., staves for blankets, netting for blown-in) Blanket insulation is verified to have no gaps, voids or compression Blown-in insulation is verified to have proper density with firm packing 				
	3.1 Insulated Floor Above Garage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.2 Cantilevered Floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Shafts	Requirements: Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam (provide fire-rated collars and caulking where required)
4.1 Duct Shaft	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.2 Piping Shaft/Penetrations	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.3 Flue Shaft	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. Attic/ Ceiling Interface	Requirements: <ul style="list-style-type: none"> • All attic penetrations and dropped ceilings include a full interior air barrier aligned with insulation with any gaps fully sealed with caulk, foam or tape • Movable insulation fits snugly in opening and air barrier is fully gasketed
5.1 Attic Access Panel (fully gasketed and insulated)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.2 Attic Drop-down Stair (fully gasketed and insulated)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.3 Dropped Ceiling/Soffit (full air barrier aligned with insulation)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.4 Recessed Lighting Fixtures (ICAT labeled and sealed to drywall)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.5 Whole-house Fan (insulated cover gasketed to the opening)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6. Common Walls Between Dwelling Units	Requirements: Gap between drywall shaft wall (i.e., common wall) and the structural framing between units is fully sealed at all exterior boundary conditions
6.1 Common Wall Between Dwelling Units	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Home Energy Rating Provider: _____ Rater Inspection Date: _____ Builder Inspection Date: _____ Home Energy Rater Company Name: _____ Builder Company Name: _____ Home Energy Rater Signature: _____ Builder Employee Signature: _____	

402.4.2.2 Visual Inspection Option (this is the 2009 code language)

- Building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table 402.4.2, applicable to the method of construction, are field verified.
- Where required by the *code official, an approved party independent from the installer of the insulation shall inspect the air barrier and insulation.*



**TABLE 402.4.2
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA**

COMPONENT	CRITERIA
Air barrier and thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air-permeable insulation is not used as a sealing material. Air-permeable insulation is inside of an air barrier.
Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.
Windows and doors	Space between window/door jambs and framing is sealed.
Rim joists	Rim joists are insulated and include an air barrier.
Floors (including above-garage and cantilevered floors)	Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl spaces is covered with Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.
Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.
Garage separation	Air sealing is provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures are air tight, IC rated, and sealed to drywall. Exception—fixtures in conditioned space.
Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
Shower/tub on exterior wall	Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall.
Electrical/phone box on exterior walls	Air barrier extends behind boxes or air sealed-type boxes are installed.
Common wall	Air barrier is installed in common wall between dwelling units.
HVAC register boots	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.
Fireplace	Fireplace walls include an air barrier.

Some Efficiency steps to reach HERS 70

- New Home – approx. 1500 sf, 2 Stories, Full Basement
Home meeting Prescriptive Requirements of the **CURRENT**
Building Code Requirements (IECC 2009)
earned a HERS rating of **82**

Option 1: Add R5 rigid insulation to the exterior of the home, change the basement wall exterior insulation to R15, change the windows U value to 0.30 and put the ductwork under the attic insulation = HERS 70

OR

Option 2: Change to a 92% efficient furnace, 14 SEER condensing unit and an 80% efficient on demand gas fired water heater = HERS 67



Baseline Home (2,672 sf)

	IECC 2009 Code	Stretch Code	Stretch Code - with ENERGY STAR ^{4,5} -
HERS Index Modeled in REM/Rate	86	70	70
Improvement Measures (changes relative to Basecase)	<ul style="list-style-type: none"> - Unconditioned basement - Floor, R30 - Walls, R21 - Ceiling, R38 G2 - Heating, 80 AFUE - Cooling, 13 SEER - Water Heating, .59 EF - Duct leakage, 8% - Infiltration, 7 ACH50 - Efficient lighting, 50% 	<ul style="list-style-type: none"> - Ceiling, R38 G1 - Heating, 94 AFUE - Water heating, .62 EF - Infiltration, 4 ACH50 - Efficient lighting, 75% - Exhaust Only Ventilation 	<ul style="list-style-type: none"> - Ceiling, R38 G1 - Heating, 94 AFUE - Water heating, .62 EF - Duct leakage, 6% - Infiltration, 5 ACH50 - Efficient lighting, 80% - Exhaust Only Ventilation
Improvement Costs		\$ 2,049	\$ 2,155
HERS Rater Fee ¹		\$ 900	\$ 900
HERS Rater reimbursement ²		-	\$ (650)
ENERGY STAR Incentive ³		-	\$ (650)
Total Improvement Costs		\$ 2,949	\$ 1,755
Mortgage Interest Rate		6%	6%
Loan Term (Years)		30	30
Annual Incremental Mortgage Payment		\$ 214	\$ 127
Annual Energy Costs ⁶	\$ 3,970	\$ 3,463	\$ 3,454
Annual Energy Savings from Baseline		\$ 507	\$ 516
Annual Cash Flow	\$ -	\$ 293	\$ 389



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Residential Additions

1. Prescriptive:

2009 IECC envelope insulation levels,

Energy Star v5.0 for doors, windows, skylights

Ducts for **new** HVAC systems must be 4cfm per 100 ft²

OR

2. Performance-based: HERS 65 or 70



Stretch Code for Alterations, Renovations and Repairs

Two compliance options

1. Prescriptive (same as prescriptive for additions)

OR

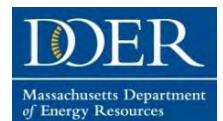
2. Performance (HERS)

Less stringent thresholds (80 or 85)

- Again, BOTH compliance options are complemented by EPA Thermal Bypass Checklist



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'Stretch Code' and 'Energy Star'

The Stretch appendix puts the current Energy Star Homes program (at Tier 2 level) into code.

All new residential construction can use the Energy Star homes program to receive:

- Builder incentives/rebates
 - \$1250/home for HERS 65
 - other utility incentives – on appliances, fluorescent lights, etc.
- Builder training and materials
- Subsidized HERS raters



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Process in a Nutshell

- PRE-CONSTRUCTION:
 - Projected energy rating/ENERGY STAR compliance documentation submitted in conjunction with energy code compliance documentation (typically REScheck)
- DURING CONSTRUCTION:
 - HERS rater verifies ENERGY STAR compliance
 - Building official verifies energy code compliance
- POST-CONSTRUCTION:
 - Confirmed energy rating/ENERGY STAR compliance documentation submitted in addition to building official energy code compliance verification



Commercial by Size and Type

- 5,000-100,000 ft² – Performance or Prescriptive
20% below ASHRAE or
Stretch code amendments to IECC Chapter 5
- Over 100,000 ft² - Only Performance option
Energy model showing 20% below ASHRAE 90.1-2007
- Special cases
buildings with unusual energy demands
(Supermarkets, Labs, Warehouses...)
Over 40,000 ft² - 20% below ASHRAE 90.1-2007
Under 40,000 ft² are exempt





Advanced Building Features

- High Efficiency T-5 Pendant Lighting
- Lighting Control Efficiency
- Reduced Lighting Power Density
- Efficient Site Lighting
- Additional Wall Insulation
- High Performance Glazing
- Efficient VAV RTU's, with ECM Motors
- Demand Control Ventilation
- Part Load HVAC Efficiency Enhancements

Funded Utility Services Support

- Early Life Cycle Cost Analysis
- Integrated Design Team Approach
- Commissioning



Project Description

The 47,000 SF Fidelity Bank Corporate Office and Branch was constructed as a design-build project in Leominster, MA. The four story building will provide office space plus a ground floor branch bank office. This project is acclaimed for its highly successful implementation of the national Advanced Buildings program. The project demonstrates the validity of the Advanced Buildings program assertions. The guideline cost effectively delivered even more than the expected 20% to 30% reduction in annual energy costs compared to a code based design.

Envelope Improvements

- Walls: Added 3-1/2" batt insulation to planned 2" rigid.
- Glazing:
 - Upgrade U value from 0.42 to 0.31
 - Upgrade SHGC from 0.50 to 0.30
- Projected envelope savings: \$1,500

Project Team

Owner:
Fidelity Bank
Project Management:
Habitat Advisory Group



High Performance Building Design Uses 31% Less Energy

Savings Projection

Annual Energy Savings:	\$ 27,600
Additional Cost for Upgrades:	\$100,622
Utility Incentives:	<u>- \$ 66,587</u>
Net Owner Costs:	\$ 34,035

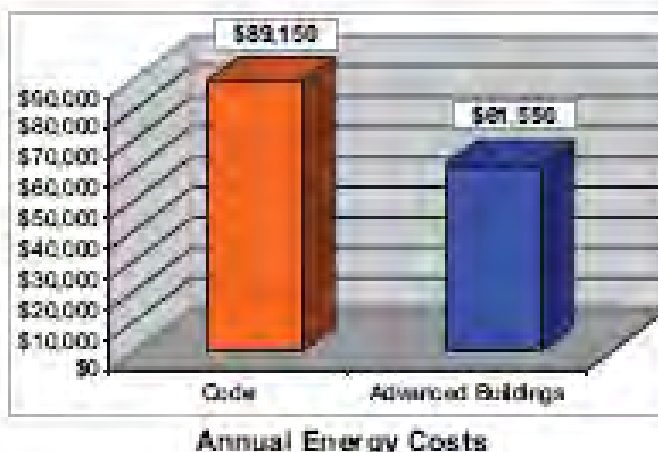
Payback with Incentives:

1.2 years ROI: 93%

Payback without Incentives:

3.7 years ROI: 27%

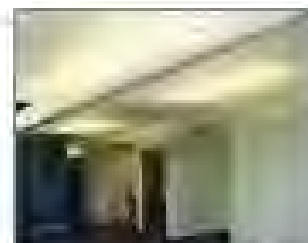
31% Improvement Over Code



Lighting Savings Summary

The lighting layout consisted mainly of T-5 pendants in open office areas, and the latest generation of recessed T-5 fixtures in the remaining areas.

Projected Lighting Savings: \$7,200



	Mass Energy Code	Advanced Buildings Criteria	Final Design	% Reduction
Lighting Power Density	1.34 w/SF	0.96 w/SF	0.86 w/SF	36%

Improved lighting quality while using less energy!

Energy Efficient Mortgages

- Energy Efficient Mortgages make it easier for borrowers to qualify for loans to purchase homes that are already energy efficient or to cover the expenses for making cost-effective energy improvements when purchasing or refinancing older existing homes.
 - Conventional Energy Efficient Mortgages
 - FHA Energy Efficient Mortgages
 - VA Energy Efficient Mortgages



Adoption by Cities & Towns

- Adoption Process
 - Building Official Training
 - Municipal Public Hearing / Forum (tonight)
 - Vote of Town Meeting (simple majority)
- Timing of Adoption
 - Municipality can vote any time
 - Code change starts on Jan 1 or Jul 1
 - Base & Stretch code both in place
for the first 6 months (concurrency period)
Builder can choose EITHER code



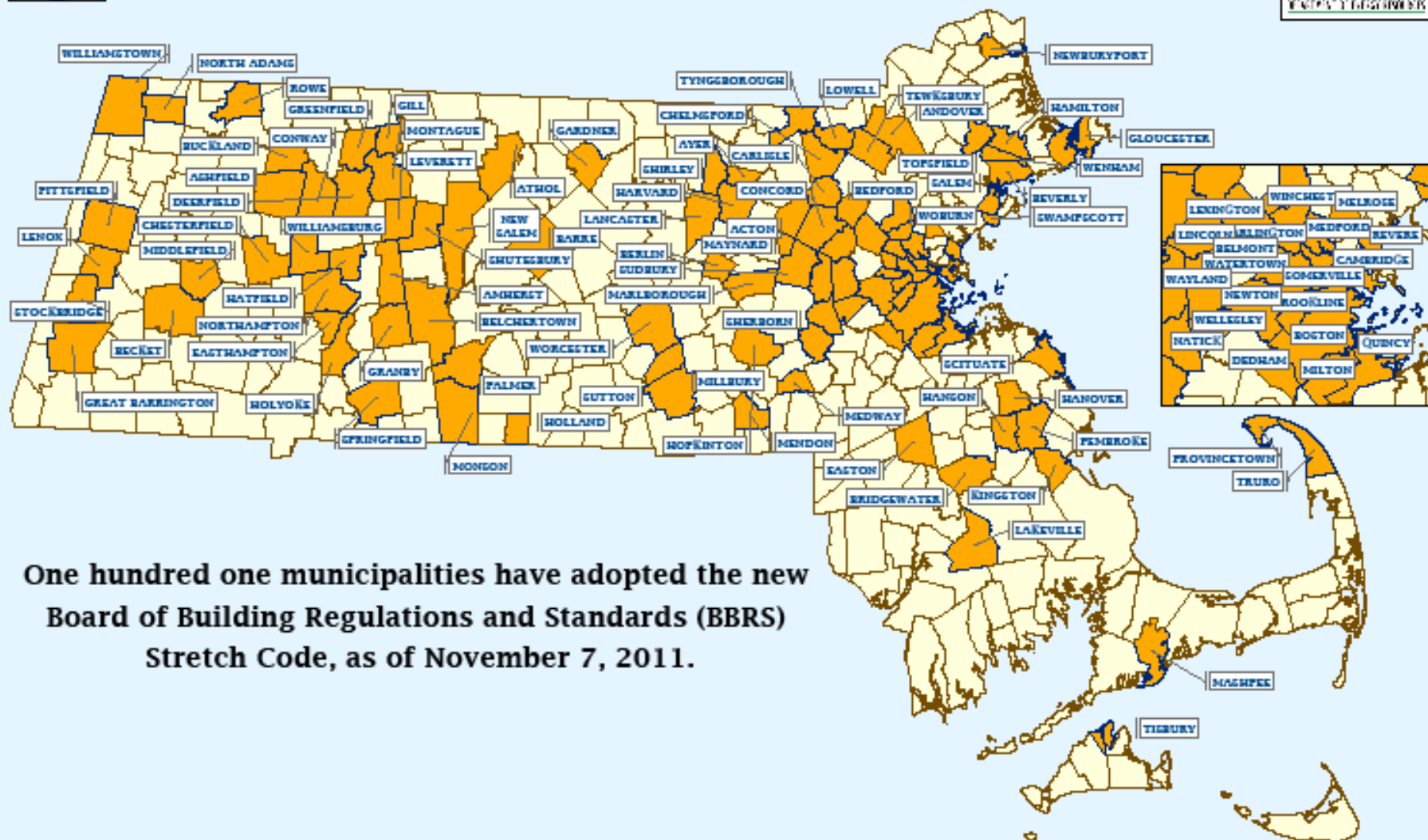
Implementation Timeline example

- Example of **adoption** by Town of Canterbury,
 - October , 2011 Municipal public meeting/forum
 - November, 2011 ... Vote of Town Meeting to adopt Stretch Code; Canterbury is eligible to become a Green Community
- Timing of code **implementation** in Canterbury,
 - Jan 1, 2012 Stretch code implemented alongside base code in Canterbury
 - Jan→June 2012 Building permits can comply with either current base code (IECC 2009) **or** Stretch code until Dec 31, 2011
 - July 1, 2012 Stretch code becomes sole energy code in Canterbury – for new building permits





Stretch Code Adoption, by Community



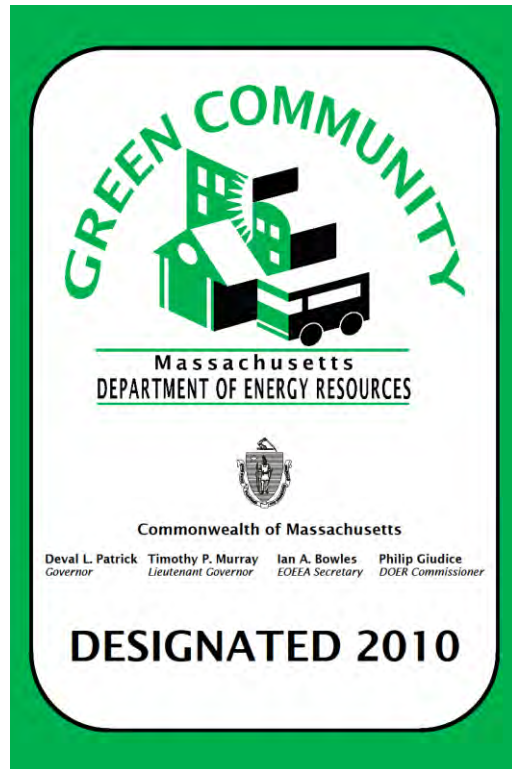
**One hundred one municipalities have adopted the new
Board of Building Regulations and Standards (BBRS)
Stretch Code, as of November 7, 2011.**

GREEN COMMUNITIES GRANT PROGRAM

\$8,100,000 was awarded to 35 Municipalities in Spring 2010.

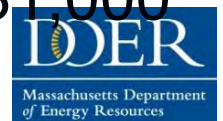
\$4,100,000 was awarded to 18 Municipalities Winter 2010/2011

\$4,000,000 to awarded this summer to another 21 more municipalities



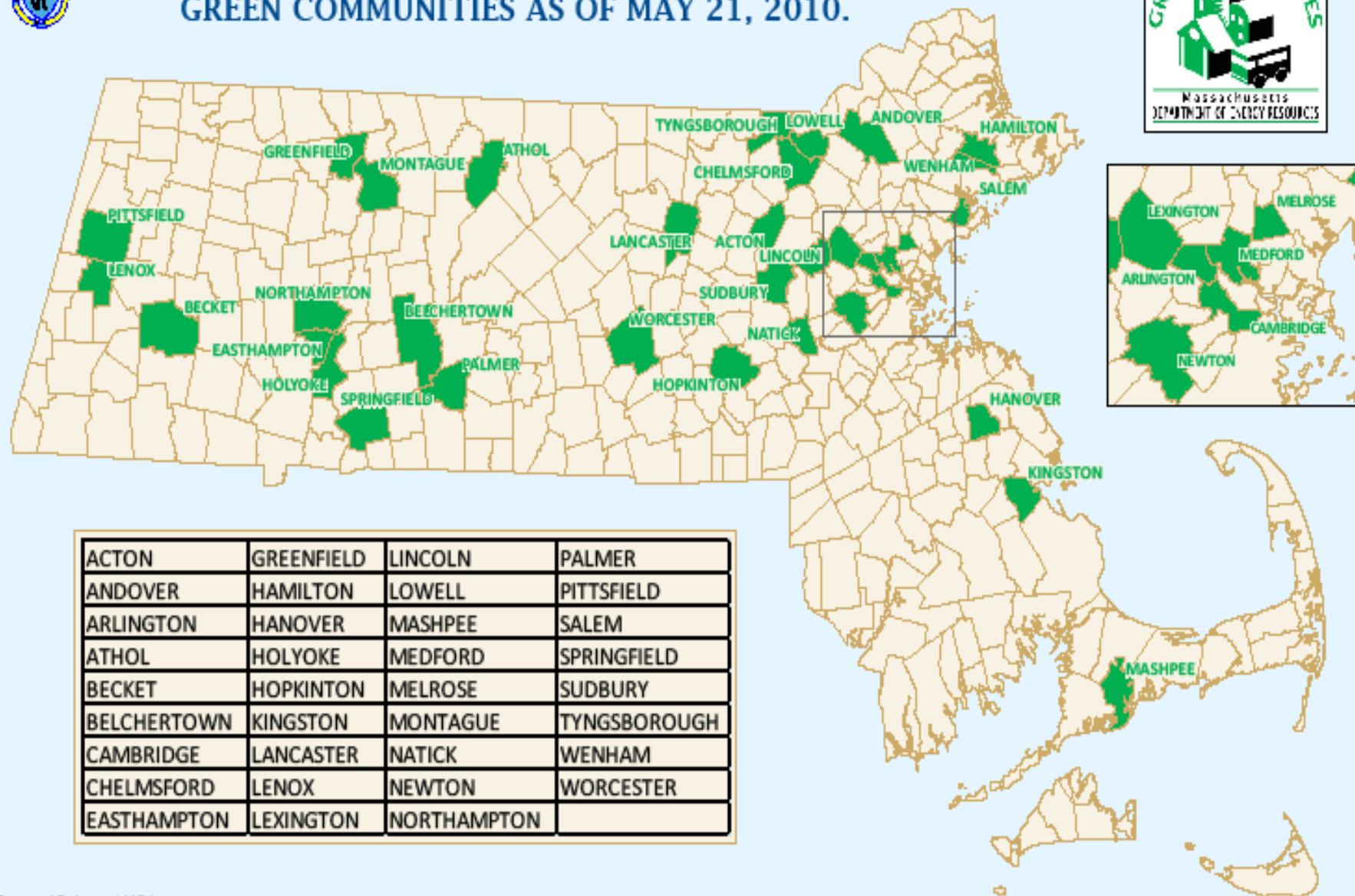
	Population	Grant
Middlefield	521	\$138,025
New Salem	930	\$138,000
Buckland	2,000	\$134,150
Becket	1,800	\$140,000
Hatfield	3,200	\$131,000
Northfield	3,000	

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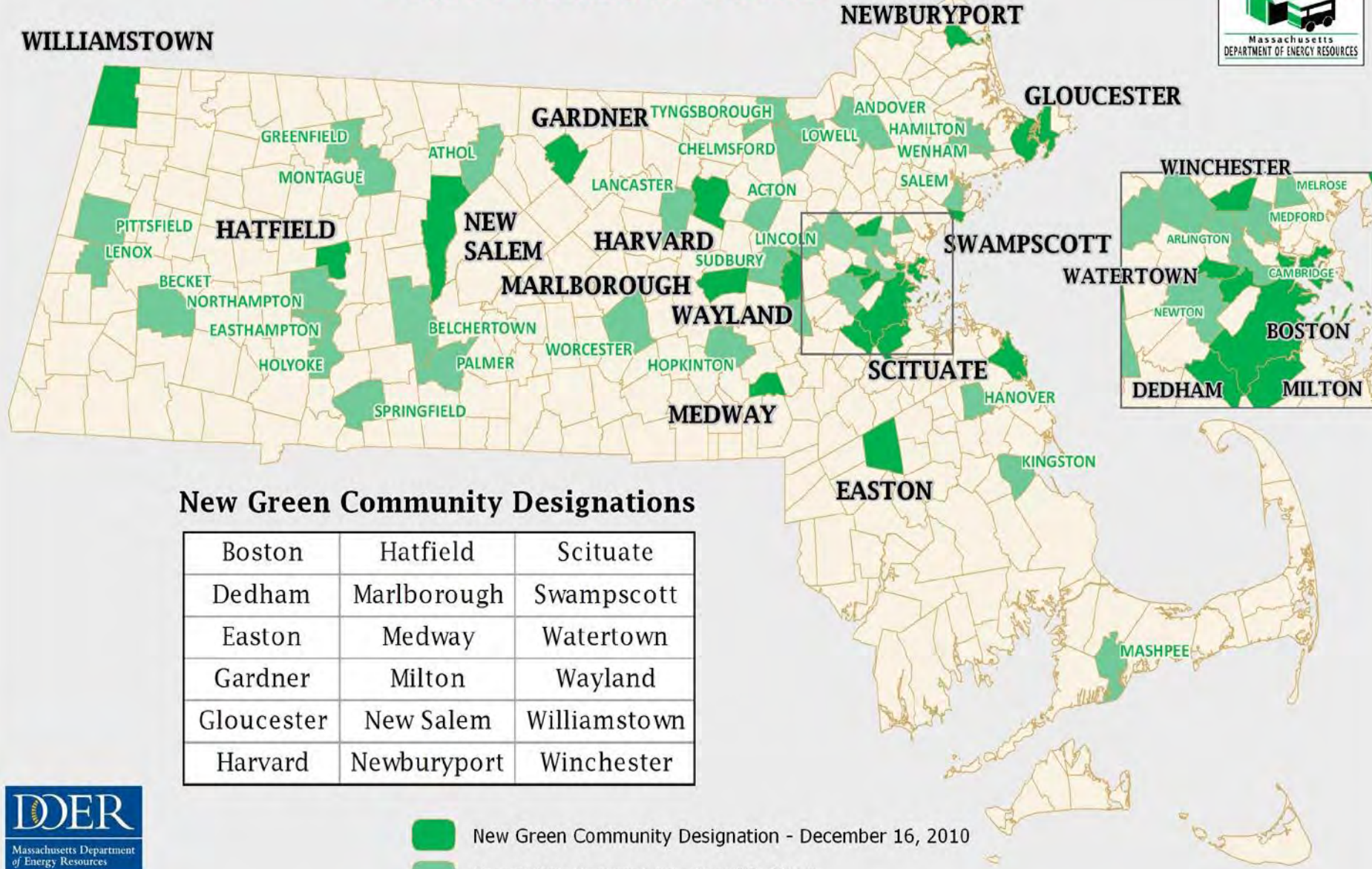


THIRTY-FIVE MUNICIPALITIES DESIGNATED GREEN COMMUNITIES AS OF MAY 21, 2010.

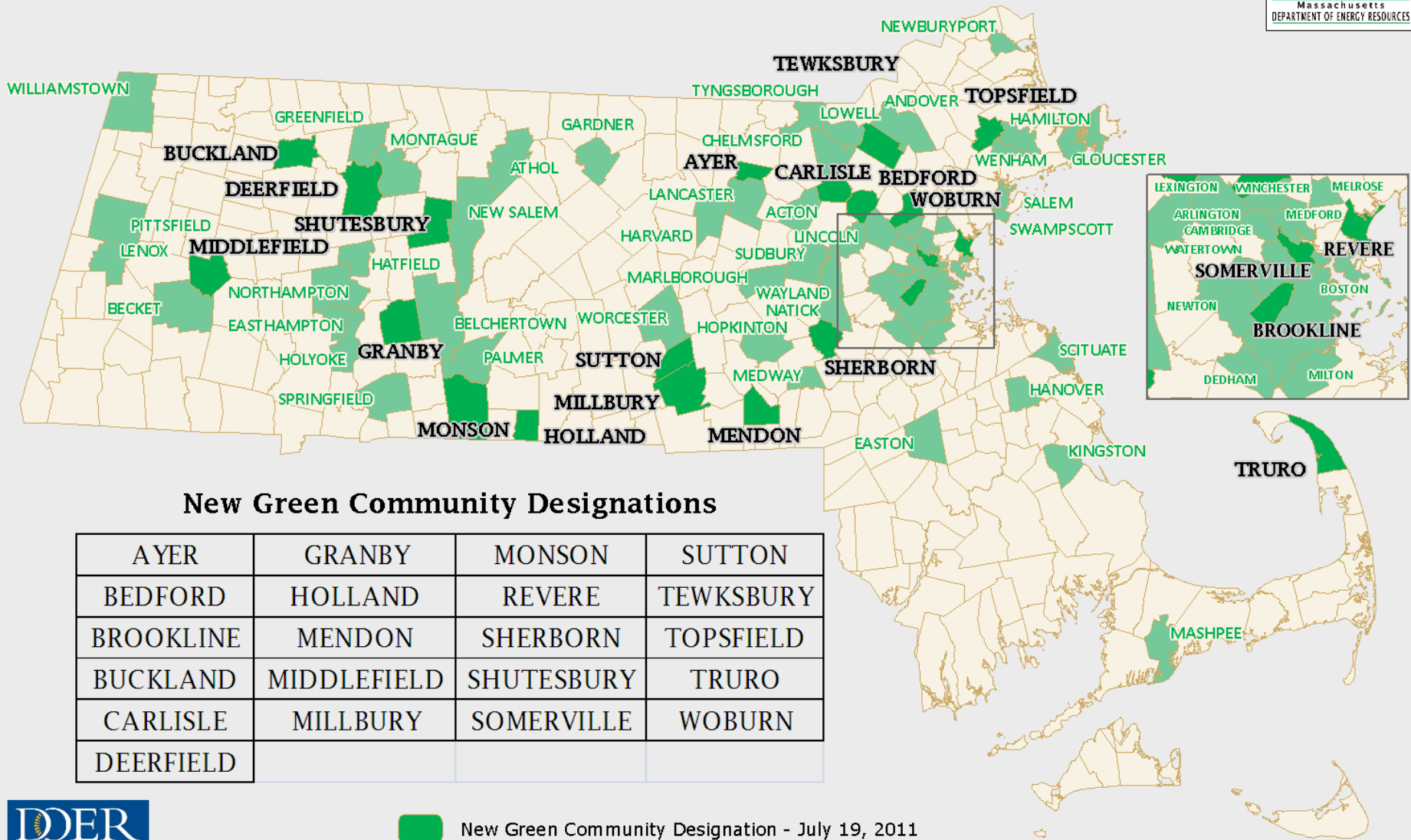


ACTON	GREENFIELD	LINCOLN	PALMER
ANDOVER	HAMILTON	LOWELL	PITTSFIELD
ARLINGTON	HANOVER	MASHPEE	SALEM
ATHOL	HOLYOKE	MEDFORD	SPRINGFIELD
BECKET	HOPKINTON	MELROSE	SUDBURY
BELCHERTOWN	KINGSTON	MONTAGUE	TYNGSBOROUGH
CAMBRIDGE	LANCASTER	NATICK	WENHAM
CHELMSFORD	LENOX	NEWTON	WORCESTER
EASTHAMPTON	LEXINGTON	NORTHAMPTON	

EIGHTEEN NEW GREEN COMMUNITY DESIGNATIONS ~ FIFTY-THREE IN TOTAL



TWENTY-ONE NEW GREEN COMMUNITY DESIGNATIONS ~ SEVENTY-FOUR IN TOTAL



New Green Community Designations

AYER	GRANBY	MONSON	SUTTON
BEDFORD	HOLLAND	REVERE	TEWKSBURY
BROOKLINE	MENDON	SHERBORN	TOPSFIELD
BUCKLAND	MIDDLEFIELD	SHUTESBURY	TRURO
CARLISLE	MILLBURY	SOMERVILLE	WOBURN
DEERFIELD			



New Green Community Designation - July 19, 2011

Previously Designated Community

Why Become a Green Community?

- **Economic Benefits** – reduce energy consumption, reduce energy costs
- **Environmental benefits** – reduce greenhouse gas emissions
- **Recognition** – Sustainability leader in the Commonwealth
 - Recognized on DOER website, printed materials
 - Recognition sign placed in each community
- **Grants** - to become even greener \$\$

www.mass.gov/energy/greencommunities

Jim.Barry@State.Ma.US



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